1 INTRODUCTION

1.1 BACKGROUND

1.1.1 The Indian Statistical System is rooted in historical tradition. In the pre-independence era, the system was limited to the needs of colonial rulers and did not develop into an integrated or well-coordinated system. When however, India achieved her independence in 1947, the necessity for creating a strong statistical base for economic planning was keenly felt by the planners and policy makers. The National Income Committee (1949) appointed by the Government of India noticed several large gaps in the statistical database of the country and recommended measures to bring improvements in the system of data collection. The need for creating a sound statistical system, led to the establishment of the Central Statistical Unit (1949) – later converted into the Central Statistical Organisation (1951) – and the Directorate of the National Sample Survey (1950), the Computer Centre (1967) and the National Sample Survey Organisation (1970).

1.1.2 The Indian Statistical System endeavours to capture a wide variety of data of a very large and decentralised economy. Despite the System's impressive and commendable achievements in the past, there is a growing concern regarding the quality of the data presently being made available by it. The operational efficiency of the Indian Statistical System today is compromised by serious deficiencies with respect to credibility, timeliness and adequacy. Some of the deficiencies that could have been ignored in the earlier period of a highly controlled regime can no longer be done, now that the country has moved to a more liberalised economy. The State-private sector mix is undergoing a change. The country is getting integrated more closely with the rest of the world. The composition of national output is changing more in favour of services. These changes have important implications for the collection and dissemination of data. Also data requirements for decision-making have expanded. Revisions of data on such crucial variables such as national income and agricultural production have raised questions among the data users about the adequacy of the data collection system. On one side there is a growing statistical requirement in view of the expanding economy and on the other side there is over dependence of the statistical system on the administrative set up and traditional records. Further, in view of the decentralised nature of the statistical system prevailing in the country, the Government has been feeling that a strong coordinating mechanism to generate adequate data of high quality with the desired timeliness is the need of the hour and a critical examination of the deficiencies of the present statistical system with a view to suggesting remedial action is urgently called for. Realising the growing statistical needs of the Society and to make sure that these get appropriately addressed, the Government of India set up the National Statistical Commission, the first of its kind, through Resolution No. M/13011/3/99-Admn. IV dated 19th January 2000 of the Ministry of Statistics and Programme Implementation (see Annexe 1.1). Dr. C. Rangarajan, Honourable Governor of Andhra Pradesh was appointed as the part-time Chairman of the Commission along with eleven eminent statisticians and economists as its part-time members.

1.2 COMPOSITION AND TERMS OF REFERENCE

1.2.1 The composition of the National Statistical Commission is as follows:

1	Dr. C.Rangarajan, Governor, Andhra Pradesh, Hyderabad	**Chairman**
2	Shri V.R. Rao, Ex-Director, Central Statistical Organisation and UN Adviser, Hyderabad	Member

3	Shri S.M. Vidwans, Ex-Director, Directorate of Economics and Statistics, Government of Maharashtra and UN Expert, Mumbai	Member
4	Professor J. Roy, Professor Emeritus, Indian Statistical Institute, Kolkata	Member
5	Dr. Prem Narain, Emeritus Scientist, Indian Agricultural Research Institute and Ex-Director, Indian Agricultural Statistics Research Institute, New Delhi	Member
6	Dr. Rakesh Mohan*, Director General, National Council of Applied Economic Research, New Delhi	Member
7	Dr. V.R. Panchamukhi, Director General, Research and Information System for the Non-Aligned and Other Developing Countries, New Delhi	Member
8	Dr. Y. Venugopal Reddy, Deputy Governor, Reserve Bank of India, Mumbai	Member
9	Dr. K. Srinivasan, Executive Director, Population Foundation of India and Ex-Director of International Institute of Population Studies, New Delhi	Member
10	Professor S. Tendulkar, Delhi School of Economics and Vice-Chairman, National Advisory Board on Statistics, New Delhi	Member
11	Dr. A.B.L. Srivastava, Chief Consultant, Educational Consultants India Ltd. and Ex-Professor, National Council of Educational Research and Training, New Delhi	Member
12	Dr. Fredie Ardeshir Mehta, Eminent Economist and Director, M/s Tata Sons Ltd., Mumbai	Member

1.2.2 The Terms of Reference for the National Statistical Commission are as follows:

(i) To examine critically the deficiencies of the present statistical system in terms of timeliness, reliability and adequacy;

(ii) To recommend measures to correct the deficiencies and revamp the statistical system to generate timely and reliable statistics for the purpose of policy and planning in Government at different levels of administrative structure;

(iii) To recommend permanent and effective coordinating mechanism for ensuring integrated development of the decentralised statistical system in the country;

(iv) To review the existing legislation for the collection of statistical information and to recommend amendments, where necessary, to achieve the objective of collection and dissemination of timely, reliable and adequate statistics;

(v) To review the existing organisation of the Ministry of Statistics and Programme Implementation (Statistics Wing) and other statistical units of the Government and to make recommendations on their staffing and training requirements to enable them to cope with the increase and development of statistical services;

(vi) To examine the need for instituting statistical audit of the range of services provided by the Government and local bodies and make suitable recommendations thereof; and

(vii) To recommend any other measures for improving the statistical system in the country.

* At present Adviser to the Finance Minister, Ministry of Finance, Government of India

1.3 SECRETARIAT OF THE COMMISSION

1.3.1 In view of the part-time nature of the Chairman and Members of the Commission, the Government set up a Secretariat headed by a full-time Secretary at the level of Additional Secretary and other technical and administrative staff to provide secretarial and administrative support to the Commission. The list of officers and staff of the Secretariat is given in Annexe 1.2. The Secretariat assisted the Commission by way of preparing agenda papers for the meetings, participating in the various committees constituted by the Commission, in the arranging of meetings, making available to the members important papers and documents on various subject areas, and finally by providing secretarial assistance to the Commission in its task of finalising the report.

1.4 PROGRAMME OF WORK

1.4.1 The first meeting of the Commission was held on 9 February 2000 at Hyderabad. At this meeting, the Commission discussed the salient features of the Indian Statistical System with special reference to the credibility, timeliness and adequacy of the statistics generated by the system. It further deliberated on the modalities of its functioning so as to accomplish the objectives. To facilitate focused discussion on varied spheres of the statistical system, seven Sub-groups were formed in the following areas:

- Agricultural Statistics
- National Accounts Statistics
- Industry, Commerce, Corporate Sector and Price Statistics
- Services and Infrastructure Statistics
- Socio-economic Statistics
- Financial and External Sector Statistics
- Statistical Systems, Information and Communication Technology Needs, Human Resource Development, Legislation and Audit

1.4.2 The Sub-groups held detailed discussions on the assigned areas by organising several meetings. Apart from the members, external experts and officials were co-opted in each of the Sub-groups. The list containing the names of members, co-opted members, experts and special invitees associated with various Sub-groups is at Annexe 1.3.

1.4.3 In order to assess the current status of the statistical system, the Commission had requested all the State Governments, Union Territory administrations and Central Ministries and Departments to provide the basic information on the data supplied by them and the perceived data gaps along with their suggestions. The information so collected was analysed and considered by the concerned Sub-groups as well as by the Commission.

1.4.4 To assist the Commission in examining the technical aspects of a number of issues in different sectors of the economy, some expert groups and committees were formed. Each was given specific terms of reference for studying some particular issues. The compositions of these groups and committees are given in Annexe 1.4. The following technical studies have been undertaken by these groups and committees:

- Reviewing the Improvement of Crop Statistics (ICS) Programme for modifying its survey design to provide alternative all-India estimates of crop area and yield rates of major crops and correction factors to adjust the Timely Reporting Scheme estimates of crop area.
- Efficacy of using small-area estimation techniques in the field of Agricultural Statistics.

- Rationalising the village land records for expanding the scope of the existing nine-fold classification of land use.
- Problems in capturing the growth of the Industrial Sector through the Index of Industrial Production (IIP) and the Annual Survey of Industries (ASI).
- Study of Different Sources of Data on Higher and Technical Education.
- Small-area estimation of socio-economic variables at the district and sub-district levels.
- Examining the issues related to data requirements for Direct and Indirect Taxation, Accounting, Budgeting, etc.
- Examining issues related to Insurance Sector Statistics and recommending measures for improving the system.
- Identifying the Information Needs arising out of e-commerce activities and institutional arrangements for data maintenance.
- Examining the status of data on services in the light of emerging issues for international trade in services.
- Critical examination of the status of informal Financial Sector Statistics and suggesting a system for improving data collection.
- Identifying the reasons for a divergence between the estimates of household consumer expenditure and private final consumption expenditure.

1.4.5 Besides, the following presentations were also arranged:

- Use of Remote Sensing Techniques for improving crop yield and acreage statistics in Agriculture by the Space Application Centre, Ahmedabad.
- Data Warehousing Initiatives taken by Reserve Bank of India.

1.4.6 In addition to the above, the Indian Statistical Service Association and the Staff Associations of the Ministry of Statistics and Programme Implementation presented their views on improving the morale of the statistical personnel before the Commission.

1.4.7 The Commission felt that a meeting with the representatives of the States, Union Territories and Central Ministries and Departments be convened to facilitate the members of the Commission to interact directly for assessing their views on various issues identified by them. The same was accomplished by taking the opportunity of the Eleventh Conference of Central and State Statistical Organisations arranged by the Ministry of Statistics and Programme Implementation during the last week of October 2000. The Conference was attended by several heads of statistical organisations or divisions from the States which included Secretaries, Commissioners of Statistics, Directors of Economics and Statistics of the States and senior officers from the Central Ministries and Departments. The views and suggestions that emerged in the Conference have been duly considered during the discussions of the different meetings of the Sub-groups as well as the Commission.

1.4.8 In the course of discussions over several meetings, the Commission observed that Administrative Statistics flowing from various channels of the Government administration suffer seriously from the problem of reliability, timeliness, coverage, etc. The Commission, therefore, felt that there was a need to get the views of the administrators of the States. Accordingly, a meeting with the Chief Secretaries representing twenty-one States was convened in June 2001. Chief Secretaries, Principal Secretaries, Secretaries and other senior officers in the State Administration attended the meeting. The meeting provided an opportunity to the Commission to discuss the State Statistical System including the Administrative System, participation of the States in the Statistical Legislation, improving the Centre-State Coordination in statistical activities and the use of Information Technology in improving the statistical system. While expressing their views on the above issues, the representatives from the States were also of the

view that overall improvement in the State Statistical System is essential for strengthening the Indian Statistical System, as the former is an integral part of the latter.

1.4.9 The Commission held a total of 15 meetings, the last being held on 2-3 August 2001 and discussed the issues brought before it by the Sub-groups, which had met 39 times. The Commission submitted an Interim Report focusing on issues relating to the Agricultural, Industrial, Corporate, Financial and External Sectors during the month of February 2001. A number of experts in the fields including retired senior officers of the Government forwarded their comments on the various recommendations of the Commission enlisted in the Interim Report. The Commission has considered these views during the discussion in its subsequent meetings.

1.4.10 The Commission was required to submit its Report to the Government within a period of 12 months. However, in view of the wide-ranging terms of reference and emergence of many contentious issues, the Commission requested an extension of six months. Accordingly, the Government, through Resolution No. M-13011/3/99/Adm.IV dated 23 January 2001 of the Ministry of Statistics and Programme Implementation (see Annexe 1.5) extended the term of the Commission up to 18 July 2001, the tenure being thereafter further extended up to 18 August 2001 in order to enable the completion of the Report.

1.5 ORGANISATION OF THE REPORT

1.5.1 The Report has been divided into two volumes. Volume I comprises three chapters, while Volume II has eleven chapters. All the chapters have been continuously numbered for easy identification. Annexes pertaining to the different chapters have been accommodated in the concerned volume for quick reference.

1.5.2 Chapter 1 in Volume I, is introductory in nature, giving in brief, the circumstances leading to the formation of the Commission, its composition, the terms of reference of the Commission and the programme followed in its task. In Chapter 2, the approach followed by the Commission while dealing with the different issues has been discussed, besides, giving an overview of the entire Report highlighting important recommendations made by the Commission. All the recommendations made by the Commission have been furnished as the third chapter. Chapters 4 to 14 in Volume II deal with the different sectors of the economy, discussing in a detailed manner the current status, deficiencies and remedial measures for each of these.

1.6 ACKNOWLEDGEMENTS

1.6.1 The Commission takes this opportunity to express its thanks to the ministries, departments, organisations of the Central and State Governments, quasi-Governmental and non-Governmental organisations as well as individual experts who have contributed immensely and helped the Commission in formulating their views. It further thanks all the co-opted members for their suggestions during the discussions in the Sub-group meetings. The Commission wishes to place on record its thanks to all the special invitees who attended the meetings of the Sub-groups as well as the Commission for their contributions during the discussion. The Commission acknowledges the contributions by the participants of the Eleventh Conference of the Central and State Statistical Organisations based on which recommendations on several technical issues could be formulated. It would also like to place it on record its thanks to all those Chief Secretaries, Principal Secretaries, Secretaries and other senior officers who participated in the meeting of the Chief Secretaries and suggested measures for improving Administrative Statistical System.

1.6.2 The Commission is indebted to all those experts, senior officers from Central and State Governments and retired officers who contributed their valuable views and comments on the Interim Report. The Commission received important inputs from a number of Committees and Expert Groups appointed by it, for which it records its thanks to the members of such Groups and

Committees. It places on record its appreciation to the cooperation rendered by the Ministry of Statistics and Programme Implementation. In this connection, it specially expresses its thanks to Dr. Arun Shourie, the Minister of State and Shri K.V. Irniraya, Secretary of the Ministry of Statistics and Programme Implementation. The Commission also likes to thank Dr. N.S. Sastry, Director General and Chief Executive Officer, National Survey Sample Organisation, for his participation in the meetings of the Commission and his contribution on the different subject areas. Several Government as well as private organisations responded whenever contacted for some information or views, for which the Commission places on record its thanks. Mrs. Meera Juneja did the painstaking job of editing both the volumes of the Report for which the Commission is thankful to her. The Commission further wishes to put on record its sincere thanks to Shri Bh.U.V. Seshagiri Rao, Personal Assistant to the Governor of Andhra Pradesh, for providing excellent secretarial support to the Chairman of the Commission.

1.6.3 The Commission also records its appreciation of the commendable services rendered by the Secretariat. Dr. Vaskar Saha, Secretary to the Commission was tireless in his efforts in assembling the necessary materials and subjecting them to close scrutiny. His academic credentials combined with his long experience in the various segments of the statistical system enabled him to provide the critical inputs needed by the Commission to reach the conclusions. The Commission expresses its appreciation of the dedicated work put in by all the members of the Secretariat whose assistance was a source of great support to the Commission.

(C. Rangarajan)
Chairman

(V. R. Rao)
Member

(S. M. Vidwans)
Member

(J. Roy)
Member

(Prem Narain)
Member

(Rakesh Mohan)
Member

(V. R. Panchamukhi)
Member

(Y. Venugopal Reddy)
Member

(K Srinivasan)
Member

(S. Tendulkar)
Member

(A.B. L. Srivastava)
Member

(Fredie Ardeshir Mehta)
Member

2 APPROACH AND OVERVIEW

2.1 INTRODUCTION

2.1.1 Collection of numerical data for the purpose of understanding the behaviour of various socio-economic variables has a long history. The origin of the term 'statistics' is associated with this concept, which is to describe the state. Of course, statistics, as a scientific discipline, goes beyond enumeration. Statistical inference is an important part of the discipline. However, inference will be fruitless, if the basic data are faulty or inaccurate or unreliable. That is why we have to pay attention to data collection in all its dimensions. A good statistical system is a prerequisite for sound decision-making and for the formulation and monitoring of public policies.

2.1.2 India, in accordance with its federal structure, has created a statistical system, which is both decentralised and centralised. Large-scale statistical operations such as Population Census, Economic Census and nation-wide sample surveys are centralised. In addition, the compilation of macro-economic aggregates like national accounts, price indices and industrial production are largely Central activities. However, the State Governments and statistical organisations of the State are also engaged in collecting and generating data on a number of variables. Even where the responsibility for policy formulation lies with the Central Ministries, the actual collection of data may be done by the State Governments through their agencies. For example, in the case of Agricultural Statistics, the crop area and yield data are collected by State Governments through various schemes initiated by the Central Ministry of Agriculture. There is, therefore a need for a high degree of coordination between the Central statistical authorities and the State-level organisations. The Statistics Wing of the Ministry of Statistics and Programme Implementation in the Government of India is the nodal agency for coordination of statistical activities and maintenance of statistical standards. For coordination with States and Union Territories, it operates through State Directorates of Economics and Statistics.

2.1.3 The Indian Statistical System has over the years built an elaborate statistical infrastructure to capture the wide variety of data generated by a very large and decentralised economy. However, due to its over dependence on the administrative set up and traditional records, the system has not been able to keep pace with the demands of statistical requirements. The process of development has also brought in significant structural changes in the economy, which need to be captured by the statistical system. While the scientific basis for the generation of data and the methodologies adopted may not be in question, in many cases, what has brought about a decline in the quality and reliability of the statistics generated by the system is the inability of the present system or procedure of collecting data to meet the quality standards.

2.1.4 Apart from the quality of data, there are other problems such as data gaps, duplication leading to conflicting statistics and inordinate delays in transmission and publication of data. In the field of Agricultural Statistics large data gaps exist with reference to the output of fruits and vegetables and other minor crops, and estimates of meat, meat products and fish. The results of 16th Livestock Census, scheduled to be completed in 1997, are still not available for a number of States. The representativeness of the Index of Industrial Production has been considered as questionable due to *inter alia* inadequate information on Small Scale Sector. One of the perennial issues relating to national income in our country has been the difference between

the National Accounts and National Sample Survey (NSS) estimates on consumption expenditure. In the area of External Sector Statistics also, the reconciliation of the data on exports and imports between the Directorate General of Commercial Intelligence and Statistics (DGCI&S) and RBI is essential. Further, the present system has not been able to provide adequate information on basic socio-economic indicators required for micro-level planning. For example, although the Civil Registration System was envisaged as a mechanism to provide annual estimates of the infant mortality rate, death and birth rate, etc. at the district level, it has failed and as a result, such estimates are not available at the decentralised level. No reliable information is available on many aspects in the Health Sector like problems of the aged, contribution of private sector to health care, disease-specific expenditure on health, etc. The whole area of Services Sector is undergoing far-reaching changes with the application of Information Technology. More of intangible goods are getting exchanged. However, huge data gaps exist with reference to such transactions.

2.1.5 The Indian Statistical System, therefore, needs to improve its credibility, timeliness and adequacy. The Commission has examined the present system of collection and dissemination of statistics relating to different sectors of the economy using these criteria. For overcoming the problems identified thereby, the Commission has adopted a five-fold remedial approach:

First, reform in the administrative structure of the Indian Statistical System and upgrading its infrastructure so as to ensure its autonomy,

Second, improvement of the present system of collection of data, in relation to data that are currently being generated,

Third, exploration of alternative techniques, in relation to the existing statistics, if the present system for collecting data is under strain for whatever reasons,

Fourth, identification of new data series that may be generated in keeping pace with the expanding economy, and

Fifth, evolution of appropriate methodologies for collection of data, in relation to the new data requirements.

2.2 ADMINISTRATION OF THE INDIAN STATISTICAL SYSTEM

2.2.1 At the moment, as the system operates, there is no effective coordination either horizontally among the different departments at the Centre or vertically between the Centre and the States. The responsibilities for the horizontal and vertical coordination and maintenance of statistical standards rest with the Ministry of Statistics and Programme Implementation. However, it is found that this Ministry is not in a position to ensure that the Ministries and all State Governments adhere to certain commonly-accepted procedures. The task has become more difficult as the post of the Director General of the Central Statistical Organisation remains unoccupied so far. The lack of an effective and adequately empowered coordination mechanism is a major weakness in the system. Besides, there is no statistics policy-making body or authority for evolving a national statistical strategy.

2.2.2 For reform of administration of the Indian Statistical System by upgrading its infrastructure and thereby enhancing the credibility of official statistics, the Commission is of the view that an independent statistical authority free from political interference having power to set priorities with respect to Core Statistics is needed to ensure quality standards of statistical processes. Such an authority will also improve the coordination among different agencies collecting data. Though the National Advisory Board on Statistics was constituted with this objective, its impact has been minimal. In view of this, the Commission has recommended the creation of a permanent and statutory apex body – National Commission on Statistics (NCS) – through an Act of Parliament, independent of the Government in respect of policy-making,

coordination and maintaining quality standards of Core Statistics. The NCS will have a Chairman and four Expert Members all of whom would be eminent statisticians or social scientists and they will act on the advice of a number of technical committees on various subject areas.

2.2.3 The presence of an administrative machinery within the Government is necessary to implement and sustain the policies evolved by the proposed NCS. The Commission has, therefore, proposed a restructuring of the existing Statistics Wing of the Ministry of Statistics and Programme Implementation into a full-fledged Department of the Ministry to be known hereafter as the National Statistical Organisation (NSO). The head of the NSO will be the National Statistician and will be the Secretary to the Government of India. He or she will also be the Secretary to the National Commission on Statistics. The NSO will comprise three offices and a wing namely, the Central Statistical Office, National Sample Survey Office, Data Storage and Dissemination Office and Consultancy Wing in order to implement and maintain statistical standards as laid down by the NCS besides carrying out various other functions such as the compilation of National Accounts, apart from facilitating national and international coordination, publication of Core Statistics, the conduct of methodological research and studies, as well as arranging the training of statistical personnel and maintenance of a 'warehouse' for Core Statistics.

2.2.4 There is an increasing demand for professional statistical activities within the Government. The Commission has, therefore, recommended the creation of a body – the Consultancy Wing – under the National Statistical Organisation to utilise the expertise available within the Government in the setting up of a commercial wing for professional statistical activities.

2.2.5 A lack of coordination among the different ministries and departments of the Central Government leads ultimately to poor and unproductive statistical advice to the concerned administrative ministries and departments. To remedy this situation, the Commission recommends the appointment of statistical advisers in important ministries and departments in order to make available sound statistical inputs and advice for the purposes of policy formulation and decision-making under the technical guidance of the National Statistician.

2.2.6 Some of the State Directorates of Economics and Statistics do not play a nodal role in the coordination of statistical activities within the State and lack survey sampling and data processing capabilities. To improve the coordination within the State statistical systems, the State Directorates of Economics and Statistics must be made responsible for technical coordination with all State Departments in respect of the content, methodology and dissemination of statistics. The Conference of Central and State Statistical Organisations is another instrument, which would provide a forum for regular interaction among the Central and State statisticians. In some of the States, as the statistical cadres are generally fragmented, the constitution of an organised State Statistical Cadre is urgently required. For strengthening the statistical system in the States, the Commission has recommended a Centrally-sponsored scheme with the specific objectives of developing survey and data-processing capabilities in the States.

2.2.7 As quality issues hinge on the professional capabilities of the officers and staff engaged in producing national statistics, an important objective of the Indian Statistical System is to promote professionalism in the Indian Statistical Service. Statistical activities being skill oriented an adequate focus on human resource development is therefore necessary to sustain any reforms in the system. At the moment, there is no mechanism either for providing appropriate training to the official statisticians or for promoting specialisation among the officers of the Indian Statistical Service (ISS). The Commission, therefore, recommends the provision of appropriate training facilities for improving the skills of the ISS officers. Further, the career of an officer should be so planned that he or she can specialise in some specific areas, gradually

narrowing down the areas of specialisation over the years. There is also a need for harmonisation between the choice of individual specialisation and the goals of the organisation and for orienting the transfer and training policies consistent with the goals of specialisation. Moreover, the Commission has noted that there is stagnation in the career prospects of ISS officers due to bleak promotional avenues, which has adversely affected the system. The Commission has, therefore, recommended a one-time measure of promoting the stagnant ISS officers so as to inspire them to enhance their output.

2.2.8 The system lacks legal backing for the statistical activities. The present Collection of Statistics Act, 1953 is weak. In addition to ensuring the reliability of statistics and the efficiency of operations, a strong Act, in accordance with the federal structure of the country, should also take into account the informants' rights to privacy. Recognising the role of Information Technology for processing, transmission and dissemination of data, the Commission has recommended the establishment of strong communication links between the NSO and all other related statistical offices including the States' statistical offices through one or more Internet service providers or virtual private network.

2.3 AGRICULTURAL STATISTICS

2.3.1 Though India has a long tradition of comprehensive crop statistics, at present a steady deterioration in the quality of data on crops, which are traditionally covered under the system of Agricultural Statistics has occurred. In addition to this, there are several data gaps on new crops and ancillary agricultural activities. Despite impressive and commendable achievements in agriculture over the years, there is a growing concern over the quality of Agricultural Statistics that are now available. Statistics of crop production – both area and yield – are based on scientifically designed methodologies. These designs have been arrived at after considerable experimentation and discussion among scholars of international repute. However, the present status of crop statistics is far from satisfactory. There have been frequent revisions of crop estimates and they have been quite steep on a number of occasions. The publication of final estimates on crop production is considerably delayed. The quality of land use and crop data has suffered seriously for a variety of reasons. Village officials who play a key role in collecting land use statistics do not attach much importance to this work. Higher-level revenue officials too do not pay adequate attention to this activity at the time of supervision. All these factors have contributed to the deterioration in the quality of crop statistics even though efforts have been made to bring about improvements through the Timely Reporting Scheme (TRS) and the Improvement of Crop Statistics (ICS) Scheme. Thus the pillars on which the entire edifice of Agricultural Statistics rests have been weakened. The Commission has, therefore, made a reassessment and examined the methodology as well as the organisational improvements required for improving Agricultural Statistics.

2.3.2 The major reason for the poor quality of area statistics is the failure of the *patwari* agency to devote adequate time and attention to the *girdawari* operations while yield estimates suffer on account of the poor performance of field operations. The heavy workload of the primary agency contributes substantially to the poor quality and delay in the availability of Agricultural Statistics. In order to reduce the workload, it may not be an appropriate proposition to increase the number of primary workers, at this juncture, due to financial constraints.

2.3.3 At present, the area statistics are generated through complete enumeration in the temporarily settled States while in the permanently settled States these are arrived at through a sample of 20 per cent villages covered by the Establishment of an Agency for Reporting Agricultural Statistics (EARAS) scheme. The Commission's assessment is that adequate improvements in the quality and timeliness of area statistics can be achieved if the *girdawari* is declared as a programme of high priority and the *patwari* is mandated to carry out the crop

inspection, according to the prescribed time schedule, more importantly in the case of the 20 per cent villages under TRS and EARAS, if necessary by sparing him from other duties during that period. In addition to this, intensive supervision of the *patwari's* work by higher-level revenue officials as well as by the technical staff of the Scheme for ICS with accountability for any lapses should be ensured. Once the TRS and EARAS are put on such sound footing, it is possible to use its results for framing not only the advance estimates but also the final estimates of crop area. Further, the Commission is of the view that data from a 20 per cent sample is large enough to estimate crop area with a sufficient degree of precision at the all-India, State and district levels. The Commission has, therefore, recommended that crop area forecasts and final area estimates issued by the Ministry of Agriculture should be based on the results of the TRS in the temporarily settled States and on those of EARAS in the permanently settled States. The revised system for the estimation of crop areas will also reduce the workload of the primary data collecting agencies and improve the quality of their work.

2.3.4 The role of the scheme for ICS in locating the deficiencies in the State system of crop statistics is quite significant. The ICS reports which act as a cross check on the work done by others have brought to light several discrepancies and deficiencies in quantitative terms. Despite the fact that the ICS has commented on the quality of crop statistics with reference to individual States, there have not been much improvements in the quality. Therefore, there is a need for exploring the feasibility of using the ICS data for working out a correction factor to be applied to official statistics of crop area to generate alternative estimates of the same.

2.3.5 At present, primary statistics of crop production are collected and compiled by the State Governments and consolidated for the nation as a whole by the Union Ministry of Agriculture. The Ministry compiles the crop production figures and releases a number of forecasts of crop production. The present system of release of the forecasts has been found to be subjective. The Commission is of the view that it is necessary to make an objective forecasting based on timely and detailed information on crop condition, meteorological parameters, water availability, crop damage, etc. Though the Ministry of Agriculture has been working in this direction, organisational strengthening with professional statisticians and experts in other related fields is required. While the use of Remote Sensing Technology does offer an alternative route for the regular flow of crop statistics, there are a number of issues that require to be sorted out before this can become extensively operational. Meanwhile, the existing programmes of Remote Sensing Technology must be pursued with active cooperation from the concerned agencies.

2.3.6 The data collected through Agricultural and Livestock Censuses are required for identifying and formulating policies and programmes for the rural population. However, as the results of these censuses are not available in time, this defeats the very purpose for which these censuses are conducted. The major reasons for the delay in the availability of the results from these censuses are the gargantuan nature of the task, the heavy workload on the part of the primary agencies and a lack of adequate administrative and technical supervision over the work of primary agencies. To circumvent these problems, there is a need for conducting the censuses not as complete enumeration but as sample censuses. Further, no relationship has been worked out based on the data collected through these two censuses because they are conducted independently with different field agencies, reference periods and basic units of enumeration. In view of several operational and substantive gains, the Commission has recommended the integration of the Livestock and Agricultural Censuses.

2.4 INDUSTRIAL STATISTICS

2.4.1 The Industrial Sector is one of the important sectors of the economy both in terms of its spread over the economy and its contribution to the generation of income, employment, and foreign exchange earnings. Statistics relating to this sector, therefore, assume a crucial

importance for policy-making by the Government and for choice of suitable strategies by the Corporate Sector. Ever since India launched its development programme with the Five-Year Plan's framework, the importance of these statistics has been duly recognised. The emergence of a highly competitive environment, both at the national and global levels, has further increased the imperatives of ensuring the availability of adequate and reliable statistics. With the recent shift in policies from a framework of controls, permits and licenses towards a system of liberalisation and free flow of market forces through the process of economic reforms, a review of the erstwhile statistical system had become necessary. Further, with the growing erosion of discipline in the data generating system of the Government, the reliability, adequacy and timeliness of statistical data had been adversely affected. The Commission reviewed in this context the different aspects of Industrial Statistics in the country, such as the quality of statistics, institutional machinery for data collection and dissemination, the problem of marginalisation of the Statistical Wings of the different ministries, decline in the compliance profile of the respondents, and conceptual and methodological problems of data collection.

2.4.2 The Annual Survey of Industries (ASI) has been the principal source for most of the basic statistics of the Industrial Sector. However, the frame of factories, which the ASI uses for conducting the survey, is based on the list of factories maintained by the Chief Inspectors of Factories (CIF). A large number of units, which are qualified for inclusion in the CIF's list, have not been included and at the same time many defunct units have not been removed. The data generated by the ASI system based upon this deficient ASI frame do not therefore depict the true situation of organised Industrial Sector. Urgent steps should, therefore, be taken for making the ASI frame more comprehensive by including in it all units that are eligible for registration with the CIF, followed by an appropriate updating mechanism. With the objective of generating reliable benchmark estimates at the disaggregated level, of providing an efficient weighting diagram for revision of the base year of Index of Industrial Production and also of updating the ASI frame, the Commission has recommended a one-time census of units eligible for registration.

2.4.3 The estimates of different variables of Industrial Statistics derived by the ASI are often associated with large sampling and non-sampling errors. To enhance the credibility and utility of these estimates, sampling errors need to be published along with the estimates of important survey characteristics. Further, a periodic review of the sampling design and of the sample size in the ASI must be undertaken with the objective to improve the precision of the estimates at the industry-group levels.

2.4.4 Estimates of the growth rates of industrial production based upon the Index of Industrial Production (IIP) are extensively used for policy-making at various levels in the Government and also for decision-making in the banking and Corporate Sectors. The importance of IIP is further increased due to the fact that it is the only indicator generated every month and disseminated on a wide scale. Concern has been expressed over the large divergence between the quick and the final estimates of the IIP. The IIP is compiled and released by the Central Statistical Organisation (CSO) within six weeks as per Special Data Dissemination Standards (SDDS) norms of International Monetary Fund, based on the data received from different agencies. The Commission has made a critical appraisal of the quality of the monthly IIP as an economic indicator of the general level of the industrial activity in the economy. The functioning of the source agencies providing the primary data of industrial production to the CSO is afflicted with a number of serious deficiencies. The product coverage of IIP and the administrative and institutional framework for primary data collection are much below the desirable standards. In the new policy regime of liberalisation of the Industrial Sector, the Governmental machinery's ability to induce a good response from the industrial units for providing statistics on a monthly basis has been considerably eroded. The available legal backing by the Industrial Development and Regulation Act has also not yielded the desired response. The Commission therefore recommends

that the quality of the IIP must be improved by toning-up the statistical wings of the source agencies, in particular, within the Department of Industrial Policy and Promotion (DIPP) of the Ministry of Industry, which has a considerable share in the weighting diagram. Further, the Commission has recommended exploring the possibilities of constructing an additional IIP based on bigger units, for which collection of data could be streamlined in a more effective manner than in the case of the entire Industrial Sector.

2.4.5 The need for harmonisation of the activity, product and trade data has been evident for quite some time, as this would enable a cross-classification of activity and product data. At present, there is no uniformity in the codes being used by the organisations dealing with the collection and processing of product-level data, compelling the user to refer to different documents. In this context, the Commission has recommended an urgent finalisation of the unique coding system developed by the Central Board of Excise and Customs (CBEC) based on the Harmonised System and emphasised its simultaneous adoption by all the producer and user organisations concerned with product-level data. To give wide publicity, the information on coding structure should also be made available on an extensive basis through websites and publications. The use of national classification would eliminate the multiplicity of product-level coding systems and would also enable a study of the flow of output through various economic systems apart from a cross-classification of activity and product data.

2.5 SERVICES SECTOR STATISTICS

2.5.1 With the Services Sector's growing share in the nation's GDP, the need for establishing a well-organised mechanism that can maintain a sound statistical database for this can hardly be over-emphasised. The task becomes difficult given the vastness of the sector, its heterogeneous nature as well as fast-changing composition with the frequent emergence of new services and the exit of obsolete ones. Thus the evolving of an appropriate survey methodology for collection of data from the vast Services Sector is a real challenge.

2.5.2 The Commission has noted that for different sub-sectors of Services Sector, the estimates of the number of workers based on the existing Follow-up Enterprise Surveys of the Ministry of Statistics and Programme Implementation quite often diverge widely from the alternative estimates available from the sources like the Employment-Unemployment Surveys of the same Ministry and the Population Census. Further, data users perceive that Follow-up Enterprise Survey estimates of gross value added per worker for different sub-sectors are sometimes unrealistic. This problem should be addressed by way of carrying out methodological research to find out innovative methods of data collection. The Commission has recommended the setting up of a unit in the proposed National Sample Survey Office of the National Statistical Organisation to regularly undertake studies for bringing about improvements in the survey methodologies, including the method of data collection. Further, for the emerging areas like software exports, e-commerce, entertainment sector, and related fields, the Commission has recommended the development of a suitable methodology for estimating their contribution in employment, gross value added, etc.

2.5.3 The existing Follow-up Enterprise Surveys on the Services and other sub-sectors (excluding manufacturing and repairing sub-sectors), carried out by the Ministry of Statistics and Programme Implementation, take into account all types of enterprises (other than those in the public sector), irrespective of their size, under the same survey year. This approach to data collection might lead to improper representation of bigger units in the sample causing distortion in the estimated results. Thus the survey estimates are subject to a large margin of sampling error. To overcome this problem, the Commission has recommended the carrying out of a survey of 'bigger' units in sub-sectors other than manufacturing and repairing. For complete coverage of the sub-sectors, the residual category of relatively smaller units should be surveyed through the

existing Follow-up Enterprise Surveys. As trade and services figure in the State list, the Commission has also recommended the evolving of an appropriately decentralised survey mechanism in collaboration with State Directorates of Economics and Statistics.

2.5.4 The latest classification of economic activities, i.e. National Industrial Classification 1998 (NIC-98), that also includes activities relating to services, accepts the major features of the International Standard Industrial Classification (ISIC) 1990 (Revision 3). A comparison of the NIC-98 with the World Trade Organisation's List of Services reveal that some of the emerging activities are not specifically listed in the NIC-98. The Commission has, therefore, recommended developing a mechanism to identify such activities on a regular basis and for assigning them proper codes within the framework of NIC.

2.6 INFRASTRUCTURE STATISTICS

2.6.1 In developing a proper statistical database for the Infrastructure Sector, a major hurdle is the absence of a clear definition of "infrastructure". The Commission has defined the term by identifying certain characteristics. The Commission has also observed large data gaps in the Infrastructure Sector and recommended measures to bridge such gaps. In order to improve the accessibility of such data for policy makers and other data users, the Commission has recommended that the Ministry of Statistics and Programme Implementation should publish data on all infrastructure activities in a single document.

2.6.2 Road transport is one of the important activities of the Infrastructure sector. But the database for this sub-sector is quite weak. Thus a proper data collection mechanism should be evolved to strengthen the database. Power is another vital sub-sector where the statistics need improvement. The Commission has recommended that the State Governments should be asked to collect data pertaining to the finances of the State Electricity Boards. Further, the electricity authorities at the State and Union Territory level should publish the data for the electricity-generating units, including those in the private sector, under their respective jurisdictions.

2.6.3 Quantification of the infrastructural activities in the form of an index would help policy makers and researchers. The Commission has therefore recommended the construction of two types of indices in this regard. While the first one, called "Infrastructure Index", will provide a summary measure of the growth of infrastructure, the second one, namely, "Infrastructure Utilisation Index", will indicate the extent of utilisation of identified infrastructure facilities.

2.7 SOCIO-ECONOMIC STATISTICS

2.7.1 The Socio-economic Statistics include a vast array of information on health and disease, literacy and education, standard of living and poverty, labour force and employment, status of women and gender empowerment, population parameters relevant to fertility, mortality and migration, ecology and environmental protection. A sound system for collection of Social Sector Statistics is vital for the effective development of social policy, for informed decision making on policy issues and for evaluation of the impact of social and economic polices. An inadequate system of collection and compilation of Social Statistics constitutes a major impediment to effective social development of the country. Reliable data on the above dimensions and use of these in planning, implementation, monitoring and redesigning of various developmental programmes is absolutely essential, if the country has to develop more rapidly than in the past.

2.7.2 The Commission took note of the problems on various aspects included in the Socio-economic Sector Statistics and assessed the current status of these for the country in the areas of education, health and family welfare, manpower and employment, environment, population characteristics and gender with regard to reliability, timeliness and adequacy of data available in these areas and have made specific recommendations for improving the system.

2.7.3 The Commission is of the view that in each of these areas, there are major deficiencies of data, which can be largely attributed to the near collapse of the Administrative Statistical System. The deficiencies common to all the sectors include: poor quality of data collected by the statistical system, inordinate delays, lack of effective checks, incomplete coverage, inconsistent data, poor implementation of provisions of Acts, low priority and general apathy to statistical activities, inadequate infrastructure & staff for statistical work, and lack of computerisation & its use in data compilation, processing and dissemination of data produced by different agencies. As a result, routine data on schools, students enrolled, hospitals, medical and para-medical personnel, births and deaths occurring in the population are just not collected due to a lack of proper emphasis on these items of information and the administrative back up for a compilation and analysis of the required data.

2.7.4 In the area of Population Statistics, the Population Census is one of the most comprehensive sources of information on the size, distribution, living conditions and demographic characteristics of the population. Even though the provisional population totals on limited data are released within a month of the completion of fieldwork, a considerable delay in the processing and release of detailed final results still persists, which undermines the immense utility of this gigantic exercise. The results released early are considered as provisional figures. Therefore, it is essential to have an advance calendar for the entire census operations so that all reports are released and disseminated within a time frame of three years. Another aspect, which requires immediate attention, is to reverse the sequence of data release by producing the data with a bottom up approach.

2.7.5 The Commission also highlighted the need to integrate databases relating to the administrative units of the country, while attempts could be made to develop uniform and unique area codes for districts, blocks and villages at the national level. This exercise has been attempted in the recent Census. These codes should also include geo-codes, which should be sufficient to locate them in a map.

2.7.6 The recent democratic decentralisation process initiated by the 73rd and 74th Amendments giving greater responsibilities and powers to the *Panchayats* and *Nagar Palikas* as the third tier of governance offers a new window of opportunity for local planning, effective implementation and monitoring of various social and economic development programmes in the country at the local levels. The National Statistical System should assist the various developmental agencies in this challenging requirement and it is therefore important to establish a system of data collection from the block level onwards and also their dissemination to the local bodies on one hand and further flow upwards to the district and above levels. To facilitate this, a statistical functionary is necessary, who would be the outermost peripheral link at *taluka* headquarters with a networked computer for data entry, maintenance of block-level databases, simple tabulations and speedy data transmission to higher authorities in an appropriately summarised pre-designed format.

2.7.7 In the area of Health and Family Welfare Statistics, the three Departments of Health, Family Welfare and Indian System of Medicines and Homeopathy of the Ministry of Health and Family Welfare have a separate system of data collection in their respective areas, while the Registrar General of India is responsible for collection and dissemination of vital statistics through its system of registration of vital events. The Commission has recognised that an efficient Health Management Information System (HMIS) is a prerequisite for studying the problems of health and diseases, effective administration of health services and evaluation of effectiveness and efficiency of various health programmes. It is, therefore, essential that a comprehensive assessment of the HMIS as it operates, be undertaken by setting up of a Committee and examining in detail the data requirements of the States and the Centre. Similarly, detailed data on morbidity and mortality that form the core of data requirements for any health planning strategy

are lacking and periodical morbidity surveys must be conducted to meet the data requirements of public health planners and epidemiologists. The computerisation of hospital records both in the public and private sector is needed for generation of the requisite data on health conditions. Further, recognising the increasing participation of private sector in providing health care services both in the rural and urban areas, the integration of the information from this sector with that of the Government sector is urgently needed. It is also necessary to regulate the private health sector to ensure quality of services to the public and therefore the Centre should formulate a regulatory model Act including provisions for submission of periodical statistical returns.

2.7.8 The country has a well-established system of civil registration through an elaborate machinery right up to the district level and below for registration of vital events under the Registration of Births and Deaths Act. The Civil Registration System, has the potential to generate vital rates for district level and below and form the basis for planning health and family welfare programmes at the local level as required in the 73rd and 74th Amendments. The system is however deficient and suffers from poor coverage and quality in registration. In the country as a whole the registration coverage is only 53 per cent for births and only 48 per cent for deaths and the problem is more acute in the rural areas and in a few States. There are many administrative and management factors responsible for this poor registration. The Commission is of the view that the responsibility for registration of births and deaths should be vested with *Panchayats* and *Nagar Palikas* in a phased manner starting with the States where *Panchayati Raj* institutions are well in place. The system should be a proactive one by increased involvement of local-level Government functionaries and the local bodies. The computerisation of the system of Civil Registration would also solve the problem of compilation of information that has to flow regularly into the statistical system. Other essential items are generation of public awareness on the need of registration of births, deaths and marriages and encouragement for production of birth, death and marriage certificates for various educational, employment and administrative purposes.

2.7.9 The need for information on the fast-changing composition of the labour market has been growing for appropriate assessment of demand and supply of labour in different sectors of the economy. Labour and Employment Statistics are generated largely through the implementation of various labour laws and Regulations by the States and Centre. For the unorganised sector, the National Sample Survey Organisation and Central Statistical Organisation are collecting and disseminating labour and employment-related data by conducting periodic sample surveys. The Registrar General and Census Commissioner of India is also publishing data decennially on workers and those seeking work through its census operations. The data collected by Ministry of Labour through States suffer from very poor response in submission of returns, delays in filing the returns, poor quality, under coverage and time lag in publication of results. The large number of returns to be submitted by the primary units add to the reluctance of the unit owners for a prompt response. The poor implementation of the penal provisions of the Acts for non-submission of returns by the implementing agencies has been another area of concern. The problems are largely administrative in nature and the agencies concerned should give adequate priority to the statistical aspects in the implementation of the Acts. Further, simplification and rationalisation of various returns is also required apart from use of Information Technology in the compilation and processing of data by the States. The role of employment exchanges in the changing jobs scenario needs to be assessed and redefined as a placement agency and source of labour-market information. The Ministry of Labour should also develop a database by integrating the information available from different sources in this sector.

2.7.10 Education being key to the process of human development in the country, statistics on education becomes crucial in the formulation of development policies. Ministry of Human Resource Development is the main agency for producing statistics on school education, which are

collected through the States. The All India Educational Survey conducted by the NCERT is another important source of statistics on school education in the country. In its review of the educational statistics system, the Commission took note of the deficiencies of quality, reliability, time lag and weak infrastructure in the collection and dissemination of education data. The system can be improved by strengthening the practice of record keeping, vigilant data scrutiny and verification and computerisation of district-level information. Quite a few data gaps exist in relation to educational planning, and these should be collected and published by the agencies concerned. In the area of technical and higher education the problems are still more acute as the agencies involved are collecting data for specific purposes without any coordination with the Ministry of Human Resource Development. In this area, the regulating bodies such as University Grants Commission, All-India Council of Technical Education, the Department of Agricultural Research and Education, National Council of Teacher Education and Department of Health through the Medical and Dental Councils should be responsible for collecting and disseminating the requisite data. Further, the infrastructure for collection and dissemination of education statistics needs to be strengthened at the Centre and the States by providing adequate statistical manpower and other facilities of computer hardware and software.

2.7.11 The improvement in gender statistics can be achieved by ensuring that statistics related to individuals are collected, compiled, analysed and presented by sex and age so as to reflect issues related to women and men in society. A gender perspective is needed in all traditional statistical fields. This implies that gender statistics cannot be produced and improved in isolation. Such work must be integrated with the development of the overall data collection system. Improvement of content, methods, classifications and measurements should be made part of the ongoing efforts to improve the sources of statistics, namely, censuses, surveys and administrative systems. The Department of Women and Child Development should play a proactive role and strengthen its statistical set up. Indicators of gender disparity in various aspects of education, health and employment are required to be brought out. The CSO should develop a standard methodology for the purpose of generating these indices to reflect the status of women in the country.

2.7.12 The need for conservation of environment and the related concept of sustainable development has attracted the attention of the entire world and is becoming a guiding principle of developmental planning. Environment Statistics is in its nascent stage in the country and as such there is a need to build up an efficient system for the collection of Environment Statistics and developing environmental indicators based on the international framework provided by the United Nations Statistics Division. The CSO has already taken initiatives in this direction; however, Ministry of Environment and Forests should take the primary responsibility for collection and dissemination of Environment Statistics and the CSO should continue to play the coordinating role. Another related issue is that of Natural Resource Accounting to gauge genuine economic performance and growth, taking the environmental factors into consideration. The System of National Accounts, 1993 has suggested the development of satellite accounts under a standard framework and the CSO should be responsible for the development of suitable methodologies and work in close coordination with all the concerned agencies for collecting the varied nature of environmental data.

2.8 FINANCIAL AND EXTERNAL SECTOR STATISTICS

2.8.1 The deregulation of financial markets has accelerated the pace of financial innovations and brought forth the need for regular and timely flow of qualitative financial statistics for pursuing sound macro-economic policies as well as promoting financial stability. In the context of the recent financial crises, the traditional issues in Financial Statistics such as timeliness in dissemination, accuracy, transparency, harmonisation, international comparability, etc. have come into sharper focus. In addition, many unconventional issues relating to

classification, valuation and measurement of financial transactions have also attracted attention. An efficient use of Financial Statistics requires greater harmonisation of Financial Statistics with other related system of accounts such as national accounts, balance of payment statistics, etc. The need for data standardisation, wider coverage and higher frequency has become important from the viewpoint of analysis and the establishment of linkages among various market segments. Since financial markets are much more information driven, timeliness in dissemination of reliable information assumes special importance. Furthermore, there are data gaps such as for informal markets which, depending on their size, are relevant for policy.

2.8.2 The international initiative in this direction has resulted in the IMF establishing the Special Data Dissemination Standards (SDDS) in April 1996, in order to enhance the timely availability of comprehensive statistics relating to the real, fiscal, Financial and External sectors of the economy. As a subscriber to SDDS, the concerned agencies in India have made concerted efforts to adhere to the data standards of SDDS. With the use of technology, it is possible to quickly disseminate data to a wider range of users. With a larger role for markets and increasing cross-border financial flows, transparency has assumed significance not only for market participants but also for regulators. Apart from transparency, timeliness and quality of the information made available as public good have also assumed importance. Alignment with international standards in economic, banking and financial areas is critical for the enormous efficiency-enhancing value that this offers. A further emergence of new institutions in the regulatory sphere poses new opportunities and challenges.

2.8.3 The Commission while making its recommendations on Financial and External Sector Statistics took into account this changing environment. It noted that an institutional infrastructure already exists in India for collection and dissemination of statistics on these sectors. The Reserve Bank of India (RBI) is the principal though not the sole agency for collection and dissemination of statistics in respect of Financial and External Sector Statistics. It collects and disseminates these data through its various publications, website and press releases. The other major public sector agencies and institutions that collect, compile and disseminate Financial Statistics are the Ministry of Finance, Securities and Exchange Board of India (SEBI), National Bank for Agriculture and Rural Development (NABARD) and Industrial Development Bank of India (IDBI). The Insurance Regulatory and Development Authority (IRDA) would have an important role in collection and dissemination of data with regard to the Insurance Sector. The Commission has noted that many of these institutions have been taking into account the changing environment and modifying their data collection formats from time to time. For instance, the modalities for the collection of data on the External Sector have been modified as per the recommendations of the High Level Committee on Balance of Payments, 1993, (Chairman, Dr. C. Rangarajan). The Commission also noted that by and large, the data available on Financial and External Sectors in India are in conformity with relevant international manuals on External, Monetary and Financial Statistics. However, the Commission identified some areas that need further refinement to suit the unique needs of Indian economy, the recent institutional development in the Financial Sector especially the developments in financial markets. In particular, the Commission has identified the needs in respect of data relating to fiscal, informal sector, insurance and e-commerce.

2.8.4 The monetary and Financial Statistics as well as data relating to commercial banks published by RBI are reliable, adequate and reasonably timely. However, there are deficiencies in respect of data relating to non-banking finance companies (NBFCs) and the Informal Financial Sector, which need to be addressed by RBI urgently. There is a need for NABARD to improve the quality and timeliness of data relating to co-operative banks and also to initiate surveys on financial data relating to Non-Governmental Organisations and Self Help Groups.

2.8.5 While SEBI should continue to have the primary responsibility for collection and dissemination of data in respect of capital markets, there is a need for improvement in data with regard to private placement and daily dissemination of data by all stock exchanges in a standardised format. The primary responsibility for collection and dissemination of data in respect of the Insurance Sector should naturally rest with IRDA.

2.8.6 While the data disseminated by RBI on the Government securities market compares well with international standards, there is a need to improve the coverage and timeliness of data with regard to certain money market instruments such as Commercial Papers (CP) and Certificate of Deposits (CD). As the data on money and the Government securities market are critical not only for the market participants but also for RBI in its own day-to-day monetary management, with further improvement in technology such as implementation of the negotiated dealing system (NDS), full-scale operationalisation of Very Small Aperture Terminal (VSAT), such data should be made available on a real time basis. Keeping in view the impact of fiscal policy on the Real, Financial and External Sectors of the economy, there is scope for further improvement in terms of coverage, classification and dissemination. There is also a need for establishment of a data warehouse for fiscal statistics.

2.8.7 While the balance of payments statistics compiled and released by RBI are broadly consistent with the international standards, and are disseminated widely and in a timely manner, certain discrepancies in data have, however, persisted and certain new areas have emerged which need further attention. For instance, there are continuing discrepancies in merchandise trade data, both exports and imports, between the Directorate General of Commercial Intelligence and Statistics (DGCI&S) and RBI. There is also a need for more detailed data on trade in services, which has emerged as an important component of balance of payments. In view of electronic commerce being a new and fast growing way of conducting business, there is a need for developing an appropriate methodology by closely monitoring the international trends and multilateral initiatives for data compilation.

2.8.8 Notwithstanding the progress made so far by the concerned agencies, namely, RBI, SEBI, NABARD, IDBI, IRDA and Ministry of Finance, there is a need to focus on the areas recommended by the Commission so as to further strengthen the process of collection, compilation and dissemination of the Financial and External Sector Statistics.

2.9 PRICE STATISTICS

2.9.1 Changes in the prices of goods and services affect different segments of the population differently. Thus measuring prices and their rate of change over time has become crucial to almost every economic issue, from the conduct of monetary policy to measuring inter-temporal and inter-regional economic progress. Central and State Government agencies collect the primary data on prices for varied purposes. The data on prices, both for the wholesale price index and consumer price indices, are not satisfactory. On account of existing deficiencies, such as involvement of multiple data collection agencies, use of varying concepts and definitions, non-existence of an exclusive field agency, non-standard specifications, repetition of prices due to non-response, and the meagre honorarium to data collectors, the Commission has recommended the unification of the system of price data collection so that the mechanism should take into account the requirements of all Central agencies compiling price indices. This would enhance the reliability and credibility of price data. On the issue of compilation of the Wholesale Price Index (WPI), the Commission has recommended that the revision of base year must be undertaken more frequently so as to capture the changes in industrial structure on account of liberalisation. The Services Sector has presently developed to such an extent now that it contributes significantly to country's GDP. On account of the non-inclusion of Services Sector in the existing WPI, the development of a separate price index for Services Sector is recommended. Ultimately, this

should be merged with the WPI, once the Services Sector index is stabilised and its robustness is established. The Consumer Price Index (CPI) is widely used for a variety of purposes and is also viewed as an indicator of the effectiveness of Government economic policies. However, in the absence of an all-India CPI, the WPI is currently used as a measure of inflation in India, though it is an inadequate indicator. The Commission has recommended the development of all-India consumer price indices for rural and urban areas.

2.10 CORPORATE SECTOR STATISTICS

2.10.1 The growing importance of the Corporate Sector calls for a greater transparency and availability of data. Furthermore, with the withdrawal of various direct regulatory functions of the Government such as industrial licensing, import licensing, capital issues and exchange controls, a number of avenues of collection of data have ceased to exist while the need for data for the success of indicative planning, forecasting and for research purposes has grown. Finally, the onset of the knowledge-based sectors or the new economy requires better reporting standards of certain attributes to help monitor the national economic performance and its future outlook.

2.10.2 The Corporate Sector includes not only the domestic corporates but multinational companies of various types as well. In the Department of Company Affairs (DCA), the Registrars of Companies (ROCs) are primarily responsible for provision of the basic information on the Corporate Sector and the statistical machinery in the ROCs is inadequate to deal with this task. The frame of the Corporate Sector maintained by the ROCs is highly inadequate and the available information is not properly processed for wider dissemination. Therefore, the Commission recommends a one-time census of all registered companies by the DCA, which will help to create a frame by eliminating closed or defunct companies and also to facilitate the estimation of population parameters. The ROCs, vested with the responsibilities for allotting the Corporate Index Number (CIN), should monitor the submission of annual reports rigorously for a proper implementation of the Act and for purposes of annual updation of the frame as well as improvement of the database. The DCA and ROCs should process information available in the company balance sheets and produce more comprehensive information on the different aspects of the Corporate Sector for monitoring and policy formulation. The scope of the standards of disclosure and reporting of data should be improved by including additional variables in the annual reports and the balance sheets of the Companies. Specific recommendations in this regard have been made by the Commission.

2.11 NATIONAL ACCOUNTS STATISTICS

2.11.1 In view of the decentralised character of the Indian Statistical System, the Commission is of the view that the Indian System of National Accounts should include not just the national-level accounts published by the Central Statistical Organisation but also regional accounts at the State-level and below. The term National Accounts Statistics (NAS) used in the report should be interpreted in this inclusive sense.

2.11.2 The National Accounts Statistics provides the framework for an internally consistent description of the macro economy based on the data generated by practically the entire statistical system in the country. The estimates of National or State domestic product and related aggregates and accounts are derived statistics that draw on the basic data available from various primary sources. The primary data sources fall in two broad categories: those data generated as a by-product of public administration system (land records, enforcement of various laws regulating economic activities, collection of customs duties, etc.) and those collected directly from the economic agents through sample surveys or censuses carried out by the official agencies of the Central and State Governments. For certain newly-emerging activities such as software, where the official system of primary data collection is not currently in place, the NAS also draw on selective non-official sources. The accuracy and quality of national accounts estimates depend on

(i) geographical coverage and quality of primary data which are utilised in their compilation; and (ii) methods, procedures and approximations used in transforming the primary data into NAS framework. While the basic concepts and methods of compilation of the NAS have been mostly standardised under the United Nations System of National Accounts (UN-SNA), procedures and approximations are shaped by the country-specific data collection system. While alternative standard methods of estimating national accounts aggregates, namely, income, expenditure and commodity-flow, are suggested to provide independent checks, data limitations often do not permit these independent consistency checks. Hence, certain internal consistency checks provided by national accounts identities are used to derive certain components as residuals. Wherever independent methods are employed, discrepancies usually appear. In such cases, a judgment is exercised about the relative reliability between the estimates obtained by independent methods and the most reliable one is taken to provide the control total and discrepancies with reference to control total are recorded as "errors and omissions".

2.11.3 The basic (gross or net) domestic product estimates at factor cost by industry or sector of origin can be classified into two broad categories. Direct estimates are aggregates or sub-aggregates at current prices based on annually available statistics on a regular basis so that they directly reflect year-to-year variations in the contribution of the concerned economic activities to GDP. These are deflated by appropriate price indices in the case of commodity-producing sectors to derive estimates at constant prices. In the case of services, variations in annually available physical volume indicators of activity are used to derive estimates at constant prices. Indirect estimation has to be resorted to in the absence of annually available direct statistics relating to the concerned economic activity. In such cases, periodic or *ad hoc* benchmark survey-based estimates are derived for the survey year and are extrapolated backwards or forwards on the basis of mostly physical indicator(s) of activity in the sector to derive estimates at constant prices. These are then converted into corresponding estimates at current prices on the basis of appropriate price indices. The degree of approximation of indirect estimates at constant prices depends critically on the accuracy of benchmark survey-based estimates and the sensitivity of the physical indicator to the variations in the concerned economic activity relevant to national accounts estimation. By type of institutions direct estimates mostly relate to the public sector (of which the Government proper is a component) and in some cases to the Private Corporate or Factory Manufacturing Sector so that estimates relating to them usually constitute what in the Indian context is usually referred to as the "organised" sector or segment of the economy. Indirect estimates mostly relate to households (including non-profit institutions serving households) and constitute the residual unorganised sectors or segment of the economy.

2.11.4 In addition to the broad division of direct and indirect estimates, several rates, ratios and norms are used in transforming direct as well as indirect estimates into related aggregates. As distinct from the benchmark surveys used in indirect estimates, the updating of rates, ratios and norms require geographically dispersed type studies to capture regional diversities in behaviour and economic practices employed in different activities.

2.11.5 The credibility of National Accounts Statistics in the 1990s came to be questioned on two counts. One, there were frequent and often large revisions in the sectoral or aggregate estimates for the same year released at different points of time. The reason has been traced to the large revisions carried out by the various primary source agencies supplying data for national accounts. The Commission has made recommendations to improve the quality of primary data collected by the reporting source agencies as also to put in place certain institutional correctives to minimise large revisions. Secondly, there have been frequent charges, sometimes made by the officials themselves, that a very large degree of under-estimation of the level of gross or net domestic product exists. This is partially true because of the absence of official data-collecting machinery for some of the new activities like software and floriculture, which have expanded

since the economy was liberalised in 1991. However, as in other countries, indirect estimation methods and use of non-updated rates, ratios and norms that go into the estimation of GDP have unknown (downward or upward) biases. The Commission has, therefore, approached this criticism in the context of improving the database and procedures of estimation of GDP (including the updation of rates, ratios and norms) while suggesting mechanisms of data collection for as yet uncovered or inadequately covered newly-emerging activities.

2.11.6 After analysing the methods of estimation, data sources and deficiencies in NAS at the sectoral, sub-sectoral and regional levels, the Commission, while making recommendations, has emphasised the following five points:

- Improving the quality, reliability and timeliness of the existing direct estimates of NAS aggregates;
- Updating the rates, ratios and norms used in various aggregates by conducting geographically dispersed type studies at as frequent intervals as possible;
- Conducting benchmark surveys with experimentation in survey methods for improving indirect estimates of NAS aggregates;
- Guidelines for improving the regional accounts for State Directorates of Economics and Statistics (DESs);
- Institutionalising frequent interaction between National Accounts Division of the Central Statistical Organisation and DESs and working out a joint programme of improvement.

2.12 CONCLUSION

2.12.1 The Commission after analysing the deficiencies of the Indian Statistical System in terms of its administration and technical requirements has made several recommendations to revamp the statistical system. It may be legitimate to question how the recommendations in this Report would bring about improvements in the timeliness, reliability and adequacy of the Indian official statistics and contribute to its credibility in public perceptions and debates. In this context it may be stated that the loss of credibility in official statistics especially in the 1990s prompted the appointment of the National Statistical Commission with a wide-ranging terms of reference. The reasons were traced to: (a) deterioration in Administrative Statistics at the primary level; (b) weakening of the institutional mechanisms of vertical coordination between the Centre and the States; and (c) a similar weakening of the lateral coordination between the ministries at the Centre and the Central Statistical Organisation. The recommendations on individual subjects in the Report aim at stemming the deterioration in the Administrative Statistical System and to improve it over time. Similarly, a revival or strengthening of the established institutional mechanisms of vertical coordination has also been recommended along with several suggestive guidelines for improving the State Statistical Systems. This would go a long way towards restoring the vertical coordination. The Commission has recommended wide-ranging changes in the top structure of the Indian Statistical System to provide correctives for identified systemic deficiencies. In doing so the Commission has taken into consideration the proposed 'Mission Statement' as given below:

> *The Mission of the Indian Statistical System shall be to provide, within the decentralised structure of the system, reliable, timely and credible social and economic statistics, to assist decision making within and outside the Government, stimulate research and promote informed debate relating to conditions affecting people's life.*

2.12.2 The proposed establishment of the National Commission on Statistics as a nodal policy-making and supervisory non-official body with statutory backing and assisted by subject specific expert groups as also its executive organ namely, the National Statistical Office with

Comment [MSOffice1]: Paragraph no. to be modified.

well-defined implementing powers and headed by a National Statistician are meant to strengthen coordination in the decentralised statistical system at various levels. The proposed new institutional arrangement of statistical advisers in the various Central ministries with the responsibility of supplying the Core Statistics would help not only in ensuring coordination but also in ensuring the standards and carrying out statistical audit. The systemic view of the essentially decentralised Indian Statistical System reflected in the recommendations of the Commission would help to improve the credibility along with timeliness, reliability and adequacy. The improvements suggested would lay the foundation of a strong, robust and responsive statistical system that would cater to the needs of its various stakeholders and for enabling scientific decision-making using statistics, which is the basic requirement for good governance. The Commission is aware that the implementation of the various recommendations made in its Report requires not only additional resources but also strengthening of statistical machinery at various levels of the statistical system. The Commission urges that the Government should consider the recommendations in totality for an all-round improvement in the system in view of the strategic importance of statistics and should make available the necessary budgetary resources for effective and immediate implementation of the recommendations.

36.

3 RECOMMENDATIONS

AGRICULTURAL STATISTICS

Crop Area Statistics (*Para 4.2.23*)

1. As the data from a 20 per cent sample is large enough to estimate crop area with a sufficient degree of precision at the all-India, State and district levels, crop area forecasts and final area estimates issued by the Ministry of Agriculture should be based on the results of the 20 per cent Timely Reporting Scheme (TRS) villages in the temporarily settled States and Establishment of an Agency for Reporting Agricultural Statistics (EARAS) scheme villages in the permanently settled states. In the case of the North-Eastern States, Remote Sensing methodology should be used for this purpose after testing its viability.
2. The *patwari* and the supervisors above him should be mandated to accord the highest priority to the work of the *girdawari* and the *patwari* be spared, if necessary, from other duties during the period of *girdawari*.
3. The *patwari* and the primary staff employed in Establishment of an Agency for Reporting Agricultural Statistics (EARAS) should be imparted systematic and periodic training and the fieldwork should be subjected to intensive supervision by the higher-level revenue officials as well as by the technical staff.
4. For proper and timely conduct of the *girdawari*, the concerned supervisory staff should be made accountable.
5. Timely Reporting Scheme (TRS) and Establishment of an Agency for Reporting Agricultural Statistics (EARAS) scheme should be regarded as programmes of national importance and the Government of India at the highest level should prevail upon the State Governments to give due priority to them, deploy adequate resources for the purpose and ensure proper conduct of field operations in time.

Crop Production (*Para 4.3.12*)

6. In view of the importance of reliable estimates of crop production, the States should take all necessary measures to ensure that the crop cutting surveys under the General Crop Estimation Survey (GCES) are carried out strictly according to the prescribed programme.
7. Efforts should be made to reduce the diversity of agencies involved in the fieldwork of crop cutting experiments and use as far as possible agricultural and statistical personnel for better control of field operations.
8. A statistical study should be carried out to explore the feasibility of using the Improvement of Crop Statistics (ICS) data for working out a correction or adjustment factor to be applied to official statistics of crop area to generate alternative estimates of the same. Given the past experience of the Land Utilisation Surveys of the NSS and the controversies they created, the Commission is of the view that the objective of redesigning of the ICS, at present, should be restricted to working out a correction factor.
9. The two series of experiments conducted under the National Agricultural Insurance Scheme (NAIS) and the General Crop Estimation Survey (GCES) should not be

combined for deriving estimates of production as the objectives of the two series are different and their merger will affect the quality of general crop estimates.

10. Crop estimates below the level of district are required to meet several needs including those of the National Agricultural Insurance Scheme (NAIS). Special studies should be taken up by the National Statistical Office to develop appropriate "small area estimation" techniques for this purpose.

Crop Forecasts (*Para 4.4.8*)

11. The Ministry of Agriculture and the National Crop Forecasting Centre (NCFC) should soon put in place an objective method of forecasting the production of crops.
12. The National Crop Forecasting Centre (NCFC) should be adequately strengthened with professional statisticians and experts in other related fields.
13. The programme of Forecasting Agricultural output using Space, Agro-meteorology and Land based observations (FASAL), which is experimenting the approach of Remote Sensing to estimate the area under principal crops should be actively pursued.
14. The States should be assisted by the Centre in adopting the objective techniques to be developed by the National Crop Forecasting Centre (NCFC).

Production of Horticultural Crops (*Para 4.5.7*)

15. The methodology adopted in the pilot scheme of "Crop Estimation Survey on Fruits and Vegetables" should be reviewed and an alternative methodology for estimating the production of horticultural crops should be developed taking into account information flowing from all sources including market arrivals, exports and growers associations. Special studies required to establish the feasibility of such a methodology should be taken up by a team comprising representatives from Indian Agricultural Statistics Research Institute (IASRI), Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA), Field Operations Division of National Sample Survey Organisation (NSSO (FOD)) and from one or two major States growing horticultural crops. The alternative methodology should be tried out on a pilot basis before actually implementing it on a large scale.
16. A suitable methodology for estimating the production of crops such as mushroom, herbs and floriculture needs to be developed and this should be entrusted to the expert team comprising representatives from Indian Agricultural Statistics Research Institute (IASRI), Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA), Field Operations Division of National Sample Survey Organisation (NSSO (FOD)) and from one or two major States growing these crops.

Land Use (*Para 4.7.7*)

17. The nine-fold classification of land use should be slightly enlarged to cover two or three more categories such as social forestry, marshy and water logged land, and land under still waters, which are of common interest to the centre and States, and which can easily be identified by the *patwari* through visual observation.
18. State Governments should ensure that computerisation of land records is completed expeditiously.

Irrigation Statistics (*Para 4.8.15*)

19. In view of wide variation between the irrigated area generated by the Ministry of Agriculture and the Ministry of Water Resources, the State Governments should make an attempt to explain and reduce the divergence, to the extent possible,

through mutual consultation between the two agencies engaged in the data collection at the local level.

20. The State Directorates of Economics and Statistics (DESs) should be made the nodal agencies in respect of irrigation statistics and they should establish direct links with the State and Central agencies concerned to secure speedy data flow.
21. Statistical monitoring and evaluation cells with trained statistical personnel should be created in the field offices of the Central Water Commission (CWC) in order to generate a variety of statistics relating to water use.
22. The Central Statistical Organisation (CSO) should designate a senior level officer to interact with the Central and State irrigation authorities in order to promote an efficient system of water resources statistics and oversee its activities.

Land Holdings and Agricultural Census (*Para 4.9.13*)

23. The Agricultural Census should henceforth be on a sample basis and the same should be conducted in a 20 per cent sample of villages.
24. There should be an element of household enquiry (besides re-tabulation) in the Agricultural Census in the temporarily settled States.
25. Computerisation of land records should be expedited to facilitate the Agricultural Census operations.
26. There should be adequate provision for effective administrative supervision over the fieldwork of Agricultural Census and also a technical check on the quality of data with the help of the State statistical agency.
27. The post of the Agricultural Census Commissioner of India at the Centre should be restored and should be of the level of Additional Secretary to be able to interact effectively with the State Governments. Further, this post should be earmarked for a senior statistician.
28. The Census Monitoring Board should be revived to oversee the Agricultural Census operations.

Agricultural Prices (*Para 4.10.10*)

29. The Ministry of Agriculture should prepare a well-documented manual of instructions on collection of wholesale prices of agricultural commodities.
30. The agricultural price collectors should be given thorough training in the concepts, definitions and the methods of data collection, and the training courses should be repeated periodically.
31. Workshops and training courses should be made an integral part of quality improvement. The quality of data should be determined on the basis of systematic analysis of the price data of agricultural commodities both by the Centre and the States.
32. Latest tools of communication technology like e-mail should be availed of to ensure timely data flow of agricultural prices.
33. A system should be developed to secure a simultaneous data flow of agricultural prices from lower levels to the State as well as the Centre.
34. The State agencies at the district level and below should follow up cases of chronic non-response relating to collection of data on agricultural prices.
35. The number of essential commodities for which agricultural prices are collected should be reduced to an absolute minimum, especially the non-food crops, in consultation with Ministry of Consumer Affairs and Cabinet Committee on Prices.
36. The centres of agricultural price collection should, as far as possible, be the same for the essential commodities as those for wholesale prices.

Agricultural Market Intelligence (*Para 4.11.4*)

37. The functions, activities and the staff requirements of the Agricultural Market Intelligence Units should be re-evaluated and appropriate measures taken to streamline the units.

Cost of Cultivation of Principal Crops (*Para 4.12.6*)

38. In view of the importance of the Cost of Cultivation Studies in the price administration of agricultural commodities and several studies relating to farm economy, the present programme should continue.
39. Focused attention should be paid to the proper organisation and management of the Cost of Cultivation Studies.
40. A review of the number of centres, methodology, sample size, the existing schedule and questionnaire, etc. of the Cost of Cultivation Studies should be undertaken.
41. The Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) should minimise the delay in bringing out the results of the Cost of Cultivation Studies.

Livestock Numbers (*Para 4.13.7*)

42. The quinquennial Livestock Census should henceforth be taken in a 20 per cent sample of villages instead of a cent per cent coverage.
43. The Livestock Census should include some minimum information about the household (size, occupation, etc.) in addition to the head count for more meaningful analysis of the census data.
44. There should be a concerted effort towards better organisation and management of the Livestock Census operation through comprehensive training of the field staff and regular supervision over their work by both administrative and technical personnel.
45. Information Technology tools should be used at various stages of the Livestock Census for rapid processing and preparation of the final reports as well as improving the quality of the data.

Integration of Livestock and Agricultural Censuses (*Para 4.14.3*)

46. The Livestock and Agricultural Censuses should be integrated and taken together in a 20 per cent sample of villages.
47. Before effecting the integration of Livestock and Agricultural Censuses a limited pilot investigation be undertaken to firm up the procedures of integration.
48. The periodical National Sample Survey Organisation's survey on land and livestock holdings be synchronised with Agricultural and Livestock Censuses in order to supplement as well as help in the crosscheck of information from the two sources.

Livestock Products (*Para 4.15.6*)

49. The Integrated Sample Surveys should be continued and efforts should be made to fill up the existing data gaps.
50. The Indian Agricultural Statistics Research Institute (IASRI) should be entrusted with the task of developing appropriate methodologies for filling up the remaining data gaps relating to estimates of mutton, pork, poultry meat, and meat by-products.

Fisheries Statistics (*Para 4.16.10*)

51. The survey design for estimating production of marine fisheries should be modified taking into account the current distribution of landing sites and the volume of catch

at different sites. The field staff engaged in collection of data should be imparted regular training and their work should be adequately supervised.

52. The survey methodology for estimating production of inland fisheries especially with regard to running water sources (rivers and canals) should receive urgent attention and the Indian Agricultural Statistics Research Institute (IASRI) along with the Central Inland Fisheries Research Institute (CIFRI) should be provided with adequate support to develop this programme on a priority basis.
53. The States should improve the recording of area under still water by appropriate modification of land use statistics.
54. The discrepancies between the two sources of data namely, Livestock Census and State reports with regard to data on fishermen, fishing craft and gear should be reconciled by adoption of uniform concepts and definitions and review of these statistics at the district and State levels.

Forestry Statistics (*Para 4.17.10*)

55. Remote Sensing techniques should be extensively used to improve and develop forestry statistics.
56. The State Forest Departments should be adequately supported by the establishment of appropriate statistical units to oversee the collection and compilation of forestry statistics from diverse sources on forest products including timber and non-timber forest products.
57. Arrangements should be made for storage and speedy transmission of forestry data through Information Technology devices.
58. In view of the unavoidable nature of the divergence between statistics from the two sources – land records and State Forest Departments – because of different coverage and concepts, the two series should continue to exist; but the reasons for divergence should be clearly indicated to help data users in interpreting the forestry statistics.
59. A Statistics Division in the Ministry of Environment and Forests with adequate statistical manpower should be created for rationalisation and development of proper database on forestry statistics.

Marketable Surplus and Post-Harvest Losses (*Para 4.18.4*)

60. The existing methodology in conducting the surveys on marketable surplus and post-harvest losses of food grains should continue in future surveys of this type.
61. The agencies designated for the collection of information on marketable surplus and post-harvest losses of food grains should be provided additional manpower, wherever necessary, for the conduct of these surveys.

Market Research Surveys (*Para 4.19.4*)

62. The Directorate of Marketing and Inspection (DMI) should establish a Statistical Cell either independently or within Market Research and Planning Cell (MRPC) with sufficiently trained statistical personnel to undertake comprehensive analysis of survey data and aid the decision-making process.
63. The Statistical Cell of Directorate of Marketing and Inspection (DMI) should identify the problems and deficiencies in the market research surveys carried out by different institutions and develop a standard methodology for uniform adoption.

Index Numbers in Agriculture (*Para 4.20.8*)

64. A review of the item basket for the construction of Index Numbers of Area, Production and Yield should be undertaken immediately.

65. The item basket for the construction of Index Numbers of Area, Production and Yield should be different for different States.
66. The present arrangements for the construction and release of Index of Terms of Trade should continue.

Recording of Area under Mixed Crops (*Para 4.21.5*)

67. The rates used to apportion the areas of constituent crops of major crop mixtures should be fixed for the recognised mixtures at sub-district and district levels and updated periodically.
68. Data available from surveys conducted under schemes like Improvement of Crop Statistics (ICS) over the years should be used for deciding the crop mixtures and their ratios.

Input Statistics (*Para 4.22.8*)

69. The Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) should collect, compile and maintain a complete database on State-wise production, sale of tractors, power tillers, harvesters and other agricultural implements, density of such implements per hectare, investment made, level of mechanisation, adoption of water saving devices, etc.
70. A Farm Management Survey on an all-India basis should be conducted on a regular basis preferably at an interval of five years.
71. The Directorate of Plant Protection Quarantine and Storage (PPQ&S) being the apex body for plant protection should act as a depository of information on plant protection. Efforts should be made to design, develop and maintain a comprehensive database on plant protection for effective long-term uses.
72. The Statistics and Computer Unit of the Directorate of Plant Protection, Quarantine and Storage (PPQ&S) should be strengthened both in terms of statistical and computer personnel as well as computer equipment.
73. Information collected through General Crop Estimation Survey (GCES) and the scheme for Improvement of Crop Statistics (ICS) should be compiled to generate estimates on various inputs such as fertilisers, pesticides, multiple cropping, etc.

INDUSTRIAL STATISTICS

Annual Survey of Industries (ASI)

ASI Frame (*Para 5.1.24*)

1. The Chief Inspectors of Factories (CIFs) should update their own lists by including those units, which ought to be there in the lists and excluding the units that do not operate.
2. The Central Statistical Organisation (CSO) and the National Sample Survey Organisation (NSSO) should take immediate steps to prepare directories of establishments (that employ at least 10 workers) based on data collected in the Fourth Economic Census and the recent Follow-up Enterprise Surveys of Economic Census, respectively so that these could be made use of by the CIFs in their work of updating the lists maintained by them.
3. The work of preparation of a comprehensive frame for selection of samples in the Annual Survey of Industries (ASI) should be taken up jointly as a task on a priority basis by the NSSO and the CSO. This comprehensive frame should be prepared by taking into account the lists maintained by the CIFs, the directories of establishments prepared by the CSO and the NSSO and information available from other sources.

4. The comprehensive frame so prepared should be updated on a continuing basis using survey and census data as well as information available from other sources. The additional resource requirements for carrying out the work should also be met.
5. The State Level Coordination Committee (SLCC) should be reconstituted with the Secretary, Department of Industry, as the Chairman and the Labour Commissioner, Chief Inspector of Factories, Director of Industries, etc. as members so as to ensure greater vigour and discipline in the task of revision of the frames.
6. The CIFs should take steps to simplify the process of de-registration of closed units so that units non-operating for a long time could be removed from the registers of factories of the CIFs.

Accuracy of the Estimates – Sampling and Non-sampling Errors (*Para 5.1.29*)

7. The effect of the changes made from time to time in the sampling design, including changes in sample size, on survey estimates should be analysed and the findings brought out regularly whenever such changes take place.
8. The sampling errors of estimates of important survey characteristics should be published along with the survey results.
9. The sampling design and the sample size should be reviewed to improve the precision of estimates at industry-group level. There is a need to increase the sample size for at least some of the industries where the sampling errors of the estimates are very high.
10. Non-sampling errors in the data should be regularly studied and measures should be taken to minimise them.
11. Factors responsible for wide divergence of summary or provisional results from detailed or final results need to be identified and steps taken to minimise such divergence.

One-time Census of Industries (*Para 5.1.31*)

12. A one-time census of industrial units which are eligible for registration should be conducted. While there should be a complete enumeration of all the units already included in the CIF list, the excluded units could be covered either by a sample or on a complete enumeration basis in the census. Such a census will help in generating reliable benchmark estimates at the disaggregated level (by geographical region, industry group, product level, etc.), providing an efficient weighting diagram for revision of the base year of the Index of Industrial Production, and also updating of the ASI frame.
13. Before such a census is launched on a full scale, an exercise on a pilot basis should be carried out to explore the usefulness of the various alternative sources of information for preparing a comprehensive frame, and also to estimate resource requirements for conducting the one-time census.

Schedule for Data Collection, Computerisation and Use of IT Network (*Para 5.1.34*)

14. The schedule of data collection should be rationalised to make it as respondent-friendly as possible and designed in a computer-readable form.
15. The query, 'whether the industrial unit can supply ASI data on a floppy on software to be provided' that formed part of the schedule of ASI 1997-98 but was subsequently dropped should be reintroduced. This would help in identifying units that are capable of furnishing information through floppy or other electronic media.
16. Information on input and output items clubbed under the large 'others' category should be obtained in a more disaggregated form through the schedule. Items having

importance in value terms, at least, should be separated from 'others'. This is particularly important for the census sector units.

17. For bringing about further improvement in the quality of data and a timely release of results, the cooperation of the factories should be solicited, through the Industry Associations and Chambers of Commerce, for supplying the required information in a pre-designed format in the electronic media.
18. Steps should be taken for data transmission from factories and field offices of NSSO to the tabulating agency in the form of digitised schedules using the countrywide Information Technology (IT) network.

Timeliness of Processing (*Para 5.1.35*)

19. Further measures should be taken to ensure the timely processing of data on a regular basis and release of the final results of ASI within one year of commencement of the fieldwork.
20. An advance calendar for release of quick estimates, provisional results, and final results should be declared through appropriate media, including a website.

State Participation in ASI (*Para 5.1.37*)

21. The existing system of independent tabulation of ASI data by both the agencies should continue.
22. States and Union Territories should canvass the ASI schedules in the residual units (i.e., not covered by the NSSO) in their respective States and Union Territories, either on a sample or on a complete enumeration basis, whenever the required infrastructure and resources are available. For that purpose, the Government of India should declare, under the Collection of Statistics Act the Directors of the States' Directorates of Economics and Statistics as statistical authority within the respective States, for the collection of ASI data and such other industrial statistics as the Government of India collects in its national programme.

Surveys on Unregistered Manufacture

Divergence in the Alternative Data Sets (*Para 5.2.20*)

23. Uniform concepts and definitions should be adopted in the censuses and the sample surveys in defining the enterprises and workers. In case of non-uniformity, provisions must be made in the census and survey questionnaires so that it is possible to generate comparable estimates for a cross-examination of data and to take remedial measures in case of divergences in the data.
24. The advisory working groups and technical committees set up by the National Commission on Statistics should ensure standardisation of concepts and definitions in the censuses and sample surveys, to the extent possible.
25. The National Sample Survey Office should regularly study the extent of divergences in the alternative data sets so as to identify the reasons for divergences and suggest remedial measures. As the village and urban block level data of the number of enterprises and workers as per the Economic Census (EC) are used as the sampling frame for selection of villages and urban blocks in the Follow-up Enterprise Surveys, necessary measures must be taken in the EC to enhance the quality of the data.

Accuracy of the Survey Estimate (*Para 5.2.26*)

26. Standard errors of important estimates should invariably be published in the reports.

27. Post-survey evaluation should be regularly carried out to identify the deficiencies in the survey methodology for the purpose of taking remedial measures.
28. There should be a regular interaction between the survey agencies and the data users to discuss the limitations of survey results with a view to taking necessary corrective steps for improving the quality of survey data.
29. Until action is completed to cover all the bigger units in the ASI frame, steps should be taken in the Follow-up Enterprise Surveys to net such bigger units by proper stratification so as to improve the precision of the survey estimates.
30. Measures such as strengthening of training, field visits and scrutiny of schedules by higher-level officers, interactive feedback session at the initial stage of the survey, etc. should be taken to minimise non-sampling errors in the surveys.
31. Other measures like shortening of schedule and creating public awareness about the data requirements should also be taken to improve the quality of the data.
32. It would be worthwhile to extend the provisions of the Collection of Statistics Act for surveys in respect of unregistered manufacture as well as other sectors as in the case of Annual Survey of Industries.

Time Frame for Conducting the Surveys (*Para 5.2.29*)

33. The time frame for covering various non-agricultural activities, including unregistered manufacture, through Follow-up Enterprise Surveys (FuS) should be finalised keeping in view the periodicity of data requirements by the users vis-à-vis resources available for handling the survey work.
34. The collection of data relating to all types of unregistered manufacturing enterprises consisting of Own-account Manufacturing Enterprises (OAMEs), Non-directory Manufacturing Establishments (NDMEs) and Directory Manufacturing Establishments (DMEs) should be integrated in the FuS and it should be the responsibility of the NSSO to conduct such surveys, process the results and bring out the reports.

State Participation (*Para 5.2.31*)

35. Views of the State and Union Territory Governments should be solicited and measures should be taken for improving their data processing capabilities.
36. The State and Union Territory Governments should actively involve the NSSO and the CSO in regular discussions and exchange of ideas for improvement of their system of data processing.

Small Scale Industries (*Para 5.3.13*)

37. The representation of the Small Scale Industries (SSI) sector in the all-India Index of Industrial Production (IIP) should be improved by extending the coverage of items for which Development Commissioner, Small Scale Industries (DCSSI) is collecting regular monthly production data.
38. Since the frames maintained by the source agencies do not make a distinction between the registered and unregistered units, a mechanism should be devised to avoid overlapping of units belonging to SSI and other source agencies, in respect of common items for which the production data is reported by two agencies.
39. The Office of DCSSI should make efforts to compile monthly IIP as against the present practice of compiling quarterly IIP, for monitoring the trend of the Small Scale Industries. Efforts should be made to enlarge the coverage of items in order to make the index more representative of the SSI sector. The base year of the two indices namely, all-India IIP and DCSSI index should be in close proximity if not the same.

40. The Office of DCSSI should publish the index for use by the Government, private agencies and researchers.
41. The Economic Census and the Follow-up Enterprise Surveys should collect the information on "investment in plant and machinery (original value)" and "whether registered as SSI unit or not". The Economic Census would help in providing the number of registered and unregistered SSI units while the Follow up Surveys would enable estimation of various parameters of these sectors. Similar information in ASI should also be collected to estimate the different characteristics of registered and unregistered SSI units in the total organised sector.
42. With the availability of information on the SSI sector from the Economic Census and Follow-up Enterprise Surveys, as mentioned above, the utility of conducting a future census of small-scale units should be examined. The detailed information, if any, required for the sector could be collected through sample surveys.
43. To facilitate evaluation over time, the Office of DCSSI should present data to enable time series comparison keeping in view the changes in the definition of the SSI sector.
44. The NSSO as a part of their tabulation programme should generate data on the principal characteristics relating to the SSI sector to enable cross comparison with DCSSI data.
45. Though administratively, the Small Scale Sector is divided into seven sub-sectors, which are under the control of different ministries and departments, the Office of DCSSI that is controlling the major segment of this sector, should coordinate with the remaining six departments and generate a database for the sector. Thereafter, efforts should be made to compile an index of the overall Small Scale Sector.

Index of Industrial Production

All-India Index of Industrial Production (*Para 5.4.17*)

Improvements in the Existing IIP

46. The item basket of the Index of Industrial Production (IIP) should be selected in such a way that the indices are representative of the growth in the industrial sector at least at the 2-digit level of National Industrial Classification (NIC).
47. The source agencies should make available the data on the additional items to be included in the item basket. The agencies should expand their database to capture new units and new items.
48. To ensure the availability of data on new items, the Central Statistical Organisation (CSO) should regularly provide the source agencies with:
    (a) The list of items that are just below the cut-off criteria of item selection and likely to figure in the revised item basket on the basis of the current series;
    (b) Items identified on the basis of detailed results of Annual Survey of Industries (ASI).
49. The source agencies should also identify the important and fast-moving items for inclusion in their database for the purposes of administration and revision of IIP.
50. The base year of the Index should be revised quinquennially by the Central Statistical Organisation to adjust to the structural changes in the industrial sector.

Strengthening of Source Agencies

51. The statistical set-up in Department of Industrial Policy and Promotion (DIPP) needs restructuring in terms of statistical manpower and infrastructure, preferably by

creating a full-fledged statistical unit under the overall guidance of a professional statistician.

52. The proposed statistical unit should be vested with the responsibility of maintenance of the frame, timely supply of monthly production data with an adequate response rate, exploring of suitable methodologies for dealing with non-response and improving the overall quality of data.
53. The statistical set-up of other source agencies of the IIP also needs to be adequately strengthened.
54. Since such strengthening will take some time, the agencies should, in the mean time, attempt to achieve a minimum standard for ensuring the quality and reliability of the Index, by adopting a suitable monitoring mechanism to target a response rate in terms of production of at least 60 per cent in the first month and 80 per cent at the final revision.
55. The source agencies should correspond with the production units through fax, e-mail and telephone followed by a personal visit, if necessary, to minimise non-response. Cooperation from the Industrial Associations and State Governments should also be solicited in this context.
56. Source agencies should preferably avoid inclusion of items for which very few units (say, less than 5) are reporting production, in order to avoid extreme fluctuations in the production data due to non-response. If, however, it is necessary to include some such items, the source agencies should make all efforts to closely monitor and collect data for these items.
57. The problem of non-response needs greater and more detailed examination. Therefore, technical experts from the fields of industry and statistics should go into the question of whether statistical methods could be useful for the solution of this problem.

Additional All-India Index of Industrial Production

58. In view of the difficulties faced in the collection of data for compilation of IIP by the mail enquiry method, the possibilities of constructing an Additional Index of Industrial Production by direct collection of monthly production data on selected items from factories with 200 or more workers should be explored. This should first be done for one year on an experimental basis.
59. For this purpose, the Field Operations Division (FOD) of the National Sample Survey Organisation (NSSO) should be entrusted with the task of collection of monthly production data under the existing legal provisions. The requirement of additional resources for this purpose should be met.
60. Before the above suggestion of compilation of the Index is taken up, a study should be conducted to compare the annual growth rate in production, based on ASI data of recent years (for factories with 200 or more workers) and current IIP. The findings should be examined by the Standing Committee on Industrial Statistics regarding the workability and adoptability of this approach for compilation of the Additional Index of Industrial Production

Use of other Administrative Data

61. An exploratory study should be undertaken to examine the feasibility of using the production data as available with Central Board of Excise and Customs for compilation of an All-India Index of Industrial Production. The possibility of utilising data from other sources like sales tax for compilation of IIP, at least at the State level, should also be examined.

Comparable State-level Indices of Industrial Production (*Para 5.4.25*)

62. The present practice of using Gross Value Added (GVA) for preparation of weighting diagram for All-India Index of Industrial Production and Gross Value of Output for State Comparable Indices of Industrial Production would result in incomparability in the two methodologies. GVA should, therefore, be used for the State IIPs.
63. Industrial Associations and State Industry Departments should be requested to impress upon their members and units to cooperate with the State and Union Territory (UT) Governments in supplying regular monthly production data to the State Directorates of Economics and Statistics so that the Comparable State-level Indices can be compiled and released regularly.
64. Coordination mechanism needs to be established between the source agencies and the States and UTs for supply of regular production data.
65. For the purpose of collection of necessary data, the State Directorates of Economics and Statistics (DESs) should be given authority as recommended by the Commission at Serial Number 22 above under State Participation in ASI.
66. Vigorous efforts on the part of the States, with the help of industrial associations and State Industrial Departments, are required to try out the mail methods i.e. fax, e-mail, etc. for collection of regular monthly production data.
67. Additional resources to the States for compilation of State-level Comparable IIPs should be provided.

TRADE STATISTICS

Improvements in the Existing System of Trade Data (*Para 6.2.9*)

1. Measures such as making available the entire code list on the website; introducing the standard query system for assigning an appropriate code for each item and feedback system from the exporters for amendment and widening the coding structure, etc. should be taken to assist the exporters in reporting the proper codes as envisaged in the Directorate General of Foreign Trade (DGFT) notification. A similar notification for imports should also be issued.
2. The possibility of releasing commodity-wise and country-wise details of imports and exports of crude oil and petroleum products should be explored.
3. An effective mechanism between the customs houses and Directorate General of Commercial Intelligence and Statistics (DGCI&S) to ensure complete coverage of all transactions in the compilation of Foreign Trade Statistics should be evolved.
4. All the Customs Houses and Ports including DGCI&S should be brought under the Electronic Data Interchange (EDI) system in a phased manner to eliminate the errors in data transfer and minimise the time-lag in the processing and release of data. Priority to bring the remaining customs houses under EDI scheme should be given to those ports where the volume of trade transaction is significant.
5. DGCI&S should take steps to bring out the publications, *Monthly Statistics of Foreign Trade of India* and *Statistics of the Foreign Trade of India* by Countries within a period of about one month from the release of aggregate foreign trade data through the press note. In such a situation, the monthly Brochure entitled, *Foreign Trade Statistics of India (Principal Commodities and Countries)* can be dispensed with.
6. DGCI&S should make available on website the key results of Foreign Trade Statistics released through its various publications.

Inter-State Movement/Flows of Goods (*Para 6.3.19*)

7. DGCI&S should devise a standard format for collection and presentation of data on inter-State trade for all modes of transport. This method of presentation should also enable its comparison with foreign trade data. The possibility of using National Product Commodity Codes developed by Central Board of Excise and Customs (CBEC) and others should be explored.
8. DGCI&S should be given the responsibility for coordinating and monitoring of data collection from the various agencies associated with different modes of transport.
9. Forms used by the different agencies in recording the basic information for the various modes of transport should be standardised.
10. The DGCI&S should take data from the zonal railways through electronic media instead of computer printouts in a standard format for the purposes of computer processing and inclusion in their publications.
11. A specially-designed Enterprise Survey should be conducted for collection of data on movement of goods by road transport. The feasibility of conducting sample surveys by the revenue or transport authorities to assess the volume of Inter-State Trade by road through copies of invoices collected at check-posts of the State borders should also be examined.
12. Feasibility of collecting relevant data by introducing logbook system should be explored.
13. The River-borne Trade data should be shown separately and should not be clubbed with Rail-borne Trade as is presently being done.
14. The commodity-wise details of air-cargo movement should be collected and presented as in case of other modes of transport. The movement of cargo by private airlines should also be covered.

Generation of Data on Exports by State of Origin (*Para 6.4.3*)

15. Pilot surveys based on the addresses of exporters as available in EDI and non-EDI data should be conducted to know whether exporters are aware of the actual origin of the goods or can give information only on the place or State of Procurement.
16. If found feasible, appropriate modification in the Shipping Bills should be made to collect the information relating to place of procurement and State of Origin.

Index Numbers of Foreign Trade of India (*Para 6.5.4*)

17. DGCI&S should immediately revise the current base year (1978-79) of indices of Unit Value and Quantum of Foreign Trade and the corresponding indices of terms of trade.
18. DGCI&S should compile and release the series of indices on Bilateral Foreign Trade following the methodology suggested by the Technical Committee constituted within a period of one year.

Product Classification: Harmonisation of Code (*Para 6.6.4*)

19. The 8-digit coding system being developed by the Task Force constituted by CBEC should be finalised urgently and also stress upon the need to adopt this national classification code based on Harmonised Commodity Description and Coding System (HS) by all the producer and user organisations engaged in product-level data. The use of national classification would eliminate the multiplicity of the product-level coding system and would also enable a study of the flow of output through various economic systems apart from cross-classification of activity and product data.

SERVICES SECTOR STATISTICS

Devising a Proper Classification of Services (*Para 7.2.10*)

1. The work of identification and the preparation of a list of new activities in the Services Sector that are coming into existence should be carried out on a regular basis.
2. All such activities should be assigned proper codes within the framework of National Industrial Classification (NIC) and International Classification, periodically by the Central Statistical Organisation (CSO) for the benefit of user organisations with a view to maintaining international comparability.
3. The suggested list of new activities with their codes should be released through the website as well as other media.
4. Of these new activities, those, which are important at the international level, should be taken up with the organisations like World Trade Organisation (WTO), International Monetary Fund (IMF), etc. for their proper representation in the international classification.
5. Periodic revision of NIC should be attempted within a reasonable time frame after revision of the classification takes place in the international scenario.
6. The CSO should monitor the work stated above.

Assessing the Quality of the Survey Estimates (*Para 7.3.9*)

7. A unit in the proposed National Sample Survey Office of the National Statistical Organisation should be set up to regularly undertake studies for bringing about improvement in the survey methodologies, including method of data collection, and also suggest measures for minimising non-sampling errors in the surveys. The National Sample Survey Office should publish standard errors of important estimates in the survey reports. These recommendations on the improvement of data quality and release of standard errors of estimates are relevant for surveys pertaining to numerous areas including the Services Sector.

Finding out Ways and Means to Collect Data for Emerging Areas (*Para 7.4.6*)

8. A suitable methodology should be developed to estimate the contribution of emerging areas like software exports, e-commerce, Entertainment Sector, and related fields in employment, Gross Value Added (GVA), etc.
9. An appropriate mechanism to compile data related to the Non-Profit Institutions Serving Households (NPISHs) including Non-Governmental Organisations (NGOs) at the national and State level should be evolved.
10. An integrated system to improve the database on scientific and technical manpower (knowledge workers) should also be evolved.
11. The Ministry of Statistics and Programme Implementation (MoS&PI) should be entrusted with the responsibility to operationalise these recommendations.

Introducing a Survey of Non-Manufacturing Industries (Bigger Units) (*Para 7.5.9*)

12. To improve the database, it would be desirable to carry out a survey of bigger units in the sub-sectors other than manufacturing and repairing. For this, an appropriate method of data collection and other methodological aspects need to be first worked out. Also, as the subjects of trade and services are in the States' domain, it will be necessary to decide upon an appropriately decentralised survey mechanism in collaboration with States.

Working out a Proper Time Frame for Follow-up Enterprise Surveys of Economic Census (*Para 7.6.4*)

13. A proper time schedule for covering various activity groups with specified periodicity should be framed by the MoS&PI and strictly implemented for providing benchmark estimates required for national accounting.
14. While finalising the said time schedule, efforts should be made to evenly group various activities among different survey years.

INFRASTRUCTURE STATISTICS

Notion of Infrastructure (*Para 8.2.23*)

1. The list of infrastructure activities should be finalised by the Ministry of Statistics and Programme Implementation (MoS&PI) on the basis of the characteristics recommended for identification of infrastructure.
2. Data gaps have been identified for many infrastructure sub-sectors. Steps to bridge this gap should be taken by the respective authorities namely, Railway Board (Railways); Ministry of Road Transport and Highways (Roads); Director General, Civil Aviation (Airways); Ministry of Shipping (Waterways); Department of Telecommunications (Telecommunications); Central Electricity Authority (Electricity); National Sample Survey Organisation, National Buildings Organisation, and Office of the Registrar General and Census Commissioner (Housing Services); Department of Post (Postal Services); Ministry of Urban Development and Poverty Alleviation (Urban Infrastructure); Ministry of Rural Development (Rural Infrastructure); Planning Commission (Energy Sector excluding Electricity); and MoS&PI (Infrastructure Indices).
3. A mechanism to collect reliable data on the infrastructure activities should be evolved immediately by the respective authorities in consultation with the MoS&PI.
4. Considering that Infrastructure Statistics are generated in different sub-sectors, for the benefit of the users, data on all infrastructure activities should be published in one document by the MoS&PI so as to improve the accessibility of such data to policy makers and other data users.

Strengthening Infrastructure Statistics

Railways (*Para 8.3.5*)

5. The Railway Board should make the Annual Statistical Statement, which at present gives zone-wise data in the form of an unpublished and internal document, widely available.

Roads (*Para 8.3.18*)

6. Statistical cells within the Public Works Departments (PWDs) should be set up, which should coordinate with various agencies in the matter of collection, compilation and dissemination of Road Statistics. Such data collected by the PWDs should be made available to the Transport Research Wing of the Ministry of Road Transport and Highways that should then take steps to publish these.
7. Detailed data with respect to the bigger and/or significant Road Transport Sector units should be collected through the proposed Survey of Non-Manufacturing Industries (SNMI).

8. Improved method of data collection should be tried by the MoS&PI to generate the Road Transport Statistics through both the SNMI and the Follow-up Enterprise Surveys that should exclude enterprises covered under the SNMI.
9. A mechanism should be evolved to improve the Road Transport Statistics by way of compulsory furnishing of essential information at the check posts and their processing on an appropriate sampling basis.
10. Compulsory furnishing of certain minimum statistics by the transport operators at the time of renewal of licensing should be enforced. Statistical cells in the Regional Transport Offices (RTOs), with proper infrastructural facilities, should be set up to compile the data furnished by the transport operators at the time of renewal of licensing and disseminate the same in a prescribed format.

Airways (*Para 8.3.21*)

11. The data-collection system for the private sector should be strengthened and identified data gaps be addressed.
12. The Director General, Civil Aviation should publish the data on airways for both the nationalised and private airlines.

Waterways (*Para 8.3.24*)

13. The prevalent statistical system for the sector should be modernised through application of advanced Information Technology.
14. A mechanism should be evolved by the Ministry of Shipping to collect data from individual shipping companies, which own one or two vessels in most of the cases.
15. Full-fledged statistical cells should be created in the Inland Water Transport (IWT) Directorates of the State Governments to strengthen the database for IWT Statistics.
16. Such statistical cells should be charged with the responsibilities of collection, processing, compilation and dissemination of IWT data not only for the IWT vessels operated by the IWT Directorates but also for the vessels as well as country crafts owned and operated by private companies and individuals.
17. The Ministry of Shipping should be made responsible for publishing data related to this IWT Sector.

Telecommunications (*Para 8.3.29*)

18. With the opening up of telecom services to the private service providers, they should be mandated to furnish the required information to the Department of Telecommunications on a regular basis.
19. The overall responsibility of publishing telecom data for both the public and private sectors should rest with the Department of Telecommunications.

Electricity (*Para 8.3.34*)

20. The Central Electricity Authority (CEA) should remove the delays in release of Electricity Statistics.
21. The electricity authorities at the State and Union Territory level should publish the data for the electricity-generating units, including those in the private sector, under their respective jurisdictions.
22. State Governments under whose jurisdiction State Electricity Boards (SEBs) operate should be asked to collect data pertaining to the finances of the SEBs.
23. In order to improve the data coverage and timely dissemination of Electricity Statistics, the CEA should strengthen its existing cell with statistical expertise.

Housing Services (*Para 8.3.42*)

24. The National Sample Survey Organisation (NSSO), National Buildings Organisation (NBO) and Office of the Registrar General and Census Commissioner of India should take steps to bridge the data gaps on Housing Statistics through surveys and censuses.
25. The local self-governments should be involved in compilation of Housing Statistics based on the house completion certificates. The concerned Ministry in each of the State and Union Territory Governments should consolidate the information for the State or Union Territory and release the same.
26. An expert group should be set up by the NBO to examine the collection mechanism of prices of building materials and wage rates for suggesting improvements in the mechanism of data collection and dissemination.

Postal Services (*Para 8.3.47*)

27. The database on postal services should be strengthened by the Department of Post to have zone-wise data, including the data on revenue collected from different categories of postal services, origin-destination of postal traffic and timeliness of delivery.
28. In order to reduce delays in the release of statistics, qualified statistical staff should be provided at least in the major postal circles.
29. The system of dissemination of Postal Statistics should be improved by introducing the latest information technologies.
30. Information on the operations of courier services should also be collected through the proposed Survey of Non-Manufacturing Industries and Follow-up Enterprise Surveys.

Urban Infrastructure (*Para 8.3.52*)

31. An official publication on Urban Infrastructure Statistics should be brought out by the Ministry of Urban Development and Poverty Alleviation.
32. The publication should cover the identified data requirements, data gaps as well as other emerging requirements.
33. The States' Directorates of Economics and Statistics should vigorously pursue the programme of compiling and publishing Municipal Year Books.

Rural Infrastructure (*Para 8.3.55*)

34. The possibility of bringing out a publication on Rural Infrastructure Statistics should be explored by the Ministry of Rural Development.
35. The publication should cover all the identified data requirements, data gaps as well as other emerging requirements.

Energy Sector excluding Electricity (*Para 8.3.58*)

36. Efforts should be made by the Ministry of Non-Conventional Energy (for Solar Energy); Ministry of Petroleum and Natural Gas (for Petroleum and Natural Gas); Department of Atomic Energy (for Nuclear Energy); and Ministry of Coal (for Coal) to provide data pertaining to Energy Sector (excluding electricity) to the Planning Commission which should then produce a comprehensive document covering the identified data requirements as well as other emerging requirements.

Construction of Infrastructure Indices (*Para 8.4.11*)

37. For devising a summary measure of the state of infrastructure in the country, two suggested infrastructure indices – one being a general index and the other an utilisation index – should be constructed by the MoS&PI. A Special Committee should be set up by the MoS&PI to look into the details of construction of these indices.
38. Although coverage of infrastructure facilities to be included in the indices may be modest in the initial stage, its scope should be widened in a gradual manner.
39. The weighting pattern of the indices should be revised every five years so that the indices are representative of the actual state of affairs in the Sector.

SOCIO-ECONOMIC STATISTICS

Population and Basic Statistics at the Local Level

Population Census (*Para 9.2.16*)

1. A timetable for the conduct of various activities of the Population Census right from preparatory work, enumeration work, data processing and tabulation should be finalised sufficiently well in advance and adhered to strictly. To begin with, the plan of release of tables of the Census 2001 must be drastically changed and the census organisation must give the highest priority to speedy data entry and processing of the Census 2001 to bring out all the final tables within a period of three years. Similar timetable should be prepared for all future decennial population censuses. For achieving this task, necessary help from the Public Sector Undertakings and the Private Sector should be taken.
2. The census organisation must accord utmost priority for modernising the entire census operations by acquiring modern processing equipments and utilising the latest technological advancements in the field of information technology and printing for speedier processing and dissemination of census results. The highest priority should be given to tabulate as much data as possible at the district and block levels. These data should be made available to the rural and urban local authorities and district planning authorities without much delay so that programmes for local development are based on latest official data. Tabulation plans and data presentations should be from bottom up levels rather than attempting to provide an aggregated national picture. The usual sequence of data release is to produce key tables for all India and States first, followed by State tables and only at the end; the Primary Census Abstract (PCA) becomes available in published form. It is not necessary to stick to this pattern in the interest of providing early data at the local levels.
3. There is a need to think afresh about the Post Enumeration Check (PEC) by modifying the old sampling design in consultation with sampling experts. Further, to enhance the credibility and faith in census operations, the PEC should be entrusted to an independent agency or a group of agencies.
4. There is a need to re-examine the issue of non-publication of information such as, cross-classification of data on religion, caste and language by literacy, work, migration, etc. in the census. Further, data on most of the social and cultural aspects should be provided at least at the district level.
5. The literacy data for age 15 years and above, which is the internationally accepted minimum age for which literacy data are published, should be released on priority basis.

6. In the Census 2001 and Census 1991, the definition of economic activity has been expanded by including cultivation of certain crops for self-consumption. The Census 2001 tabulation plan must provide the details so that the contribution of additional economic activities included in the year 2001 is available separately to enable comparability with the results of the Census 1991. The Census should strive to adopt standardised concepts and definitions for comparability of data from other sources and to meet international standards. However, as far as possible, data according to the previously used concepts and definitions should also be made available separately, for comparison across the censuses.
7. Considering the increasing functional requirements and growing expectations from census, the status of the Census Commissioner and of the statistical officers providing statistical support to the Census Commissioner should be upgraded. The Fifth Central Pay Commission has also recommended upgradation of post of Census Commissioner to the Additional Secretary level and one post of Joint Registrar General of India (RGI), to the level of Joint Secretary. It is, therefore, recommended that the Census Commissioner should be upgraded to the Chief Census Commissioner in the rank of Additional Secretary and supported by one Census Commissioner from Indian Statistical Service in the rank of Joint Secretary to provide the requisite technical support to the Chief Census Commissioner.
8. The work of Registrar General of India and Census Commissioner should be separated. The job of the Registrar General of India should be to implement the provisions of Civil Registration Act and conduct of related surveys, while that of Census Commissioner should be to manage the census operations. Since the job of the RGI involves a lot of statistical expertise as surveys such as Sample Registration System, Causes of Death, etc. have to be conducted, the post of RGI should be manned by an officer at the Joint Secretary level from Indian Statistical Service. The RGI should function under the overall guidance of the Chief Census Commissioner.

Basic Statistics for Local Level Development (*Para 9.2.22*)

9. The Population Census provides valuable information on a number of items/variables of the population from village level upward that is published in the District Census Handbooks. The primary census abstract for Census 2001 at each village and community development block level should be compiled at the earliest and made available to the *panchayats* and local bodies for planning and development.
10. A minimum list of variables/indicators that should be collected at village level should be identified and a system of their compilation and aggregation should be established. Similarly, the variables and indicators required for aggregation at the district, State and National levels should also be identified. The community block should be the first level of aggregation for village level information.
11. Blocks should have qualified statistical personnel (e.g. Block Statistical Assistant) with facility of a personal computer (PC), networked to district where data required at the district level would be aggregated. Such a statistical functionary already exists in many States. This statistical functionary should be trained in data entry, simple database systems, tabulations and data transmission to higher authorities and to *panchayats* below in appropriately summarised pre-designed format.
12. The data compiled by all Government departments at the village and block level in respect of the identified variables/indicators should be supplied to the Block Statistical Assistant periodically, who will maintain the block level data and also disseminate the same to the *panchayats*/local bodies on one hand and to the district on the other hand. A system for ensuring a regular flow of information from all the

Government departments to the block level statistical personnel should be established.

13. The additional data required to meet the specific requirements of local level planning should be decided and collected at the local level itself without any prescription from the district and State levels.

14. A Committee of Experts comprising representatives from the concerned agencies should be constituted to review the efforts already made in the past by various Groups and Committees and suggest a minimum list of variables on which data need to be collected at the local level for rural and urban areas. The Committee should suggest a comprehensive scheme for collection of this dataset in pre-designed formats, data sources, periodicity of updating, aggregation level (block, district, State and National) for each variable, agencies responsible for collection, compilation and aggregation, and transmission of information from blocks downwards to *panchayats*/local bodies and upwards to district, State and National levels. The Committee should complete its work in a time bound manner and its recommendations after due examination should be implemented by the Government within the suggested time frame.

15. For the variables, on which the data are not compiled and updated periodically based on regular administrative records or frequent sample surveys, but data on which are necessary for planning at district and lower levels, attempt should be made to estimate them through the use of small area estimation techniques, since the present large scale sample surveys usually provide estimates of various parameters only at State and National levels. Studies for developing appropriate small area estimation techniques for estimating socio-economic parameters at the disaggregated level should be taken up by the National Statistical Office.

Uniform Area Codes for Districts, Villages and Urban Blocks (*Para 9.2.23*)

16. Attempt should be made to develop uniform area codes for districts, blocks and villages at the National level, which would facilitate permanent and unique identification of every village and urban block in the country. These codes should include, as a part, necessary geo-codes, which should be sufficient to locate them in a map.

17. Village level digitised maps showing data on minimum variables and indicators can be produced with the presently available satellite image based mapping procedures. Geo-codes should be developed on the basis of these base maps. The geo-coding of the primary unit areas such as villages and urban blocks within such a map can be taken up in consultation with agencies such as Indian Space Research Organisation, Census Commissioner, Surveyor General of India and Anthropological Survey of India.

Centralised Database of Citizens (Population Register) (*Para 9.2.27*)

18. A centralised database of the citizens of the country with a system of issuing a unique identification number/card has several potential benefits to its citizens and will improve the efficiency of administration. The project, if implemented, will have obvious benefits to the statistical system.

Health and Family Welfare Statistics

Health Management Information System (*Para 9.3.13*)

19. A comprehensive assessment of the Health Management Information System (HMIS) should be made by a small Committee quickly and HMIS be reintroduced in

the country in a phased manner with necessary modifications. The combined HMIS format should be separated into programme-wise modules. While revising the programme modules, care should be taken to meet the data requirements of both the Central and State Governments. Flexibility should be given to the States and UTs to include additional items to meet their State specific data requirements.

20. Steps should be taken to rationalise and minimise the number of records and registers maintained by the peripheral health workers such as ANMs and public health inspectors to reduce their burden and to improve the quality of data. The minimum data set on which data from the grass root levels should be regularly collected along with their periodicity should be clearly identified.

21. There is a need for computerisation of the administrative records of all specialised hospitals and general-purpose hospitals and other treatment facilities both in the public and the private sectors. The International Classification of Diseases (ICD-10) Coding System for Medical Records should be adopted for generating morbidity and mortality data. There should be systematic training given to all medical personnel on the use of ICD.

22. The system needs to be revamped and expanded to include information on private sector health facilities by adopting an integrated approach for capturing data on both allopathic and Indian System of Medicine and Homeopathy.

23. Data relating to non-communicable diseases such as cancer, diabetes, mental disorders should also be collected through the HMIS.

24. A suitable mechanism to collect the data at the grass roots level and its upward transmission to the district, State and the National level should be evolved and for that methods of data collection, transmission, and processing must be modernised. As National Informatics Centre facilities are inadequate to meet the requirements of HMIS, adequate funds need to be provided for necessary hardware, software and connectivity and training of personnel.

25. The Central Bureau of Health Intelligence (CBHI), which is at present a part of Directorate General of Health Services (DGHS) should be separated and upgraded to a full-fledged Directorate of Health Statistics (DHS) directly under the Department of Health. An officer from the Indian Statistical Service at the Additional Secretary level should head this Directorate and act as the Statistical Adviser to the Department of Health. Also required posts of supporting officers should be created. The DHS should be the nodal agency in matters of health statistics and should advise the Department in all matters related to the collection of Health Statistics; coordinate with the National Statistical Office; agencies in the Central and State Governments as well as international agencies in matters related to medical and health statistics.

26. The CBHI upgraded as DHS should be strengthened with adequate Electronic Data Processing (EDP) personnel and existing personnel should be trained in EDP operations, to enable the processing, tabulation and presentation of the large volume of data on health. Adequate funds out of the national health programmes should be earmarked for development and maintenance of information system as well as for verification of field level performance data through independent agencies.

27. In order to facilitate effective implementation of the HMIS in the States and UTs, the State Department of Health and Family Welfare in every State should have a Statistical Division headed by a senior level statistical officer. In the districts, a health statistics cell should be set up in the Office of Chief Medical Officer (CMO) to implement HMIS and to take care of all health and family welfare statistical activities of the district.

28. All States should bring out District Health Profile for each district containing information on medical and health facilities, personnel employed in health facilities, public health information, epidemic situation of the district, etc.

Data on Morbidity and Mortality at Disaggregated Levels (*Para 9.3.15*)

29. There should be periodic sample surveys of households on morbidity in the country, by trained investigators taking in to account the seasonal variations in diseases. These data should be analysed as quickly as possible and the morbidity patterns in the country should be published regularly. The National Statistical System should bring out regularly the morbidity and mortality patterns in the different age groups at least at the district/regional levels including for the diseases like T.B. and AIDS.
30. The morbidity and mortality surveys should be conducted in two stages. While at the first stage, the data could be collected on a fairly large sample; at the second stage, data from a sub-sample may be collected and verified by trained medical functionaries on certain specific aspects like causes of death, maternal mortality audit, etc.
31. As recommended by the Khusro Committee, the quality of data on infant, child and maternal mortality can be greatly improved by conducting comprehensive sample surveys of pregnant women and by a follow up of these over one or more years after childbirth. Such surveys can be conducted on a small scale at local levels.
32. There should be a procedure for medical certification of the cause of death to be implemented at least on a sample basis throughout the country regularly, in order to have a better understanding of the causes/factors underlying deaths in the country. The death records should include symptom-based information on the possible cause of death.
33. The scheme of Medical Certification of Cause of Death (MCCD) envisaged under the Registration of Births and Deaths Act, 1969 should be strengthened. The State Governments should attach a high priority to the implementation of this scheme both in the rural and urban areas. There should be a system for prompt reporting of deaths due to certain diseases, like cholera, polio, malaria, diphtheria, etc. so that immediate preventive and curative measures can be taken.
34. The statistical system in all hospitals, nursing homes and other treatment facilities and dispensaries including those in the private sector should necessarily include certain basic information on each patient and this information in prescribed formats should flow to Health Statistical System within a fixed time frame. Computerisation of birth, morbidity and mortality records should be done in phases and should be coded with ICD-10 codes to facilitate processing.

Data on Expenditure and Social Consumption on Health (*Para 9.3.17*)

35. The Ministry of Health & Family Welfare in consultation with the concerned Central Ministries, Planning Commission, State Governments and other concerned agencies should develop a suitable mechanism for collection and dissemination of plan and non-plan expenditure on infrastructure and manpower in the health sector, data on investment and expenditure from private organisations, NGOs and externally assisted projects.
36. The data on availing health facilities and expenditure by households should continue to be captured more comprehensively from the NSSO's surveys, which should be conducted on a quinquennial basis.
37. The cost of specialised treatment in respect of certain diseases such as kidney transplant, cardio-vascular surgery, etc. should be compiled institution-wise and published at least on an annual basis for the benefit of public. The NGOs and

Medical Associations should be encouraged to publish and disseminate this information.

Information from the Private Health Sector (*Para 9.3.19*)

38. The Centre should formulate a model Act for registering and regulating health facilities in the private sector. All the States should bring out State level Acts for this purpose on the lines of the model Act. A system of periodical filing of statistical returns with the statutory body should be established. The law should have provision for penalty and even deregistration for failing to file such information with the statutory authority.

39. The statistical system in all hospitals and dispensaries should necessarily include certain basic information on ailments of inpatients and outpatients, health personnel, health infrastructure such as number of beds, income and expenditure, etc. and such information on a regular basis should be furnished to the National Statistical System, so as to become a part of an improved database on health.

Information for Manpower Planning in the Health Sector (*Para 9.3.21*)

40. The statistical system in the Medical Councils concerned with Allopathic, Homeopathic, Dentistry, Indian System of Medicine and paramedical personnel should be strengthened to provide updated data on number of medical and paramedical personnel in both the rural and urban areas at least upto the district level.

41. The information on all medical practitioners, dentists, paramedical personnel, pharmacists and nurses of various systems should be compiled by the Councils and be made available at the district level and should be updated every two years. They should also be made available on Internet.

Methodology for Couple Protection Rate (*Para 9.3.22*)

42. The data on Couple Protection Rate (CPR) provided by the Department of Family Welfare should be critically looked in to for the relation it bears to actual contraceptive prevalence rate. Suitable modifications should be made to re-define the data needs on contraceptive acceptance, use of family planning methods and computation of the couple protection rate from official statistics.

43. The methodology for estimating the Couple Protection Rate (CPR) should be revised, if necessary in view of the recommendations made by the Committee set up by the Department of Family Welfare for this purpose.

National Family Health Surveys (*Para 9.3.23*)

44. National Family Health Surveys similar to those conducted in 1992-93 and 1998-99 should be conducted periodically using national resources, if funds are not available from any other agency.

Use of Information Technology in Improving Health Statistics (*Para 9.3.24*)

45. Steps should be taken for the adoption of Information Technology and introduction of a unified system of computerisation and networking for data transmission from one level to another, to reduce delays in transmission and compilation of Health Statistics, and to improve the data quality, to derive various indicators and to retrieve information promptly on health related issues as and when needed.

Civil Registration System (*Para 9.3.32*)

46. There should be a more pro-active Civil Registration System in place of the existing passive system. In rural areas, *panchayats*, local bodies and other basic and primary workers apart from Auxiliary Nurses, Midwives, Village Watchmen, should play an active role in informing the Registrar about the occurrence of vital events. They should collect birth and death information from households and deliver the same to the Registrar. All States should implement this as a part of strategy to improve the registration. This can be achieved by giving the local level workers the responsibility for informing and collection of reports of events and getting them registered.

47. Within a State, as far as possible, only one department of the Government should be responsible upto the district level for implementing the provisions of the Registration of Births and Deaths (RBD) Act. Where multiple departments are involved, inter-departmental coordination committees should ensure effective and periodic reviews to propose measures for improving registration levels and provision of registration services by drawing up a plan of action. This requires tight monitoring and supervision of the registration work at the field level.

48. Recognising the increasing role of local self-governance in the light of the 73rd and 74th Constitutional Amendments and considering the fact that quite a few States in the country have already taken initiative in this direction, the *panchayats* in the rural areas and Municipalities in the urban areas should gradually be given the responsibility for registration of births, deaths and marriages.

49. Sufficient resources should be provided to the agencies implementing the RBD Act. The Planning Commission should provide funding to the States for this purpose. Further, to improve the availability of required forms and registers used for registration of vital events, the Central Government should bear the expenditure on this account.

50. Regular training programmes should be organised by the States for Registration officials at all levels. The 'Registrar's Manual for Registration of Births and Deaths' being prepared by RGI should be made available to all concerned, and training programmes should be conducted to impart training to all Registrars in the use of the manual.

51. The revamped system of registration of births and deaths in the country introduced by Registrar General of India, mainly with a view to strengthen the statistical functions of the CRS and to reduce paper work at the level of the local Registrar, by facilitating computerised data entry, easy retrieval of records and reducing storage requirements of records, should be vigorously implemented in all the States. There should be special emphasis on the monitoring and supervision of the system particularly for poorly performing States in order to enhance their performance.

52. Production of birth and death certificates should be encouraged for various purposes, as it will help in improving the overall registration of vital events. For example, the production of birth certificates should be made mandatory for entering the name of new-born child in the ration card, school admission, etc. and death certificates for settling insurance claims and for inheritance of property by legal heirs, in case it is not so already in any State and UT.

53. Considering the stated goal in the National Population Policy of 100 per cent registration of marriages by 2010, sustained efforts should be made to achieve this goal through the Civil Registration System by suitably amending the RBD Act for registration of all marriages and divorces.

54. Public campaigns should be launched to create awareness among the general public about the need and importance of registration of births and deaths. Also steps should

be taken to improve customer services by making registration centres more visible, prompt issue of birth and death certificates, simplifying the procedure, making registration in big hospitals more efficient, and proper preservation and maintenance of records of vital events.

55. Acknowledging the fact that an efficient Civil Registration System is the lasting solution to produce a regular series of vital rates e.g., fertility, mortality, etc. specific for age, sex, and educational level upto the district and even lower levels, the ultimate goal should be to put in place the Civil Registration System in the next 10 years and to use the Sample Registration System (SRS) as a source of data for longitudinal study of the social dynamics of the country and as a means of validating the CRS data.

56. Recourse to Information Technology (IT) should be taken for establishment of an effective system of civil registration that would provide prompt service to the public and help in quick retrieval of information for both administrative requirements and statistical purposes. As the costs of hardware and network communications will come down in the coming years, decentralised data entry and data transmission at the Registration level should be the goal to be achieved within a few years. Sustained efforts should be made for adoption of IT in modernising the CRS. The computers provided by the Department of Family Welfare, Government of India may be utilised for this purpose as well.

Labour and Employment Statistics (*Para 9.4.34*)

57. The inspectors of the Labour Department and Factory Inspectorate, during their routine inspections of the units, should also check the status of submission of returns. The provisions of various Labour Acts should be vigorously implemented and enforced for defaulting units. Further, if required, legal provisions should be strengthened and penalties made more stringent to act as a deterrent. The renewal of licence of the units should be subject to satisfactory submission of returns in the past.

58. A system of regular meeting of the officials from Government Labour Departments with representatives from business/manufacturers associations should be established. The associations would be instrumental in persuading their member units to submit the returns prescribed under various statutory and other provisions in time. The units submitting the returns should be duly acknowledged.

59. To make the units aware of their obligation to furnish the returns correctly and in a time, periodical notices should be issued in the leading newspapers by the concerned authorities.

60. The Ministry of Labour should undertake immediate measures to rationalise and simplify returns prescribed under various Acts. Combined returns that cater to the requirements of more than one Act should be designed, to the extent possible, in order to reduce the burden of units/establishments. In a liberalised economic environment, this will be a step forward and will find great favour in the industry. To achieve this, if required, necessary amendments should be brought out in the various Labour Acts. Government of India has set up a Labour Commission and the Ministry of Labour should take up this issue with the Commission.

61. The Labour Bureau should strengthen its on-going programme for training of staff in collection, compilation and analysis of data received from the State Governments, as well as from the agencies preparing and submitting the returns. The States should also start such training programmes for the staff of units/establishments supplying information/returns to them.

62. To overcome the problem of non-response from the primary units, a tightening of the administrative machinery is the only solution. However, in respect of those Acts where the degree of non-response is not very high, the Labour Bureau should conduct sample surveys regularly to work out estimates for non-responding units. In cases of very high non-response such as Payment of Wages Act, Minimum Wages Act, Trade Union Act, Motor Transport Workers Act, etc. certain studies on the degree of non-response should be conducted to understand the magnitude of the problem.

63. For the sake of uniformity in the collection and dissemination of Labour Statistics, it is necessary that the variety of definitions for a single concept be avoided. This issue should also be taken up with the Labour Commission so that the inconsistencies of various definitions used in different Acts could be removed. The Ministry of Labour should take up the necessary steps in this direction.

64. In order to meet the requirements of various International Labour Organisation (ILO) Conventions, the Labour Bureau should formulate an action plan especially for ILO Convention Number 160, covering Labour Statistics.

65. There is a need to computerise the working of all organisations engaged in the generation of Labour and Employment Statistics at the Central and State levels. A Labour Information Network integrating all such organisations should be established within the Ministry of Labour for maintenance, coordination and data dissemination.

66. The statistical system in the Labour Departments in the States should be strengthened from district level onwards. At the Centre, there is a need for strengthening or establishing statistical units in various divisions/directorates like Child Labour, Directorate General of Factory Advice Services & Labour Institute (DGFASLI), Directorate General of Employment and Training (DGE&T), etc. of the Ministry of Labour. Further, in the Labour Bureau, there is a need for re-structuring of posts between economic and statistical professionals keeping in view the job functions and to meet the growing demand for Labour Statistics. As most of the functions of the Labour Bureau are statistical in nature, the organisation should be headed by a qualified statistician, as was in the past.

67. The role of Employment Exchange as a placement agency and as a source of labour market information has diluted over the years and needs to be re-established by integrating the labour market information available with private placement agencies along with the Employment Exchanges and making them furnish information on placements, type of jobs, extent of demand, qualifications, industry, etc. A Committee should examine the role of the Employment Exchanges as the source of labour market information and career counselling and how it can work in partnership with private placement agencies.

68. There are serious shortcomings in the Live Register data of the Employment Exchanges as an indicator of unemployment in the country due to inadequate coverage problems. Therefore, for the purpose of drawing valid conclusions on levels of unemployment, etc. the data on the Live Register of Employment Exchanges should be adjusted and updated annually with the help of ratios/multipliers made available by the labour force survey of the NSSO.

69. Though the DGE&T makes attempts at collection and analyses of data on the state of the labour market from the information supplied by the Employment Exchanges, the infrastructure available with the Employment Exchanges is inadequate to compile and forward the necessary data to the DGE&T in time. Therefore, it is recommended that, a comprehensive programme of computerisation and networking of all Employment Exchanges in the country, development of required software and appropriate training programmes should be taken up.

70. The exclusion of certain non-market economic activities, from the definition of work adopted in Population Census could be the reason for the low female participation rates derived from the Census 1991 compared to the rates obtained from National Sample Survey Orgnisation's (NSSO's) 50th Round. In order to cross check the data from the two sources, it is recommended that the census should adopt the same definition as that of NSSO. This is important to overcome the criticism of under-count in the census data of women workers, which becomes a serious limitation of its utility as a source of economic data. In the Census, 2001, the definition of economic activity adopted has been expanded and modified to reconcile this position.
71. The current practice of tabulation of Census data by the regional offices should continue. However, in order to make available the State level data to the users early, the practice of withholding the release of tabulated data of the region till the All-India tables are released should be done away with. Further, the latest advances in the technology for data processing, analyses and printing should be utilized so that the delays can be brought down and dissemination of data is improved.
72. More probing questions from the informants on subsidiary work in NSSO's quinquennial survey would enable the capturing of information on part-time and intermittent work, which is likely to become very common in the near future.
73. The NSSO should provide standard error of estimates of employment related variables so that the differences in the estimates projected by annual and quinquennial rounds are explained.
74. The NSSO classifies an individual who worked for an hour on any day of the reference week as worker by weekly status. To study the intensity of unemployment (or employment) during the reference week, NSSO should publish data on distribution of persons by, number of days at work and total intensity of work during the reference week.
75. Efforts should be made to compile data on migration of skilled manpower to foreign countries, to capture information on the skills of the emigrant and on the nature of work to which the emigrant is moving out at the place of destination. A system of collecting annual information from the placement agencies for overseas employment should be established to capture this information.
76. The data management system on social security should be computerised so as to ensure better management of Employees State Insurance (ESI), Employees Provident Fund (EPF) and other social security Acts.
77. Child labour poses a complicated and a multi-dimensional problem. The time disposition study of young people along with a classification of their activities into economic and non-economic types can give an insight into the dimension of this problem. For this purpose, a methodological study or survey should be conducted to evolve methods for capturing the problems of child labour.
78. Considering the inherent problems in data collection for bonded labour, as suggested by the L.K. Deshpande Study Group, household surveys should be conducted to ascertain socio-economic circumstances like debt, caste, etc. which lead to the practice of bondage in the areas and activities where there is a tendency to employ bonded labour. The Ministry of Labour should commission such studies in areas and activities prone to bondage.
79. There is a considerable time lag in the publication on Labour Statistics brought out by various agencies. Efforts should be made by all the concerned agencies to take steps that are necessary to reduce the time lag at all stages of work so that published data are available to the users with a minimum time lag.

Education Statistics

Quality, Reliability and Time lag in Educational Statistics (*Para 9.5.14*)

80. The institutional records such as registers of admission, attendance, stock, and teacher's registers, etc. should be maintained properly by all institutions. State Departments of Education should facilitate maintenance of records by supplying suitable registers and guidelines to schools. During school inspection, inspectors and officers of the State Department of Education should check the records to ensure that these are up-to-date and are maintained as per guidelines. Suitable manuals should be provided to the concerned teachers and staff for this purpose while some training programmes should also be organised for them at the State and district levels.

81. Scrutiny and verification of all filled-in-forms should be done meticulously at the block level. Errors and omissions should be checked at the block level itself for primary/elementary schools and at the district level for secondary and post-secondary institutions. In order to ensure accuracy of data, verification should be undertaken by the concerned authorities while undertaking inspections. This should not only include scrutiny and verification of records but an on-the-spot assessment of actual situation that exists in respect of enrolment, attendance, teachers in position and facilities that exist in schools.

82. Computerisation of education data at all levels is needed to tackle the problems of quality, consistency, reliability and time lag in data transfer and data retrieval. Use of Information Technology and Internet facilities should be made for data transmission from district to the State and from State to National level. Computerisation will not only reduce the time lag, but in due course of time, it should also do away with the system of supplying State level compiled statistics on cumbersome forms such as Educational Statistics – I (ES-I), Educational Statistics – II (ES-II), etc. A computerised Educational Management Information System should be developed right from the district level to the State and National levels. The Educational Management Information System (EMIS) that has been developed for District Primary Education Project (DPEP) districts should be expanded and implemented in all the districts of the country for collection, processing and dissemination of all educational statistics upto the higher secondary stage.

83. Efforts should be made to provide accurate data on the number of institutions, teachers and students (by sex, grade, SC/ST, rural/urban, etc.) for each level and type of education within a year in the publication, Selected Educational Statistics, which is a very widely used source of Educational Statistics. Other detailed statistics should be included in subsequent publications, which should be produced within 2 years, and not with a time lag of 5 to 6 years as at present. The main results of large-scale surveys that provide educational data, such as those conducted by National Council of Educational Research and Training (NCERT) and NSSO should be available in published form within a year of the date of reference with the detailed results being made available within 2 years. A detailed timetable should be prepared and all data collection and compilation activities at every level should be monitored to ensure strict adherence to the timetable.

84. The administrators in charge of education and human resource development should pay sufficient attention and give priority to the tasks of data collection and compilation. Some incentives and recognition should be given for supplying accurate information on time. Also punitive measures may be taken in the case of inordinate delays and carelessness in filling forms, for example, release of funds to schools could be made dependent on the receipt of statistical returns on time.

85. The present sets of Educational Statistics (ES) forms in which data are being supplied by the States to the Ministry of Human Resource Development are unwieldy and need to be rationalised. These forms would, however, no longer be needed when the computerised system become operational.

86. For collecting and compiling all Educational Statistics, the International Standard Classification of Education (ISCED 1997) developed by United Nations Educational and Scientific Organisation (UNESCO) should be used to ensure standardisation and comparability of data across the States and internationally.

Non-availability of Data on Some Important Items (*Para 9.5.16*)

87. The forms for collecting data annually from schools should be reviewed and new items on which data are needed annually, but not collected at present, should be included. Data on a minimum set of items should be collected by all the States, while the States should be free to add items that they consider important specifically for the State.

88. Data on the age of students, teachers' qualifications and experience, income and expenditure of private schools, incentive schemes, educational facilities and equipment, children with disabilities, etc. should be collected in the All India Educational (AIE) Surveys on school education to be conducted by NCERT. The data on age and some other items should be collected on a sample basis in these surveys.

89. All India Educational Surveys on school education should be conducted regularly at intervals of five years and the results of the survey should be published within two years of the date of reference. Data on some of the items should be collected only on a sample basis, as was done in the Sixth All India Educational Survey of 1993.

90. All schools should be given a permanent code number, which should be used both in AIE surveys of NCERT and in the annual data collection programme of the Ministry of Human Resource Development (MHRD) from schools.

91. Data on new categories of schools and teachers such as different type of alternative schools or schools under the Education Guarantee Scheme (EGS) and teachers categorised as para-teachers (known as *shikshakarmi*, *guruji*, *shikshamitra*, etc.) should be collected annually and information on them should be provided separately in statistical reports.

92. The data on income and expenditure of institutions managed by the Government or local bodies should be collected annually from the offices that maintain the record of disbursement of grants and payment of teacher salaries.

93. Certain periodical studies should be conducted by institutions such as NCERT, National Institute for Educational Planning and Administration (NIEPA), Institute of Applied Manpower Research (IAMR) and University Grants Commission (UGC) on the expenditure incurred by educational institutions by level and type of educational programme to estimate the unit cost for each level and type of education.

94. Collection of data on beneficiaries, cost and effectiveness of various incentive schemes should be collected in All India Educational Surveys (AIES) and through special studies.

95. While data on educational facilities becomes available through All India Educational Surveys, data on the present condition and extent of such facilities should also be collected periodically at least on a sample basis.

96. The data on economic aspects such as finances of educational institutions and some other aspects such as average attendance of enrolled students, should be collected on a regular basis in one or more of the following ways, through:

(a) All India Educational Surveys conducted by NCERT once in five years;

(b) Sample surveys of institutions to be conducted by NCERT or the proposed Educational Statistics Bureau of MHRD on a regular basis once in 3 years or through *ad hoc* sample surveys, if necessary, at the National or State level.

97. Data on literacy, educational level of population, expenditure on education incurred by parents, socio-economic background of students, children attending or not attending school, dropouts, etc. should be collected, apart from the Population Census, through household surveys conducted by NSSO. As these items are normally covered under 'social consumption' it is suggested that the rounds of NSS that cover social consumption should be conducted regularly every five years.

98. The unrecognised schools and institutions should be covered in sample surveys to be conducted by MHRD and in AIE surveys of NCERT. Effort should be made to provide data at least on the number of such institutions, enrolment and number of teachers. To begin with, the local authorities (e.g. Block Education Officers at the block level) should enumerate all private unrecognised schools and keep a record of the same and update them every year.

99. The secondary and post-secondary level unrecognised institutions (such as those offering courses in computer applications, management, etc) should be covered through periodical sample surveys. To begin with, a comprehensive survey should be undertaken to enumerate them and a system of updating their statistics annually should be evolved. Eventually, All India Council for Technical Education (AICTE) should be entrusted with the task of collecting and maintaining their statistics.

Data Collection in Higher and Technical Education (*Para 9.5.21*)

100. University Grants Commission (UGC) should shoulder the main responsibility of collecting and publishing data pertaining all types of institutions of higher education. It should use its regional centres and universities for collection and transmission of data of colleges and other institutions under their jurisdiction instead of collecting data from colleges directly. Universities should collect and compile data from their affiliated colleges and should use computers and Internet/e-mail for processing and transmission of data to UGC for which they should have adequate statistical and computer personnel. UGC should reduce the number of data collection forms and also simplify the existing forms. UGC should also organise quinquennial surveys of Higher Education Institutions on the pattern of All India Educational Surveys of school education conducted by NCERT.

101. Since MHRD requires some basic statistics on technical and higher education for dissemination through its annual statistical publications, it should continue to collect the same from the States to avoid delay. However, a common institutional form should be devised for collection of basic data (on enrolment, graduates, facilities, teachers, etc.) and the data on this form with the same date of reference should be sent to the concerned Government Department in the State and also to the affiliating university or UGC's regional centre for compilation and transmission to UGC. This should help in eliminating the difference if any, between the two sets of statistics, one produced by MHRD and the other by UGC at the national level. UGC should use other forms for collecting data on additional items that may be needed for other purposes.

102. AICTE should have a full-fledged Statistical Unit to collect and compile data on enrolment, intake, teaching staff, graduates, educational facilities, finances, etc. from all types of technical and vocational education institutions, through its regional offices. So far as the minimum data needs of the State Governments and MHRD are

concerned, a procedure similar to that suggested above for institutions of higher education should be adopted to reduce the time lag in compilation of Educational Statistics at the National level by MHRD.

103. The above arrangement of data collection should also apply in respect of institutions offering courses in Ayurvedic, Siddha, Unani, and Homeopathic systems of medicine, for which the Department of ISM&H is responsible.

104. The limited data on education in Medical and Dental colleges, presently collected by Medical Council of India (MCI) and Dental Council of India (DCI) is not sufficient and additional items of information on enrolment, teaching staff, etc. should also be collected by the Central Bureau of Health Intelligence (CBHI) through MCI and DCI or directly from the institutions.

105. The Department of Agricultural Research and Education (DARE) should collect and publish the data on Agricultural Education on an annual basis and develop the necessary infrastructure for the purpose.

106. The NCTE should expand its data collection programme to include data on enrolment, teachers, finance, etc. Suitable formats should be developed by it in consultation with MHRD and UGC. Also National Council of Teacher Education (NCTE) should bring out a statistical publication on teacher education institutions annually.

107. All the above agencies should strengthen or establish Statistical Units to take up the responsibilities of collection and compilation of data on various programmes of technical and higher education. They should also supply data to the MHRD regularly as required by it and bring out their own statistical publications annually without much time lag.

108. A Coordination Committee on Technical and Higher Education comprising representatives of MHRD, UGC, AICTE, CBHI, DARE, NCTE, etc. should be set up under the aegis of MHRD to devise measures for avoiding duplication of data collection on similar items by different agencies and devising measures to improve the quality and coverage of statistics on all types of technical and higher education.

Weak Infrastructure at Centre, State and District Levels (*Para 9.5.27*)

109. In order to ensure that statistical activities get due attention, there should be a full-fledged Educational Statistics Bureau in the Ministry of Human Resource Development. It should be headed by a Statistical Adviser from Indian Statistical Service, in the rank of Joint Secretary to take care of all statistical activities of the two Departments namely, Department of Secondary and Higher Education and Department of Elementary Education and Literacy. The Educational Statistics Bureau should have two Units, each headed by a Statistical officer in the rank of Director/Joint Director to handle the work of these two Departments. The Statistical Adviser will advise the two Departments in all matters related to the collection of Educational Statistics, will coordinate with the National Statistical Office, organise sample surveys on education and liase and coordinate with international agencies and agencies of the Central and State Governments responsible for generating and supplying educational statistics.

110. Apart from providing basic statistics on enrolment, number of teachers, etc. through periodical publications, the Bureau should bring out various indicators derived from the data and make them available to users. It should also undertake special studies based on time series data from time to time and also make educational projections on a regular basis.

111. It should be possible to bring about the above changes without creating new posts (except that of Statistical Adviser) by suitably upgrading the existing posts and by

reallocation of work among the existing staff and with provision of suitable training for handling the new type of work.

112. At the State level, the Educational Statistics Unit should be preferably located in one of the Directorates instead of there being several small units for statistical work in every Directorate. A statistician in the rank of Joint Director should head this Unit. The unit should be provided adequate manpower and computer resources to handle data collection and processing of State level data.

113. The concerned Directorate should be the nodal agency in the State to coordinate all the work related to Educational Statistics with other Departments, which perform educational functions such as Technical Education and Education in Medicine, Agriculture, Animal Husbandry, etc.

114. The State Educational Statistics Unit should also undertake sample surveys and *ad hoc* studies in the field of education on topics of interest to them. It should also be responsible for conducting training programmes for the staff engaged in statistical work at various levels.

115. The district level establishment should be well equipped to cater to data collection and processing needs for education upto the higher secondary level in the district and to undertake scrutiny and verification of forms received from the block level. It should however, be ensured that the main statistical work does not suffer because of the staff meant for educational statistics being used for other activities.

116. The Educational Statistical Bureau at the Centre and the Educational Statistics Units in the States and districts should be equipped with adequate computer hardware and software for data entry, scrutiny, verification and data analysis. Sufficient resources should be provided by both the Central and State Governments to implement computerisation uniformly for the educational statistical system. Some facilities and staff already provided in DPEP States and districts for EMIS should be upgraded for handling the statistics of all institutions up to secondary level and the same should be extended to non-DPEP States and districts also.

117. The Statistical Bureau at the Centre should network with the States and the districts for receiving data directly from the districts, as well as consolidated State level data from the State Departments of Education.

118. The staff handling statistical work at the Centre and States should be provided with adequate training in statistics and use of computers for statistical work. Their skills should also be upgraded through proper training. The proposed Bureau in the Ministry of Human Resource Development should organise refresher and other training programmes periodically for the staff to upgrade their knowledge and skills.

Gender Statistics (*Para 9.6.13*)

119. The Department of Women and Child Development and CSO have already issued guidelines for collecting all data with a male-female break-up, wherever applicable. In order to ensure that relevant Gender Statistics are collected as per the guidelines, necessary instructions for compliance should be issued again at the highest level. All the censuses, large-scale sample surveys and Administrative Statistics should have a provision for collecting data with sex break-up, where applicable.

120. As several ministries and organisations are involved in the development of Gender Statistics, a high-level Standing Advisory Committee under the Chairmanship of Secretary, Department of Women and Child Development, with representation from all the concerned ministries including Central Statistical Organisation should be constituted for ensuring proper reporting of Gender Statistics.

121. The Department of Women and Child Development, which is the nodal Department for various developmental planning for women, does not have a Statistics Division.

Therefore, a Statistics Division headed by a senior statistical officer at the level of Joint Secretary, should be created. For better co-ordination with other ministries and departments including the National Statistical Office, the post should be manned by an Indian Statistical Service officer.

122. Indicators of gender disparity such as equity index should be computed at State level for every State taking into account the data available on socio-economic variables. CSO should develop appropriate methodology for computing Human Development Index (HDI) and Gender Development Index (GDI) at State level. Studies should be conducted using gender related data to highlight existing gender disparities.

Environment Statistics

Development of Environment Statistics and Indicators (*Para 9.7.6*)

123. CSO should continue to coordinate and collate the relevant information on environment as is being done at present and bring out the Compendium on Environment Statistics on an annual basis. CSO should also provide necessary guidance to the States for development of Environment Statistics and indicators.

124. The database on Environment Statistics should be strengthened and it should be linked with the Environmental Information System (ENVIS) already functioning in the Ministry of Environment and Forests.

125. CSO in collaboration with the Ministry of Environment and Forests and other agencies should finalise the list of Environmental indicators needed for the country and should take the steps to be taken for regular collection of relevant information.

126. Considering the emerging need for Environment Statistics, a Statistical Division in the Ministry of Environment and Forests should be established to cater to the requirements of environment and forest related data and analysis of the same. A Statistical Adviser at an appropriate level from Indian Statistical Service should head the Division.

127. Environment Statistics Cells should be created in the Directorate of Economics and Statistics in all the States and the same should be responsible for co-ordination and collation of information from other related agencies in the State.

Natural Resource Accounting (*Para 9.7.10*)

128. The development and implementation of satellite accounts on environment accounting, as suggested by the System of National Accounts, 1993, should be pursued systematically. To begin with, a framework for environmental accounting needs to be developed in India. The framework should be based on System of Integrated Environmental and Economic Accounting (SEEA) as this would avoid the drawback of non-compatibility with national accounts concepts and procedures.

129. Once the framework for environmental accounting is established, the aim should be to improve the data contents and analysis of particular sectors of the framework and develop suitable methodologies for systematic valuation of environmental resources in the country and for estimating the cost of pollution abatement and environmental degradation caused by various economic activities.

130. As Natural Resource Accounting requires the integration of data from different subject areas efforts should be made to involve experts from all relevant disciplines along with the experts from CSO. This office should play a more active and dominant role in the entire exercise.

131. The pilot project on Natural Resource Accounting in Goa initiated by the Ministry of Statistics and Programme Implementation (MoS&PI) should be replicated in 2 or 3

major States for developing a suitable methodology before extending it at the all-India level for developing integrated environment and economic accounts.

Consumption Surveys and Levels of Living

Issues of Concern (*Paras 9.8.21 to 9.8.28*)

132. The results of the on-going Pilot Survey on Reference Periods launched by NSSO need be utilised to choose the appropriate reference period for collecting data on food, pan, tobacco and intoxicants in future NSS enquiries on consumer expenditure. Further work need to be done to choose the appropriate reference period for non-food items like durables, education, medical care, etc. Pilot studies may be made to collect panel data for understanding changes over time. Revisit to the same sample of households for data collection after the lapse of few years could also be explored.

133. Any change in the methodology of NSS household expenditure enquiries runs the risk of loss of comparability with the past, but the present situation may require changes. Keeping this in view, the NSS questionnaires for consumer expenditure should be shortened in such a way that it should not take more than 1-1½ hours of interview time, especially in urban areas.

134. In order to reduce the non-sampling errors in canvassing a lengthy schedule, the NSS should make efforts to reduce the length of the of consumer expenditure schedule by analysing the past data. Further, in doing so, the possibility of dividing the full sample of households into two matched half-samples and the use of one schedule with detailed food items but abridged non-food items in one half-sample, and of another schedule with abridged food items but detailed non-food items in the other half-sample should also be explored.

135. The State sample data should be processed regularly within a reasonable time after completion of fieldwork and attempts should be made to obtain and utilise pooled estimates by combining Central and State samples. Efforts need also be made to generate separate estimates for the different NSS regions for all the rounds, especially the quinquennial rounds.

136. Techniques of small area estimation may be adopted to extract maximum amount of information from the collected data, keeping the goal of district level estimates in view.

137. For monitoring of changes in the levels of living, dissemination of consumption data through regular NSS Reports may be done as expeditiously as possible. These Reports may include estimates of per capita physical consumption of a few items besides cereals, like pulses and products, liquid milk, sugar and gur, etc.

138. Poverty measurement and poverty analysis has come to occupy a central place in policy-making in the country. NSSO should provide relevant information expeditiously to Government agencies like the Planning Commission and also to interested researchers for undertaking poverty-related studies. Further, the NSSO may take up special tabulations/exercises periodically to facilitate studies like calculations of calorie intake by households in different segments of the population, especially by those below the poverty line.

139. To facilitate the building of models explaining the poverty status of individual households, the NSS questionnaire should also record relevant characteristics of sample villages and blocks. In the past, such characteristics were not always recorded or made available.

FINANCIAL AND EXTERNAL SECTOR STATISTICS

Monetary and Financial Statistics

Monetary Statistics (*Para10.2.11*)

1. Reserve Bank of India (RBI) should consider publication of an average holding of cash reserves by commercial banks during the reference period. Data on actual cash reserves and liquidity amounts, excess cash reserves and liquidity investments, corresponding net demand and time liabilities (DTL) amounts, and the ratios of required, actual and excess cash reserve ratio (CRR) and statutory liquidity ratio (SLR) should be published. This is because a major component of the reserve money is the bankers' deposits with RBI, essentially arising out of CRR prescribed for the banks. The banks are, however, allowed the flexibility to maintain CRR on an average basis during a fortnight with the restriction that the CRR on a particular day could be maintained at as low as 50 per cent of the required level for the first seven days of the reporting fortnight and 65 per cent for the rest of the fortnight. The reserve money data at a particular point of time, therefore, may not reflect the sharp changes in the component of bankers' deposits with RBI.
2. Since there are differing perceptions on the concepts of monetary aggregates, RBI should publish a time series on components of money at a disaggregated level so as to enable analysts to construct their own series.
3. The data on the new monetary aggregates are available on a monthly basis since April 1993. RBI should consider extending this series backwards with a view to providing a longer time series, which would facilitate empirical studies.

Banking Statistics (*Para 10.2.21*)

4. Data on residual maturity of term deposits with the commercial banks should be collected and published by RBI. This will help in understanding the maturity profile of liabilities of commercial banks, its transition over time and the causal factors determining such changes.
5. The data on inter-bank cheque clearances should be given separately by the RBI.
6. In view of the need for consistency in the National Statistical System, RBI should maintain uniformity in the classification of occupation in borrowal accounts in Basic Statistical Returns (BSR) in conformity with National Industrial Classification (NIC) 1998 of CSO.
7. The coverage of data under the BSR system presently collected on electronic media (floppy) from the public sector banks (PSBs) should be extended. The PSBs should be encouraged to report data to RBI on-line, which would further reduce the time lag in processing and disseminating statistics based on the BSR system. The estimates based on sample surveys under the BSR, should include information on their statistical credibility such as standard errors.
8. Locational Banking Statistics (LBS) and Consolidated Banking Statistics (CBS) on international claims of banks should be compiled and published by RBI as early as possible.

Regional Rural Banks (*Para 10.2.26*)

9. The delay in collection of data from the Regional Rural Banks (RRBs) should be eliminated by concerted efforts made by RBI, NABARD and RRBs.

Co-operative Banks (*Para 10.2.32*)

10. The NABARD should consider different methods of collecting data to reduce the time lag. The basic strategy should be to differentiate among higher tiers as well as to differentiate larger co-operatives from the large number of smaller ones. Data from the former should be prompt and regular while for the latter a suitable system should be designed. The differentiation between the scheduled and non-scheduled co-operatives can also be useful for quick data collection and dissemination.
11. The NABARD should adopt a suitable sample survey to collect data from primary rural co-operative societies, (which are large in number) as it becomes difficult to collect data from all such co-operatives at frequent intervals.
12. The balance sheet of the co-operative banks should be standardized to a form, similar to that of commercial banks by RBI and NABARD.

Financial Institutions (*Para 10.2.38*)

13. Term-lending (IDBI, SIDBI, IFCI, etc.) and refinance institutions (NABARD, NHB) should furnish data promptly on a monthly/quarterly basis. To facilitate prompt release of data, a revision of the existing returns should be undertaken and an increased frequency in reporting stipulated by RBI and IDBI concertedly on an urgent basis.
14. The accounting years should be synchronised for all financial institutions.
15. The RBI, in consultation with IDBI, should introduce necessary returns from Financial Institutions (FIs) for compilation of liquidity and other financial aggregates.

Non-Banking Financial Companies (NBFCs) (*Para 10.2.51*)

16. The RBI should undertake the task of institutionalising the reporting system of all the NBFCs on an urgent basis. Accordingly, an appropriate reporting system should be devised for different categories of NBFCs. With regard to companies, which are, both registered and regulated by RBI namely, deposit-taking companies, periodical returns should be collected, consolidated and data disseminated on a systematic basis. The data coverage and timeliness for large companies should be on par with banking companies. There are NBFCs, which are registered with the RBI but are not regulated since they do not accept deposits. Information in respect of these companies should be consolidated and disseminated. There are several other companies which are registered under the Department of Company Affairs (DCA) and do not come under the jurisdiction of RBI and with respect to such companies, the information should be classified, consolidated and disseminated on the basis of their Annual Reports.
17. RBI has been collecting certain information through their surveys on growth of deposits with non-banking companies (now replaced with system of returns in case of deposit-accepting companies), which covers comprehensively different aspect of their operations. The RBI should analyse the complete set of data collected through these returns and publish comprehensive data on asset and liabilities, income and expenditure of all reporting companies, besides the analysis of public deposits as is being published at present. The details should also be presented by type of financial companies in collaboration with DCA.
18. A one-time census of NBFCs covering all companies incorporated with DCA should be conducted. The census should collect data on important activities, especially assets and liabilities and income and expenditure. A periodic sample survey should be conducted by the RBI for updating population estimates for NBFCs.

19. The RBI should continue the studies on financial and investment companies, till the system suggested above gets stabilised.

Informal Financial Sector Statistics (*Para10.3.13*)

20. The National Sample Survey Organisation (NSSO) should continue to conduct the All-India Debt and Investment Surveys (AIDIS) at decennial intervals. The coverage of the AIDIS needs to be improved by pooling the estimates of Central and State samples on the one hand and by increasing the sample size on the other. It is necessary that the RBI and the NSSO should have a close collaboration in the conduct of AIDIS.
21. The Central Statistical Organisation (CSO) should conduct Enterprise Surveys separately for financial service enterprises and provide data needed to derive value-added details as also the details of credit. The RBI should closely liaise with CSO and NSSO on the technical aspects of these surveys and ensure the coverage of all known household financial enterprises like, share brokers, multani shroffs, chettiars, marwari kayas and pawnbrokers and various kinds of moneylenders.
22. The details collected under various returns of RBI, in particular Basic Statistical Return–1 (BSR-1) and Basic Statistical Return–4 (BSR-4), should be tabulated against the informal financial sector to understand the extent of linkages between the formal and informal segments.
23. Financial data in respect of all Non-Governmental Organisations (NGOs) and Self-Help Groups (SHGs) involved in micro financing should be collected. It is suggested that a sample survey of NGOs and SHGs should be undertaken by NABARD at quinquennial intervals. NABARD should also prescribe a half-yearly return to be submitted by all NGOs and SHGs.
24. Apart from nation-wide surveys, which provide macro estimates, it is necessary to promote regional and micro-level studies on the informal financial sector activities considering the diversity across the regions.

Insurance Statistics (*Para 10.4.17*)

25. Information pertaining to the insurance sector should be collected and disseminated by Insurance Regulatory Development Authority (IRDA). Income, expenditure, assets, liability, sources and uses of funds, investments, term structure, non-resident operations of insurance companies, etc. should be the major items of information. IRDA should establish a Research and Statistical Division for this purpose, rationalise existing returns and introduce new returns to collect necessary data.
26. The data should be consolidated by different categories of insurance, e.g. life, non-life, reinsurance, pension and super-annuation, health, crop, others.
27. In respect of Postal, Employees State Insurance, Army and other group insurance schemes, pension and super-annuation, essential information should be collected by IRDA and published.
28. Break-up of data by State, sector (rural-urban), ownership of insurance business, gender and occupation classification of policy holders, etc. should be published.

Capital Markets

Primary Market (*Para 10.5.5*)

29. The Securities and Exchange Board of India (SEBI) should disseminate statistics on: (a) Resource mobilisation in the primary market by various categories of entities (non-Government Public Limited Companies, Banks, Financial Institutions (FIs), Government Companies (PSUs) and various categories of investors (ownership

pattern of capital raised), (b) Data on firm allotments to institutional and other investors, (c) public subscriptions, (d) bond issues divided as between public issues and private placements, (e) actual mobilisation of funds through bonds, (f) Data on underwriting, and (g) Cost of issues.

30. The SEBI should undertake a comprehensive survey (as was done by the RBI in the past) on public response to equity capital issues – size-wise, occupation group-wise, region-wise.

Private Placements (*Para 10.5.10*)

31. The Securities and Exchange Board of India (SEBI), being a regulatory authority, should collect, compile and disseminate data on equity and debt on private placement, as a significant part of private placements are being listed on the stock exchange through subsequent processes. The system of data collection should be urgently formalised by SEBI along with disclosure norms for the private placement market. Pending such formal regulation through further amendments to the Companies Act, SEBI should stipulate certain listing requirements.

32. The banks, Financial Institutions (FIs) and NBFCs investing in privately-placed issues should periodically furnish details to RBI, such as amount invested, maturity period and credit rating of the instruments, rate of interest, etc. This would help in widening the coverage of data available with RBI for the purpose of processing and maintaining continuity in disseminating data on private placement.

Secondary Market (*Para 10.5.22*)

33. The Securities and Exchange Board of India (SEBI) should provide estimate of an all-India market capitalisation at regular intervals.

34. SEBI should construct divergence indices for the two main stock exchanges in the country, Bombay Stock Exchange (BSE) and National Stock Exchange (NSE), to bring out the extent of arbitraging opportunities that exist after taking into account the cost differences in operating in the two exchanges.

35. Trades and Quotes (TAQ) data set should become available for all exchange-traded products, such as shares, bonds and derivatives. SEBI should ensure that a standardised data set is obtained and disseminated by each exchange every day.

36. The reporting of trade data on bonds should be made mandatory by the RBI for Government securities and by SEBI for corporate bonds and that such reporting should take place within the stipulated period. The NSE should ensure time-stamp of the data.

Mutual Funds (*Para 10.5.25*)

37. The Securities and Exchange Board of India (SEBI) should consider widening the coverage of mutual funds operations to include: (a) Resource mobilisation by individual mutual funds, (b) Deployment of funds by mutual funds, (c) Resource mobilisation by offshore mutual funds, (d) Resource mobilisation by type of schemes (i.e., open-ended or close-ended) and by objective of scheme (i.e., income, growth, balanced, tax-saving), (e) Net resource mobilisation by Mutual Funds during the month, (f) Ownership of the units of Mutual Funds, and (g) Liabilities and assets, and income and expenditure accounts of the mutual funds.

Capital Market Related Institutions (*Para 10.5.30*)

38. SEBI should be the Central agency for collection and dissemination of data from all institutions that are under its control and jurisdiction.

39. SEBI should also bring out consolidated data of share brokers and share-broking firms in the organised sector in respect of their income, expenditure, volume of transactions and sources and uses of funds.

40. RBI should evolve a statistical system for collection of statistics from institutions for electronic funds transfer, payments through credit or debit cards in the market and the total volume of such transactions.

Government Securities Market (*Para 10.6.8*)

41. Data on ownership pattern of Central and State Government securities are released on an annual basis for a broad category of investors. However, no data on ownership pattern are disseminated on a quarterly/monthly basis. Therefore, monthly/quarterly data with wider coverage should be made available.

42. The maturity profile of outstanding State Government loans are not released, though such data, for the Central Government are released annually. Therefore, the outstanding market loans of the Central and State Governments separately, scrip-wise, as well as aggregate year-wise, should be released regularly on an annual basis.

43. There are areas where dissemination of market borrowings of State Governments is not at par with that for the Central Government. This gap needs to be bridged. First, data on Central Government market borrowings, budgeted and actuals and gross and net, are released regularly on a weekly, quarterly and annual basis. However, such data are not available for State Governments. Hence, details of market borrowing programmes of State Governments, allocations and actuals, auction and pre-announced coupons should be released regularly, preferably on a quarterly basis. Secondly, data on maturity pattern of the Government of India Rupee loans outstanding at the end of the year classified into different periods with a 5-year interval are released on an annual basis. Data on maturity pattern, on a similar basis, should be extended to include State Government loans. Further, residual maturity by original coupon rates should also be published.

44. The Government-guaranteed bonds are not treated as part of Government securities but as an integral part of the corporate debt. However, in view of the sovereign guarantee extended and the large magnitudes of such securities in the debt market, they deserve to be separately identified as a category, and data collected and disseminated. RBI should take up with the Central and State Governments and the regulator for other securities to mount an information system for this purpose.

Money Market (*Para 10.7.8*)

45. Introduction of the negotiated dealing screen (NDS) system should be operationalised urgently by RBI, so as to enable on-line access to data pertaining to all money market instruments. This would help reduce the time lag in release of data on call/notice money market, Commercial Papers (CPs), Certificates of Deposits (CDs) and bills rediscounting market.

46. Pending the introduction of NDS, RBI should improve coverage of daily data on call/notice money market transactions and reduce the time lag in data on Commercial Paper, Certificates of Deposit and the bills rediscounting market. This would be facilitated with the full-scale operationalisation of Very Small Aperture Terminal (VSAT), which would connect all the banks amongst themselves and with RBI and there would be inter-connectivity between branches of banks. Such a system would facilitate treasury management and management information system of banks as also reporting to RBI through electronic media. Hence, with faster

submission of data by banks to RBI, the time lag in dissemination of data to the market would be greatly reduced.

47. While the setting up of a Clearing Corporation is a welcome step, efforts should be made to ensure that the Corporation aids the process of comprehensive, timely and reliable data dissemination in regard to secondary market transactions in both money market instruments and Government securities.

Fiscal Statistics (*Para 10.8.29*)

General Budget Data

48. The Expenditure Budget of Central Government provides data on Budget Estimates and the Revised Estimates of Internal and Extra Budgetary Resources (IEBR) of the Central Public Sector Enterprises. The account (actuals) figures on resources raised by these enterprises against the Budget Estimates (BE) and Revised Estimates (RE) are not available. Therefore, the details of actuals of IEBR (including the amount of External Aid) should be published in the Budget.

49. The accounts data on State-wise distribution and devolution of income tax, basic and additional excise duties, etc. are not published in the Receipt Budget of Government of India while the Budget Estimates (BE) and Revised Estimates (RE) are available. The account data on amounts of devolution actually transferred to the States are available elsewhere in the publications of Ministry of Finance and the Planning Commission. Therefore, the accounts data should be provided in the Budget documents for the subsequent years for the purpose of consistency.

50. Tax expenditure, which arise in the context of various exemptions that are extended under various tax laws, are yet to be quantified. Therefore, the details on both tax expenditure and implicit subsidies; tax arrears and tax refunds should be provided in the budgets of the Central and the State Governments.

51. The Combined Finance and Revenue Accounts published by the Comptroller and Auditor General of Accounts (CAG) is the only source where the Fiscal Statistics of both the Centre and individual States are published. At present, there is a considerable time lag in this publication. This publication should be released promptly and regularly.

52. The detailed data of State Finances on a comparable basis is not available in the country. Though the RBI does publish an annual consolidated study, there persists a need to have a detailed and comparable data set for each State – individually and consolidated. There are significant differences in the budgetary practices between different States. There has to be a uniform classification of a proper plan to classify the data on a comparable basis, eliminating inter and intra-Government transfers. The Central Government should therefore ensure that such data are compiled and disseminated on an early basis.

53. No published information is available on various Centrally sponsored schemes. The data on financing pattern of Centrally sponsored schemes in different States and the expenditures incurred in different States from Central funds and States' own contributions should be compiled and disseminated along with the Budget documents.

54. The State Governments do not provide high frequency data on major fiscal indicators on a monthly basis as is the practice followed by the Central Government. Therefore the State Governments should make available to the public the data on major fiscal variables on a monthly basis.

55. To assess the current system of accounts and budgets of local bodies, and to establish uniform budget practices for local bodies on the pattern of Central and

State Governments, a system of consolidation of accounts by the States should be evolved and thereafter followed at national level. At the initial stage, the accounts of bigger local bodies such as those of the metropolitan cities, municipal corporations and municipalities should be taken up completely, while the accounts of smaller bodies may be covered through suitably designed sample surveys. The securities issued by the local bodies should be published in the State Government budgets.

56. The issue of providing guarantees has significant implications for the sustainability of the fiscal position of the Governments – Central and States. Further, some forms of guarantees, like the letters of comfort issued by State Governments to banks and financial institutions, are in nature of implicit guarantees, which are not included in the present estimates of guarantees in India, but are internationally treated as guarantees. Therefore adequate arrangements for reporting and monitoring of guarantees granted by Central and State Governments should be instituted.

57. The draft Manual on Government Finance Statistics 2000 of the International Monetary Fund (IMF) favours revised principle of recording the flows on accrual basis switching over from the current system of cash basis. Accordingly, the Government may consider, in due course, dissemination of Fiscal Statistics on accrual basis as per advice of the Comptroller and Auditor General of India (CAG).

Tax Statistics

58. The details regarding the tax records, revenue as raised, revenue foregone on account of concessions contained in the budget proposals, receipt on tax arrears of the previous years and taxes collected through special schemes are not separately indicated. This data in gross and net terms should be given in the Budget Documents in a more transparent and detailed manner.

59. The data on tax revenue of Central Government should be disseminated promptly and State wise break-up made available.

60. The data published by the Directorate of Income Tax in its All India Income Tax Statistics (AIITS) are based on estimates derived from a small sample size and is therefore rendered unrepresentative. Therefore the sample size and design should be modified to make it more representative and broad-based considering the manifold increase in the number of assessees. Further, the time lag in the publication should also be reduced.

61. The computerisation and net working of Field offices of the Central Board of Direct Taxes (CBDT) and Central Board of Excise and Customs (CBEC) should be completed on a priority basis for improving the data quality, better management and speedier transmission of data from the field offices to the Directorates at the Centre. To generate a comprehensive database on various aspects of Direct and Indirect Tax Statistics, the CBEC and CBDT should generate profiles of all tax assessees by implementing complete computerisation of various returns filed by assessees.

62. The organisational set up for collection of statistics in the field offices of CBDT and CBEC should be strengthened. The Research and Statistics Wing, Directorate of Income Tax should be the nodal agency on all statistical activities and function directly under CBDT. A Research Unit should also be set up in CBDT to undertake research studies on various aspects of tax planning.

Institutional

63. A data warehouse for Fiscal Statistics at the National level within the Department of Economic Affairs (DEA) should be established. Such an institutional mechanism is intended to collect, compile and store the data generated and disseminated by various official agencies which would not only help to build up a comprehensive

database on Indian Fiscal Statistics but also to identify the data gaps at the macro and micro levels.

Balance of Payments (*Para 10.9.20*)

64. The implementation of recommendations made in Reports of various committees and groups already constituted to closely examine different aspects of Balance of Payments (BoP) data needs to be expedited with a view to further refining items of the BoP statistics. In fact, there should be a continuous review of the methods of collecting data with regard to BoP on account of the anticipated developments in liberalisation of external sector transactions on both the current and capital accounts. In particular, this would be necessitated by any further review of repatriation and surrender requirements in the current account and liberalisation of the capital account.

65. Steps should be taken to identify and narrow down the differences in merchandise trade data as compiled by the Directorate General of Commercial Intelligence and Statistics (DGCI&S) and those reported on payments basis by RBI.

66. The coverage of Electronic Data Interchange (EDI) system should be enlarged to more ports and different types of shipping bills so as to facilitate a matching of exports data on the basis of Daily Trade Return (DTR) and those on the basis of exports negotiated contract (ENC). This would result not only in the narrowing down of differences in exports data between DGCI&S and RBI but would also facilitate recording of exports data on the basis of ENC statements reflecting change of ownership.

67. The coverage of DGCI&S data on imports should be enhanced to include defence items, aircraft, oilrigs, etc. This would help in narrowing down the differences between DGCI&S and RBI data.

68. The import data should be compiled on free on board (f.o.b.) basis. RBI should examine the possibilities of conducting surveys to collect information on freight and insurance components from DTR data, which in due course would facilitate compilation of imports on f. o. b. basis.

69. The purpose codes prescribed for reporting of foreign exchange transactions by Authorised Dealers (ADs) to RBI should be enlarged to capture more disaggregated data on international trade in services. Further, the mechanism of data reporting by the ADs should be supplemented by surveys on important areas of services.

70. The tourist arrival figures as compiled by the Ministry of Tourism are used by RBI for estimating travel receipts. In order to improve the quality of these estimates, the Ministry of Tourism should conduct surveys on the expenditure pattern of tourists drawn from different broad regions of the world on a regular basis.

71. Although RBI collects data on software exports through Software Exports (SOFTEX) forms, it uses NASSCOM data as a controlling total for gross receipts from software exports. There is, however, a need to re-examine the current methodology on collection of software export data. RBI, therefore, should constitute a technical group consisting of members from RBI, Ministry of Commerce, CSO, NASSCOM and a few major software companies to comprehensively examine the data reporting mechanism for software exports.

72. In a liberalising economy, it becomes increasingly necessary to rely on surveys to plug information gaps. RBI should conduct periodical surveys on dividends and profits arising out of foreign direct investment (FDI) and portfolio investment separately.

73. There is a need for surveys by RBI on disinvestment in India and abroad by non-residents and resident Indians, respectively.

74. The RBI should take necessary steps to capture data on portfolio investment by NRIs in order to improve the coverage of the capital account in the BoP.

75. In order to ensure complete coverage of short-term credit, RBI should institutionalise a mechanism for collection of data on suppliers' credit up to 180 days, which would have an impact on the capital account of the BoP. This information is also required on stock basis to improve the coverage of the external debt statistics.

External Debt and International Investment Position (*Para 10.10.14*)

76. As suggested by the Study Group on Short-Term Debt under the aegis of the Monitoring Group on External Debt in the Ministry of Finance in order to capture data relating to suppliers' credit up to 180 days, RBI should modify the existing floppy based R-Return reporting by introducing an additional field on date of shipment. While this information is required for complete coverage of external debt, it would also enhance the coverage of short-term credits in the capital account of the balance of payments (BoP).

77. The RBI should introduce a computerised Comprehensive Single Return for Non-Resident Indian (NRI) Deposits as suggested by the Study Group on NRI Deposits for compilation of external debt data on residual maturity basis.

78. The quarterly external debt data are disseminated with a time lag of 5 to 6 months from the reference period. This time lag should be reduced to 3 months, which would also meet the Special Data Dissemination Standards (SDDS) requirement of timeliness.

79. Steps should be taken by agencies responsible for external debt data [namely, the Controller of Aid, Accounts and Audit, and External Debt Management Unit (EDMU) in the Ministry of Finance and RBI] to provide additional sectoral classification of non-government external debt into banks and other sectors (private and public non-bank enterprises), which would also meet the SDDS requirement of sectorisation.

80. At present, the stock of Foreign Institutional Investors' (FIIs') investment in debt securities is estimated on the basis of accumulation of flows in the absence of direct data on stocks. RBI should take necessary steps to put in place a data collection mechanism for stock data on FIIs' investment in debt securities at market prices in consultation with Securities and Exchange Board of India (SEBI), FIIs and custodial banks.

81. The RBI should re-orient its methodology for compilation of data on International Investment Position (INIP) by making increasing use of flow data wherever the stock data are not readily available with a view to generating quarterly data with a time lag of six months, which would meet the timeliness requirement under SDDS of the IMF.

E-Commerce (*Para 10.12.10*)

82. The database on electronic commerce has to be established. Since e-commerce is still at initial stages and has significant cross-border linkages, it is necessary for the Central Statistical Organisation (CSO) to closely align the statistical system with initiatives on World Trade Organisation.

83. It is necessary to conduct surveys covering e-commerce providers for data on income, expenditure, value added, etc.

PRICE STATISTICS

National Consumer Price Index Numbers (*Para 11.2.14*)

1. It should be mandatory on Labour Bureau and Central Statistical Organisation (CSO) to revise their series preferably every five years, but not later than ten years. In the case of Consumer Price Index for Agricultural Labourers {CPI (AL)} and Consumer Price Index for Rural Labourers {CPI (RL)}, the base year should be revised five yearly, using the quinquennial NSS Consumer Expenditure Survey data.
2. For revision of the series, the administrative procedure should be streamlined in such a way that necessary resources are sanctioned in a time-bound manner. The exercise on revision of the base year should be completed by the concerned agencies within a one-year period preferably after the availability of the requisite data.
3. The procedure of allocation of weights to different centres covered under Consumer Price Index for Industrial Workers {CPI(IW)} for computation of the all-India CPI(IW) needs further examination by Technical Advisory Committee on Statistics of Prices and Cost of Living Index Number (TAC on SPCL). A similar examination should also be done for Consumer Price Index for Urban Non-Manual Employees {CPI (UNME)} series.
4. Increasing the present sample of 600 villages spread over 20 States selected for price collection under CPI (AL) and CPI(RL) should be examined by TAC on SPCL.
5. As the current CPI series does not provide changes in the prices for the entire rural and urban population since they are designed to measure the changes in the prices of goods and services consumed by specific segments of the population, there is a need to compile the CPI separately for the entire rural and urban populations. TAC on SPCL should give a methodology for compilation of CPI for rural and urban areas separately using quinquennial NSS Consumer Expenditure Survey Data for the preparation of the weighting diagram. TAC should also give a procedure for compiling a combined index based on these two indices. The existing system of price data collection should be suitably streamlined and augmented so as to provide price data for compilation of CPI for rural and urban areas.

State CPI Numbers (*Para 11.3.3*)

6. There is a need to bring uniformity of methodology in the computation of price indices compiled by the States and Union Territories (UTs) so that meaningful analysis of regional price variation can be made. TAC on SPCL should suggest measures to ensure uniformity in compilation of CPI numbers by the States and UTs.

National Wholesale Price Index Number (*Para11.4.6*)

7. In order to obtain uniformity in the collection of wholesale price data, the Office of the Economic Adviser should explore the possibility of engaging exclusive staff for a weekly collection of price data. There should be a direct system of data collection to eliminate problems of non-response in the mail method.
8. An Expert Committee should be constituted to go into the quality aspects of Wholesale Price Index (WPI) data. To make the system transparent, the Office of Economic Adviser should make available detailed data to other Government agencies for official use.
9. To capture the recent changes in industrial structure on account of liberalisation and globalisation, there is a need to have periodic revisions of WPI numbers, preferably

every five years but not later than ten years. The proposed revision should bring base years of WPI and CPI numbers much closer to each other.

10. A separate Services Sector Index should be developed, initially as a complement to the WPI. It should be merged with the WPI, once it has stabilised and established its robustness.
11. The Working Group on Services Sector Index constituted by TAC on SPCL should suggest institutional mechanism for collection of requisite data for the Services Sector Index and also its periodical updation. The Group should also take into account requirements of the World Trade Organisation's (WTO) categories as also National Accounts.
12. As the present WPI is an inadequate measure of inflation; there is a need for a separate index for measurement of inflation in the economy. The proposed CPI for the rural and urban areas could be used for this purpose.

State WPI Numbers (*Para 11.5.2*)

13. There is a need to bring uniformity in terms of base year, number of items, derivation of weighting diagram, data sources, etc. in the wholesale price indices compiled by the various Sates and UTs in order to make any meaningful analysis of regional variation in prices of wholesale transactions. All the State WPIs should have preferably the same base year or around that, as that of the all-India. TAC on SPCL should examine all issues including conceptual and technical difficulties in compilation of State WPI numbers.

Existing Price Collection Mechanism (*Para 11.6.3*)

14. There is a need to unify the system of price data collection in such a way that the proposed mechanism should take into account the requirements of, at least, all central agencies compiling the price indices. The proposed system should be streamlined and strengthened in such a way that effective participation of both the Central and the State Agencies is ensured. The system would also facilitate the compilation of CPI for rural and urban areas with a substantial saving on the cost of price data collection. For speedier transmission of price data, appropriate tools of information technology should be deployed.
15. As there is no legislation of collection of price data at present, the feasibility of bringing it under the umbrella of Collection of Statistics Act, 1953 should be explored.

CORPORATE SECTOR STATISTICS

Corporate Sector (*Para 12.1.14*)

1. A one-time census of all registered companies to create a frame by eliminating closed down and defunct companies should be conducted. This will also facilitate the estimation of population parameters.
2. The Registrars of Companies (ROCs), vested with the responsibility of allotting the Corporate Index Number (CIN), should monitor the submission of Annual Reports rigorously for a proper implementation of the Act and for purposes of annual updation of the frame as well as improvement of the database.
3. In the long run, this process of assigning CINs along with updation in respect of closed down and defunct companies would result in a complete frame. It should be made compulsory through the provisions of the Companies Act to mention the unique code (CIN) in all returns submitted by the companies.

4. Since some attributes, like listing status, ownership, industrial activity and State of registration are likely to change over a period of time, the CIN should take into account the likely changes in these attributes with the passage of time, to maintain the continuity in information at the individual company level.
5. The procedure of de-registration should be simplified by incorporating suitable provisions in the Companies Act.
6. At present, the Department of Company Affairs (DCA) or ROCs are not processing the information contained in the Annual Reports and Balance Sheets. They should be entrusted with the responsibility of processing and dissemination of information in respect of a set of variables for monitoring and policy formulation. To accomplish these tasks, suitable strengthening of the statistical personnel should be provided.
7. The DCA should also ensure that Annual Reports of companies required by Reserve Bank of India (RBI)─ whether listed, deemed or private limited – are available to RBI so that further detailed analysis can be conducted. A mechanism for smooth supply of annual reports of all companies, both public limited and private limited, and both listed and non-listed, should be mutually agreed upon by the DCA and RBI.

Standards of Disclosure/Reporting (*Para 12.2.6*)

8. The minimum list of variables to be added in the Annual Report or Balance Sheet along with the format of Balance Sheet Abstract (BSA) should be finalised by the Department of Company Affairs (DCA) in consultation with the concerned agencies such as the Reserve Bank of India (RBI), the Securities and Exchange Board of India (SEBI), the Central Statistical Organisation (CSO), etc.
9. A standard format should be formulated for uniform and timely reporting of data and to facilitate electronic processing.

Institutional Arrangement for Non-listed Companies (*Para 12.3.2*)

10. Companies having assets or sales over, say, Rs. 50 crores (on the lines of deemed public company in the Companies Act), or having a market share of over 10 per cent in a particular market segment, or those with controlling foreign interest should be brought under some legal obligations to provide for necessary disclosure of annual reports and their accessibility to the public. Such transparency with regard to reporting and disclosure requirements should be adequate, even if not necessarily on par with listed companies.
11. The DCA should have the primary responsibility of bringing out basic statistics in respect of such companies.

NATIONAL ACCOUNTS STATISTICS

Publication of National Accounts Statistics and Press Releases (*Para 13.1.28*)

1. The Cabinet Secretariat or a similar high-level authority at the Centre and in the States should impress upon the source agencies to supply the requisite basic data for National Accounts Statistics (NAS) in a timely and reliable fashion by minimising delays and major revisions.
2. The National Accounts Division (NAD) of Central Statistical Organisation (CSO) should explicitly announce the time-table of release of NAS and strictly adhere to it.
3. The NAD of CSO should explicitly provide clarifications for the large differences (magnitude to be specified) from one revision to another for the same year in the

sectoral and aggregate estimates along with the mention of the source agencies concerned.

4. The list of such source agencies causing delay/major revisions be notified to the apex technical agency, National Commission on Statistics, which would be in charge of supervising and monitoring the statistical system, for information, appropriate action and devising institutional correctives.

Overview of the Indian System of National Accounts (*Para 13.2.10*)

5. Urgent steps be taken to revive and restore the legitimate role of NAD of the CSO in providing technical leadership, guidance and coordination in the compilation of National and Regional Accounts.
6. Steps be taken to activate the institutionalised interaction between NAD of CSO and State Directorate of Economic and Statistics (DES) through periodical meetings to discuss the weaknesses in data and problems, and difficulties emerging from the foregoing detailed discussion of NAS and chalk out mutually agreed programme for improving the reliability, timeliness and credibility of the Indian System of National Accounts.
7. The meetings be used to impress upon the States to carry out State level annual/benchmark surveys keeping in view the needs of the system of National accounts.
8. Priorities in carrying out the benchmark sample surveys be worked out keeping in view (a) the share of the concerned aggregate/sub-aggregate in the total at the State/National level and (b) urgency of updation in terms of the year, of last survey, used in the estimation.
9. In line with the decentralised character of the Indian Statistical System, the States should develop the necessary survey organising capabilities.

Gross Domestic Product (*Para 13.3.72*)

10. Recommendations in chapter 4 to 12 in respect of Official Statistics relating to different sectors of the economy be implemented speedily so as to improve the quality of data going in to the compilation of National Accounts Statistics from primary source agencies.
11. The major weakness lies in estimating the contribution of the large number of unorganised and small self-employed enterprises in manufacturing and services, where the basic problems are those of irregular income streams, multiple activities undertaken during a year, absence of business accounts, and frequent entries and exits of units. While benchmark enterprise surveys currently provide the available database, the characteristic features mentioned above pose formidable challenges of survey design, survey methodology and survey practices. It is therefore recommended that, periodical benchmark surveys of unorganised enterprises be continued while simultaneously conducting pilot studies for improving the technical survey design methods and practices.
12. For updating rates and ratios used in GDP estimation by industry of origin, it is recommended that type studies (see Appendix 13.1 in Volume II) in different parts of the country, to provide reasonably representative estimates at the National level, be conducted regularly with the help of State Directorates of Economics and Statistics.

Private Final Consumption Expenditure (*Para 13.4.9*)

13. Existing weak areas in the estimation of PFCE relate to outdated basis for (a) marketable surplus ratios and wastage ratio in agricultural crops, fruit and vegetables

and meat and meat products, (b) trade and transport margins, and (c) various rates and ratios. It is recommended that periodical and geographically dispersed type studies/case studies be carried out for continual updation.

14. As part of the Study Group on non-Sampling Errors, Central Statistical Organisation (CSO) and National Sample Survey Organisation (NSSO) jointly carried out "Cross-validation Study of Estimates of Private Consumption Expenditure Available from Household Survey and National Accounts" to bring out major sources of differences between PFCE from National Accounts and Consumer Expenditure from National Sample Survey. It is therefore recommended that studies be carried out to correct the item-level weaknesses noted in the Cross-validation Studies in both the sources so that discrepancies in the two estimates would be minimised.

15. The weakest link in the estimation of Private Final Consumption Expenditure (PFCE) has been the indirect coverage of the Non-profit Institutions Serving Households (NPISHs). It is recommended that periodical surveys/type studies be conducted to collect income and expenditure of NPISHs.

16. The sampling design of the annual consumer expenditure surveys carried out by National Sample Survey Organisation NSSO be examined with a view to (a) reducing sampling error of the annual estimate and (b) assessing the feasibility of obtaining sub-round-wise estimates for quarterly estimation.

Government Final Consumption Expenditure (*Para 13.5.4*)

17. The major data gap in the estimation of Government Final Consumption Expenditure (GFCE) being with respect to local bodies, it is recommended that the State Directorates of Economic and Statistics (DESs) analyse the budgets of the local bodies every year for estimating all the National accounts aggregates including GFCE.

Saving and Capital Formation (*Para 13.6.18*)

18. The problems in the estimation of saving and investment of the private corporate sector have been traced to the doubts about the representative character of the sample companies and inadequacies in the blow-up factor. It is recommended that corrective steps contained in the recommendations in Chapter 12 of the report on the Corporate Sector be implemented speedily.

19. The second major weakness in the estimation of saving and investment relates to the indirect residual estimation of savings in the form of physical assets undertaken by household enterprises and own-account un-incorporated enterprises for which decennial all-India debt and investment surveys provide benchmark estimates. It is therefore recommended to (a) examine the feasibility of reintroducing the receipts and disbursement block with last 365 days as a reference period as was the case with the National Sample Survey integrated household schedule from 1964-65 (19th round) to 1970-71 (25th round) in the current annual surveys of household consumer expenditure; and (b) experiment with the survey methodology for improving the estimation of capital formation from the enterprise surveys.

20. Various rates and ratios are used in the estimation of Capital Formation in construction, machinery and equipment and change in stock as also in the estimation of trade and transport margins. It is recommended that necessary type studies (see Appendix 13.2 in Volume II) to update them be carried out in a geographically dispersed fashion.

21. The following observations which appeared in the Chelliah Committee Report are still valid and need attention of the concerned agencies for implementation:

(a) A reasonably expeditious system needs to be evolved to reduce the time lag in making available the flow of funds accounts.

(b) Dissemination of details of capital financing separately on foreign direct investment, domestic investment and borrowing, retained earnings of foreign controlled rupees companies and branches of foreign companies in National accounts.

(c) The Perpetual Inventory Method of preparing the estimates of Consumption of Fixed Capital may be reviewed periodically for assumptions made regarding the average life of various assets.

(d) All States should compile estimates of total capital formation.

(e) Public sector information in respect of local bodies should be improved. States need to make arrangements for consolidation of statistics from the annual statements of receipt and expenditure in respect of their local bodies.

(f) For improving the estimates of saving and capital formation for the corporate sector, the top 1500 companies (out of over 3 lakhs companies) which would account for a predominant proportion of total saving/capital formation should be covered on a census basis. For the remaining companies estimates may be built up on a sample basis.

(g) The flow of funds data should be used for estimating household saving in the form of currency. For the years for which flow of funds data are not available, the average ratio for the past three years should be applied.

(h) Consumer credit extended by banks and non-banking financial companies should be shown separately in the National Accounts Statistics.

(i) Feasibility of conducting independent income expenditure surveys on a periodic basis should be explored for validation of the estimates generated by Central Statistical Organisation through residual method for the household saving in the form of physical assets.

(j) Present All-India Debt and Investment Surveys (AIDIS) covers only households. Entire household sector includes unincorporated enterprises and non-profit institutions as well. To obtain the estimates of complete household sector, Enterprise Surveys on the lines of AIDIS may be designed and conducted periodically preferably every five years.

(k) In the case of deep discount bonds and zero coupon bonds, interest accruing needs to be spread out.

(l) All new financial instruments such as warrants which are traded apart from the underlying securities to which they are linked should be taken into account in the estimation of saving as and when complete relevant data become available.

(m) Software and database, which are purchased from the market by the business enterprises should be treated as part of capital formation. However, the increase in productivity of the existing software due to development of utilisation techniques should not be treated as part of capital formation.

Guidelines for Bridging the Data Gaps in Regional Accounts (*Para 13.7.7*)

22. Cost of Cultivation Studies: The Cost of Cultivation Studies (CCS) is conducted by the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) through the agricultural universities. The number of crops covered in each State is

very few and the sample size (about 10,000) is too small to give reliable estimates. The time lag in the release of the results of these studies is of the order of 3 years. For generating the input structure of different crops in each State/UT, it would be desirable to conduct large-scale sample surveys on inputs of agricultural crops by State Directorates of Economics and Statistics rather than the current practice of "studies". This would enable coverage of most crops in all the States, a manifold increase in the current sample size and a reduction of the time lag in releasing the estimates with the help of computerisation.

23. Index of Industrial Production: Most States/UTs do not have a database on the industrial production in their States. The Annual Survey of Industries (ASI) is the only source of data on industrial activity in the States. As the ASI is annual and the time lag in the availability of its results being about two years, there is no data on the current industrial production scenario at State level. While there is an Index of Industrial Production (IIP) at the National level, the absence of a corresponding index for the States is a major data gap. The development and maintenance of an IIP by each State and UT would lead to an enormous improvement in the State Domestic Product estimates. The State/UT IIP could be used to prepare the Advance and Quick Estimates of SDP and would also act as a crosscheck to the ASI results. The States could consider using the frame/database of Directorates of Industries or/and the Central Excise or Sales Tax authorities. While the weights for different industry/commodity groups at State level could be taken from the ASI results, the monthly production figures collected either directly or from the database of the Central excise authorities, from a fixed sample (with suitable adjustments for new units, information on which is available with the above mentioned two organisations) would enable the States to have an IIP for their States.

24. Consumer Price Index: Most States publish State-level Consumer Price Indices (CPI). All-India CPI for industrial workers and urban non-manual employees are based on CPI for various centres in the country from which price quotations are collected for this purpose. It is desirable for the States to review existing CPI or introduce State-level CPI (where none exists today) for the purpose of estimation of the State domestic product.

25. Corporate Sector Statistics: For most services sectors, the GDP estimates are derived separately for the corporate sector, on the basis of the RBI's company finance statistics. The same source is also used for generating domestic product estimates for the corporate sector segment at the State level. However, the size of the sample is considered too small even at the National level to give reliable estimates at industry-group level. At the State level, the estimates are not considered scientific even at the aggregate level, much less at the sectoral level. If States manage to compile corporate statistics (the number of corporations may not be many in a single State) on the basis of the frame available with the Regional Registrars of Companies, even once in five years, the quality of SDP estimates will considerably improve.

26. Benchmark Surveys of Enterprises: Benchmark sample surveys of enterprises have been conducted about once during five years by Central Statistical Organisation (for directory enterprises) and National Sample Survey Organisation (for non-directory enterprises). A decision has been taken that the NSSO will carry out sample surveys for both sets of (manufacturing and service) enterprises. The States participate in these surveys with a matching sample. The results generated by NSSO are not designed to yield estimates of the State/industry group at the State level. If the Central and State samples could be pooled (copies of the filled-up NSSO schedules could be obtained from the NSSO Regional Offices located in the States) and

analysed by the States, there would be a significant improvement in the quality of the SDP estimates that are based on these benchmark surveys.

27. Annual Surveys of Enterprises: The major data-gap in the Gross Domestic Product or the State Domestic Product estimates is considered to be the absence of annual surveys of enterprises (with the exception of registered manufacturing). This has also been so identified by the Regional Accounts Committee (RAC) in 1970s. However, due to various reasons (particularly attributable to lack of resources), the annual surveys of enterprises have not found a place in the statistical system of the country. However, it would be desirable to conduct these annual surveys of enterprises by using a fixed sub-sample of the benchmark sample (such a recommendation was also made by the RAC) and collecting information on about five items namely, employment, production/total receipts, salaries and wages, capital expenditure and changes in stocks. The problem of exits of the enterprises could be overcome by assuming that the proportion of exits in the fixed sample and the population is the same. For the new enterprises, which come into existence, a correction factor could be applied on the basis of information on the number of enterprises (for any segment of the enterprises for which such information is available) starting economic activity in the State, from the State Directors of Industries or the District Industries Centres.

28. Indicators to Extrapolate the Estimates Based on Five-Yearly Benchmark Surveys: Currently, for the purpose of preparing annual Gross Domestic Product and State Domestic Product estimates on unorganised manufacturing and services sectors, various physical indicators of activity are used to extrapolate the benchmark estimates (for example, in the case of unregistered manufacturing, the Index of Industrial Production). However, it is essential to have a reliable set of proxy indicators and ensure that data are available on them on annual basis. The introduction of annual surveys on enterprises, stated in the above para, would generate the database required for extrapolating the benchmark estimates.

29. Local Bodies: There are a large number of local bodies in each State and since they get grants from the State budgets and also generate their own resources (for example, municipalities), it is necessary that their budgets/accounts are analysed and expenditures properly accounted for in the State Domestic Product/Gross Domestic Product estimates, as also under other expenditure categories of National Accounts. Currently the estimates of local bodies are prepared on the basis of grants shown in the State budgets, which implies that resources generated internally by these bodies are not covered. At the Central Statistical Organisation (CSO) level, it is not possible to analyse the annual budgets of these local bodies' and efforts have to be initiated only at the State level. Appropriate inclusion of local bodies' expenditures in the State accounts will reflect a correct picture of the public sector component.

30. Capital Formation, Capital Stock and Consumption of Fixed Capital: The State Directorate of Economics and Statistics should start compiling the estimates of Gross Fixed Capital Formation (GFCF), on the basis of the guidelines provided by the Central Statistical Organisation (CSO) from time to time. Once the States start compiling the GFCF estimates, a database on this could be developed, which in the long run, would be used for compiling the estimates of capital stock and CFC. State DESs should examine the guidelines in consultation with CSO for the compilation of capital formation, capital stock and CFC.

31. Appointment of Expert Groups: For developing the State accounts as recommended by the Regional Accounts Committee (RAC), it is necessary that an Expert Group is appointed in each of the States. These Expert Groups would oversee the methodological aspects of the compilation of State accounts and make suitable

recommendations to the State Governments and also the Advisory Committee on National Accounts, from time to time. The States of Karnataka and Rajasthan have recently constituted Expert Groups to look into various aspects relating to the improvement of estimates of SDP and expenditure aggregates. Such expert groups must be constituted by other States as well. At present, the CSO looks after these issues in consultation with the Advisory Committee on National Accounts in respect of both National and State Accounts.

32. Need for Resources: Improvement in the quality of SDP estimates and other aggregates requires the introduction of various surveys and the development of database, besides the availability of adequate trained personnel. All these require resources. Importance needs to be attached to State income estimates. Without providing adequate resources, it may not be feasible for the States to come up with improvements in the State income estimates. In most States, only a skeleton contingent of staff have been given the responsibility of compiling the SDP estimates, which barely manages to put together the annual estimates. The State Income Units in various States must be augmented with qualified personnel. This could be done by the DESs by re-deploying the staff appropriately.

33. District Domestic Product: There has been an increasing demand for the estimates of the District Domestic Product (DDP) below the State level in the context of calculating district level human development index (HDI). The Commission would like to point out that (a) the DDP estimates, wherever currently available, cover mostly major agricultural crops only or at best commodity producing sectors covering agriculture and industry because of problems of data availability at the district level; (b) that available DDP estimates are calculated by income-originating (by sector of origin) method; (c) that conceptually, for HDI, what are needed are DDP estimates by the income accruing method in order to reflect district-level living standards; and (d) that currently available data do not permit calculation of DDP by the income-accruing method. It would be desirable to develop some appropriate indicators of the living standards at the village/block/district level. Techniques of small area statistics may be used to estimate these indicators on the basis of State/regional level statistics capabilities.

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Extended Production Boundary (*Para 13.8.6*)

34. For covering the production of goods within households for own consumption, the NSS consumer expenditure surveys need to account for these separately. Production of services by the households for their own consumption is not to be covered in the GDP estimates. However, output of services produced with the help of domestic servants, who are members of households need to be accounted in the GDP estimates. This might be quite difficult to capture separately in the present statistical system. The valuation of such services may be imputed on the basis of the value of output of domestic servants, who are Own-account enterprises in their own right.

35. Regarding concealed and underground production, many activities are covered implicitly, through the various approaches followed in the estimation of GDP. For example, in the case of agriculture, illegal crops are implicitly covered under the miscellaneous category "area under other crops"; in the case of firewood, the production estimates are made through consumption approach; in the case of construction, through commodity flow approach; and in the case of unorganised sectors, through the employment approach. The indirect approach of estimation

currently followed should be continued, as direct survey of concealed and underground production is not possible.

Saving and Capital Formation (*Para 13.8.12*)

36. Type studies should be conducted on extended asset boundary to capture the necessary data like Cost of transfer of capital assets from one unit to the other unit; copyrights/patents, film originals, books and artistic originals; Defence expenditure on capital assets like vehicles, construction of buildings for office, hospitals, schools, roads, airfields, etc. which could be used for civilian purposes; Expenditure on purchase of software, databases, etc; and, information on valuables like: precious metals (non monetary gold if used as store of value) and stones, antiques and other art objects.
37. UN-SNA 1993 recommends that trees, which are repeatedly used to produce valuable goods, are to be taken as cultivated assets. It is recommended that the item, trees which are used repeatedly or continuously to produce product, such as fruits and rubber, be treated as capital formation.
38. The originals of films/books/research/artistic work, identified by copy rights/patents, need to be taken as a part of capital formation. The research and development expenditure should not be capitalised, when research succeeds, it results in new copy rights/patents which in turn get included in capital assets.
39. Defence expenditure on capital equipment such as radar, satellite launching system and vehicles, construction of buildings for offices, hospitals and schools, etc. and other construction works like roads, air fields, docks which are useable for civilian purposes, should be considered as part of gross capital formation as per UN-SNA1993.

Institutional Sector Accounts, and Sequence of Accounts (*Para 13.8.13*)

40. Efforts should be made to develop suitable frames for non-financial corporations, households and non-profit institutions serving households and collect information on regular basis on their income and expenditures.
41. With regard to extended production and asset boundaries, as and when new estimates are introduced for extended production and extended assets (in relation to the existing boundaries in UN-SNA 1968), they be indicated in separate rows and not merged with the estimates in order to maintain UN-SNA1968 consistent boundaries, so as to maintain inter-temporal comparability of National Accounts aggregates.

INDIAN STATISTICAL SYSTEM

Central Statistical Organisation

Coordinating Role of Central Statistical Organisation (*Para 14.2.15*)

1. The post of Director General (DG), Central Statistical Organisation (CSO), should be immediately filled up.
2. The practice of organising the Conference of Central and State Statistical Organisations once in two years should be revived.
3. A unit in the Central Statistical Organisation should be created for proper documentation of various papers connected with the meetings of the various technical committees. The Central Statistical Organisation should publish periodically technical monographs on different subjects piecing together recommendations relating to various issues.

4. The Central Statistical Organisation, as a coordinating agency, should maintain a pool of eminent experts in different subject areas. This would be useful for getting comments on various statistical matters quickly and also for constituting various committees and working groups on technical matters.
5. The Central Statistical Organisation should acquire membership of the important national as well as international statistical associations and institutions and participate in the conferences arranged by them so as to develop expertise in the field of official statistics.
6. In order to gain exposure to the methodologies adopted by other countries for compiling official statistics, arrangement should be made to get publications, journals and related documents brought out by the US Bureau of Census, Statistics Canada, Australian Bureau of Statistics, etc.

Economic Census and Follow-up Enterprise Surveys (*Para 14.2.25*)

7. In future the operation of Economic Census should be part of house-listing operations of the decennial Population Census. For this purpose, the census Enumeration Blocks and Urban Frame Survey blocks have to be linked in a manner such that each Urban Frame Survey block is made up of a number of complete census Enumeration Blocks. Since this involves close cooperation between the Ministry of Statistics and Programme Implementation and the Office of the Registrar General and Census Commissioner, the issue should be taken up immediately. If for this purpose, changes are required in the Census Act, they should be made.
8. Proper remedial measures should be taken to improve the quality of data in the Follow-up Enterprise Surveys as the existing sampling design and method of data collection have failed to provide satisfactory data. The responsibility of designing all the Follow-up Enterprise Surveys should rest with the National Sample Survey Organisation.

Business Register (*Paras 14. 2. 26 to 14. 2. 28*)

9. The Commission recognised the need for conducting a Survey of Non-Manufacturing Industries (SNMI) covering "bigger" units, other than those in the public sector. The "smaller" units are to be covered through Follow-up Enterprise Surveys of the economic census. To facilitate the SNMI, it is necessary to develop a list of such units for being used as the frame for sampling. The Commission feels that a beginning in this direction could be made by combining together available lists of such units – like the frame of the Fourth Economic Census, Annual Survey of Industries frame, lists maintained by the Department of Company Affairs, Development Commissioner of Small Scale Industries, Municipalities and Sales Tax Departments of State and Union Territory Governments, various Associations or Chambers of Commerce, etc. The list so developed should contain in addition to identification details of the units, other relevant items of information to make it a so-called Business Register.
10. The methodology for combining the lists, criterion for "bigness", items of information to be included, procedure for updating the list are all complex issues, which should be left to a technical group for examination. To what extent this work can be done with the involvement of State Governments and local agencies should also be examined in consultation with the State Directorates of Economics and Statistics.
11. An approach indicated in the paper (see Annexe 14.1 in Volume II), prepared by the NSC Secretariat, could be used as a starting point by the technical group. The

Commission would however like to emphasise that after the project has been formulated, it should be implemented in phases starting with a pilot phase.

National Sample Survey Organisation

Functioning of National Sample Survey Organisation (Organisational Aspect)

(*Para 14.2.61*)

12. All activities of the National Sample Survey Organisation, presently excluded from the scope of the National Sample Survey Organisation Governing Council, such as Annual Survey of Industries, Price Collection, or Agricultural Statistics, should be brought within the scope of the Governing Council.
13. Highest priority should be given to develop specialised skills in the methodology of large-scale sample surveys.
14. The National Sample Survey Organisation through the Government of India should become an institutional member of the International Association of Survey Statisticians.
15. The nature of the departmental journal *Sarvekshana* should be changed to make it a medium of publication of technical papers based on NSS data or related to survey practice.
16. E-mail facilities should be made available to all offices of the National Sample Survey Organisation and video discussion facilities between pairs of important offices.
17. Steps should be taken to re-distribute total available resources, particularly investigators, among the States and Union Territories on a rational basis.
18. The practice of field visits by officers of the Survey Design and Research Division, Field Operations Division, and Data Processing Division followed up by interactive feedback sessions should be restored.
19. Planning for any survey should start well in advance so that necessary requirements could be completed in time.

Functioning of National Sample Survey Organisation (Methodological Issues)

(*Para 14.2.62*)

20. A Methodological Study Unit should be set up in the National Sample Survey Organisation to regularly undertake studies for bringing in improvements in the survey methodologies. The unit should be equipped with library and computer facilities. The requisite number of field and data processing staff should be transferred to this unit. Some topics which can be taken up urgently are listed below:
    (a) Pilot studies on the effectiveness of intensive stratification and one-by-one sampling in place of systematic sampling.
    (b) Theoretical and empirical studies on the use of time series data and information from sources outside the current survey, and to borrow strength from them to improve the precision of estimates through the technique of small area estimation.
    (c) Exploring use of the rotational sampling design for selection of first stage units for repetitive surveys to make comparisons over time more precise and cut down the cost of listing of first stage units.
    (d) Developing suitable procedures for data collection pertaining to the trade and services sectors to get better estimates of value added.

(e) Reconciliation of divergence between data from different sources and assessment of their quality.

(f) Ascertaining reasons as to why aggregates are usually underestimated in NSS while there is no such problem with averages and ratios.

(g) Examining the feasibility of reducing the size of schedules canvassed by the NSS without affecting quality.

(h) Extracting useful information from the listing schedule.

Functioning of National Sample Survey Organisation (Survey Programme)

(*Para 14.2.63*)

21. The present practice of covering various subjects with the existing periodicity should be continued. All the Follow-up Enterprise Surveys of Economic Census currently undertaken should be the responsibility of the National Sample Survey Organisation. A ten-year programme indicating the subject coverage should be prepared and released in advance for the benefit of the users.

22. There should be flexible arrangements for the inclusion of a few selected items of topical interest to the Government as an additional feature in the normal NSS programme.

23. The National Sample Survey Organisation should undertake, along with its normal programme, very short duration (monthly) surveys, each devoted to one topic of interest to any Government of India Ministry, and produce results in a short period. After trying this on a modest basis, if the experiment shows that the users appreciate the scheme of such supplementary surveys, the scheme should be incorporated on a permanent basis and the necessary additional resources provided to the National Sample Survey Organisation.

Functioning of National Sample Survey Organisation (Publicity Campaigns and Dissemination of Data) (*Para 14.2.64*)

24. The commencement of a new survey and the main results of a concluded survey should be widely publicised through newspapers, magazines, radio and TV. Regular publicity campaigns should be arranged by the Government to apprise the respondents of the role played by the National Sample Survey in meeting the data requirements.

25. The National Sample Survey Organisation should identify two or three important characteristics in every round for quick release.

26. All publications of survey results of the National Sample Survey Organisation should contain an assessment of the associated errors.

27. The National Sample Survey Organisation should play an important role in apprising the Government, as early as feasible, of the changes taking place in the structure of the society, with respect to some of the important variables for which data are collected every year, like literacy level, employment-unemployment situation, sex ratio, consumption pattern, etc.

28. For providing an idea of the soundness of the estimates, the marginal totals of the number of reporting units should be indicated in the tables of the National Sample Survey reports for important survey characteristics.

Computer Centre (*Para 14.2.72*)

29. The Government has already decided to reorganise the Computer Centre as the Data Storage and Dissemination Office (DSDO) to act as the central repository of various

data collected by the Government. It should be built by making use of modern data warehousing technology. A high-level technical group should be constituted immediately to work out the plan and a budget for setting up and maintaining the DSDO. As this is likely to take some time to be fully operational, the present Computer Centre should continue to take up data processing jobs for the proposed NSO.

Role of the Private Sector in Statistics (*Para 14.2.76*)

30. Since the issue relating to data collection by private agencies is complex and important, the Commission recommends that the proposed National Commission on Statistics would formulate the necessary guidelines in this respect from time to time. Till then a committee of Central and State statisticians and experts outside the Government should go into all aspects of the question, before any data collection work is outsourced by any Government agency in India.

Modernisation Project (*Para 14.3.20*)

31. It is understood that the project is under review by the Ministry of Statistics and Programme Implementation. While reviewing and reformulating it, the Ministry of Statistics and Programme Implementation should consider the recommendations made by this Commission on the various subjects and the components of the project may be modified accordingly, if necessary. For this, the project will have to shift its focus from expansion of sample surveys to improvement of the systemic issues of the administrative statistical system. Modernisation may be considered as a means for that purpose. It should also keep in view the essentially decentralised character of the Indian statistical system and ensure that the States' statistical systems are interwoven in the project architecture.

Bringing all Technical-cum-supervisory Positions under Indian Statistical Service (*Paras 14.3.21 & 14.3.22*)

32. Statistical units of Central Ministries and Departments can be grouped into three main types:

    (a) Those headed by ISS officers;

    (b) Those headed by officers from other organised services;

    (c) Those headed by officers not belonging to any organised service.

33. With an organised Indian Statistical Service (ISS) in place, the continued existence of ministries and departments of types (b) and (c) above is a serious anomaly. It appears to be a historical legacy of the birth of the ISS from voluntary offering of posts by different ministries and departments. To bring about uniformity in management and strengthen coordination, the Commission recommends that all technical-cum-supervisory statistical positions in the Central Government should be brought under the umbrella of the ISS. However, this does not preclude Government from appointing in a few senior positions, professional statisticians with proven capability on an appropriate arrangement.

Filling up of Vacancies (*Para 14.3.23*)

34. The Commission notes that a number of positions at the highest and middle levels of the hierarchy in the ISS have remained vacant for long periods. For the sake of proper functioning of the statistical system, these positions must be filled up immediately.

Implementation of above Recommendations (*Para 14. 3. 24*)

35. The Commission is of the view that for correcting the systemic problems of the Indian statistical system, it is necessary to revamp and restructure the statistical system, starting from the top, by laying down a firm and lasting foundation for the Indian statistical system. Implementation of the above recommendations should proceed immediately and independently of the creation of the National Commission on Statistics. The existing institutions of National Advisory Board on Statistics (NABS), Governing Council of National Sample Survey Organisation, Advisory committee on National Accounts Statistics and other technical Committees and institutional arrangements should also continue till the National Commission on Statistics is created.

RESTRUCTURING THE INDIAN STATISTICAL SYSTEM

National Commission on Statistics (*Paras 14.5.1 to 14.5.6*)

36. The creation of a permanent and statutory National Commission on Statistics (NCS) is envisaged as a pre-requisite for improving the System. This is more or less on the lines of the UK except that the Indian NCS would have more authority in certain respects to cope with the federal structure of the Indian polity.

37. The Commission recommends creation of a permanent and statutory apex body – the National Commission on Statistics – independent of the Government and responsible to the Parliament in respect of policy making, coordination and certification of quality of Core Statistics.

38. The National Commission on Statistics should be entrusted with functions broadly categorised as follows so as to:

    (a) Serve as a nodal and empowered body for all core statistical activities of the country.

    (b) Evolve, monitor and enforce statistical priorities and standards.

    (c) Ensure strong co-ordination through a closer linkage between statistical programming and budgeting.

39. The National Commission on Statistics will be constituted through an Act of Parliament. It will determine the areas of official statistics that are to be considered as core or critical to the functioning of the economy and accordingly prioritise the statistical activities of national statistical system. The statistics defined under critical areas could be called Core Statistics. The Core Statistics will have the following characteristics:

    (a) They should be of national importance;

    (b) It will be mandatory for the Governments at all levels to collect and disseminate them;

    (c) They should conform to prescribed definitions, concepts and standards laid down by the Commission;

    (d) They should be updated periodically, with suitable periodicity to be determined; and

    (e) They will be available at both aggregate and disaggregate levels, wherever appropriate.

40. The Core Statistics will be identified and accessed from all critical areas of the economy including agriculture, socio-economic sector, demographic, industrial, labour and employment, finance. The National Commission on Statistics will ensure

that the production of statistics and their release are free from Government influence, by designating appropriate statistical institutions or functionaries to be solely and independently responsible for these functions. In designating the statistical institutions or functionaries for the collection and release of Core Statistics on different subjects, the National Commission on Statistics will adhere to the distribution of subjects in the Union, State, and Concurrent Lists of the Constitution of India. Though the compilation and release of statistics will be the sole responsibility of the agency concerned, the National Commission on Statistics will exercise a statistical audit over the statistical activities to ensure quality and integrity of the statistical products. The Act would empower the National Commission on Statistics to make it binding on all agencies responsible for the Core Statistics to comply with the directives of the National Commission on Statistics. The National Commission on Statistics would be required to submit its Report annually to Parliament regarding its own functioning, and that of other statistical agencies and about the statistical situation in the country.

41. The directive principle for the National Commission on Statistics will be that it shall work within the framework of a decentralised national statistical system, both laterally among Central Ministries and vertically among the State Governments. In this context, it would be pertinent to mention that the national-level statistics, in most cases, will be merely State-level aggregation of statistics. Particularly, its orientation shall be that:

(a) National statistics would mean entire set of statistics collected officially from administrative returns or through sample surveys.

(b) Statistics at the all-India level are an aggregation of State-level statistics in most cases.

(c) In advising on the collection of Core Statistics, the National Commission on Statistics would keep in view the optimum use of national resources, in context of essentially decentralised character of statistical system. The national resources mean the resources of both Central and State governments together.

(d) Further, the proposed system shall provide a direct approach by the States to the National Commission on Statistics on any statistical issue, and

(e) The States shall have the opportunity to bring directly to the notice of the National Commission on Statistics, their reservation on any policy decisions taken by the Commission and to request for its consideration.

Mission Statement (*Para 14.5.7*)

42. The Mission Statement of the Indian statistical system shall be *to provide, within the decentralised structure of the system, reliable, timely and credible social and economic statistics, to assist decision-making within and outside the Government, stimulate research and promote informed debate relating to conditions affecting people's life.*

Functions of the National Commission on Statistics (*Para 14.5.8*)

43. Within the framework of the decentralised system, the functions of the National Commission on Statistics would be to:

(a) Evolve and arrange to monitor the nation-wide strategies on Core Statistics: updating the list of Core Statistics; framing and monitoring the advance release calendar; dissemination of data;

(b) Evolve and arrange to monitor the nation-wide strategies on: Human Resource Development for Official Statistics; Information Technology and Communication needs of the Statistical System;

(c) Improve Public Trust in Statistics by: increasing and promoting public awareness of Official Statistics; monitoring and ensuring reduction of respondent burden; arranging interaction with data users;

(d) Function as Apex Authority on Statistical Co-ordination: between Central Ministries, Departments and other Central agencies; between Central and State Governments;

(e) Ensure Quality Assurance of Statistical Processes: evolve and enforce appropriate statistical standards; declare quality with statistical releases; audit statistical activities; determine modality of the release of data;

(f) Constitute Technical Committees or Working Groups to assist the National Commission on Statistics in performing various functions;

(g) Assess legislative requirements periodically.

Constitution of the National Commission on Statistics (*Paras 14.5.9 to 14.5.*11)

44. The National Commission on Statistics will have a Chairman and four Expert Members. Since the National Commission on Statistics would be primarily a policy-making body working through a number of technical committees and should not be involved in routine administration, given the function of the National Commission on Statistics and the time that the Chairman and members are expected to devote to them, the Chairman and the members should be appointed on a part-time basis. The tenure of both would be 3 years. For administrative purposes, the status of the members should be at least that of Secretary to the Government of India. The Chairman and members will be eminent statisticians or social scientists and represent the following indicative areas of specialisation:

(a) Agriculture and allied areas including, Meteorology and Environment;

(b) Industry, Trade, Finance, National Accounts and Infrastructure;

(c) Population, Health, Education, Level of Living, Labour, Employment and other Socio-economic Sectors;

(d) Survey Design, Analysis and Statistical Modelling;

(e) Statistical Information System and Information Technology;

(f) State Statistical Systems.

45. The National Commission on Statistics would be assisted by technical committees in the following illustrative list of subject areas:

(a) Agricultural Statistics

(b) Industrial Statistics

(c) Price Statistics

(d) Trade statistics

(e) Social Statistics

(f) Infrastructure Statistics

(g) National Accounts Statistics

(h) Large-scale Sample Surveys

(i) Information Technology.

46. For budgetary purposes, the National Commission on Statistics would be in the Ministry of Statistics. The Secretary of the National Commission on Statistics would be the head of the National Statistical Organisation (NSO) described below. He will be called the National Statistician and would also be the Secretary to the National Commission on Statistics. He will have the rank of a Secretary to the Government of India. To assist him in the responsibilities, a core secretariat should be established in the National Commission on Statistics. The post of National Statistician will not be reserved for any organised service of the Government of India. Recruitment will be made by open selection from among professional statisticians with long technical and managerial experience in large statistical organisations.

National Statistical Organisation (*Para 14.5.12*)

47. The National Commission on Statistics will operate through the National Statistical Organisation (NSO), which will be the official agency to implement policy decisions of the National Commission on Statistics. The NSO will function as the single full-fledged Department of the Ministry of Statistics of the Central Government headed by the National Statistician, who would be the Secretary of the Department. Essentially, the NSO would be the restructured form of the present Statistics Wing of the Ministry of Statistics and Programme Implementation. The National Statistician, will be its technical and administrative Head. The National Statistician, would broadly be responsible for the following activities:

(a) To provide leadership to statistical activities by promoting coordination with components of the national statistical system, particularly with the State Directorates of Economics and Statistics;

(b) Assist in evolving and implementing the National Statistical Strategy;

(c) Assist the National Commission on Statistics to decide and reallocate statistical priorities;

(d) Promote reliability and integrity of statistics;

(e) Formulate and implement plan scheme in statistics (as ex-officio Adviser, Statistics to the Planning Commission).

Functions of the National Statistical Organisation (*Para 14.5.13*)

48. The envisaged functions of the National Statistical Organisation are enumerated below:

(a) Implement and maintain statistical standards and coordinate statistical activities of Central and State agencies as laid down by the National Commission on Statistics;

(b) Compile National Accounts according to the latest international standards at regular periodic intervals;

(c) Collect or arrange to collect Core Statistics, which have not been collected so far;

(d) Participate in regional, national, and international statistical forums and meetings;

(e) Carry out methodological research and studies;

(f) Publish Core Statistics at regular intervals together with critical analysis regarding the quality of data and implication of the use of data in policy making and administration;

(g) Arrange in-service training course for statistical personnel, in cooperation with universities and research institutes;

(h) Maintain a "warehouse" for Core Statistics, for dissemination amongst all users in the public and private sectors inside and outside the country and serve as the sole provider of information to foreign Governments, international bodies and United Nations agencies.

Proposed Structure of the National Statistical Organisation (*Para 14.5.14*)

49. The NSO will comprise the following four Offices. The present rank and status of the heads of the first three Offices, which now form the Statistics Wing of the MoS&PI, should be maintained.

(a) Central Statistical Office (CSO), to replace the present Central Statistical Organisation;

(b) National Sample Survey Office (NSSO), to replace the present National Sample Survey Organisation;

(c) Data Storage and Dissemination Office (DSDO), to replace the present Computer Centre;

(d) Consultancy Wing (CW), new.

These will be divided into a suitable number of Divisions.

Central Statistical Office (*Para 14.5.15*)

50. The Central Statistical Office will comprise the following Divisions with functions given below the names:

(a) Coordination, Standards and Administration Division

- Formulation and maintenance of statistical standards in coordination with statistical agencies inside and outside the country;
- General Administration and Budget.

(b) Human Resource Development Division

- Cadre Management – to maintain job and personnel database, arrange cadre review, filling up vacancies, transfer and posting;
- Assessing training needs, arrange training programmes.

(c) National Accounts Division

- Compilation of National Accounts, Comparable State Domestic Product, Input Output Transaction Table, Capital formation, etc.

(d) Economic Statistics Division

- Expanded form of the present Industrial Statistics Division to be responsible for Annual Survey of Industries (ASI), Index of Industrial Production, Economic Census, Business Register, etc.

(e) Social Statistics Division

- Social Sector Statistics, Environment Statistics, Index Number of Prices and Cost of Living, etc.

(f) Research and Publications Division

- Methodological Research on applicable theoretical innovations, Empirical research based on statistics collected in different subject areas, Reconciliation of the data generated from different source agencies, Publication of occasional research papers.

National Sample Survey Office (*Para 14.5.16*)

51. The National Sample Survey Office will comprise the same four Divisions with more or less the same functions as those of the present NSSO.

(a) Survey Design and Research Division (SDRD)

- Plan and design sample surveys conducted by the National Statistical Organisation;
- Develop and maintain suitable frames for sample surveys;
- Prepare instructions, validation and tabulation programmes, report generation, etc. for the surveys;
- Undertake studies in survey design and quality aspects of surveys;
- Assess sampling and non-sampling error of survey data.

(b) Field Operations Division (FOD)

- Undertake fieldwork for surveys of the National Statistical Organisation;
- Explore improvements in data collection methodology jointly with SDRD.

(c) Data Processing Division (DPD)

- Transcribe, clean and tabulate survey data;
- Develop related software.

(d) Coordination and Publication Division (CPD)

- Monitor survey activities;
- Publish survey reports and the journal, *Sarvekshana*.

Data Storage and Dissemination Office (*Para 14.5.17*)

52. The Data Storage and Dissemination Office (DSDO), with no break-up into Divisions, would perform the following functions:

- Acquire from different sources Core Statistics, organise, store and disseminate them on electronic media and serve as a data warehouse;
- Train data users;
- Use excess capacity for data processing.

Consultancy Wing (*Paras 14.5.18 to 14.5.20*)

53. The Consultancy Wing (CW) would cater to the increasing demand for professional statistical services, especially within the Government. The Consultancy Wing will aim to cater to the increasing demand for investigations and studies of a statistical nature and provide related professional statistical services that cannot be accommodated in the existing arrangements within the Government. This Wing would essentially function as an autonomous body and aim to be the commercial wing for professional statistical activities. In its nascent stage it will be nurtured by the National Statistical Organisation, before it hives off as an independent corporate entity outside the Government.

54. To start with, it may undertake projects from governmental and international agencies regarding data collection, processing, analysis and report generation through sample surveys or other means on topics assigned to it. It could also take-up consultancy services relating to statistical problems including methodological studies and model building. It would carry out detailed analytical reporting, consultancy (both national and international) and compete in the consultancy market on commercial terms. Some of the activities include methodological studies,

surveys, macro-econometric modelling and forecasting and consultancy to the State Governments. It will adhere to the appropriate statistical standards and methodology. The Consultancy Wing would be free to hire skilled personnel for project-specific work including officers of the ISS on deputation.

55. This being a new activity, the Commission recommends that the organisational structure for it should evolve along with the growth of its activities.

Improvement of Lateral Coordination at the Centre through Statistical Advisers (*Para 14.5.21*)

56. At present there is no institutional mechanism through which the MoS&PI can effectively coordinate with different ministries at the Centre in statistical matters. The Commission is of the view that heads of the statistical divisions in the ministries and departments should be responsible for the professional integrity in the statistical activities of their departments and improvement of these activities. In discharging their responsibility, they will work closely with the National Statistician as the head of the national statistical system. They will be responsible to the National Statistician for the professional quality of their work. They will collaborate with the National Statistician in their professional responsibilities while remaining in the administrative organisation of their ministries or departments. The heads of the statistical divisions, to be designated as Statistical Advisers, would thus have dual responsibilities – assisting the concerned ministry in matters of statistics and coordinating with the National Statistician in respect of maintenance of quality standards as laid down by the National Commission on Statistics. Considering the high level of responsibility of their posts, the Commission recommends that the Statistical Advisers in the major ministries or departments, such as Agriculture, Industry, Commerce, Finance, Health, Water Resources, etc. would be of rank one step below the National Statistician, while in other ministries and departments, the Statistical Advisers should be of a sufficiently high rank (see Annexe 14.9 in Volume II). The Statistical Adviser would:

(a) Be designated as the 'Nodal Officer' with regard to all statistical matters pertaining to the ministry or department;

(b) Assist the Secretary of the administrative ministry or department in all statistical matters;

(c) Be associated closely with the National Statistician in implementing the guidelines outlined by the National Commission on Statistics;

(d) Coordinate flow of information to and from the National Statistical Organisation.

Improvement of Coordination with the States by Empowering the State Directorate of Economics and Statistics (*Paras 14.5.24 to 14.5.27*)

57. The Directorates of Economics and Statistics should be formally entrusted with the responsibility for a periodic review of the content, methodology and output of the statistics of all State Departments and to make suggestions for the further improvement of these statistics. The Conference of Central and State Statisticians should be held regularly. A similar forum for a meeting of State Departmental Statisticians should be created by the State Governments to review the performance of the statistical system of each State. The report of the review and the suggestions may be forwarded by the Directorates of Economics and Statistics to NSO and by the departments to the corresponding ministries, for action at the Centre.

58. The enhanced role of the Directorate of Economics and Statistics, and the wider technical discussion of the State's Statistics will help State Governments take a holistic view of the State's Statistical system to enhance its utility to the State Governments and indirectly to achieve the same result at the Centre.
59. A Centrally-sponsored scheme for strengthening the statistical system in the States should be drawn up immediately for inclusion in the Tenth Five Year Plan, with the specific objectives of developing a survey and data-processing capability in the States.
60. The earlier mechanism of setting up working groups in the Central Statistical Organisation to formulate the plan schemes in statistics at the all-India and State levels should be revived immediately for the Tenth Five Year Plan.

The States' Statistical Systems (*Para 14.6.34*)

61. The breakdown of the Administrative Statistical System needs the immediate attention of the highest authorities of State Governments. They are urged to take steps to reduce the burden of the additional work given to lowest-level government functionaries such as *patwaris* and primary teachers so that they can effectively carry out the statistical functions assigned to them.
62. The authorities should also instruct the offices implementing different Acts and Rules to be vigilant that all relevant units file with them regularly the statutory statistical returns required by the Acts and Rules, and take necessary action under the Acts against the defaulting units.
63. The State Directorates of Economics and Statistics (DESs) should develop capabilities to tabulate data on demand and to analyse data from different sources. For this they should organise all the data that the State's statistical system possesses in an appropriate manner.
64. The State Governments should accord priority to computerisation of administrative offices that generate administrative statistics.
65. The Directorate of Economics and Statistics should fully exploit the potential of their participation in the National Sample Survey programme by using the survey data as a data-bank and by utilising the survey mechanism for *ad hoc* collection of additional simple data required by the Government.
66. The State Governments should support the Directorate of Economics and Statistics in the creation of sample survey capabilities by creating sample survey divisions in them.
67. The State Governments should make the necessary resources available to the Directorate of Economics and Statistics for computerisation and development of necessary software to make the Directorate of Economics and Statistics self sufficient in this respect. This will help them to undertake tabulation of NSS data, which they are collecting in their matching samples.
68. The Directorate of Economics and Statistics should develop the necessary analytical capabilities to carry out data-analysis relevant to the problems of decision-making of the Government.
69. For strengthening the effectiveness of the statistical system of the Government, the State Governments should create a separate Department of Statistics by elevating the existing Directorate of Economics and Statistics to the level of a Department and the Director of the existing Directorate of Economics and Statistics to the level of Secretary to the Government. The Department of Statistics should have complete freedom in statistical work. The head of the Department of Statistics should be a professional statistician or a professional economist with experience in large-scale data collection and empirical analysis of data.

70. The State Governments should closely involve the Director of Directorate of Economics and Statistics in its decision-making processes by making him a member of or an invitee to committees and groups dealing with plans and programmes in substantive fields.
71. The State Governments should strengthen the role of the Directorates of Economics and Statistics as coordinators of their statistical activities by empowering them to take a technical review of the statistical activities of all departments every year. The Directorates of Economics and Statistics should also be asked to make a report to the Government of its comments on and suggestions for these activities. The Directorates of Economics and Statistics should also be authorised to convene a biennial conference to review the State statistical system and its activities.
72. The State Governments should take steps to create a common statistical cadre and State Statistical Service for manning statistical posts in all departments.
73. The heads of the departments of the State Governments should closely involve their departmental statisticians in their decision-making process. To give institutional support to their role, the departmental statisticians should be placed directly under the head of the department.
74. In view of the renewed importance of the Block Statistical Organisation in the context of local area planning, the State Governments should bring it directly within the fold of the States' Statistical System by either transferring the organisation to their Directorates of Economics and Statistics, or by making it responsible for its statistical work to the Directorate and bringing it under the Directorate's technical supervision through the district statistical organisation.
75. The State Governments may consider setting up commissions or committees to advise them on the manner of implementation of these recommendations and on other issues relating to States' statistical system.

Information Technology in the Indian Statistical System (*Para 14.7.31*)

76. The Government must develop and nurture expertise and skills in various areas of specialisation – statistical software being one of the most important amongst them. Training and transfer policies must be framed accordingly. Transferring specialist officials to positions, in which their specialised knowledge is of no use, is a waste. A software group consisting of systematically trained officers in Information Technology tools should be set up in the National Statistical Office, to meet all software requirements of the National Statistical Organisation. When in-house expertise and resources are not available, data processing or software development projects could be given to agencies of proven competence.
77. The area of application of computers should be widened to cover statistical modelling, forecasting, simulation, and other sophisticated "applicable" theoretical methods.
78. It is essential to establish strong communication links between:
    - The National Statistical Organisation (NSO) and all its subordinate offices;
    - The National Statistical Organisation and all Central Ministries with substantial statistical output;
    - The National Statistical Organisation and all State Directorates of Economics and Statistics (DESs);
    - The National Sample Survey Office and its Survey Design and Research Division, Data Processing Division, Field Operation Division and Coordination and Publication Division;

- Headquarters of Data Processing Division, Field Operation Division and their respective subordinate offices;
- State Directorate of Economic and Statistics and statistics divisions of the departments.

79. These offices should be networked through one or more Internet Service Providers, and/or one or more Virtual Private Network. A dedicated computer network is neither necessary nor desirable and would not at all be cost effective.
80. Urgent steps must be taken to strengthen computer hardware and software systems in the State DESs.
81. To cut down travel expenses and waste of time, it would be more economic and convenient to go in for video conferencing facilities, which are comparatively inexpensive when held between a pair of participants.
82. Before investing in expensive sophisticated equipment, a feasibility study including cost-benefit analysis must be carried out. When the equipment are to be used by primary workers under field conditions, as in the case of palmtop or laptop computers, practical difficulties of maintenance, repair, local availability of consumables and the procedural problems of handing over expensive government property to primary workers should be carefully examined.
83. Specifically in respect of palmtop and laptop computers, the Commission is of the view that these are not needed for collection of data in large-scale sample surveys at present except when information content is small. The large number of palmtop computers already purchased, if they are still serviceable, should be used in surveys with small information content – price data collection for example.
84. However, methodological studies on Computer Aided Interviews, as a collaborative venture of survey practitioners, software specialists, subject-matter specialists and psychologists is strongly recommended. The first attempt should be to reduce the questionnaire to a reasonable size, which can be honestly answered in less than one hour. The question of development of appropriate software is of second priority. It should be emphasised that software for laptop computers can very well be developed on Personnel Computer's and no investment on laptop computers would be necessary for this methodological study.
85. For mobile applications, a few laptops should be available in each large statistical office.
86. In the Annual Survey of Industries or in the envisaged survey of non-manufacturing industries, attempts should be made to collect information on electronic media from enterprises, which use computers for accounting purposes.
87. The existing practice of publishing survey results in the form of multiple cross-classified tables with, in many cases, a large number of empty cells, should be stopped. Only readable reports, with simple tables and their interpretation, should be published. For experts and professionals, the results and unit-level data should be made available in an electronic medium like a Compact or Floppy Disk. Survey results and other important statistical information should be put on the website of the National Statistical Organisation.
88. There should be regular computer training programme for statistical personnel at all levels.
89. The Commission has noted with serious concern that there are occasions when the unit level data as well as summary tables computed from them, both disseminated under the National Policy on Data Dissemination, do not match. In order to establish its credibility, the Government should investigate the reasons for the discrepancies

and assign institutional responsibility for the failure. A case of immediate concern is the data and results of Annual Survey of Industries 1995-96.

90. A Standing Technical Committee on Information Technology should be set up in the proposed National Commission on Statistics, to lay down policies and review their implementation.

91. A website of all classification, concordance tables along with online database query system should be developed for public use. This system should help the user in identifying a code on the basis of part description or key words.

Legal Provisions for the Statistical System

Need for Broader Legislation (*Para 14.8.9*)

92. In the following paragraphs, legislative requirements for the three sets of Acts are discussed separately. Whether these could be incorporated into a single Act is a matter for legal experts to decide.

Legislation in respect of proposed National Commission on Statistics

(*Paras 14.8.10 to 14.8.12*)

93. This being a new arrangement, various aspects of the Commission's functioning, its relationship with different official agencies, other institutions, etc. as also the necessary mechanisms required for its effective functioning, have to be examined in detail and appropriate legislation thereof has to be put in place. However, to ensure that the legislation is actually effective in practice and fulfils its objectives it would be desirable, not to draft it in advance but to let it be evolved by the proposed Commission itself, taking into account the ground realities, the emerging requirements, etc. when it starts to function. It is therefore suggested that the National Commission on Statistics be established as early as possible (within six months) with a modicum of authority, through a Government Order. Thereafter, in consultation with the Law Ministry and other appropriate agencies and in the light of its own operational experience, the National Commission on Statistics could evolve within a short period the appropriate legislation. This is in fact the procedure adopted by the National Statistics Commission of the United Kingdom, which came into being on 7th June 2000 by a Government Act. The United Kingdom Commission is still working on the legislation to define its status.

94. The proposed National Commission on Statistics, which is envisaged to be a high-level nodal body accountable to the Parliament and having a policy-making, standard-setting and coordinating role for the statistical system, has to be empowered for the crucial role of framing legislation.

95. Legislation for the proposed National Commission on Statistics should *inter alia* address the following important issues:

(a) Constitution

(b) Status, powers and functions

(c) Terms and conditions of service of Chairman and Members of National Commission on Statistics,

- Procedure for Appointment and Termination,
- Powers of Chairman and Members.

(d) Modalities of functioning of National Commission on Statistics;

- Obligation to Parliament;

- Relationship with National Statistician, National Statistical Office, Central and State Ministries and Statistical agencies/institutions;
- Meetings of the Commission;
- Constitution of expert technical committees in different branches of Statistics;
- Provision for hiring Technical Consultant;
- Mechanism of interacting with the User and Producer of Statistics.

(e) Mandate of National Commission on Statistics on Core Statistics

- Defining the scope of Core Statistics;
- Periodicity and procedure for collection of Core Statistics;
- Delegation of powers to Central and State Ministries and other Statistical offices for collection of Core Statistics;

(f) Budget, Accounts and Audit;

- Implementation aspects of Statistics Act;
- Provision for obligatory transparency in the work of Commission.

Legal Provision for Collection of Statistics (*Paras 14.8.13 to 14.8.15*)

96. Necessary legal provisions should be made, either by expanding the scope of the present Collection of Statistics Act (1953) or by passing new Act or Acts to:

(a) Cover any topic under "Core Statistics", as defined by the proposed National Commission on Statistics;

(b) Make it obligatory on the part of individuals, or enterprises, or State and private agencies to provide the information sought for any survey under the aegis of the National Commission on Statistics;

(c) Provide right of access to records, including the record of Government agencies for statistical purposes;

(d) Ensure the informant's right to privacy by making it illegal to publish the identity of the informant, or by requiring him to furnish sensitive information;

(e) Provide penalties for informants, for their refusal to supply, or for willfully supplying wrong information;

(f) Make it a penal offence for a statistical officer authorised to collect, process, or disseminate information collected from any survey under the Act, to willfully distort or manipulate the data.

97. Though Clauses 3(a), (b) and (c) of the Collection of Statistics Act (1953) on the one hand gives the State Governments the right to name a Statistical Authority, it seems to be substantially negated by subsequent provisions of the Act under the same clause. As a matter of fact, though there have been occasional requests from other data-collecting agencies to be named as Statistics Authority under the Act, the Government of India had seldom agreed to such a request. The sole Statistics Authority for the Annual Survey of Industries has always been the Head of the Field Operations Division of the NSSO, while the States have also been engaged in collection of ASI data, without any such Statistics Authority. To strengthen the attempts of the States to collect industrial statistics, particularly through the ASI, the Government of India should delegate to them, as was done earlier, the necessary legal authority.

98. Though "Statistics" is under the Concurrent List of the Constitution and "Surveys" is only under the Union List, it is more important that the collection of statistics on any subject vests in the authority (Central Ministry or State Government Department) that is responsible for that subject according to its status in the Union, State or Concurrent Lists in the Constitution of India. When the National Commission on Statistics determines certain statistics as Core Statistics, in deciding on the agency that should be responsible for their collection, it will have to do so in consistence with the distribution of subjects in the three Lists. Therefore, when proposing legal measures for Core Statistics, the National Commission on Statistics may have to propose different Acts for different subjects according to the List to which the subject belongs.

Modification of the Census Act (*Para 14.8.16*)

99. Twice in the past, the Economic Census of India had been carried out as part of the house-listing operation of Population Census. Recently doubts have been raised, whether the Census Act permits this, and consequently the Economic Census has been de-linked from the Population Census. The Commission is of the view that it would be desirable to revert back to the old practice and modify if necessary the Census Act, 1948 and Census (Amendment) Act, 1993 for this purpose.

Statistical Audit

Items for Audit (*Para 14.9.7*)

100. A fairly long but not exhaustive list of items, which could be audited is given below:

(a) Theoretical concepts and their modification into operationally feasible definitions, covering individual respondents, population of such respondents, sampling unit and information unit, frame and its adequacy, information to be collected from the respondents, etc.;

(b) Methods of data collection and handling: Interview, Direct observation or measurement, copied from records, mail enquiry, etc.; Steps to avoid respondents' or interviewers' bias; Treatment of sensitive questions; Deliberate redundancy to check consistency of information; Data transcription and scrutiny; Classification and coding; Choice of reference period and survey period; Design of questionnaire or schedule; Instruction manual;

(c) In the case of secondary data acquired from administrative records – design of the form for recording and summarising, incomplete coverage and treatment of missing data, definitional consistency, checks on arithmetical errors;

(d) Sampling design: uni-stage or multi-stage, procedure for stratification and selection at every stage; Formula for estimation of parameters;

(e) Procedure for control and assessment of sampling and non-sampling errors; Manual and computerised procedures of scrutiny and editing of data; Methods for imputation of missing or rejected observations;

(f) Data handling errors – Errors in data capture, editing, coding of open-ended textual responses, data processing, etc.

Obligation of Producers of Core Statistics (*Para 14.9.8*)

101. It will be obligatory for every producer of Core Statistics to supply a copy of their report to the National Commission on Statistics for audit. The producer of the report

should certify that all standards set by the National Commission on Statistics have been met, or draw attention to deviations, in case there are any. Their reports must contain information on all the above items for audit. In addition, the report should give its own assessment of the magnitudes of sampling and non-sampling errors associated with the more important statistics produced by them.

Audit Procedure (*Para 14.9.9*)

102. The National Commission on Statistics may accept the producer's certificate or carry out an audit of the report and related documents through the National Statistical Organisation. For the purpose of the audit, the National Commission on Statistics may call upon the producer to supply additional records or documents. The result of the audit would be communicated to the producer and would also be included in the annual report of the National Commission on Statistics.

Human Resource Development

Training (*Paras 14.10.16 & 14.10.17*)

103. A suitable Central Training Facility for Indian Statistical Service officers and senior statistical officers of State Governments, equipped with accommodation, arrangement for food, lecture rooms, computer laboratory, and library should be constructed for trainees and visiting teachers.

104. There is an immediate need for extensive arrangements for training of trainers so that when availability of qualified trainers is assured, eventually the Central Training Facility could be transformed into a Training Academy.

105. Arrangements for training of subordinate operational staff should be decentralised and separate. The existing in-house training facilities of NSSO should be further strengthened.

106. It should be made mandatory for each Indian Statistical Service officer to undergo Refresher Training for a period of at least four weeks in every two years. The training could be either in-house at the Ministry of Statistics and Programme Implementation or at any other Institute in India or abroad. Training in respect of new practices in official statistics could be arranged in-house or through participation in training programmes arranged by professional agencies like the International Association of Survey Statisticians, the U.S. Bureau of Census, Statistics Canada, etc. For broadening the knowledge of 'applicable' statistical theory, training arrangements could be made with universities in India or abroad or with reputed research and training organisations like the Indian Statistical Institute, Indian Agricultural Statistics Research Institute, etc. Study leave with financial support should be provided to promising ISS officers working for doctorate degrees in relevant subjects.

107. Refresher Training Courses should be arranged in the following illustrative list of areas:

    (a) Principles of Economics
    (b) Communication skills
    (c) System of National Accounts
    (d) Time Series Analysis, Forecasting and Modelling
    (e) Small Area Estimation
    (f) Geographic Information System
    (g) Management

(h) Information Technology

(i) Classificatory Analysis

(j) Market Research.

108. Indian Statistical Service (ISS) officers should be eligible for Sabbatical leave for pursuing advanced studies related to their area of specialisation.

109. Training and deployment should be linked. The Cadre Management system should be suitably streamlined for this purpose.

110. The Annual Training Calendar should be announced in advance.

111. The content of the Junior and Senior Certificate Courses in Statistics should be reorganised into smaller modules and offered on a large scale to the supporting statistical personnel (both from the Central and State Governments) who need training at this level. The training also should be decentralised and organised by State Directorates of Economic and Statistics. The Ministry of Statistics and Programme Implementation should organise Training of Trainers Sessions for this program.

112. In order to achieve closer collaboration between academicians and professionals, a suitable system should be developed to enable teachers and researchers from academic institutions to work in the Ministry of Statistics and Programme Implementation, Government of India and vice-versa.

113. The Commission further recommends that a high-level committee should be set up by the Government of India to evolve a long-term plan for assessing and effectively meeting the training needs for the Central and State Statistical Systems, consistent with what would be expected from the system. The said committee should also be required to examine in this connection whether a Staff Training Institute is necessary and feasible, or, whether the need could be met through cooperation with existing organisations. Such a Committee could comprise as its members, amongst others, the Director of the Indian Statistical Institute as also the envisaged National Statistician besides eminent statisticians with proven academic and professional credentials.

Career Management (*Para 14.10.22*)

114. During the first 15 years or so of the career, every ISS officer should work in about four of the following areas: Applied Statistics (sampling design, time–series analysis and forecasting, statistical modelling and inference, classificatory techniques, etc.), Computer linked areas (Systems analysis and software development, survey data processing, data bank and data warehouse management, desk top publication, computer management, etc.), National Accounts, Agricultural Statistics, Industrial and Commercial Statistics, Population and Socio-economic Statistics, and Field Operations.

115. Gradually during the next 5 years or so, he or she should be required to narrow down the area of specialisation to only one or two of these areas. The role of the cadre management should be to help harmonise the choice of specialisation by the officer with the goals of the organisation. All transfers and training of an officer should be consistent with the goals of specialisation.

116. A computerised database of details of qualifications, job experience and training undergone by every officer must be maintained up-to-date.

Subordinate Staff (*Para 14.10.28*)

117. As the constitution of the Subordinate Statistical Service has been recommended by the Fifth Central Pay Commission and the related issues are under active

consideration of the Government, all relevant aspects as mentioned in the body of the report should be considered by the Government while constituting the service.

Indian Statistical Service (*Para 14.10.37*)

118. As a one-time ameliorative measure, ISS officers should be given the benefit by awarding them the Senior Time Scale, Junior Administrative Grade and Non-Functional Selection Grade in the 5th, 9th and 14th year of their service. The Commission is aware that quite a few officers would miss this benefit because the length of their service is only marginally shorter than the specified limits set above. The Commission hopes that the next two recommendations, if implemented promptly and properly, would resolve the problem.

119. Ministry of Statistics and Programme Implementation should immediately carry out a Cadre Review of the Indian Statistical Service and thereafter every five years to assess the statistical needs of different ministries and departments as per the guidelines of the Department of Personnel and Training.

120. In addition, all *ad hoc* promotions should be regularised, and vacancies should be filled up immediately. A panel for promotions to fill up vacancies during the following year should be drawn up in advance in the current year itself.

121. The Indian Statistical Service cadre should be restructured to narrow down the base so as to achieve the model cadre structure as recommended by the Fifth Central Pay Commission.

122. The stature of the officer responsible for management of the Cadres of Indian Statistical Service as well as Subordinate Statistical Service should be sufficiently high for better management of the cadres.

4 AGRICULTURAL STATISTICS

4.1 INTRODUCTION

4.1.1 Agriculture plays a vital role in the Indian economy. Over 70 per cent of the rural households depend on agriculture as their principal means of livelihood. Agriculture along with fisheries and forestry accounts for one-third of the nation's Gross Domestic Product (GDP) and is its single largest contributor. Agricultural exports constitute a fifth of the total exports of the country. In view of the predominant position of the Agricultural Sector, collection and maintenance of Agricultural Statistics assume great importance.

4.1.2 India has a well-established and internationally acknowledged Agricultural Statistics System. It is a decentralised system with the State Governments – State Agricultural Statistics Authorities (SASAs) to be more specific – playing a major role in the collection and compilation of Agricultural Statistics at the State level while the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) at the Centre is the pivotal agency for such compilation at the all-India level. The other principal data-gathering agencies involved are the National Sample Survey Organisation (NSSO), and the State Directorates of Economics and Statistics (DESs).

4.1.3 The Agricultural Statistics System is very comprehensive and provides data on a wide range of topics such as crop area and production, land use, irrigation, land holdings, agricultural prices and market intelligence, livestock, fisheries, forestry, etc. It has been subjected to review several times since independence so as to make it adaptive to contemporary changes in agricultural practices. Some of the important expert groups, which examined the working of the system are: the Technical Committee on Coordination of Agricultural Statistics (1949), the National Commission on Agriculture (1976), the High Level Evaluation Committee (1983) and the more recent Workshop on Modernisation of the Statistical System (1998).

4.1.4 The Technical Committee on Coordination of Agricultural Statistics in India (1949) under the Chairmanship of Shri W.R. Natu was the first to examine the Agricultural Statistics System after independence. It mainly focused on standardising concepts and definitions, devising uniform forms of returns for collection of data and suggesting the scope of enquiry in respect of areas where the system of land records did not exist. The Committee also suggested among other measures, a pattern of organisation for collection of Agricultural Statistics at different levels.

4.1.5 The National Commission on Agriculture (1976), while critically reviewing the entire range of Agricultural Statistics made far-reaching recommendations to lay a strong foundation for statistical operations and to help the Government in formulating appropriate strategies.

4.1.6 While reviewing the functions of the Central Statistical Organisation (CSO) with reference to different sectors of the economy, the High Level Evaluation Committee (1983) under the Chairmanship of Professor A.M. Khusro, brought to light important data gaps including methodological gaps and made a number of recommendations to improve the system. It emphasised the need for building up a strong database for Agricultural Statistics so as to aid planning and policy formulation. It also identified newly emerging areas such as crop estimates at the local-level Community Development Block (C.D.Block), and crop forecasting and recommended development of suitable methodologies for quantitative measurement of important parameters in those areas.

4.1.7 The recent Workshop on Modernisation of the Statistical System in India (1998) considered various measures required to modernise the system by identifying the lacunae, and suggested the use of latest techniques including information and communication tools to improve the timeliness, reliability and adequacy of Agricultural Statistics.

4.1.8 The National Statistical Commission took note of the findings and recommendations of all these important bodies in the context of the prevailing status of Agricultural Statistics and attempted a fresh analysis focusing its attention on an identification of the deficiencies of the system and the remedial measures required to set them right. The Commission was assisted in this task by detailed documentation furnished by the Secretariat and the Central and State Government agencies. It also benefited from personal interaction with the representatives of these agencies. The Conference of Central and State Statistical Organisations (held in October 2000) also provided valuable inputs on the issues under consideration.

4.1.9 This chapter on Agricultural Statistics deals with 21 subject areas. The approach followed in the presentation of the report is to first indicate the current status in respect of each of these subject areas dealt with including the methodology in use; then to highlight the major deficiencies and finally, to make recommendations for improvement. Most of the recommendations suggest the scope of improvement in the organisation and management of current practices, additional administrative support and better coordination among the State and Central agencies concerned with statistical operations.

Crop and Land Use Statistics

4.1.10 Crop and land use statistics form the backbone of the Agricultural Statistics System. Reliable and timely information on crop area, crop production and land use is of great importance to planners and policy makers for efficient agricultural development and for taking decisions on procurement, storage, public distribution, export, import and many other related issues. With an increasingly evident trend of decentralised planning and administration, these statistics are needed with as much disaggregation as possible down to the level of village *panchayats*. India possesses an excellent infrastructure and it has a long-standing tradition of generating a comprehensive series of crop and land use statistics though, of late, there has been a disturbing deterioration in their quality. With most parts of the country having detailed cadastral survey maps, frequently updated land records and the institution of a permanent village reporting agency, the country has all the necessary means to produce reliable and timely statistics. The performance of the system was quite satisfactory until 2-3 decades ago but it has since become dysfunctional essentially due to administrative apathy and inaction. It is still not too late to revamp the system and restore its credibility. The following sections deal with the current status and deficiencies of the system and what needs to be done to improve it.

4.2 CROP AREA STATISTICS

Current Status

4.2.1 From the point of view of crop area statistics, the States and Union Territories can be classified into three broad groups:

(a) States and Union Territories which have been cadastrally surveyed and where area and land use statistics form a part of the land records maintained by the revenue agency (referred to as “temporarily settled States”). This system is followed in 18 States namely, Andhra Pradesh, Assam (excluding hill districts), Bihar, Chatisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Uttaranchal and Uttar Pradesh, and the five Union Territories of Chandigarh, Dadra and Nagar Haveli, Daman and Diu, Delhi and Pondicherry.

(b) Kerala, Orissa and West Bengal known as "permanently settled" States, where there is no land revenue agency at the village level and crop area and land use statistics are collected through a scheme of sample surveys.

(c) Part of Assam (hill districts), Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura, and the two Union Territories of Andaman and Nicobar Islands and Lakshadweep, for which only "conventional" estimates are available.

4.2.2 Statistics of crop area are compiled with the help of the village revenue agency (commonly known as *patwari* agency) in the temporarily settled parts of the country and by specially appointed field staff in the permanently settled States under a scheme known as "Establishment of an Agency for Reporting Agricultural Statistics (EARAS)". The remaining eight States in the North-Eastern Region and two other Union Territories do not have a reporting system, though the States of Tripura and Sikkim (except some minor pockets) are cadastrally surveyed. They compile what are called conventional crop estimates based on personal assessment of the village chowkidars. The three categories of States and Union Territories account for eighty-six, nine and five per cent, respectively of the total reporting area. Besides, there is non-reporting area of around seven per cent of the geographical area that mainly consists of the hill tracts of North-Eastern States and the area under illegal occupation of Pakistan and China. No statistics are available for these areas.

4.2.3 In the States that have a *patwari* agency, a complete enumeration of all fields (survey numbers) called *girdawari* is made in every village during each crop season to compile land use, irrigation and crop area statistics. In the States covered by EARAS, the *girdawari* is limited to a random sample of 20 per cent villages of the State, which are selected in such a way that during a period of five years, the entire State is covered.

4.2.4 Crop area statistics of the temporarily settled areas are comprehensive, being based on the complete enumeration method. They are considered fairly reliable because of the *patwari's* intimate knowledge of local agriculture and his ready availability in the village. However, due to an increasing range of functions assigned to the *patwari*, the *girdawari* tended to receive low priority. In order to improve the timeliness and quality of crop area statistics, two schemes are in operation since early seventies namely, the Timely Reporting Scheme (TRS) and the scheme for Improvement of Crop Statistics (ICS).

4.2.5 The TRS has the principal objective of reducing the time lag in making available the area statistics of major crops in addition to providing the sampling frame for selection of crop-growing fields for crop cutting experiments. Under the TRS, the *patwari* is required to complete the *girdawari* on a priority basis in a 20 per cent random sample of villages and to submit the village crop statements to higher authorities by a stipulated date for the preparation of advance estimates of the area under major crops. These are used in the framing of crop forecasts. The TRS sample of villages is also selected in such a way that the entire temporarily settled parts of the country are covered over a period of five years.

4.2.6 Under the ICS scheme, an independent agency of supervisors carries out a physical verification of the *patwari's girdawari* in a sub-sample of the TRS sample villages (in four clusters of five survey numbers each); and makes an assessment of the extent of discrepancies between the supervisor's and *patwari's* crop area entries in the sample clusters. The supervisor also scrutinises the village crop abstract prepared by the *patwari* and checks whether it is free from totaling errors and whether it has been dispatched to the higher authorities by the stipulated time. The ICS also covers the permanently settled States and the supervisory agency in this case too carries out the check in a sub-sample of EARAS sample villages using the same methodology followed in the temporarily settled States. In all, 10,000 sample villages are covered by the ICS,

roughly 8,500 in the temporarily settled States and 1,500 in the permanently settled States. The National Sample Survey Organisation is responsible for the planning and operations of the ICS and employs full-time staff for field supervision. It shares the fieldwork with the designated State agencies, which carry out the field supervision in about half the number of sample villages.

4.2.7 More recently, since 1990, an attempt has been underway to use Remote Sensing (RS) technology for estimation of crop areas and land use through a Centrally sponsored scheme, "Crop Acreage and Production Estimation (CAPE)". The objective of CAPE, among others, is to provide State-level crop area estimates, meeting a 90/90 accuracy goal using the remote sensing data covering mainly the crop growing parts of the States. Pre-harvest area estimates are reported to be generated on a regular basis for major crops like rice, wheat, *ragi, jowar,* groundnut and cotton. The feasibility of Remote Sensing in providing detailed and disaggregated area statistics at the local level (village or *panchayat*) has yet to be established.

Deficiencies

4.2.8 As noted earlier, the main purpose of the ICS scheme is to monitor the performance of the primary reporting agency in the TRS and EARAS villages. The findings of the ICS over a number of years reveal a high degree of negligence in carrying out the *girdawari*, thereby casting doubt on the reliability of crop area statistics. For instance, a review of the ICS results for the four years ending 1998-99 (see Annexe 4.1) shows that:

(a) The *patwari*s submit crop statements to the processing centres without completing the *girdawari* in about 10 per cent of the villages;

(b) Village crop statements are received at the processing centre from only around 78 per cent of the sample villages (i.e. a non-response of 22 per cent) and around 45 per cent only by due date;

(c) Crop entries of the *patwari* and the supervisor do not tally with each other in about one third of the survey numbers inspected; and

(d) The net effect of discrepancies between the *patwari*'s and supervisor's crop entries is quite large in respect of even some major crops.

4.2.9 It is significant that the ratios mentioned above are of the same order in a previous study of ICS results for the four-year period ending 1988-89.

4.2.10 This is the kind of performance in the TRS sample despite the *patwari* being aware that his work will be subjected to technical supervision; one cannot therefore expect a better performance in 80 per cent of the remaining villages.

4.2.11 The above findings are a clear indication of the *patwari's* neglect of one of his major functions. It is a matter of concern that this has continued on for many years evidently with the knowledge and indulgence of the higher-level officials of the State departments of revenue and land records.

4.2.12 Another deficiency of crop area statistics needs to be mentioned. With the development and modernisation of agriculture, several new short duration crops are grown. Although the *patwari* is required to undertake intermediate crop inspection between the two major *kharif* and *rabi* seasons, this does not appear to be done regularly. Even if short duration crops like vegetables, flowers, mushroom, etc. are covered during the crop inspection, they are not listed separately in the final crop abstract but clubbed together under "other crops".

Conclusions and Recommendations

4.2.13 It is seen that a major reason for the poor quality of area statistics is the failure of the *patwari* agency to devote adequate time and attention to the *girdawari*. The fact that the *patwari*

agency is overburdened with multifarious functions and has to cope with a large geographical jurisdiction, typically four or five villages and in some States extending over more than 10 villages (Bihar, Himachal Pradesh, Orissa and Uttaranchal) has long been acknowledged. The National Commission on Agriculture (NCA), while reiterating that the *patwari* agency should continue to be responsible for the collection of basic Agricultural Statistics, recommended that his jurisdiction should be reduced wherever it is excessive and that intensive supervision through normal revenue and statistical staff should be organised over his work of area enumeration. The ICS fulfills the latter part of NCA recommendation and has been doing a commendable job in assessing the quality of crop area statistics and in highlighting the deficiencies. However, there has been no significant effort on the part of the State Revenue and Land Records Departments to take effective remedial measures.

4.2.14 Some southern states, a few years ago, replaced the hereditary system of appointing patwaris (karnams) by a state-wide cadre of transferable officials. This system is reported to be working quite well. However, it is desirable that the states concerned keep staff transfers to the minimum and see that when an officer is posted at a place, he remains there sufficiently long to take advantage of familiarity with the local conditions in discharging his functions.

4.2.15 It is worth emphasising that the *patwari* agency and the *girdawari*, which has stood the test of time and proved to be cost effective and efficient in generating crop and land use statistics down to the village level, should be restored to its past level of performance. It seems almost impossible at this stage to increase the strength of *patwaris* (as recommended by NCA) due to financial constraints. The only course readily available is to declare the *girdawari* as a programme of high priority and the *patwari* be mandated to carry out the crop inspection according to the prescribed time schedule, if necessary, by sparing him from other duties during that period. More importantly, this has to be ensured rigorously in the case of TRS sample villages. There should be intensive supervision of the *patwari's* work by higher-level revenue officials as well as by the technical staff of the ICS and the former should be made accountable for any lapses.

4.2.16 Once the TRS is put on a sound footing, it is possible to use its results for framing not only the advance estimates but also the final estimates of crop area. Data from a 20 per cent sample is large enough to estimate crop area with a sufficient degree of precision at the all-India, State and district levels. By ensuring that the *girdawari* in the TRS sample is carried out under strict operational and technical control, area estimates based on the TRS data will be of high quality in terms of reliability and timeliness.

4.2.17 The Commission, therefore, considers it feasible that the forecasts of crop area as well as the final estimates published by the Ministry of Agriculture should henceforth be based on the TRS sample data alone. This makes it possible that the final area estimates also become available soon after the sowing is completed in each crop season. Transmission and processing of data can be expedited with the help of Information Technology and this can be handled more efficiently due to the reduced volume of data. The TRS data can also be used to build estimates of crop area separately under irrigated, un-irrigated, high yielding and local varieties.

4.2.18 If the TRS replaces the present system of cent per cent coverage in the preparation of forecasts and final estimates of crop area, there is a possibility that the *girdawari* in non-TRS villages may tend to be neglected more than before or not even conducted at all. Cent per cent coverage may still be required to frame estimates for small areas (block, *panchayat*, etc.). This can be organised in the local areas concerned whenever the need arises. The States may decide whether or not to continue the *girdawari* on a regular basis in the non-TRS villages. Dispensing with the cent per cent coverage and concentrating instead on a 20 per cent sample reduces the

patwari's workload substantially and enables him to pay due attention to the *girdawari* in the sample village(s) falling in his jurisdiction.

4.2.19 It may be mentioned that in the permanently settled States of Kerala, Orissa and West Bengal, the *girdawari* is confined to the 20 per cent villages covered under EARAS and this forms the basis of area estimates. This has to continue and the EARAS operations should be streamlined and effectively supervised, if necessary, by augmenting the strength of the primary reporting agency.

4.2.20 The North Eastern States and Union Territories that prepare crop area estimates based on personal assessment of village chowkidars need to improve the method of data collection. Some efforts have been made to extend EARAS to some of these States but in the absence of cadastral survey and detailed records it is not possible to use EARAS type of area estimation. The progress made by Remote Sensing Technology (RST) in area estimation holds out a promise to deal with this problem. The Space Application Centre (SAC) may pay special attention to frame crop area estimates in the North Eastern States with as much detail as possible.

4.2.21 The Commission, therefore, strongly favours the use of TRS and EARAS data for framing area forecasts as well as final estimates in the temporarily and permanently settled parts and the Remote Sensing technique in the rest of the country. Incidentally, the representatives of the Ministry of Agriculture and most States endorsed this approach in the Conference of Central and State Statistical Organisations held in October 2000.

4.2.22 Before the proposed method is adopted as a substitute for the present one, there should be an exploratory study to make sure that there are no unforeseen impediments in implementation and that it is fully viable to meet the intended purpose. One aspect that deserves consideration is the desirability of adding to the current year's TRS sample, a small sub-sample of the preceeding year's TRS sample. Data for two consecutive years from the same set of villages prove useful to improve the precision of the survey estimates.

4.2.23 The Commission, therefore, recommends that:

(i) As the data from a 20 per cent sample is large enough to estimate crop area with a sufficient degree of precision at the all-India, State and district levels, Crop area forecasts and final area estimates issued by the Ministry of Agriculture should be based on the results of the 20 per cent Timely Reporting Scheme (TRS) villages in the temporarily settled States and Establishment of an Agency for Reporting Agricultural Statistics (EARAS) scheme villages in the permanently settled states. In the case of the North-Eastern States, Remote Sensing methodology should be used for this purpose after testing its viability.

(ii) The *patwari* and the supervisors above him should be mandated to accord the highest priority to the work of the *girdawari* and the *patwari* be spared, if necessary, from other duties during the period of *girdawari*.

(iii) The *patwari* and the primary staff employed in Establishment of an Agency for Reporting Agricultural Statistics (EARAS) should be imparted systematic and periodic training and the fieldwork should be subjected to intensive supervision by the higher-level revenue officials as well as by the technical staff.

(iv) For proper and timely conduct of the *girdawari*, the concerned supervisory staff should be made accountable.

(v) Timely Reporting Scheme (TRS) and Establishment of an Agency for Reporting Agricultural Statistics (EARAS) scheme should be regarded as programmes of national importance and the Government of India at the highest level should prevail

upon the State Governments to give due priority to them, deploy adequate resources for the purpose and ensure proper conduct of field operations in time.

4.3 CROP PRODUCTION

Current Status

4.3.1 Estimates of crop production are obtained by multiplying the area under crop and the yield rate. The yield rate estimates are based on scientifically designed crop cutting experiments conducted under the General Crop Estimation Survey (GCES). The GCES covers around 68 crops (52 food and 16 non-food) in 22 States and 4 Union Territories. Around 5,00,000 experiments are conducted every year with the help of State revenue and agricultural staff of a rank higher than the primary field staff of the departments. The survey design adopted is that of a stratified three stage random sampling with *tehsil or taluka* as the stratum, a village as the first stage unit, a field growing the specified crop as the second stage unit and a plot, usually 5m x 5m, as the ultimate unit. The experiment consists of marking the plot and harvesting and weighing the produce from the plot. These weights form the basic data for yield estimation. The number of experiments and their distribution over the strata are made in a manner to be able to obtain the yield rate estimates with a fair degree of precision at the level of the State and each major crop-growing district. The field staff is periodically trained in the conduct of crop cutting experiments.

4.3.2 The Improvement of Crop Statistics (ICS) scheme carries out a quality check on the field operations of GCES under which around 30,000 experiments are supervised by the ICS staff at the harvesting stage, one half by the Assistant Superintendents of the Field Operations Division (FOD) of NSSO and the remaining half by the staff of the State Agricultural Statistics Authority (SASA).

Deficiencies

4.3.3 The method of crop cutting experiments is objective and unbiased and if properly followed provides reliable estimates of yield rates. In practice, however, the field staff do not strictly adhere to the prescribed procedures and thereby the survey estimates are subject to a variety of non-sampling errors. The supervisory check by ICS staff reveals a number of such lapses.

4.3.4 The review of ICS results referred to earlier (see Annexe 4.1) shows that the experiments in the GCES were conducted properly in only 80 per cent of the cases while the rest had one defect or the other. The defects mainly related to wrong selection of sample fields and location of experimental plots, and failure to use essential equipment such as proper weighing scales. The ICS and GCES yield estimates were seen to differ widely from each other, much more than what could be attributed to sampling errors. It is obvious that the GCES in many States is carried out perfunctorily unmindful of the serious consequences. The State departments of revenue and agriculture that are responsible for the surveys, do not seem to consider this programme important enough and there is little higher level supervision and control of field operations. The "High Level Coordination Committee (HLCC) on Agricultural Statistics" in the States is supposed to take remedial action and if it does so, it seems to have little impact on improving the situation.

4.3.5 GCES carries out around 5,00,000 experiments every year; but these are not still adequate to provide usable estimates below the district level. With the introduction of National Agricultural Insurance Scheme (NAIS) in several States a need is felt for assessment of yields of insured crops at the level of *tehsil or* C.D. Block and even at the *panchayat* level. NAIS has, therefore, prescribed additional crop cutting experiments for this purpose at the rate of 16 per block or 8 per *panchayat* for each insured crop. This imposes an enormous burden on the field agency, increases considerably the non-sampling errors and results in further deterioration of the

quality of work. Apart from non-feasibility of carrying out such a huge number of experiments, the recent decision of Government of India that the States should combine GCES and NAIS series of experiments and use them together for framing crop production estimates is fraught with serious consequences. The objectives of the two series are different and the NAIS series is likely to underestimate yield rates because of local pressure from insured farmers whose interest lies in depressing the crop output.

4.3.6 Yet another deficiency in the production statistics is the divergence between the production figures available from different sources especially in respect of cash crops like cotton, oilseeds and horticultural crops.

Conclusions and Recommendations

4.3.7 The estimation of crop yields is based on sound and well-tested crop cutting experiment methodology. The main problem in producing reliable estimates is the poor performance of field operations. Urgent measures should be taken by the States to address this problem. There should be strict supervision of fieldwork by higher-level revenue and agricultural officials and appropriate action taken against those whose performance is consistently bad. There should be direct interaction between the ICS staff and the higher level officials of revenue and agricultural departments to instill a better awareness of the importance of the programme.

4.3.8 The immediate priority is to reduce the unacceptable level of non-sampling errors in the survey results. There should be adequate training of field staff every season. All field workers should have ready access to the experimental equipment and a serious view should be taken of anyone not using proper tools. There is scope for improving the equipment to make it more portable and easy to handle in the field.

4.3.9 At present, several State agencies are assigned the work of crop cutting experiments, which cannot, perhaps be avoided altogether when a large number of experiments have to be conducted within a short period. Nevertheless, an effort should be made to reduce the diversity of agencies and utilise as far as possible the State agricultural and statistical agencies for better control of field operations.

4.3.10 A Statistical Study may be made to examine whether the data collected in the ICS can be used for working out a correction or adjustment factor to be applied to official statistics of Crop Area to provide an alternative all-India estimate of crop area as a cross check on official statistics compiled from the States' reports. If this is technically feasible, the design of the ICS can be modified and the scheme strengthened to generate such correction factors. The Commission appointed an Expert Group comprising representatives of ISI, IASRI and NSSO to look into this question. In the short time available the Expert Group could not examine the question of efficacy of the correction factor. After studying the report of the Expert Group, the Commission is of the view that, in view of the past experience of the Land Utilisation Surveys of the NSS, the modified objective of the ICS should be restricted to working out a correction factor and not the generation of independent estimates of crop area. Further statistical investigations of the problem will be required before redesigning ICS to meet the modified objective.

4.3.11 The need for crop production estimates for small areas (C.D blocks, *panchayats*) has assumed urgency especially after the introduction of crop insurance. As noted earlier, expansion of the scale of crop cutting experiments to meet this need is almost impossible if NAIS is implemented throughout the country and covers many more crops than at present. An approach other than crop cutting experiments has to be sought, and the technique of "small area estimation" holds out a promising solution. There has been considerable development in the field of small area statistics. The IASRI is experimenting with this method to frame block and *panchayat* level

estimates and pilot studies are in progress. It is important to pursue this programme until a satisfactory and tested methodology is available.

4.3.12 The Commission, therefore, recommends that:

(i) In view of the importance of reliable estimates of crop production, the States should take all necessary measures to ensure that the crop cutting surveys under the General Crop Estimation Survey (GCES) are carried out strictly according to the prescribed programme.

(ii) Efforts should be made to reduce the diversity of agencies involved in the fieldwork of crop cutting experiments and use as far as possible agricultural and statistical personnel for better control of field operations.

(iii) A statistical study should be carried out to explore the feasibility of using the ICS data for working out a correction or adjustment factor to be applied to official statistics of crop area to generate alternative estimates of the same. Given the past experience of the Land Utilisation Surveys of the NSS and the controversies they created, the Commission is of the view that the objective of redesigning of the ICS, at present, should be restricted to working out a correction factor.

(iv) The two series of experiments conducted under the National Agricultural Insurance Scheme (NAIS) and the General Crop Estimation Survey (GCES) should not be combined for deriving estimates of production as the objectives of the two series are different and their merger will affect the quality of general crop estimates.

(v) Crop estimates below the level of district are required to meet several needs including those of the National Agricultural Insurance Scheme (NAIS). Special studies should be taken up by the National Statistical Office to develop appropriate "small area estimation" techniques for this purpose.

4.4 CROP FORECASTS

Current Status

4.4.1 Final estimates of crop production based on area through complete enumeration and yield rate through crop-cutting experiments become available much after the crop is harvested. However, the Government needs advance estimates of production for various decisions relating to pricing, distribution, export and import, etc. The Directorate of Economics & Statistics, Ministry of Agriculture (DESMOA) releases advance estimates of crop area and production through periodical forecasts in respect of principal food and non-food crops (food grains, oil seeds, sugarcane, fibres, etc.), which account for nearly 87 per cent of agricultural output. Four forecasts are issued, the first in the middle of September, the second in January, the third towards the end of March and the fourth by the end of May.

4.4.2 The first forecast relating to the *kharif* crops is mostly based on reports prepared by the States mainly guided by the visual observation of field officials. The second forecast covering both the *kharif* and *rabi* crops takes into account additional information obtained from various sources including agricultural inputs, incidence of pests and diseases, and weekly reports of State departments of agriculture regarding area coverage, conditions of standing crops, etc. Results of Remote Sensing data are also considered at this stage. In the third forecast, the earlier advance estimates of both the *kharif* and *rabi* seasons are firmed up, again taking into account information received from sources such as Market Intelligence Units, Meteorological Department and the Crop Weather Watch Group (CWWG). The fourth forecast is based on firm figures supplied by State Agricultural Statistics Authorities (SASAs) who are by then in a position to obtain fairly dependable estimates of yield rates through GCES. In addition to the four forecasts, the DESMOA issues the "Final Estimates" of crop area and production in December. As a few

States continue to revise their data on delayed receipt of information, the all-India crop statistics are brought out as "Fully Revised" in the next crop year in the following December.

4.4.3 Recently, the Ministry of Agriculture has set up a National Crop Forecasting Centre (NCFC) with the object of examining the existing mechanism of building forecasts of principal crops and developing more objective techniques. The NCFC takes into account information on weather conditions, supply of agricultural inputs, pests, diseases and related aspects including the proceedings of CWWG in the formulation of scientific and objective forecasting methods to replace the present system. The work of the NCFC is still at a preliminary stage and it needs more statistical support to be able to develop appropriate models of forecasting.

Deficiencies

4.4.4 The present system of crop forecasts being based mostly on subjective appraisal at various levels does not reflect the ground situation correctly. This is specially the case with regard to the preliminary forecasts, which have to be fairly reliable for taking several policy decisions. There is need for more objective forecasting based on timely and detailed information on crop condition, meteorological parameters, water availability, crop damage, etc. The NCFC is still not in a position to develop a scientific procedure of forecasting using multi-dimensional models and assimilating the information received from various sources. The DESMOA is handicapped due to non-receipt of timely information from the States and it often has to prepare such forecasts based on incomplete data.

4.4.5 Frequent changes in the production figures especially of food grains between one forecast and another, and the "final" and "fully revised" estimates cause confusion and doubt among the users. While releasing these figures, the DESMOA may indicate the reasons for the change.

Conclusions and Recommendations

4.4.6 The system of forecasting crop production in the country by the Ministry of Agriculture needs to be replaced as soon as possible by an objective method using appropriate statistical techniques. The recent establishment of the NCFC, which has been assigned the responsibility of streamlining and improving the quality of forecasting, should go a long way in accomplishing this objective. However, it needs additional professional support, comprising statisticians and multi-disciplinary team of experts to devise scientific techniques of crop forecasting.

4.4.7 Remote Sensing technology can also provide a satisfactory means of developing reliable estimates of crop area and condition of the crop at various stages of growth for forecast purposes. The Space Application Centre (SAC) is already at an advanced stage of experimenting with the approach of Remote Sensing to estimate the area under principal crops through the scheme known as "Forecasting Agricultural output using Space, Agro-meteorology and Land based observations" (FASAL). Incidentally, this will form an important input in the forecasting methodology to be developed by NCFC. The land-based observations should be used to measure quantitative changes in crop growth besides discriminating one crop from another.

4.4.8 The Commission, therefore, recommends that:

(i) The Ministry of Agriculture and the National Crop Forecasting Centre (NCFC) should soon put in place an objective method of forecasting the production of crops.

(ii) The National Crop Forecasting Centre (NCFC) should be adequately strengthened with professional statisticians and experts in other related fields.

(iii) The programme of Forecasting Agricultural output using Space, Agro-meteorology and Land based observations (FASAL), which is experimenting the approach of

Remote Sensing to estimate the area under principal crops should be actively pursued.

(iv) The States should be assisted by the Centre in adopting the objective techniques to be developed by the National Crop Forecasting Centre (NCFC).

4.5 PRODUCTION OF HORTICULTURAL CROPS

Current status

4.5.1 There are two main sources that generate statistics of production of horticultural crops. The first is the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA), which operates a Centrally sponsored scheme "Crop Estimation Survey on Fruits and Vegetables" in 11 States covering 7 fruit and 7 vegetable and spice crops for estimating area and production. The fruit crops covered are mango, banana, apple, citrus, grapes, pineapple and guava. The vegetable and spice crops are potato, onion, tomato, cabbage, cauliflower, ginger and turmeric. The survey, which is still in a "pilot" stage follows a stratified three-stage random sampling design in the case of fruit crops, with village, orchard and fruit bearing tree as the sampling units at the successive stages. The sample size is usually 150 to 200 sample villages in each major fruit-growing district, five orchards per sample village and four fruit bearing trees per orchard. The number and weight of fruits gathered from the sampled trees is observed and recorded, which form the basis for yield estimation. The survey approach in the case of vegetable crops is somewhat more complex due to special features of cultivation of these crops especially the short duration of the crop and the number of pickings required to record the harvested produce. The results of the DESMOA survey are published in its "*Report and Database of Pilot Scheme on Major Fruits and Vegetables*".

4.5.2 The second source of horticultural statistics is the National Horticultural Board (NHB), which compiles and publishes estimates of area, production and prices of all important fruit and vegetable crops based on reports furnished by the State Directorates of Horticulture and Agriculture. The methodology followed by NHB for estimating area and production has not been clearly spelt out. These estimates are apparently based on the informed assessment of local level officials dealing with horticulture and the reports of market arrivals in major wholesale fruit and vegetable markets.

Deficiencies

4.5.3 The production estimates of fruits and vegetables available from the DESMOA pilot survey are based on sound technical methodology. However, the survey procedures are complex, time consuming and rather difficult to implement in practice. Further, the survey is limited to 11 States and its extension to the remaining States will take a long time due to the fact that many of them do not possess the necessary staff resources to carry out the fieldwork. Adoption of this methodology on a nation-wide scale is a remote possibility.

4.5.4 The estimates furnished by the NHB relate to the entire country but they are of doubtful reliability being essentially based on subjective reports received from the ground-level staff. There is, in fact, considerable divergence between the NHB and the DESMOA estimates for the States and the crops covered (see Annexe 4.2).

4.5.5 Neither NHB nor DESMOA provide estimates of production of crops such as mushroom, herbs and floriculture that are of emerging commercial importance.

Conclusions and Recommendations

4.5.6 The methodology used in the DESMOA survey for estimation of production is complex, time consuming and not cost-effective. It is observed that the field staff does not

always follow the procedures laid down for collection of data. It is obvious that an alternative and more feasible methodology needs to be developed for estimating production of horticultural crops. Such an approach may consider the possibility of using the flow of data from sources concerned with horticultural crops such as wholesale markets, growers associations, fruit and vegetable processing plants, export trade, etc. in order to develop a suitable model for estimation. Special studies need to be carried out in this connection, which may be entrusted to a team comprising representatives of the Indian Agricultural Statistics Research Institute (IASRI), DESMOA, NSSO (FOD) and one or two major States growing horticultural crops.

4.5.7 The Commission recommends that:

(i) The methodology adopted in the pilot scheme of "Crop Estimation Survey on Fruits and Vegetables" should be reviewed and an alternative methodology for estimating the production of horticultural crops should be developed taking into account information flowing from all sources including market arrivals, exports and growers associations. Special studies required to establish the feasibility of such a methodology should be taken up by a team comprising representatives from Indian Agricultural Statistics Research Institute (IASRI), Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA), Field Operations Division of National Sample Survey Organisation (NSSO (FOD)) and from one or two major States growing horticultural crops. The alternative methodology should be tried out on a pilot basis before actually implementing it on a large scale.

(ii) A suitable methodology for estimating the production of crops such as mushroom, herbs and floriculture needs to be developed and this should be entrusted to the expert team comprising representatives from Indian Agricultural Statistics Research Institute (IASRI), Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA), Field Operations Division of National Sample Survey Organisation (NSSO (FOD)) and from one or two major States growing these crops.

4.6 OFFICIAL VS. TRADE ESTIMATES OF PRODUCTION

4.6.1 Apart from the estimates of production compiled and published by the DESMOA, a separate series is also available for some major commercially important crops prepared by the trade organisations especially for cotton and oilseed crops. The estimates of cotton production are published by the Cotton Advisory Board (CAB) and those for the oilseeds by the Central Organisation for Oil Industry and Trade (COOIT). The DESMOA and Trade series differ widely from each other causing confusion among users and debate over the veracity of either series. The Commission examined in some detail the divergence between the two series and its findings are as follows:

Cotton

4.6.2 The DESMOA compiles the production estimates on the basis of reports received from State Governments. These are obtained as the product of area sown under the crop through complete enumeration and the yield rate from crop cutting experiments. The CAB estimates are based on inputs from the Cotton Corporation of India, East India Cotton Association, Indian Cotton Mills Federation, etc. and these, in turn, depend on data on market arrivals, volume of cotton ginned and pressed in all ginning mills irrespective of the area sown or condition of the crop. The two series of estimates differ from each other within a range of 13 to 45 per cent over the years, the DESMOA estimates being consistently less than the CAB estimates (see Annexe 4.3). The main reasons for divergence are seen to be:

(a) Shortcomings of the *girdawari* on which the official estimate of area is based and the inadequacy of the GCES to give due representation and weight in its sample to

different factors such as irrigated and un-irrigated, hybrid and local varieties of crop. Cotton is harvested through several pickings spread over time and it is possible that the primary agency is not careful to follow the prescribed procedure of the crop cutting experiments;

(b) The CAB estimates on the other hand, are of a subjective nature being compiled on the basis of reports from several agencies without proper attention to full coverage and standard procedures.

4.6.3 The DESMOA has been making consistent efforts to reduce the divergence between the two estimates by holding discussions with the concerned agencies. The following measures are suggested in this connection:

(a) The sample of crop cutting experiments may be suitably increased and made representative of various types of cotton cultivation;

(b) The primary agencies responsible for area enumeration and crop cutting experiments should be trained thoroughly;

(c) The methodology followed by CAB should be improved by a careful review of the data from sources like market arrivals, ginning factories, Annual Survey of Industries (ASI), unorganised manufacturing units, etc. in respect of cotton and the use of appropriate models.

Oilseeds

4.6.4 The situation in the production statistics of oilseeds is not very different from that of cotton. The magnitude of divergence between the two series in this case is of the order of 14 per cent in respect of 9 important oilseeds (see Annexe 4.4). The DESMOA estimates are based on the *girdawari* for area and crop cutting experiments under the GCES for yield, whereas the estimates of COOIT mainly depend on the feedback received from important markets about arrivals, trend of crop and the additional information provided by members of the industry.

4.6.5 The main reasons for divergence, in this case too, are differences in methodology, post-harvest losses, incomplete market arrivals and the inclination of the oilseeds industry to underestimate production in order to lobby for larger imports. It is understood that the DESMOA constituted two regional committees in consultation with COOIT in Andhra Pradesh and Madhya Pradesh, respectively to look into the discrepancies and reduce them to the extent possible. The DESMOA should have the work of the regional committees completed expeditiously and in the light of their findings, undertake a special study of the major oilseed markets to devise more objective procedures of estimation to be followed by the trade agencies.

4.7 LAND USE

Current Status

4.7.1 Statistics of land use are compiled from the village land records maintained by the *patwari*. The information is available according to each survey number and recorded under nine categories: (a) Forests, (b) Area under Non-Agricultural use, (c) Barren and Uncultured Land, (d) Permanent Pastures and other Grazing Land, (e) Miscellaneous Tree Crops, (f) Culturable Waste Land, (g) Fallow Land other than Current Fallows, (h) Current Fallows, and (i) Net Area Sown. The details of each category along with its definition may be seen in the Annexe 4.5.

4.7.2 Land use statistics are also being collected through nationwide land use or cover mapping by the National Remote Sensing Agency (NRSA) according to a 22-fold classification, the definition of each category is given in the Annexe 4.6. The categories are much more detailed

and provide useful information for land development programmes. However, these details are still not available at the local levels of block and *panchayat*.

Deficiencies

4.7.3 The nine-fold classification of land use based on village records is not adequate and does not, for instance, provide information on such characteristics as social forestry, marshy and water logged land, built-up land, etc. which are important for local development plans. On the other hand, it is out of question to introduce the 22-fold classification in the village records. The *patwari* cannot, in most cases, identify the characteristics of various categories not to speak of the heavy burden this work imposes.

Conclusions and Recommendations

4.7.4 It is suggested that the nine-fold classification may be slightly enlarged to cover two or three categories of land use which are of common interest to the Centre and States, and which can be easily identified by the *patwari* through visual observation. Such addition increases his workload only marginally. The categories to be added may be decided by joint consultation between the Centre and the States. Incidentally, there was a consensus in the Conference of Central and State Statistical Organisations on the addition of social forestry, marshy and water logged land, and land under still waters.

4.7.5 It is desirable to consider in this context the question of rationalisation and simplification of the Village Crop Register (*Khasra* Register) and other records maintained by *patwari*. The records have remained almost the same since the mid 50s. There are also marked differences in the content and format of the records among the States. Cropping practices have also changed over time and new crops especially of short duration are sown and harvested. The list of crops covered by the Village Crop Abstract (*Jinswar*) needs a review that may also result in some changes in the manual of instructions for the *girdawari*. The Commission appointed an Expert to suggest changes after undertaking a review of the system of land records in different parts of the country. On examination of the Report of the Expert, the Commission is of the view that the system of land records being different in different States, it would be appropriate if the State Governments review the systems by appointing experts in the field.

4.7.6 Computerisation of land records is another major effort in progress to modernise the land record system. Under this programme, plot-wise details of ownership are to be maintained in the computer and periodically updated so that each owner is able to obtain readily his ownership record. Incidentally, computerisation reduces the workload of the *patwari* to the extent that he does not have to record the permanent columns of the *Khasra* Register. Many States have reported substantial progress in implementing the programme. It should be ensured that this is completed expeditiously.

4.7.7 The Commission, therefore, recommends that:

(i) The nine-fold classification of land use should be slightly enlarged to cover two or three more categories such as social forestry, marshy and water logged land, and land under still waters, which are of common interest to the centre and States, and which can easily be identified by the *patwari* through visual observation.

(ii) State Governments should ensure that computerisation of land records is completed expeditiously.

4.8 IRRIGATION STATISTICS

Current Status

4.8.1 Irrigation statistics mainly relate to data on area irrigated by different sources and under different crops. The principal sources of irrigation statistics are the crop statistics compiled by the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA), and the publications of the Ministry of Water Resources. Besides these, some data on irrigated area are available from the administrative reports of State Government departments and the Agricultural Census. Rainfall and weather data are available from the India Meteorological Department (IMD).

4.8.2 In the temporarily settled States, irrigation statistics are compiled from the village *girdawari*, whereas the same are estimated on the basis of sample surveys in respect of the permanently settled States of Kerala, Orissa and West Bengal. These statistics relate to net or gross irrigated area by sources (canals, tanks, tube well, etc.) and also area under each crop. The data are collated and published by the DESMOA with a time lag of three to four years.

4.8.3 Groundwater is the principal source for minor irrigation and the Central Ground Water Board (CGWB) is responsible for generation and dissemination of statistics on ground water which *inter-alia* include statistics on minor irrigation. The Minor Irrigation Division of the Ministry of Water Resources also compiles information on minor irrigation at the national level on the basis of statistics furnished by nodal offices designated for the purpose in individual States. The Command Area Development Division of the Ministry compiles and disseminates data on Command Area Development Programme (CADP) furnished by State Command Area Development Authorities (CADAs).

4.8.4 Lack of a sound database for the minor irrigation sector has made it necessary to conduct a periodical Census of Minor Irrigation works throughout the country under the scheme of Rationalisation of Minor Irrigation Statistics (RMIS). The primary fieldwork of the census is entrusted to the *patwari* and the village level worker (of C.D. block) under the supervision of block-level officials who also exercise a five per cent sample check in randomly selected villages. The results of the sample check are used to apply a correction factor to the main census data. Validation of data takes place at the district level and further compilation and tabulation at the State level with the help of software provided by the National Informatics Centre. The First census was conducted with reference year 1986-87 and the all-India Census Report was published in November 1993. The Second census with reference year 1993-94 has been completed and the report released recently. The Third census is being launched with reference period 2000-2001. A sample survey with reference year 1998-99 to assess the status of minor irrigation schemes, in use at the time of Second census is also being conducted.

4.8.5 The Central Water Commission (CWC), which is the nodal agency for water resource development in the country, is responsible for statistics of water resources pertaining to major and medium irrigation projects. The River Management Wing of CWC is engaged in hydrological data collection relating to all the important river systems in the country with the help of as many as 877 hydrological observation sites. The Information System Organisation (ISO) in the CWC is involved in planning, implementing, monitoring and coordinating all aspects of activities associated with information-gathering activities, analytical studies and computerisation.

4.8.6 Statistics compiled by CWC on major and medium irrigation projects and those compiled by the Minor Irrigation Division, especially the irrigation potential created and actually being utilised are the alternative sources of estimates of total irrigated area.

Deficiencies

4.8.7 There is a large variation between the statistics of "area irrigated" published by the DESMOA and the "irrigation potential utilised" published by the Ministry of Water Resources (see Annexe 4.7). Both data series are available with a considerable time lag.

4.8.8 The existing system of generation and dissemination of data in respect of major and medium irrigation projects does not permit real time monitoring of inflows of water and its utilisation through canals and the distributory system. Reluctance on the part of the States to furnish the data in view of their vested interest in the sharing of water is another stumbling block.

4.8.9 A large volume of useful data is reported to be available with the CWC on various aspects of irrigation without any statistical analysis. These data need to be put to use by the statistical machinery for better management of water resources.

Conclusions and Recommendations

4.8.10 In view of the wide variation between the data on irrigated area provided by the DESMOA and the Ministry of Water Resources, it becomes essential that State Governments make a special effort to minimise the divergence through appropriate interaction among the departments concerned. This is better attempted at the local level (*panchayat or* village).

4.8.11 It is desirable to have statistics of irrigated area with cross-classification by source of irrigation (major, medium and minor) and by individual crop. As this involves laborious tabulation at the village level, this may be done once in five years as part of the Agricultural Census.

4.8.12 In order to reduce the time lag between the generation and dissemination of data in respect of irrigation projects for real time monitoring of water resources, and proper and efficient water management, it is necessary that the major and medium irrigation projects are provided with computer facilities as well as appropriate Geographical Information Systems (GIS).

4.8.13 Involvement of the State Directorates of Economics and Statistics (DESs) in all State-level programmes of irrigation statistics and establishing direct linkage between the State DESs and the nodal Central Government agencies will help speedy data flow. The State DESs need to be strengthened for this purpose. The CWC has a major role in the production of water resources statistics. It is desirable to strengthen the network of CWC field offices by creating statistical monitoring and evaluation cells in them with trained statistical personnel. In order to oversee and guide the development and management of statistics of water resources, the Central Statistical Organisation (CSO) should designate a senior-level officer to interact with Central and State irrigation agencies.

4.8.14 The divergence between the two series of irrigated area published by the Ministry of Agriculture and Ministry of Water Resources is inevitable due to different concepts and definitions used by them. The data users should be made aware of these differences for proper understanding and analysis of data.

4.8.15 The Commission, therefore, recommends that:

(i) In view of wide variation between the irrigated area generated by the Ministry of Agriculture and the Ministry of Water Resources, the State Governments should make an attempt to explain and reduce the divergence, to the extent possible, through mutual consultation between the two agencies engaged in the data collection at the local level.

(ii) The State Directorates of Economics and Statistics (DESs) should be made the nodal agencies in respect of irrigation statistics and they should establish direct links with the State and Central agencies concerned to secure speedy data flow.

(iii) Statistical monitoring and evaluation cells with trained statistical personnel should be created in the field offices of the Central Water Commission (CWC) in order to generate a variety of statistics relating to water use.

(iv) The Central Statistical Organisation (CSO) should designate a senior level officer to interact with the Central and State irrigation authorities in order to promote an efficient system of water resources statistics and oversee its activities.

4.9 LAND HOLDINGS AND AGRICULTURAL CENSUS

Current Status

4.9.1 For the planning and implementation of land reforms, comprehensive information relating to the characteristics of different size classes of holdings is essential. This is also necessary to identify and formulate policies and programmes for the welfare of small and marginal farmers especially, the rural poor and economically weaker sections. The information is required by operational holdings as distinct from ownership holdings. An operational holding is defined as "all land, which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone or with others without regard to title, legal form, size or location". Thus, the Agricultural Census of operational holdings assumes importance as a source of basic data required for several uses.

4.9.2 Agricultural Censuses in the country are conducted at intervals of five years, as a part of the World Census of Agriculture (WCA). The census provides detailed statistics on the structure of operational holdings and their main characteristics like number and area, land use, irrigation, tenancy and cropping pattern. The first Agricultural Census was conducted with reference year 1970-71 and the sixth with reference year 1995-96 is nearing completion.

4.9.3 The census is carried out in three phases. During Phase I, a list is made of all the operational holdings and their primary characteristics like location, area, gender and social group of the holder. During Phase II, detailed data on tenure, tenancy, land use, irrigation, crop areas, etc. are collected. Phase III, popularly known as input survey, relates to collection of data on agricultural inputs (seeds, fertilisers, pesticides, etc.) according to five size groups of the holdings.

4.9.4 The census follows the method of re-tabulation of data from village land records in the temporarily settled States (accounting for 83 per cent of the total area). In the rest of the country, the census is taken through a household enquiry in a 20 per cent sample of villages. Even in the temporarily settled States, the data collected during Phase II is confined to a 20 per cent sample of the villages. The input survey (Phase III) is a household survey in a 7 per cent sample of villages selected from the 20 per cent villages (Phase II) in respect of both the temporarily and permanently settled States.

Deficiencies

4.9.5 One of the principal shortcomings of the Agricultural Census is the delay in the availability of final results. The reference period of the census is an agricultural year (July-June) and normally the census results should be available within two years from the end of the reference period. In practice, however, the time lag is as long as 4-6 years (see Annexe 4.8). For example, the results of the current census with reference year 1995-96 are expected to be available only in 2001. The main reason for this delay is the pre-occupation of the *patwari* agency, which is designated for this complex and time-consuming work. Census operations also

suffer from lack of adequate administrative and technical supervision over the work of the primary agency.

4.9.6 The census is based on re-tabulation of land records data in a large part of the country and its reliability rests on how accurate and up-to-date are the records. It is well known that the village records are deficient in several respects.

4.9.7 The census does not cover information on farm population and its composition, which is a major attribute of operational holdings. Likewise, it does not also provide details of livestock held by the holders.

Conclusions and Recommendations

4.9.8 The Agricultural Census is a major operation and the procedures prescribed for collecting the data are quite comprehensive and cover a wide variety of information. Initially, there was a fairly high-level hierarchy of officials responsible for planning and organising census operations. At the Central level there was an Agricultural Census Commissioner of India with adequate supporting staff and also a Monitoring Group under the Chairmanship of a Special Secretary. There used to be a corresponding mechanism at the State level to plan and supervise the census operations. However, over time, there has been depletion in the numbers and status of personnel in charge of the census. Apparently, the census ceased to have the same importance and priority, with the result that there has been significant erosion in the quality and timeliness of census data. It is essential that concerted measures are taken for effective management and organisation of the census and that it is carried out in time.

4.9.9 The *patwari* agency, which is responsible for this primary data collection, is already over-burdened with multifarious activities. The census work does not receive due priority and there is reason to believe that the work is not done properly. It is therefore desirable to explore the possibility of reducing the workload of *patwari*. The Commission proposes that the Agricultural Census should henceforth be carried out on a sample basis. A sample census in 20 per cent of villages is considered adequate to meet most of the data requirements. Even now a large part of the census information is obtained from a 20 per cent sample of villages. Only the information on the number and area of holdings is obtained with cent per cent coverage in the temporarily settled States and the rest of census operations are limited to a 20 per cent sample.

4.9.10 As mentioned before, the method of re-tabulation of land records in temporarily settled States does not enable collection of information on the farm and livestock population associated with the operational holdings. This needs a household enquiry. There is even now an element of household enquiry in these States to gather information on part holdings held by resident holders outside the village precincts. The scope of the enquiry may be slightly enlarged to include the above information. The household enquiry also serves as a cross check on the other characteristics of the holdings derived from re-tabulation of land records.

4.9.11 The Commission is of the view that a sample census will be a better-controlled and more manageable programme without in any way compromising its objectives. The computerisation of land records, that is likely to be completed shortly in many States, will also help in reducing manual re-tabulation and thus relieve the *patwari* agency of a part of the work load.

4.9.12 In order to improve the census operations, there has to be an appropriate strengthening of managerial personnel with an independent Agricultural Census Commissioner of sufficiently high status at the centre and suitable counterparts in the States. Necessary arrangements will have to be made for updating the village land records and for adequate supervision. Careful planning, advance preparation, and thorough training of primary staff are essential for successful conduct of the census.

4.9.13 The Commission, therefore, recommends that:

(i) The Agricultural Census should henceforth be on a sample basis and the same should be conducted in a 20 per cent sample of villages.

(ii) There should be an element of household enquiry (besides re-tabulation) in the Agricultural Census in the temporarily settled States.

(iii) Computerisation of land records should be expedited to facilitate the Agricultural Census operations.

(iv) There should be adequate provision for effective administrative supervision over the fieldwork of Agricultural Census and also a technical check on the quality of data with the help of the State statistical agency.

(v) The post of the Agricultural Census Commissioner of India at the Centre should be restored and should be of the level of Additional Secretary to be able to interact effectively with the State Governments. Further, this post should be earmarked for a senior statistician.

(vi) The Census Monitoring Board should be revived to oversee the Agricultural Census operations.

4.10 AGRICULTURAL PRICES

Current Status

4.10.1 The Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) is responsible for the collection, compilation and dissemination of the price data of agricultural commodities. The price data are collected in terms of (a) weekly and daily wholesales prices, (b) retail prices of essential commodities, and (c) farm harvest prices.

4.10.2 Weekly wholesale prices cover 140 agricultural commodities from 620 markets. The data are collected by price reporters appointed by the State Governments or Agricultural Marketing Committees and forwarded to the State Directorates of Economics and Statistics (DESs). Daily wholesale prices cover 12 commodities (rice, paddy, wheat, *jowar, bajra, ragi, maize,* barley, gram, sugar, *gur* and *khandsari*) from 617 market centres. On receipt of the prices from various State agencies, the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) forwards the same to the Economic Adviser, Ministry of Commerce and Industry for monitoring wholesale prices. Wholesale prices of certain important cereals, gram and sugar are also sent to the Cabinet Secretary on alternate days for direct monitoring.

4.10.3 Retail prices of essential commodities are collected on a weekly basis from 83 market centres in respect of 88 commodities (49 food and 39 non-food) by the staff of the State Market Intelligence Units, State Directorates of Economics and Statistics (DESs) and State Department of Food and Civil Supplies. Flow of data from these agencies is not considered satisfactory.

4.10.4 Farm Harvest Prices are collected by the field staff of the State revenue departments for 31 commodities at the end of each crop season and published by the DESMOA. It brings out a periodical publication entitled, *Farm Harvest Prices of Principal Crops in India*.

Deficiencies

4.10.5 Wholesale prices data are received in the DESMOA mostly through postal mail, which entails delay. Data on retail prices of the essential commodities are received with a time lag of about five to six weeks and the response rate is only of the order of 60 per cent. Supply of data through post is stated to be the reason for delay. The State Governments generally use part time reporters who are not fully conversant with the connotations of the different terms used in price data collection and they do not pay adequate attention to the reporting work. The main

deficiency in the collection of price data arises due to large non-response. There is no coordination among the State agencies concerned nor an adequate supervisory check over price collection.

Conclusions and Recommendations

4.10.6 Wholesale prices are primarily used to monitor the weekly price movements. It is, therefore, essential to have quality data on prices by ensuring representative price collection centres and commodity-wise quotations of prices. For this purpose, a well-documented manual of instructions on collection of prices is required. The price collectors should be given thorough training on concepts, definitions and the methods of data collection. The training courses should be repeated periodically.

4.10.7 A mechanism to ensure timely data flow is an immediate need. For this, the latest tools of communication technology like e-mail should be availed of. Further, the system should ensure simultaneous data flow from lower levels to the State as well as to the Centre.

4.10.8 The State agencies at the district level and below should follow up cases of chronic non-response. The quality of data should be determined on the basis of systematic analysis of the price data both by the Centre and the States. Workshops and training courses should be an integral part of quality improvement.

4.10.9 The number of essential commodities should be reduced to an absolute minimum, especially the non-food crops, in consultation with Ministry of Consumer Affairs and Cabinet Committee on Prices. The centres of price collection should, as far as possible, be the same for the essential commodities as for those of wholesale prices.

4.10.10 The Commission recommends that:

(i) The Ministry of Agriculture should prepare a well-documented manual of instructions on collection of wholesale prices of agricultural commodities.

(ii) The agricultural price collectors should be given thorough training in the concepts, definitions and the methods of data collection, and the training courses should be repeated periodically.

(iii) Workshops and training courses should be made an integral part of quality improvement. The quality of data should be determined on the basis of systematic analysis of the price data of agricultural commodities both by the Centre and the States.

(iv) Latest tools of communication technology like e-mail should be availed of to ensure timely data flow of agricultural prices.

(v) A system should be developed to secure a simultaneous data flow of agricultural prices from lower levels to the State as well as the Centre.

(vi) The State agencies at the district level and below should follow up cases of chronic non-response relating to collection of data on agricultural prices.

(vii) The number of essential commodities for which agricultural prices are collected should be reduced to an absolute minimum, especially the non-food crops, in consultation with Ministry of Consumer Affairs and Cabinet Committee on Prices.

(viii) The centres of agricultural price collection should, as far as possible, be the same for the essential commodities as those for wholesale prices.

4.11 AGRICULTURAL MARKET INTELLIGENCE

Current Status

4.11.1 On the recommendation of the Agricultural Prices Enquiry Committee, (1954), the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) set up 14 Market Intelligence Units (MIU) in the capitals of Andhra Pradesh, Assam, Bihar, Delhi, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. The market intelligence units are intended to help the DESMOA in the formulation, implementation and review of the agricultural price policy relating to procurement, marketing, storage, transportation, import, export and credit, etc. The units furnish regular reports on market arrivals, off-takes, stocks, crop prospects, and outlook of market prices. They are also required to give their appraisal of production of various *kharif* and *rabi* crops at regular intervals to help preparation of crop forecasts.

Deficiencies

4.11.2 Though the data to be supplied by the market intelligence units are of great utility, the units have ceased to be effective in discharging their functions mainly due to a lack of proper direction and control of their activities. Over the years, the staff strength of the units has been considerably reduced resulting in even worse performance.

Conclusions and Recommendations

4.11.3 Agricultural Market Intelligence is an important and useful instrument, and it should be strengthened and extended to all the States. The MIUs apparently have not been able to function in the manner envisaged. Their operations and staff requirements should be re-evaluated and appropriate measures taken to streamline the units. Full advantage of their services should be availed of to provide advance estimates of crop production, to collect auxiliary information required for framing "small area" estimates of crop production and several other studies. The Commission recommends the restoration of the MIUs and a revival of their activities fully.

4.11.4 The Commission recommends that:

(i) The functions, activities and the staff requirements of the Agricultural Market Intelligence Units should be re-evaluated and appropriate measures taken to streamline the units.

4.12 COST OF CULTIVATION OF PRINCIPAL CROPS

Current Status

4.12.1 In order to pursue its price support policy, the Government of India announces from time to time, the minimum support prices of principal crops. This necessitates the availability of relevant data on the cost of production of the crops concerned. To meet this requirement, a comprehensive survey of the Cost of Cultivation of Principal Crops was initiated in 1970-71. The survey is in operation in 16 States and covers 29 crops, the number and choice of crops in each State depending upon their importance to the State.

4.12.2 The Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) has the overall charge of implementing the survey programme through the Agricultural Universities in 13 States and general universities in three States by providing them cent per cent financial assistance. The survey design followed is that of three-stage stratified random sampling with the *tehsil or taluka* as the first stage unit, a cluster of villages as the second stage unit and an operational holding as the third and ultimate stage unit. The fieldwork consists of collecting from each sample household through the cost accounting method, data on all aspects of cultivation

(inputs, outputs, prices paid and received) by keeping a detailed record on a day-to-day basis. The universities engage full time field men for this purpose. Training to the field staff is imparted by the universities and whenever necessary, supplemented by the DESMOA.

4.12.3 The Cost of Cultivation Studies are primarily intended for use by the Commission for Agricultural Costs and Prices (CACP). In addition, these data are used by the Central Statistical Organisation, Planning Commission, other Economic Ministries of Government of India as well as research organisations.

Deficiencies

4.12.4 It is reported that the data collected and processed under the scheme do not suffer from any serious deficiencies, and the only problem is shortage of manpower in the Central Analytical Unit of DESMOA, which results in delay in the availability of final results. This is, however, far from true. The CACP does not obtain timely and sufficient inputs from these studies, which are required in the fixing of the minimum prices. The requirements of the National Accounts Division of CSO are also not met adequately. Implementation of the scheme by the Agricultural Universities is reported to be unsatisfactory. The data entry and processing still make use of a DOS-based computer package called FARMAP provided by Food and Agricultural Organisation (FAO) and no updating of the package has been undertaken. There has been no report on the results of the scheme until recently. (The DESMOA has now brought out a consolidated report.)

Conclusions and Recommendations

4.12.5 Cost of cultivation studies should continue in view of their importance in price administration of agricultural commodities and several studies relating to farm economy. Irrespective of the agency that is assigned this work, there should be a more focused attention to proper organisation and management of the studies. It is necessary to have an early review of the number of centres, methodology, sample size, the existing schedule and questionnaire, etc. The universities should be encouraged to tabulate and analyse the data for which they should be provided the necessary support. The DESMOA should endeavour to release the survey results with least possible delay, and any strengthening needed for improving the performance of the scheme should be immediately provided.

4.12.6 The Commission recommends that:

(i) In view of the importance of the Cost of Cultivation Studies in the price administration of agricultural commodities and several studies relating to farm economy, the present programme should continue.

(ii) Focused attention should be paid to the proper organisation and management of the Cost of Cultivation Studies.

(iii) A review of the number of centres, methodology, sample size, the existing schedule and questionnaire, etc. of the Cost of Cultivation Studies should be undertaken.

(iv) The Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) should minimise the delay in bringing out the results of the Cost of Cultivation Studies.

4.13 LIVESTOCK NUMBERS

Current Status

4.13.1 Data on livestock numbers are collected through a quinquennial Livestock Census that is a complete enumeration of all households with regard to livestock population, poultry, agricultural machinery and fishing craft. The data collected are quite detailed; the livestock is

classified according to various species of animals by breed, sex and age. The First Livestock Census was conducted in 1919-20 and the Sixteenth census is in progress with the reference date of 15 October 1997.

4.13.2 The Livestock Census is a Centrally sponsored scheme coordinated by Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA). The census is conducted by the State Animal Husbandry Departments with the help of their field staff. In some States, the field operations are entrusted to the village *patwari* agency with technical supervision provided by the Department of Animal Husbandry. Reports of the Livestock Census are brought out in two volumes, the first relating to all-India and State-wise data, and the second to the district-wise information.

Deficiencies

4.13.3 The Livestock Census is the only source of statistics on livestock numbers, their age and sex structure, and functional classification. The data collected are quite elaborate but the final published output leaves much scope for improvement in terms of timeliness and reliability. The sixteenth census scheduled to be completed in 1997 is still in progress in several States. The time lag in the availability of data from the Livestock Census may be seen from Annexe 4.8. Non-adherence to the reference date, incomplete coverage and spreading the census operations over long stretches of time reduce the utility of the census data.

4.13.4 Although the Livestock Census is based on household enquiry, the census data are not related to the households and their composition. It is important, for example, to have the number of purely livestock holdings classified by main occupation of the head of the household.

4.13.5 Changes in reference date and classification of the population over various censuses also vitiate comparison over time.

Conclusions and Recommendations

4.13.6 In view of the excessive delay in completing the census operation and long time-lag in the availability of census results, it is imperative to reduce drastically the volume of census work so that it can be completed at least within a period of one year, if not in a short interval of a few weeks around the reference date (15 October). It is also essential to ensure better organisation and management of the census through strict compliance to the time schedule, comprehensive training of field staff and regular supervision over the fieldwork. The Commission considers that the Livestock Census too, like the Agricultural Census, should henceforth be taken in a 20 per cent sample of villages in place of cent per cent coverage under the prevailing system. A sample census of this magnitude is quite adequate to provide reliable estimates of livestock numbers with details of principal characteristics down to the level of a district as of now. The sample census facilitates speedy collection of data and a more effective use of available resources for census work, reduces considerably the volume of data processing, and goes a long way in improving the timeliness, content and quality of the final census result. Another important measure towards securing this objective is the extensive use of Information Technology (IT) tools at various levels for processing and transmission of data.

4.13.7 The Commission, therefore, recommends that:

(i) The quinquennial Livestock Census should henceforth be taken in a 20 per cent sample of villages instead of a cent per cent coverage.

(ii) The Livestock Census should include some minimum information about the household (size, occupation, etc.) in addition to the head count for more meaningful analysis of the census data.

(iii) There should be a concerted effort towards better organisation and management of the Livestock Census operation through comprehensive training of the field staff and regular supervision over their work by both administrative and technical personnel.

(iv) Information Technology tools should be used at various stages of the Livestock Census for rapid processing and preparation of the final reports as well as improving the quality of the data.

4.14 INTEGRATION OF LIVESTOCK AND AGRICULTURAL CENSUSES

4.14.1 The issue of integrating the Livestock Census with the Agricultural Census has been raised on several occasions in the past. There are both operational and substantive gains, if the two censuses are taken together as recommended by the FAO World Census of Agricultural Programme. Several committees and workshops recommended earlier that the two censuses should be merged in order to lessen the burden of fieldwork on the primary data collection agency, reduce the total expenditure and get more meaningful data. The Eighth Conference of Central and State Statistical Organizations (1988) recommended a pilot study to evolve suitable procedures for the integration of the two censuses. Later, the National Advisory Board on Statistics in its ninth meeting (1991) agreed that there was a definite need for the integration of the two censuses and this should be done in a phased manner. In spite of these recommendations, the Ministry of Agriculture and some State Governments advanced the following reasons as to why the two censuses cannot be integrated:

(a) The basic unit of enumeration in the Agricultural Census is an "operational holding" whereas in the Livestock Census it is a "household".

(b) The reference period for the Agricultural Census is one year whereas it is a specific date for the count of numbers in the Livestock Census.

(c) Agricultural Census is conducted through a dual programme of census and sample survey whereas the Livestock Census is based on cent per cent coverage of all households in the country (urban and rural).

(d) Different field agencies are used for the two censuses, the *patwari* agency for the Agricultural Census and the field staff of the State Department of Animal Husbandry for the Livestock Census.

4.14.2 The Commission considers that the above-mentioned problems are not too difficult to overcome and that a satisfactory procedure can be evolved for integrating the two censuses. Like the Livestock Census, the Agricultural Census also follows the household approach in the permanently settled States where it has been possible to collect information on operational holdings through household enquiry. Even in the temporarily settled States, where the Agricultural Census is based on the re-tabulation of land records, there is an element of household enquiry to account for the details of land held by resident holders outside the village precincts. As regards different reference periods of the two censuses, the Livestock Census has never been able to adhere to the stipulation of a specific date for the count of numbers. On the contrary, the census is spread over several years. If the Agricultural and Livestock Censuses are synchronised to be taken during the same year, the livestock count could be concentrated around the specified reference date as far as possible with appropriate check of the change in numbers between the date of enquiry and the reference date. The Commission has already proposed that both the censuses be limited to a 20 per cent sample of villages, which also facilitates the process of integration. Finally, there is a definite advantage in entrusting the field operations to a single reporting agency with enough safeguards such as careful advance planning and by ensuring that the censuses are accorded the requisite priority by the State administration as in the case of the Population Census. It should be emphasised that the integration of the two censuses provides scope for several cross tabulations including distribution of livestock and farm population by the

size of the land holdings. Moreover, the advantages in terms of more information, reduction of operational costs on staff training, data processing, etc. overall decrease in the work load of the field agency and early availability of the census results are other major factors in favour of the merger.

4.14.3 The Commission, therefore, recommends that:

(i) The Livestock and Agricultural Censuses should be integrated and taken together in a 20 per cent sample of villages.

(ii) Before effecting the integration of Livestock and Agricultural Censuses a limited pilot investigation be undertaken to firm up the procedures of integration.

(iii) The periodical National Sample Survey Organisation's survey on land and livestock holdings be synchronised with Agricultural and Livestock Censuses in order to supplement as well as help in the crosscheck of information from the two sources.

4.15 LIVESTOCK PRODUCTS

Current Status

4.15.1 Statistics of Livestock Products are obtained from two sources: (a) annual "Integrated Sample Survey for Estimation of Major Livestock Products", a Centrally sponsored scheme under the Department of Animal Husbandry and Dairying implemented by most of the States; and (b) periodical household enquiries by the NSSO relating to livestock.

4.15.2 The Integrated Sample Survey is a large-scale survey covering 15 per cent of the villages in the country. The survey design is that of multistage sampling with villages constituting the first stage, households as the second stage and animals from the selected households as the third and ultimate stage. The survey provides for estimation of livestock numbers as well as major livestock products (milk, meat, wool, eggs and the unit cost of production of milk and eggs).

4.15.3 The NSSO livestock surveys estimate the livestock possessed by the households with details relating to sex, breed, purchase price, market value, disposal of animals, etc. Further, NSSO consumer expenditure and enterprise surveys include data on household consumption of livestock products and dairy enterprises, respectively.

Deficiencies

4.15.4 Estimates of livestock products obtained through Integrated Sample Survey are reported to be fairly reliable at the all-India and State level. These are reviewed and validated periodically by a Technical Committee of Direction for Improvement of Animal Husbandry and Dairying Statistics. There are still a few data gaps relating to mutton, pork, poultry meat, meat by-products, livestock feed, fodder and concentrates. Information on conversion ratios such as milk to milk-products is either scanty or lacking.

Conclusions and Recommendations

4.15.5 The Integrated Sample Survey is carried out under the overall technical guidance of the IASRI that has developed the survey design and continues to provide technical inputs in the conduct of the survey. IASRI has several research programmes dealing with improvement of livestock statistics and it should be entrusted with the task of developing appropriate methodologies for filling up the remaining data gaps.

4.15.6 The Commission, therefore, recommends that:

(i) The Integrated Sample Surveys should be continued and efforts should be made to fill up the existing data gaps.

(ii) The Indian Agricultural Statistics Research Institute (IASRI) should be entrusted with the task of developing appropriate methodologies for filling up the remaining data gaps relating to estimates of mutton, pork, poultry meat, and meat by-products.

4.16 FISHERIES STATISTICS

Current Status

4.16.1 Fisheries of India can be broadly classified into two types namely, marine fisheries and inland fisheries. The Fisheries Statistics Section of the Department of Animal Husbandry and Dairying in the Ministry of Agriculture is in charge of compiling the data relating to this sector. At present data on items like fish production, prawn production, fish seed production, disposal of fish catch, preserved and processed items and aquaculture are being collected from State Governments.

4.16.2 A multistage sample survey is used to estimate the fish production from the marine sector. The survey design developed by the Indian Agricultural Statistics Research Institute (IASRI) and the Central Marine Fisheries Research Institute (CMFRI) consists of sampling of landing sites of the fishing craft as well as sampling over time of the landings. Data on deep-sea fishing are obtained through reports required to be furnished by trawlers and other deep-sea fishing vessels.

4.16.3 So far as inland fisheries are concerned, there were several attempts to develop suitable sampling techniques for estimation of catch since 1955, but they have remained inconclusive. The Central Inland Fisheries Research Institute (CIFRI), Barrakpore lately devised a methodology for collection of data relating to some important still water areas. This involves dividing water sources into two categories namely, fresh water and brackish water bodies each with a distinct ecology, and classifying them further into three groups according to the level of production. Different sampling methods are adopted for assessment of fish production in each group. There is still a large data gap in coverage not only geographically but also in terms of several sources of inland fisheries such as rivers, canals, etc.

Deficiencies

4.16.4 As regards marine fisheries statistics, the sample methodology in use is considered to be satisfactory. There is, however, a need for periodic review of sample size, stratification and intensity of data collection in view of the changes in the pattern of fish landings. There are also problems in the flow of data from States and consequently much delay in the compilation of all-India statistics. As far as the deep-sea sector is concerned, though only a small number of licensed vessels are in operation, the data on fish catch do not flow in a regular manner. There is a need to put in place a proper mechanism of reporting for this purpose.

4.16.5 The data on fish production from the inland sector are collected by the State Governments. It is noticed that the resources required for regular data collection are quite large and the cost incurred is not commensurate with the actual volume of fish production. Inland fisheries pose several problems due to the vast and diverse nature of water sources and it is necessary to develop a cost-effective methodology. IASRI is presently engaged in some pilot studies in this regard but more concerted effort is urgently called for.

4.16.6 The data on fish production from aqua culture, supplied by the States, similarly suffer from poor quality and become available with considerable time lag. The types of culturing methods are not reflected in the data.

4.16.7 The data on fisherman population, fishing craft and gear are available from both the State Governments and the Livestock Census, while data on workers engaged in fishing are also

available from the population census. However, the data from these sources are not comparable due to differences in concepts and definitions and their application across States.

4.16.8 There is an apparent inconsistency between the value of the output and the export earnings, the latter being much higher. An exploratory study is required to reconcile the discrepancy.

Conclusions and Recommendations

4.16.9 It is observed that the present system is operating satisfactorily in the case of marine fisheries but a lot still needs to be done to evolve a suitable methodology with regard to inland fisheries. In the marine sector, there is a need to impart regular, training to field staff and impose adequate supervision to ensure quality of data. Use of modern tools of Information Technology for data communication and storage will improve the quality and timeliness of fisheries statistics. Since the CIFRI and the IASRI are involved in the development of sampling methodology for inland fisheries, the Commission considers that these institutes should be properly equipped to develop an alternative methodology. The alternative approach should also consider the possibility of undertaking enquiries of fishermen households wherever there is a large concentration of fishing especially along major riverbanks.

4.16.10 The Commission recommends that:

(i) The survey design for estimating production of marine fisheries should be modified taking into account the current distribution of landing sites and the volume of catch at different sites. The field staff engaged in collection of data should be imparted regular training and their work should be adequately supervised.

(ii) The survey methodology for estimating production of inland fisheries especially with regard to running water sources (rivers and canals) should receive urgent attention and the Indian Agricultural Statistics Research Institute (IASRI) along with the Central Inland Fisheries Research Institute (CIFRI) should be provided with adequate support to develop this programme on a priority basis.

(iii) The States should improve the recording of area under still water by appropriate modification of land use statistics.

(iv) The discrepancies between the two sources of data namely, Livestock Census and State reports with regard to data on fishermen, fishing craft and gear should be reconciled by adoption of uniform concepts and definitions and review of these statistics at the district and State levels.

4.17 FORESTRY STATISTICS

Current Status

4.17.1 Reliable forestry statistics are required for planning, policy-making, analysis and decision-making on forestry investment and development programmes. These statistics are collected mainly as a by-product of administrative reports of the State Forest Departments. On the recommendation of the National Commission on Agriculture (1976), the Forest Survey of India (FSI) was created in 1981 with the objective of monitoring the forest resources at a macro level, storing and retrieving forestry related data, designing methodology for forest surveys, etc. Besides the FSI, the Indian Council of Forestry Research and Education (ICFRE) is mandated to collect, collate and compile primary and secondary data generated by the State Forest Departments and various Central ministries. The data on the forestry are obtained through a set of periodical reports (45 in number) furnished by the State Forest Departments and other concerned agencies. In addition to details of forest area, the reports provide information on forest products (wood and non-wood), forest land under cultivation, and grazing land, etc.

4.17.2 Since 1987, the FSI has begun using Remote Sensing (RS) technology to collect data on forest cover under three broad classes (dense forest, open forest and mangroves) on a country-wide scale through a biennial survey. The latest survey (October-December, 1998) used satellite data having a resolution of 23.5 metres with digital image processing. Introduction of digital interpretation has helped in reducing the time lag in the availability of the area estimates to just a few months after the completion of the survey.

4.17.3 The Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) also publishes statistics of area under forests as part of Land Use Statistics according to the definition adopted in the nine-fold classification of land. This includes all land categorised as forests under any legal enactment dealing with the forests or administered as forests whether State or private owned, whether wooded or maintained as potential forest land.

Deficiencies

4.17.4 The main drawback in the compilation of forestry statistics (as in the case of several other sectors) is the inordinate delay in the availability of data. Except the area under forest cover now being assessed by the biennial RS satellite survey, all the other published data have long time lags. The FSI faces the problem of delayed transmission of data by the States, which tend to accord low priority to the reporting work. Nearly half the States do not furnish the statistics in time, which delays the national compilation. The latest estimates of forest area based on Land Use Statistics pertain to 1996-97.

4.17.5 The present contribution of the forest sector to the GDP is considered as an underestimate as it does not take into account several important items such as head loads of fire wood, wood used for power generation, eco-tourism, etc.

4.17.6 There is a large discrepancy between the area under forest cover as published by FSI and by DESMOA mainly due to the differences in the concepts and definitions followed by two agencies (see Annexe 4.9).

Conclusions and Recommendations

4.17.7 Forest area statistics are generated through two sources, the FSI and DESMOA, each using different sets of concepts and definitions resulting thereby in a wide divergence between the two estimates. It is desirable to reconcile these differences to the extent possible, which can be attempted only at the micro level. It is necessary to have the FSI survey data at the village level for this purpose.

4.17.8 Early measures are required to cover all forest products in the State reports in order to improve the GDP estimates of the forest sectors. It is reported that a Working Group set up by the FSI is presently examining this question. It is expected that its recommendation, when implemented, will improve the estimates of the share of forestry and logging sectors in the GDP.

4.17.9 To obviate delay in the transmission and to reduce the time lag in the availability of forestry statistics, it is desirable to set up statistical units under the State Conservators of Forests to oversee collection and compilation of forest statistics and make use of latest tools of Information and Communication Technology for storage, retrieval and rapid transmission of data.

4.17.10 The Commission recommends that:

(i) Remote Sensing techniques should be extensively used to improve and develop forestry statistics.

(ii) The State Forest Departments should be adequately supported by the establishment of appropriate statistical units to oversee the collection and compilation of forestry

statistics from diverse sources on forest products including timber and non-timber forest products.

(iii) Arrangements should be made for storage and speedy transmission of forestry data through Information Technology devices.

(iv) In view of the unavoidable nature of the divergence between statistics from the two sources – land records and State Forest Departments – because of different coverage and concepts, the two series should continue to exist; but the reasons for divergence should be clearly indicated to help data users in interpreting the forestry statistics.

(v) A Statistics Division in the Ministry of Environment and Forests with adequate statistical manpower should be created for rationalisation and development of proper database on forestry statistics.

4.18 MARKETABLE SURPLUS AND POST-HARVEST LOSSES

Current Status

4.18.1 The Directorate of Marketing and Inspection (DMI), Ministry of Agriculture has been conducting surveys on marketable surplus and post-harvest losses of food grains. The surveys provide information on marketable surplus ratios as well as on a variety of other important items like farm retention for family consumption, for seed, feed and wastage, etc. The present surveys collect information on these parameters using the methodology approved by a Technical Committee constituted for the purpose under the Chairmanship of the Agricultural Marketing Adviser to the Government of India. The surveys cover the following crops: Paddy, Wheat, *Jowar*, *Bajra*, Maize, *Ragi*, Barley, Red Gram, Gram, Green Gram, Black Gram and Lentil. The methodology used is that of multistage stratified random sampling and consists in selecting 20 per cent of the districts in a State, 15 villages in each selected district and 10 cultivator households from each selected village with a maximum of 100 districts, 1500 villages and 15,000 households.

4.18.2 The fieldwork of the surveys is conducted by Designated State Agencies through field investigators employed by them under the overall supervision of the Directorate of Marketing and Inspection. The data so collected are analysed with the support of IASRI and published. The information collected through these surveys is used in the National Accounts Statistics, and Ministry of Commerce and Industry in fixing the weights for certain agricultural commodities while compiling the all-India Index Number of Wholesale Prices in addition to its uses in planning and procurement operations and market development programmes.

Conclusions and Recommendations

4.18.3 The schedules used in the collection of information in the surveys are exhaustive, the methodology is robust, and the data collected do not appear to suffer from any serious deficiencies. However, the agencies designated for the purpose of collection of data are reported to face a number of difficulties due to inadequate manpower.

4.18.4 The Commission recommends that:

(i) The existing methodology in conducting the surveys on marketable surplus and post-harvest losses of food grains should continue in future surveys of this type.

(ii) The agencies designated for the collection of information on marketable surplus and post-harvest losses of food grains should be provided additional manpower, wherever necessary, for the conduct of these surveys.

4.19 MARKET RESEARCH SURVEYS

Current Status

4.19.1 The concept of market research survey in India dates back to 1935. It started with the establishment of the Office of Agricultural Marketing Adviser for investigation of the chain of operations from production through final distribution of crops, while establishing appropriate marketing standards. The market surveys are carried out by the marketing officers visiting the centres of concentrated production, as well as areas where production is relatively sparse. The information is collected by interviewing representatives of different groups of persons concerned in the production and distribution of the commodity affected, for example, producers, wholesalers, manufacturers, railway agents, etc. Each marketing officer is responsible for making sure that the sample interviews are representative of all the different groups of persons in the chain of distribution. With the setting up of a Market Research and Planning Cell (MRPC) in the Directorate of Marketing and Inspection, the importance of market research has increased. While the headquarters of MRPC looks after the guidelines, questionnaire and schedules in use and synopsis for the collection and compilation of the data, the field offices located at various State capitals and important centres carry out the field surveys. The collection of data is done by teams of qualified and experienced officers through well-planned schedules and guidelines provided for the survey. The collected data are analysed and a report on each crop is published for the benefit of various market users.

Deficiencies

4.19.2 It is reported that the field investigators often find it difficult to collect primary data from the producers of agricultural commodities, as they do not maintain any records. As a result, the information collected depends to a large extent on individual assessment by the investigators. Even so, the survey reports provide valuable information to the planners and policy makers. Several institutions both at the Central and State level carry out market research work. As there is no standard agricultural marketing research methodology, it is difficult to have uniformity in the work. A lot of statistics go into the preparation of the reports, but the MRPC is not adequately equipped to analyse and make full use of the data collected. The Cell has not been properly supported by statistical resources.

Conclusions and recommendations

4.19.3 Despite the difficulty of getting accurate information from the producers of agricultural commodities and certain subjective element is involved in the data collection, the system seems to work well. However, as several institutions carry out market research, there is a need to prescribe a standard methodology for the survey work. This can better be achieved through appropriate support of statistical personnel and adoption of statistical techniques combined with the latest Information Technology tools.

4.19.4 The Commission, therefore, recommends that:

(i) The Directorate of Marketing and Inspection (DMI) should establish a Statistical Cell either independently or within Market Research and Planning Cell (MRPC) with sufficiently trained statistical personnel to undertake comprehensive analysis of survey data and aid the decision-making process.

(ii) The Statistical Cell of Directorate of Marketing and Inspection (DMI) should identify the problems and deficiencies in the market research surveys carried out by different institutions and develop a standard methodology for uniform adoption.

4.20 INDEX NUMBERS IN AGRICULTURE

Current Status

4.20.1 Index Numbers in Agriculture are required in order to study the trends over time in respect of area, yield, production, productivity, prices, etc. and for studying the comparative picture of the performance of agricultural sector *vis-à-vis* other sectors. The index numbers are constructed after making due allowance for changes in the coverage and methods of estimation as the absolute figures of area, yield, production, etc. are known to be unsuitable for a study of trends over time. The index numbers constructed by the Ministry of Agriculture can be grouped into two broad categories: (a) Index Numbers of Area, Production and Yield, and (b) Index Numbers of Terms of Trade between Agricultural and Non-agricultural Sectors.

Index Numbers of Area, Production and Yield

4.20.2 The Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) constructs the index number of area, index number of production and index number of yield separately for each State covering 46 crops. The crops are classified into two main groups and eight sub-groups as listed below:

Food grains		
	Cereals	Rice, Wheat, *Jowar*, *Bajra*, Maize, *Ragi*, Barley and Small Millets. (Crops except Rice and Wheat constitute the sub-group coarse cereals.)
	Pulses	Gram, Tur and other pulses.
Non-food grains		
	Oilseeds	Groundnut, Sesamum, Rapeseed and Mustard, Linseed, Castorseed, Safflower, Nigerseed, Soyabean, Sunflower, Coconut and Cottonseed. (The oilseed crops except Coconut and Cottonseed constitute 9 oilseeds.)
	Fibres	Cotton, Jute, Mesta and Sannhemp (Jute and Mesta constitute a sub-group.)
	Plantation crops	Tea, Coffee and Rubber.
	Condiments and Spices	Pepper, Ginger, Garlic, Chillies, Turmeric, Arecanut, Coriander, and Cardamom.
	Fruits and Vegetables	Potato, Onion, Banana, Cashewnut, Tapioca and Sweet Potato.
	Other Crops	Sugarcane, Tobacco and Guarseed

Besides the State index numbers, the DESMOA also constructs the national level indices. The base year for the present series of "Index of Area, Production and Yield in Agriculture" is the triennium ending 1993-94 so as to be in harmony with the other series of indices such as Index of Industrial Production, Wholesale Price Index and other series of National Accounts Statistics. In order to smoothen the fluctuations of area and production from one year to another, the average of area and production over the triennium is taken for determining the base level area and production. The weight of a commodity for the production index is taken as the average production of the commodity in the triennium ending 1993-94 and the national average price of the commodity during 1993-94 as obtained from National Accounts Statistics. This has been

done to fix the base production at its average level by eliminating the cyclical variation and to evaluate the production with a same price for all States in view of the wide variations observed in the State prices. The index number of area for a specified year for an individual crop is the percentage of current year area of the crop with respect to the base year area of the crop. The index of production is also calculated in the same manner taking the production figures instead of the area figures whereas the index number of yield for the specified crop is calculated as the percentage of the index number of production with respect to that of area. Though these indices are calculated for each State separately, the all-India indices are calculated independent of the State indices. The methodology adopted for the calculation is given at Annexe 4.10.

Index of Terms of Trade between Agricultural and Non-Agricultural Sectors

4.20.3 With a view to comparing the prices of exports of Agricultural Sector with prices of imports from non-Agricultural Sector, the Ministry of Agriculture constructs the index numbers of terms of trade (ITT) between the agricultural and non-agricultural sectors. It measures the relative change in the prices received by the farmers for produce sold by them in relation to a change in the prices paid by them for the commodities purchased for final and intermediate consumption as well as capital formation. While a value of ITT greater than 100 indicates favourable terms of trade for Agricultural Sector, less than 100 indicates adverse terms of trade. These indices are available from 1981-82 onwards. The base period for constructing the current series of ITT is the triennium ending 1990-91. The methodology used for the construction of ITT is the ratio of Index of Prices Received (IPR) to the Index of Prices Paid (IPP) by the Agricultural Sector expressed as a percentage.

4.20.4 The Index of Prices Received (IPR) covers 39 important crops and commodities at all-India level produced in the Agricultural Sector and nine livestock products. The percentage of the marketed value of each commodity with respect to the total value of marketed surplus for all the commodities is used as weights for the construction of the index.

4.20.5 The Index of Prices Paid (IPP) by the Agricultural Sector depend on the items and commodities and their quantities, which the Agricultural Sector purchases from the non-agricultural sector for the purposes of final consumption, intermediate consumption and capital formation together with their prices. Accordingly, three indices namely, IPP for final consumption (IPP-FC), IPP for final intermediate consumption (IPP-IC) and IPP for capital formation (IPP-CP) are separately calculated. The combined IPP is based on a weighted average of the three component indices with percentage weights 73.54, 21.63 and 4.83 respectively.

4.20.6 The index of terms of trade between Agricultural and non-Agricultural Sector is worked out as the percentage of index of prices received by the farmers with respect to the index of prices paid for final consumption, farm inputs and capital investment. The index numbers of the terms of trade between Agricultural and non-Agricultural Sectors with bifurcations of the index numbers of prices paid and those received for the years from 1981-82 to 1997-98 are given in Annexe 4.11. These indices are used in the formulation of price policies for agricultural commodities, monitoring the changes in the economy of the Agricultural Sector in relation to the rest of the economy.

Conclusions and Recommendations

4.20.7 The index number of area, production and yield that are available for every State are constructed covering all the crops. As all the crops may not be important in all the States, the State Indices are likely to give a wrong picture. The index of terms of trade has been observed to serve the purpose for which it is meant. There appears to be no deficiency in the process of developing the series. While it is a welcoming feature that the Ministry of Agriculture has been constructing the State Indices besides the all-India series of Index Numbers of Area, Production

and Yield, it is necessary that the State Indices should give a correct picture of the State with reference to specific parameters. This would be possible if crops grown with reference to a specific State only are included in the construction of the State Indices with appropriate weights.

4.20.8 The Commission, therefore, recommends that:

(i) A review of the item basket for the construction of Index Numbers of Area, Production and Yield should be undertaken immediately.

(ii) The item basket for the construction of Index Numbers of Area, Production and Yield should be different for different States.

(iii) The present arrangements for the construction and release of Index of Terms of Trade should continue.

4.21 RECORDING OF AREA UNDER MIXED CROPS

Current Status

4.21.1 The practice of sowing crops in mixture in the same field is prevalent in almost all parts of the country. Cultivators usually mix crops that cannot stand a particular type of weather with another set of crops that resist and thrive under the same conditions. The methods employed for sowing such crops vary not only from State to State but also from area to area within the same State. The crops in the mixture are sown either individually in separate rows or are mixed together. In the former case, the seeds of the constituent crop are kept separate and a certain number of rows of one crop alternate with those of some other. In the latter case, the seeds of two or more crops are mixed together before sowing and the mixed seeds are either line-sown or broadcast.

4.21.2 The procedures followed for apportioning the net area under the constituent crops vary from State to State. The different procedures followed in the States are listed in Annexe 4.12. The major land records States of the country can be divided into the following three categories according to the manner of treatment of areas under crops grown in mixtures:

(a) States where allocation of the area to the constituent crops grown in mixture is done at the field level such as Andhra Pradesh, Assam, Bihar, Gujarat, Himachal Pradesh (except Kangra District), Karnataka, Maharashtra and Tamil Nadu.

(b) States where some major crop mixtures have been identified and the area at the field level of these recognised mixtures is recorded as such for the mixtures and allocation to the component crops done at higher levels on the basis of fixed ratios. For unrecognised mixtures, the allocation of areas to the components is done at the field level. The States following this procedure are Haryana, Kangra District of Himachal Pradesh, Jammu and Kashmir, Punjab and Rajasthan.

(c) States where some major mixtures have been identified and the area at field level of these mixtures is recorded as such, the allocation to the constituent crops being done at subsequent levels following fixed ratios. But for unrecognised mixtures, the entire area is recorded against the major crop or the recognised crop mixtures and the minor constituents are ignored. Madhya Pradesh and Uttar Pradesh follow this procedure.

Deficiencies

4.21.3 Though many States have recognised crop mixtures on the basis of the cropping pattern followed, several others do not have such recognised crop mixtures. The allocation of area under constituent crops in respect of recognised mixtures is generally made using fixed ratios and rates. The same allocations have continued for several decades and they may not conform to

the current cultivation practices. In the case of non-recognised mixtures, the area allocation is generally done at the field level using eye appraisal, which brings inaccuracies in the recording of crop area. It has also been observed that in some States, certain minor crops are mixed with major crop mixtures and the minor constituents are ignored while recording the area. For example, in Uttar Pradesh, for a mixture like 'wheat, barley, and linseed', the entire area is recorded as 'wheat and barley' (ignoring the linseed).

Conclusions and Recommendations

4.21.4 It is seen that the recognised crop mixtures and the procedures adopted for apportioning the net area under constituent crops of the crop mixtures have remained unaltered over a long period of time. These may no longer conform to the current cultivation practices. A review of the crop mixtures and the ratios of apportioning should be made by the Ministry of Agriculture using the data available from surveys like the ICS in order to arrive at realistic crop mixtures and ratios.

4.21.5 The Commission, therefore, recommends that:

(i) The rates used to apportion the areas of constituent crops of major crop mixtures should be fixed for the recognised mixtures at sub-district and district levels and updated periodically.

(ii) Data available from surveys conducted under schemes like Improvement of Crop Statistics (ICS) over the years should be used for deciding the crop mixtures and their ratios.

4.22 INPUT STATISTICS

Current Status

4.22.1 For a comprehensive appraisal of the agricultural economy, information on inputs such as fertiliser, pesticides, agricultural credit, multiple cropping, inventory of agricultural machinery and implements, mechanism of plant protection, quarantine and storage, etc. are of as much importance as the data on production. The input surveys conducted as a part of quinquennial Agricultural Census are an important source for such data. However, the latest available data pertain to the Input Survey 1991-92. More recent information on production, distribution and stocks held of fertilisers is available from the Fertiliser Association of India (FAI), but it does not provide details of actual consumption.

4.22.2 The Agricultural Implements and Machinery Division of the Department of Agriculture has been compiling and maintaining statistics relating to production and sale of tractors and power tillers from Tractors Manufacturing Association and Manufacturers of Tractors and Power Tillers.

4.22.3 Plant protection, quarantine and storage is another area where though data are collected, they are not compiled and maintained as an organised database. The Directorate of Plant Protection, Quarantine and Storage (PPQ&S) in the Ministry of Agriculture is the apex organisation in India for promoting plant protection. The Directorate advises and assists the Union Government on all matters relating to plant protection including international obligations, besides assisting the State Governments in their plant protection activities. Large amount of data are collected through Rapid Roving Surveys under the Pest Surveillance and Monitoring. In these surveys, the Surveillance Teams of the different Central Integrated Pest Management Centres move through intensive crop belts on predetermined routes at regular intervals, stop at regular distances and collect information on weather, crop stage and status, and pest and disease situation in the fields on both sides of the road. The Locust Warning Organisation of the Directorate entrusted with the task of monitoring and controlling locusts over an area of 2 lakh

square kilometres in the desert areas across Rajasthan, Gujarat and Haryana collects information on locust development and movement together with related aspects. This information is Centrally collated and a fortnightly locust situation bulletin is brought out and circulated to various organisations including the Food and Agricultural Organisation (FAO). In addition, data are collected on several other parameters relating to the plant protection and quarantine, by the Directorate of Plant Protection, Quarantine and Storage.

4.22.4 Data on inputs to agriculture are also being collected through Crop Estimation Surveys, as well as the sample check on Crop Cutting Experiments under the scheme for Improvement of Crop Statistics.

Deficiencies

4.22.5 Though some data on fertilisers are available from the input survey and from publications of the Fertiliser Association of India, they are incomplete and not available in time.

4.22.6 The collection and compilation of data with reference to agricultural implements and machinery is limited to tractors and power tillers and that too depends only on the data supplied by the manufacturers. The information is very often not complete and there is no scientific mechanism for collecting statistics in this area. Data on farm practices and farm management are not available, though these are very much required for an understanding of the farm practices.

4.22.7 Though a lot of statistics on plant protection, quarantine and storage flow into the headquarters of the Directorate of PPQ&S, they are not being fully compiled. The data have also not been organised for effective long-term use. The Directorate does not have enough statistical support and the existing 'statistics and computer unit' with only one Deputy Director and a Data Processing Assistant is not adequate.

Conclusions and Recommendations

4.22.8 The Commission recommends that:

(i) The Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) should collect, compile and maintain a complete database on State-wise production, sale of tractors, power tillers, harvesters and other agricultural implements, density of such implements per hectare, investment made, level of mechanisation, adoption of water saving devices, etc.

(ii) A Farm Management Survey on an all-India basis should be conducted on a regular basis preferably at an interval of five years.

(iii) The Directorate of Plant Protection, Quarantine and Storage (PPQ&S) being the apex body for plant protection should act as a depository of information on plant protection. Efforts should be made to design, develop and maintain a comprehensive database on plant protection for effective long-term uses.

(iv) The Statistics and Computer Unit of the Directorate of Plant Protection Quarantine and Storage (PPQ&S) should be strengthened both in terms of statistical and computer personnel as well as computer equipment.

(v) Information collected through General Crop Estimation Surveys (GCES) and the scheme for Improvement of Crop Statistics (ICS) should be compiled to generate estimates on various inputs such as fertilisers, pesticides, multiple cropping, etc.

Annexe 4. 1

Scheme for Improvement of Crop Statistics (ICS)

Review of Findings 1995 – 1999

STATEMENT 1: Submission of crop statements by the *patwari*					
Percentage of villages	**Season**	**1995-96**	**1996-97**	**1997-98**	**1998-99**
1	**2**	**3**	**4**	**5**	**6**
Statement submitted by due date after completing *girdawari*	*Kharif*	41	44	46	45
	Rabi	41	36	41	43
Statements submitted without completing *girdawari*	*Kharif*	11	11	10	9
	Rabi	11	11	8	9
Total Statements submitted for processing	*Kharif*	77	78	80	78
	Rabi	80	79	78	77

STATEMENT 2: Percentage Survey numbers in which crop entries by the supervisor and the *patwari* tally with each other						
State	**1996-97**		**1997-98**		**1998-99**	
	Kharif	***Rabi***	***Kharif***	***Rabi***	***Kharif***	***Rabi***
1	**2**	**3**	**4**	**5**	**6**	**7**
Andhra Pradesh	80	89	80	90	85	92
Assam	NA	NA	NA	NA	NA	NA
Bihar	100	100	97	96	100	100
Gujarat	60	58	65	66	67	73
Haryana	84	80	86	85	85	82
Himachal Pradesh	81	79	76	72	77	76
Jammu & Kashmir	89	83	91	89	97	97
Karnataka	44	24	42	39	45	51
Kerala	94	90	91	NA	88	91
Madhya Pradesh	59	60	63	63	62	63
Maharashtra	36	39	38	42	44	45
Orissa	99	99	100	NA	100	100
Punjab	93	92	95	97	93	94
Rajasthan	75	77	74	79	71	76
Tamil Nadu	56	46	59	32	50	46
Uttar Pradesh	67	68	62	68	70	64
West Bengal	83	53	88	64	87	71
All states	**63**	**68**	**64**	**71**	**66**	**64**

Note: NA - Not Available

STATEMENT 3: Impact of recording errors at cluster level: Ratio between the crop area totals of *patwari* over supervisor			
Crop	**1996-97**	**1997-98**	**1998-99**
1	**2**	**3**	**4**
Rice (Autumn)	0.94	0.92	0.92
Rice (Winter)	0.97	0.98	0.98
Rice (Summer)	0.99	0.97	0.97
Jowar (*Kharif*)	0.99	0.98	0.96
Jowar (*Rabi*)	0.94	0.94	0.95
Bajra	1.00	1.01	0.98
Maize	0.97	0.93	0.99
Ragi	0.98	0.96	1.03
Wheat	0.95	0.96	0.96
Barley	0.94	0.94	0.94
Gram	0.94	0.96	0.94

STATEMENT 4: Crop area comparison: Crop area according to TRS and as Estimated from Supervisor Records of Sample Clusters, both Expressed as per cent of Final Estimates							
Crop	**No. of States**	**TRS over final estimates**			**Sample check over final Estimates**		
		1996-97	**1997-98**	**1998-99**	**1996-97**	**1997-98**	**1998-99**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Rice (*Kharif*)	17	101.1	99.5	101.1	100.8	96.2	90.8
Rice (Summer)	7	104.8	111.7	108.4	131.5	128.7	80.1
Jowar (*Kharif*)	9	97.7	96.7	102.3	93.1	97.5	84.2
Jowar (*Rabi*)	4	104.8	106.8	84.9	93.1	99.6	64.6
Bajra	11	96.9	101.1	102.5	110.4	99.6	65.7
Maize	11	97.3	97.7	100.5	88.2	98.1	80.4
Ragi	6	93.9	107.6	92.1	97.8	105.2	108.1
Wheat	14	100.5	99.6	100.4	105.2	118.5	87.7
Barley	7	101.0	100.4	99.6	92.9	93.3	57.9
Gram	10	96.5	97.7	102.6	78.1	83.9	55.0

STATEMENT 5: Percentage of Crop Cutting Experiments Found Correctly Conducted During Spot Check Under I.C.S.

State	1996-97		1997-98		1998-99	
	Kharif	***Rabi***	***Kharif***	***Rabi***	***Kharif***	***Rabi***
1	**2**	**3**	**4**	**5**	**6**	**7**
Andhra Pradesh	86	91	85	83	80	93
Assam	100	100	94	97	91	97
Bihar	72	90	92	96	89	91
Gujarat	62	92	92	92	71	73
Haryana	91	87	78	94	80	93
Himachal Pradesh	84	95	68	74	76	78
Jammu & Kashmir	80	20	75	74	66	91
Karnataka	86	100	79	86	82	88
Kerala	96	83*	99	96*	97	80*
Madhya Pradesh	87	82	92	85	92	91
Maharashtra	55	47	44	57	47	65
Orissa	94	100*	96	99*	99	98*
Punjab	91	97	92	99	94	86
Rajasthan	63	71	76	70	73	74
Tamil Nadu[#]	70	NA	75	NA	70	NA
Uttar Pradesh	83	81	53	72	72	82
West Bengal	97	84	98	91	99	99
All States	**79**	**79**	**76**	**80**	**77**	**84**

Notes: NA-Not Applicable, "*": Figures pertain to Summer Season, "#": Figures pertain to 'Whole Year'

Source: NSSO's reports on the *Status of Estimation of Crop Production in India for the years 1996-97,1997-98 & 1998-99*

Annexe 4. 2

Divergence in Estimates of Production of Horticultural Crops

(in lakh metric tonnes)

CROP	Number of States*	Agencies	1991-92	1992-93	1993-94	1994-95	1995-96
1	2	3	4	5	6	7	8
Mango	8	DESMOA	40.56	36.50	36.86	45.51	45.51
		NHB	59.98	63.72	68.83	81.58	79.60
		% Diff.	47.89	74.59	86.72	79.28	74.90
Banana	7	DESMOA	66.35	69.09	83.60	85.29	85.39
		NHB	55.80	79.80	94.05	108.89	106.40
		% Diff.	-15.90	15.51	12.51	27.67	24.61
Grapes	4	DESMOA	4.39	5.18	5.60	4.76	8.35
		NHB	5.50	5.31	5.81	5.58	4.86
		% Diff.	25.16	2.47	3.61	17.15	-41.82
Guava	5	DESMOA	2.75	3.14	2.66	3.35	3.59
		NHB	3.27	3.80	3.36	5.54	5.99
		% Diff.	19.01	20.52	26.43	65.62	67.00
Pineapple	1	DESMOA	0.24	0.11	0.40	0.65	0.49
		NHB	0.36	0.29	0.40	0.65	0.65
		% Diff.	51.06	152.70	0.00	0.00	31.78
Potato	7	DESMOA	81.35	74.26	91.96	86.46	93.04
		NHB	85.65	81.54	87.22	82.13	90.97
		% Diff.	5.29	9.80	-5.16	-5.00	-2.23
Cauliflower	1	DESMOA	0.48	0.48	0.48	0.48	0.49
		NHB	0.25	0.51	0.52	0.52	0.57
		% Diff.	-47.44	6.26	8.27	8.27	16.08
Onion	6	DESMOA	21.26	21.54	24.82	27.91	27.91
		NHB	32.93	34.22	24.23	32.59	31.28
		% Diff.	54.88	58.85	-2.37	16.79	12.07

Note: The percentage difference is NHB over DESMOA.

Source: "*Report and Data Base of Pilot Scheme on Major Fruits and Vegetables (1982-83 to 1997-98)"* , Directorate of Economics and Statistics, Ministry of Agriculture; and "*Indian Horticulture Data Base (1998)",* National Horticultural Board, Ministry of Agriculture, NHB – National Horticultural Board. DESMOA-Directorate of Economic and Statistics,, Ministry of Agriculture, " * " – Number of states in which the DES data were available from the above source.

Annexe 4. 3

Divergence in Estimates of Production of Cotton

(in lakh tonnes)

Year	DESMOA	CAB	%Diff.
1	2	3	4
1990-91	98.4	117.0	-18.9
1991-92	99.1	119.0	-22.6
1992-93	114.0	138.0	-21.1
1993-94	107.4	121.5	-13.1
1994-95	118.9	138.5	-16.5
1995-96	128.6	167.7	-30.4
1996-97	142.3	177.9	-25.0
1997-98	108.5	158.0	-45.6
1998-99	121.8	163.0	-33.8
1999-00	131.6	156.0	-18.5

Notes: DESMOA – Directorate of Economics and Statistics, Ministry of Agriculture; CAB – Cotton Advisory Board

Source: Material submitted by DES at the sixth meeting of the Sub-group on Agricultural Statistics on 2.12.2000

Annexe 4. 4

Divergence in Estimates of Production of Oilseeds during 1998-99

(in lakh tonnes)

Oilseeds	Estimates of DESMOA	Estimates of COOIT	Variation between estimates of DESMOA and COOIT	
			Absolute	Percentage
1	2	3	4	5
Groundnut	89.7	73.6	16.1	17.9
Soyabean	69.4	58.1	11.3	16.3
Rapeseed & Mustard	61.3	55.5	5.8	9.5
Sunflower	11.8	9.3	2.0	21.2
Sesamum	6.6	7.5	- 0.9	-12.0
Castor seed	10.0	8.7	1.3	13.0
Nigerseed	1.7	1.5	0.2	11.8
Safflower	3.3	2.5	0.8	24.2
Linseed	2.8	3.0	- 0.2	-7.1
Total	**256.6**	**220.7**	**35.9**	**14.0**

Note: DESMOA – Directorate of Economics and Statistics, Ministry of Agriculture; COOIT – Central Organisation for Oil, Industry and Trade

Source: Material submitted by DESMOA at the 6th meeting of the Sub-group on Agricultural Statistics on 2.12.2000

Annexe 4. 5

Nine-fold classification of Land Use*

Statistics on land use are collected at present, in the form of a nine-fold classification on a yearly basis. Out of a geographical area of 329 million hectares (reporting area) statistics are available only from 305 million hectares (non-reporting area), which makes some areas to the extent of 7% still not covered or classifiable under the nine-fold classification. The reporting area is classified into the following nine categories:

1. **Forests:** This includes all lands classed as forest under any legal enactment dealing with forests or administered as forests, whether state-owned or private, and whether wooded or maintained as potential forest land. The area of crops raised in the forest and grazing lands or areas open for grazing within the forests should remain included under the forest area.

2. **Area under Non-agricultural Uses:** This includes all lands occupied by buildings, roads and railways or under water, e.g. rivers and canals and other lands put to uses other than agriculture.

3. **Barren and Un-culturable Land:** includes all barren and unculturable land like mountains, deserts, etc. Land which cannot be brought under cultivation except at an exorbitant cost, should be classed as unculturable whether such land is in isolated blocks or within cultivated holdings.

4. **Permanent Pastures and other Grazing Lands:** includes all grazing lands whether they are permanent pastures and meadows or not. Village common grazing land is included under this head.

5. **Land under Miscellaneous Tree Crops, etc. :** This includes all cultivable land which is not included in 'Net area sown' but is put to some agricultural uses. Lands under Casurina trees, thatching grasses, bamboo bushes and other groves for fuel, etc. which are not included under 'Orchards' should be classed under this category.

6. **Culturable Waste Land:** This includes lands available for cultivation, whether not taken up for cultivation or taken up for cultivation once but not cultivated during the current year and the last five years or more in succession for one reason or other. Such lands may be either fallow or covered with shrubs and jungles, which are not put to any use. They may be assessed or unassessed and may lie in isolated blocks or within cultivated holdings. Land once cultivated but not cultivated for five years in succession should also be included in this category at the end of the five years.

* *Source*: "*Land Use Statistics at a glance 1995-96 & 1996-97"*, Directorate of Economics and Statistics, Department of Agriculture & Corporation, Ministry of Agriculture, Government of India.

7. **Fallow Lands other than Current Fallows:** This includes all lands, which were taken up for cultivation but are temporarily out of cultivation for a period of not less than one year and not more than five years.

8. **Current Fallows:** This represents cropped area, which are kept fallow during the current year. For example, if any seeding area is not cropped against the same year it may be treated as current fallow.

9. **Net area Sown:** This represents the total area sown with crops and orchards. Area sown more than once in the same year is counted only once.

Annexe 4. 6

Twenty two - fold Classification of Land Use[#]

The National Remote Sensing Agency (NRSA) conducted a land use survey using Remote Sensing Technique in the year 1988-89 at the behest of the Planning Commission in which they had classified the land by visual interpretation technique and digital techniques into twenty two-fold. The definitions of the 22 categories adopted by them are as follows:

1. Built up land

It is defined as an area of human habitation developed due to non-agricultural use and that which has a cover of buildings, transport, communication utilities in association with water vegetation and vacant lands.

Agricultural land

It is defined as the land primarily used for farming and for production of food, fibre, and other commercial and horticultural crops. It includes land under crops (irrigated and un-irrigated), fallow, plantation, etc.

2. Crop Land

It includes those lands with standing crop (*per se*) as on the date of the satellite imagery. The crops may be of either *Kharif* (June-September) or *Rabi* (October – March) or *Kharif Rabi* seasons.

3. Fallow land

It is described as agricultural land which is taken up for cultivation but is temporarily allowed to rest un-cropped for one or more seasons, but not less than one year. These lands are particularly those which are seen devoid of crops at the time when the imagery is taken of both seasons.

4. Plantations

It is described as an area under agricultural tree crops, planted adopting certain agricultural management techniques. It includes tea, coffee, rubber, coconut, arecanut, citrus, orchards and other horticultural nurseries.

Forest

It is an area (within the notified forest boundary) bearing an association predominantly of trees and other vegetation types capable of producing timber and other forest produce.

5. Evergreen/Semi-evergreen forest

It is described as a forest, which comprises of thick and dense canopy of tall trees, which predominantly remain green throughout the year. It includes both coniferous and tropical broad-leaved evergreen trees. Semi-evergreen forest is a mixture of both deciduous and evergreen trees but the latter predominate

6. Deciduous forest

[#] *Source*: "*Review of Land Use Statistics of existing nine-fold classification of LUS and feasibility of switching over to twenty two fold classification*"- Paper presented by Directorate of Economics and Statistics, Ministry of Agriculture during the National Workshop on Improvement of Agricultural Statistics held on 28-29 June 2000 at New Delhi.

It is described as a forest which predominantly comprises of deciduous species and where the trees shed their leaves once in a year.

7. Degraded forest or Scrub

It is described as a forest where the vegetative (crown) density is less than 20% of the canopy cover. It is the result of both biotic and abiotic influences. Scrub is a stunted tree or bush/shrub.

8. Forest Blank

It is described as openings amidst forests without any tree cover. It includes openings of assorted size and shapes as seen on the imagery.

9. Forest Plantations

It is described as an area of trees of species of forestry importance and raised on notified forest lands. It includes, eucalyptus, casuarina, bamboo, etc.

10. Mangrove

It is described as a dense thicker or woody aquatic vegetation or forest cover occurring in tidal waters near estuaries and along the confluence of delta in coastal areas. It includes species of the general Rhizophora and Aviccunia.

Wastelands

It is described as degraded land, which can be brought under vegetative cover with reasonable water and soil management or on account of natural causes. Wastelands can result from internal/imposed constraints such as, by location, environment, chemical and physical prosperities of the soil or financial or management constraints (NWDB, 1987).

11. Salt-affected land

The salt-affected land is generally characterised as the land that has adverse effects on the growth of most plants due to the action or presence of excess soluble or high exchangeable sodium. Alkaline land has an exchangeable sodium percentage (ESP) of about 15, which is generally considered as the limit between normal and alkali soils. The predominant salts are carbonates and bicarbonates of sodium. Coastal saline soils may be with or without ingress or inundation by seawater.

12. Waterlogged land

Waterlogged land is that land where the water is at/or near the surface and water stands for most of the year. Such lands usually occupy topographically low-lying areas. It excludes lakes, ponds and tanks.

13. Marshy/Swampy land

Marshy land is that which is permanently or periodically inundated by water and is characterised by vegetation, which includes grasses and weeds. Marshes are classified into salt/brackish or fresh water depending on the salinity of water. These exclude Mangroves.

14. Gullied/Ravenous land

The gullies are formed as a result of localised surface runoff affecting the friable unconsolidated material in the formation of perceptible channels resulting in undulating terrain. The gullies are the first stage of excessive land dissection followed by their networking which leads to the development of ravenous land. The word 'ravine' is usually associated not with an isolated gully but a network of deep gullies formed generally in thick

alluvium and entering a nearby river, flowing much lower than the surrounding high grounds. The ravines, are extensive systems of gullies developed along river courses.

15. Land with or without scrub

They occupy (relatively) higher topography like uplands or high grounds with or without scrub. These lands are generally prone to degradation or erosion. These exclude hilly and mountainous terrain.

16. Sandy area (costal and desertic)

These are the areas, which have stabilised accumulations of sand in-site or transported in coastal riverine or inland (desert) areas. These occur either in the form of sand dunes, beaches, channel (river/stream) islands, etc.

17. Baren rocky/Stony waste/Sheet rock area

It is defined as the rock exposures of varying lithology often barren and devoid of soil cover and vegetation and not suitable for cultivation. They occur amidst hill forests as openings or scattered as isolated exposures or loose fragments of boulders or as sheet rocks on plateau and plains. It includes quarry or gravel pit or brick kilns.

Water bodies

It is an area of impounded water, areal in extent and often with a regulated flow of water. It includes man-made reservoirs/lakes/tank/canals, besides natural lakes, rivers/streams and creeks.

18. River/Stream

It is a course of flowing water on the land along definite channels. It includes from a small stream to a big river and its branches. It may be perennial or non-perennial.

19. Reservoir/Lakes/Tanks/Canal

It is a natural or man-made enclosed water body with a regulated flow of water. Reservoirs are larger than tanks/lakes and are used for generating electricity, irrigation and for flood control. Tanks are smaller in areal extent with limited use than the former. Canals are inland waterways used for irrigation and sometimes for navigation.

Others

It includes all those, which can be treated as miscellaneous because of their nature of occurrence, physical appearance and other characteristics.

20. Shifting Cultivation

It is the result of cyclic land use practice of felling of trees and burning of forest areas for growing crops. Such lands are also known as *Jhum* lands.

21. Grassland/Grazing land

It is an area of land covered with natural grass along with other vegetation, often grown for fodder to feed cattle and other animals. Such lands are found in river beds, on uplands, hill slopes, etc. Such lands can also be called as permanent pastures or meadows. Grazing lands are those where certain pockets of land are fenced for allowing cattle to graze.

22. Snow-covered /Glacial area

It is snow-covered areas defined as a solid form of water consisting of minute particles of ice. It includes permanently as on the Himalayas. Glacier is a mass of accumulated ice occurring amidst permanently snow-covered areas.

Annexe 4. 7

Divergence in Estimates of Irrigated Area

(in million hectares)

Year	MOWR	DESMOA	%Diff.
1	2	3	4
Up to 1951	22.6	22.6	0.0
1st Plan (1951-56)	NA	NA	NA
2nd Plan (1956-61)	27.8	28.0	-0.72
3rd Plan (1961-69)	NA	NA	NA
Annual Plans (1966-69)	35.8	35.5	0.84
4th Plan (1969-74)	42.1	40.3	4.28
5th Plan (1974-78)	48.5	46.1	4.95
Annual Plans (1978-80)	52.6	49.2	6.46
6th Plan(1980-85)Original	60.6	54.5	10.07
6th Plan (1980-85) Re-appraised	58.8	54.5	7.31
7th Plan (1985-90)	68.6	61.9	9.77
Annual Plans (1990-92)	72.9	65.1	10.7
8th Plan (1992-97) (Target)	86.5	NA	NA
Annual Plan (1992-93)	74.5	66.8	10.34
Annual Plan (1993-94)	76.1	68.0	10.64
Annual Plan (1994-95)	77.7	70.7*	9.01
Annual Plan (1995-96) Anticipated	79.3	71.4*	9.96
Annual Plan (1996-97) Anticipated	81.1	73.3*	9.62

Note: MOWR-Ministry of Water Resources; DESMOA-Directorate of Economics and Statistics, Ministry of Agriculture.

Source: Figures are from "*Water & Water Related Statistics, July 1998*", Central Water Commission. Others with * are from "*Agricultural Statistics at a glance*", DESMOA.

Annexe 4. 8

Time Lag in Releasing Reports of Agricultural Census

Year of Agricultural Census	Year of Release of Report	Time Lag
1	**2**	**3**
1970-71	Sept, 1975	4 yrs, 1 month
1976-77	Nov, 1983	6 yrs, 3 months
1980-81	July, 1987	5 yrs, 11 months
1985-86	Dec, 1991	4 yrs, 5 months
1990-91	May, 1997	5 yrs, 6 months
1995-96	July, 2000 onwards	Phase I data being released – state by state

Source: "*All India Report on Agricultural Census*", DESMOA.

Time Lag in Releasing Reports of Livestock Census

Year of Livestock Census	Year of Release of Report	Time Lag
1	**2**	**3**
15.10.1977	Sep 1984	6 yrs 11 months
15.10.1982	Jan 1989	6 yrs 2 months
15.10.1987	Dec 1992	5 yrs 2 months
15.10.1992	Aug 1998	5 yrs 9 months

Source: "*All India Report on Livestock Census*", DESMOA

Annexe 4. 9

Divergence in Estimates of Forest Area

(in million hectares)

Year	Forest Cover as per FSI	Forest Area as per LUS by DESMOA
1	**2**	**3**
1987	64.08	66.87
1989	63.88	66.94
1991	63.94	67.80
1993	63.94	67.98
1995	63.89	68.60
1997	63.34	68.75

Notes: FSI: Forest Survey Of India, DESMOA: Directorate of Economic and Statistics, LUS: Land Use Statistics
Source: "*State of Forest eport (1999)*", FSI; "*Agricultural Statistics at a glance*", DESMOA

Annexe 4.10

Methodology for Calculation of Index Numbers of Area, Production and Yield

Let

a_{ijk} be the area under ith crop in the jth year in kth state.

a_{iok} be the area under ith crop in base year period in kth state.

p_{ijk} be the production of ithcrop in the jth year in kth state.

p_{iok} be the production of ith crop in base year period in kth state.

w_{ik} be the weight of ith crop in kth state.

P_{io} be the price per unit of the ith crop in the base period.

For the state k and for the year j, individual crop indices are calculated as below:

(a) Index number of area = $\frac{a_{ijk}}{a_{iok}} \times 100 = IA_{ijk}$

(b) Index number of production = $\frac{p_{ijk}}{p_{iok}} \times 100 = IP_{ijk}$

(c) Index number of yield = $\frac{IP_{ijk}}{IA_{ijk}} \times 100$

For any sub-group G of commodities, the indices are for the year j and state k are as below:

(a) Index number of area = $\frac{\sum a_{ijk}}{\sum a_{iok}} \times 100$

The state index is obtained by including all the items of the state in sub group G where the summation is taken over items in G.

(b) Index number of production = $\frac{\sum p_{ijk} P_{io}}{\sum p_{iok} P_{io}} \times 100$

(c) Index number of yield = $\frac{\text{Index number of production}}{\text{Index number of area}} \times 100$

Source: Directorate of Economics and Statistics, Ministry of Agriculture

Annexe 4.11

Index of Terms of Trade between Agricultural and non-Agricultural Sectors

Year	Index of Price Received (IPR)	Index of Prices Paid (IPP) for				Index of Terms of Trade (ITT)
		Final Consumption	Intermediate Consumption	Capital Formation	Combined Index	
Weights	**-**	**73.54**	**21.63**	**4.83**	**100.0**	**-**
1981-82	54.9	54.4	88.5	56.9	61.9	88.7
1982-83	60.3	58.8	91.1	62.6	66.0	91.4
1983-84	64.2	64.2	91.0	67.4	70.1	91.6
1984-85	68.0	66.6	92.3	72.5	72.4	93.9
1985-86	70.4	69.5	94.3	76.4	75.2	93.6
1986-87	76.7	74.8	98.7	78.8	80.2	95.7
1987-88	86.0	84.6	102.3	82.5	88.3	97.4
1988-89	90.3	90.4	96.9	90.9	91.8	98.3
1989-90	97.5	97.6	99.2	100.6	98.1	99.4
1990-91	112.3	112.1	104.0	108.5	110.2	101.9
1991-92	130.8	124.9	119.4	127.2	123.8	105.6
1992-93	138.7	131.5	139.5	137.5	133.5	103.9
1993-94	151.4	143.9	152.9	147.3	146.1	103.6
1994-95	171.1	159.0	166.1	158.4	160.5	106.6
1995-96	182.9	173.4	174.2	176.1	173.7	105.3
1996-97	190.6	184.7	180.7	188.8	184.1	103.6
1997-98	204.6	194.8	190.6	196.7	194.0	105.5

Source: Directorate of Economics & Statistics, Ministry of Agriculture

Annexe 4.12

Methods of Estimating Area under Mixed Crops

Andaman & Nicobar Islands – Cultivation of mixed crops is not in practice.

Andhra Pradesh – Where two or more crops are sown in Rows, the area occupied by each is estimated by the village official in the ratio of number of rows, and also allocation of the area to the constituent crops grown in mixture is done at field level only.

Assam – Half the area of the field is shown under each of the crops (Vide rule 65 Assam Land Records Manual).

Punjab and Haryana – In certain districts of the State the mixed crops are shown separately by the *patwari* according to his estimate, by first measuring the area under mixed crops by *Kadmi paimaish* and then estimating the ratio in which it has been sown. In other districts, the area under mixed crops such as wheat-gram, barley-gram, is entered under the separate columns for the different crop mixtures, provided in the *Jinswar* and *Lal Kitab*. Mixed crops are distributed by office *kanungos* under appropriate headings of single crops. The area of cotton and oilseeds, which are sown mixed with other crops, is estimated according to the rule locally followed in preparation of crop abstracts. In case of wheat and gram however the area under each of these crops when sown in mixture is taken as half and half of the total area.

Kerala – The area covered by such mixed crops is recorded by eye estimates.

Himachal Pradesh – The area under mixed crops is recorded separately for each crop.

Orissa – The net area under each crop is estimated on the field itself and recorded separately under each crop.

Karnataka – The area under mixed crops is being based on eye estimates.

> Coorg area of Karnataka: In case of mixed crops inter-sown with ragi such as Tur *dal* etc. the area of the plot under each crop is assessed on the basis of the extent sown. In case of *Kumri* cultivation, the mixed crops are rice, *tur dal* and vegetables and the area is assessed at about 1/3 of the area sown under each. In other mixed crops where the constituent crops are sown in rows, they are estimated on the basis of the proportion of the number of rows under each.

Madhya Pradesh – The mixture is shown under the predominant crop if no separate heading is prescribed in *jinswar* for such a mixture.

Maharashtra – Separate columns of mixed crops are allocated and shown separately in the crop statement. The area is estimated by the village official (*talathi*) by eye estimate or by counting the rows of the particular crop in the survey number on the basis of the ratio between the main crop and the sub crop. The Procedure followed for the calculation of mixed crop is as under:

i If the mixed crops is sown by broad casting method, the area under individual crops is calculated by eye estimation and the used seed rate.

ii If the mixed crop is sown in rows the area of each crop is calculated by using the proportion of their number of rows.

Tamilnadu – The following crop mixtures with millets are sown in Tamil Nadu: *Cumbu* and Groundnut, *Cholam* and Redgram, *Cholam* and Pulses, *Cholam* Groundnut and Redgram, *Cholam* and Groundnut, *Cumbu* and Pulses, *Cumbu* and Cowpea etc.
The following yardsticks are adopted for recording the areas of crops when sown as mixed crops:

1. C*umbu* and Groundnut for millets - $4/5^{th}$ area
2. C*holam* and Redgram for millets - $4/5^{th}$ area
3. C*holam* and Pulses for millets - $4/5^{th}$ area
4. C*holam*, Groundnut & Redgram for millets - $4/5^{th}$ area
5. C*holam* and Groundnut for millets - $4/5^{th}$ area
6. C*umbu* and Pulses for millets - $4/5^{th}$ area

Procedures for computing the mixed crops of pulses into pure crops are:

1. Redgram Pure	Full (i.e. One acre in the field is taken as one acre)
2. Blackgram in Sugarcane	1/2 (i.e. Blackgram in one acre of Sugarcane is taken as 1/2 acre of blackgram)
3. Greengram in Sugarcane	1/2
4. Redgram in Paddy field bunds	1/4
5. Blackgram in Paddy field bunds	1/6
6. Greengram in Paddy field bunds	1/6
7. Redgram in dry groundnuts	1/2
8. Redgram in *Varagu*, *Cholam* and millets	1/2
9. Blackgram pure	Full
10.Greeengram in irrigated groundnuts	1/6
11.Blackgram in irrigated groundnuts	1/6
12.Blackgram in dry cotton	1/3
13.Greengram in dry cotton	1/3
14.Blackgram in rice fallow	Full
15.Greengram in rice fallow	Full
16.Blackgram in tapioca	1/6
17.Greengram in tapioca	1/6
18.*Lab Lab* in millets	1/4
19.Bengalgram pure	Full
20.Redgram in Banana	1/4
21. Redgram in turmeric	1/4
22. Redgram in blackgram or greengram in coconut tapes	1/4
23. *Lab* in dry groundnut	1/4
24. Bengalgram in rain fed Cotton and Coriander	1/4
25. Blackgram or greengram in irrigated *ragi* and other millets	1/3
26. Blackgram, greengram in irrigated cotton	1/3
27. Blackgram in dry groundnut	1/4
28. Greengram in dry groundnuts	1/4

The above procedure is done at village level by the village Administrative Officers.

Rajasthan – The identified crop mixtures are *bajra-moong*, *jowar-bajra*, til-moth, *jowar-Til*, in *kharif* and wheat-barley, wheat-barley-gram, in *rabi* and no mixed crop in *zaid*. The procedure for calculation of area under mixed crops is by eye estimation.

Uttar Pradesh – In UP the important mixtures such as wheat and barley are entered in the village registers as "mixtures", no attempt being made by the village officers themselves to separate the areas of component crops. The sub-division of area is done in the Central Offices on formulae supplied to them. An appropriate formula for each crop has been prepared for every district or homogeneous portion of the district, in consultation with the District Officer. For unimportant mixtures, that is, for mixed crops with no separate heading, the minor constituent is ignored and the whole area is to be credited to the principal crop. In the case of mixed oilseeds, which are not recorded separately, the area and yield are therefore arrived at as follows:

> Area under mixed linseed= ½ of the total acreage under gram plus 1/6 of the total acreage of wheat and barley and their mixtures.
> Yield of linseed per acre sown mixed with gram=1 ½ *maunds*.
> Yield of linseed per acre sown mixed with a crop other than gram = ½ *maund*.

West Bengal – The area covered under mixed crops, if found, is recorded by eye estimates i.e. the total mixed cropped area in any plot is divided into areas under individual crops according to the density of crop plants.

Bihar – The area under mixed crops is recorded at the field level by the Revenue *Karmacharis* on the basis of seed ratio/plant ratio and after consultation with farmers and on the basis of eye estimation.

Goa – No mixed crops are cultivated in the state of Goa. However, the area under each crop is estimated separately as based on benchmark survey and eye estimates.

Meghalaya – The state of Meghalaya has no cadastrally recorded information in respect of the different areas of the state. However, only some portions of Garo Hills region in the plain are having land record, which could provide data on the area of the land as possessed by the cultivators. It may be mentioned that the land tenure system of the state is totally different from the rest of the country in respect of land holding and propriety right over land. In view of the above hurdles, the only alternative to show the area of land is to go by guess estimation by following certain norms like seed rates etc. In order to have some broad ideas in the area coverage conforming to the prevalent cultivation practices of important crops, the following norms observed in the case of oral study with some cultivators are given below:

***Jhum* cultivation (Multiple cropping)**

Main Crops	***Subsidiary Crops***
	Mixed Crops:
Paddy 90%	Vegetables etc. 10%
Ginger 95%	Mixed vegetables 5%
Paddy 95%	Mesta 2% Other Vegetables 3%

Permanent Cultivation (non-Jhum)

Potato 75%	Maize 25%
Maize 80%	Mixed Vegetables 20%

Mizoram – The area under mixed crops is assessed by calculating the quantity of various seeds used for planting.

Manipur – If a plot grows two or more crops in mixture, the total area under the mixed crops is defined to be the gross area under each of the component crops of the mixture. For instance, for the plot growing paddy and maize in the mixture in an area of 10 acres, the gross area under paddy is 10 acres and the gross area under maize is also 10 acres.

Other States – The procedures in respect of other states are not available.

5 INDUSTRIAL STATISTICS

5.1 ANNUAL SURVEY OF INDUSTRIES

Introduction

5.1.1 The economic activities pursued in any economy can be broadly classified into three sectors namely, primary sector, secondary sector and tertiary sector. The secondary sector, consisting of manufacturing, electricity and construction, plays a pivotal role in the economic development of the country. The percentage share of this sector in the nation's GDP at current prices was about 23.9 per cent during 1999-2000. Within the secondary sector, manufacturing activities constitute a major share in the country's GDP. During 1999-2000, of the total percentage share of 23.9 per cent in the GDP held by the secondary sector, manufacturing activities had a share of 15.4 per cent.

5.1.2 For collection of data relating to manufacturing and repairing activities, all units pursuing such activities in the country are grouped into two categories, namely, registered units and unregistered units. Hereafter 'registered units', unless otherwise stated, shall refer to the units registered under Sections 2m (i) and 2m (ii) of the Factories Act, 1948, or under the *Bidi* and Cigar Workers (Condition of Employment) Act, 1966, i.e. those employing 10 or more workers and using power and 20 or more workers but not using power. Within the manufacturing sector, registered units dominate over the unregistered units in the share of GDP. During 1999-2000, of the total percentage share of 15.4 per cent in the GDP held by the manufacturing units, the registered manufacturing units had a share of 10.0 per cent, the rest (i.e. 5.4 per cent) being accounted for by the unregistered manufacturing units.

5.1.3 Data on registered manufacturing and repairing units are collected through the Annual Survey of Industries and on unregistered manufacturing and repairing units, through the Follow-up Surveys of the Economic Census. This has been helpful in improving the degree of precision in the estimates for the manufacturing and repairing sector. For selection of units in the Annual Survey of Industries, the lists of factories maintained by the Chief Inspectors of Factories are used as the sampling frame. On the other hand, the Follow-up Enterprise Surveys (FuS), which adopt a stratified two or three-stage sampling design, with villages and urban blocks as the first-stage units (FSUs) and unregistered manufacturing and repairing units as the ultimate stage sampling units, generally use the list of villages and blocks with information on number of enterprises and workers as per the Economic Census as the sampling frame for selection of FSUs. Collection of data from the units in the Annual Survey of Industries is record-based. But in the Follow-up Enterprise Surveys, data are generally collected by interviewing the respondents, as most units do not maintain any books of accounts. The issues relating to the Annual Survey of Industries have been discussed in the succeeding paragraphs.

5.1.4 The Annual Survey of Industries is the principal source of Industrial Statistics in India. It plays a key role in assessing the changes in the growth and structure of the registered units in the manufacturing sector. Recognising the pivotal role of the registered manufacturing units, our development planners, as early as in the 1940s, felt the need for institutionalising the work of primary data collection, data processing and data dissemination pertaining to such units. This realisation resulted in the launching of a Census of Manufacturing Industries (CMI) and a Sample Survey of Manufacturing Industries (SSMI). The CMI and SSMI were in operation during the

period 1944-58 and 1949-58, respectively. While the CMI was limited to factories registered under the Indian Factories Act, 1934, employing 20 or more workers, using power, and belonging to only 29 groups of industries; the SSMI was conducted with a wider coverage by including all the 63 industry groups in the country to meet the data requirements recommended by the National Income Committee set up in 1949. With the implementation of the Factories Act, 1948, the coverage of both the CMI and SSMI was extended to all factories employing 10 or more workers and using power, or 20 or more workers but not using power on any day of the preceding 12 months.

5.1.5 The Collection of Statistics (Central) Rules, 1959, framed under the Collection of Statistics Act, 1953, led to the launching of the comprehensive Annual Survey of Industries (ASI) in 1960 by replacing both the CMI and SSMI. Since then, this is being conducted regularly on an annual basis, except for 1972, when it was not conducted so as to help reduce the time lag in the release of results of the previous survey. Annexe 5.1 gives the salient features of the sampling designs of ASI, 1973-74 to ASI, 1998-99.

5.1.6 The ASI covers the following categories of units:

(a) All factories registered under sections 2m (i) and 2m (ii) of the Factories Act, 1948 employing 10 or more workers and using power, or 20 or more workers but not using power on any day of the preceding 12 months;

(b) All *bidi* and cigar manufacturing establishments registered under the *Bidi* and Cigar Workers (Condition of Employment) Act, 1966, employing 10 or more workers using power, or 20 or more workers without using power;

(c) Units engaged in certain services, repair of motor vehicles and a few other consumer durables like watches, etc. employing 10 or more workers using power, or 20 or more workers without using power; and

(d) All electricity undertakings engaged in the generation, transmission and distribution of electricity that are registered with the Central Electricity Authority irrespective of their employment size as well as certain units engaged in activities of cold storage and water supply. From ASI 1998-99[1], however, all the units listed under this category are kept out of the coverage of ASI.

5.1.7 The units or factories in the ASI frame are grouped into census and sample sectors. While the factories in the census sector are surveyed on a complete enumeration basis, a representative sample from the sample sector is considered for survey in any survey year. During ASI, 1998-99, of the 1,71,675 units in the frame, a sample of 26,847 units – 9,008 from the census sector and 17,839 from the sample sector was actually surveyed. Annexe 5.2 gives the number of factories in the frame, the number allotted for survey and the number actually surveyed during ASI, 1993-94 to ASI, 1998-99.

Current Status

5.1.8 The ASI covers the entire country except the States of Arunachal Pradesh, Mizoram and Sikkim and the Union Territory of Lakshadweep. It is conducted annually under the statutory provisions of the Collection of Statistics Act, 1953, and the Rules framed thereunder in 1959 except in the State of Jammu and Kashmir where it is conducted under the State Collection of Statistics Act, 1961, and the Rules framed thereunder in 1964.

[1] Reference period for ASI, 1998-99 was the accounting year of the factory ending on any day during the fiscal year 1998-99 and the survey period of ASI, 1998-99 was the year 1999-2000.

5.1.9 The Industrial Statistics Wing of the Central Statistical Organisation (CSO) of the Ministry of Statistics and Programme Implementation is responsible for the designing of the survey methodology, processing of data and preparation of reports. The work of carrying out the field operations for the survey rests with the Field Operations Division (FOD) of the National Sample Survey Organisation (NSSO). The Standing Committee on Industrial Statistics provides overall guidance regarding the survey methodology and tabulation of data.

5.1.10 Five States namely, Assam, Orissa, Rajasthan, Uttar Pradesh and West Bengal, supplement the ASI-related activity of FOD, NSSO, by covering a sample of residual units in the frame not covered by the FOD, NSSO, and canvassing the same ASI schedule in these units. The remaining State and Union Territory Governments (other than the States of Arunachal Pradesh, Mizoram, Sikkim and Union Territory of Lakshadweep, which are outside the coverage of ASI) do not survey any factories on their own. Each of the States and Union Territories (except the four States and Union Territories outside the coverage of ASI) receives copies of the schedules canvassed by the FOD, NSSO for their further processing or use.

5.1.11 Since 1998-99, the scope and coverage of the ASI has been limited to the registered manufacturing and repairing units only. The ASI frame is based on the lists of registered factories or units maintained by the Chief Inspector of Factories (CIF) in each State and those maintained by the licensing authorities in respect of *bidi* and cigar establishments.

5.1.12 The important aspects of the sampling design of ASI, 1999-2000 are as under:

(a) All registered manufacturing and repairing units in the frame are grouped into two basic strata namely, the census sector and the sample sector. The units in the census stratum are surveyed on a complete enumeration basis.

(b) The census sector comprises the following:

- All manufacturing and repairing units in the frame in the five States and Union Territories of Manipur, Meghalaya, Nagaland, Tripura and Andaman and Nicobar Islands; and
- For the remaining States and Union Territories: All manufacturing and repairing units employing 200 or more workers.

(c) In each of the States and Union Territories other than five States and Union Territories specified above, the complete list of units in the sample sector is stratified into different strata with each stratum consisting of all manufacturing and repairing units belonging to a particular industry 4-digit code of National Industrial Classification, 1998.

(d) A sample of suitable size from each stratum is drawn circular systematically with equal probability and in the form of two independent sub-samples after arranging the units according to district and number of workers.

(e) Of the total number of 1,74,167 units in the frame, the *gross allotment* of units considered for survey (which includes non-operating factories appearing in the frame) at the country level is 35,391 of which 9,570 are the census sector units.

5.1.13 Apart from information on name, address and some basic operational details about the factories, data collected in the ASI normally include the details of fixed assets; working capital and loans; employment details; input items consumed; products and by-products manufactured; other expenses and receipts as well as month-wise details of man-days worked, absenteeism and labour turnover for regular workers. Annexe 5.3 gives the items of information under the coverage of ASI, 1999-2000.

5.1.14 ASI is the major formal source for a comprehensive database on the different aspects of industrial activity in the country. Over the years, the entire work relating to the ASI has been

streamlined. It has been the concern of all the agencies associated with the ASI survey work to take necessary steps so that it is possible to release the results within the shortest possible time. A number of measures, particularly those taken over a couple of years in the recent past, for speedy collection of primary data, quick data processing and data dissemination have led to the development of a system where the time lag in releasing the ASI results has been reduced considerably. As a result, it has been possible to prepare quick estimates of ASI 1999-2000 by the first week of January 2001. It may be mentioned that (see Annexe 5.4) the situation was not as satisfactory during the1980s and even the early 1990s. Detailed results for ASI 1983-84 were released only in December 1989, i.e., after a time lag of about four and half years and those for ASI 1989-90 and ASI, 1993-94 in January 1997 and April 1997, i.e., after a time lag of about six years and two years, respectively.

Select Issues

5.1.15 The Commission discussed the quality of ASI, data with a view to identifying remedial measures for improvement of the system. In this context, the following specific issues of concern were considered:

A. ASI frame
B. Accuracy of the estimates - Sampling and non-sampling errors
C. One-time census of industries
D. Schedule for data collection, computerisation and use of IT network
E. Timeliness of processing
F. State participation in ASI

A. ASI Frame

Deficiencies

5.1.16 The lists of factories available with the States' CIFs are used as a sampling frame for the ASI. The CIF lists, however, suffer from the following two types of deficiencies:

(a) Many units that are eligible to be listed in the CIF list are not included in it; and

(b) The units that have not been operating for quite some time are not removed from the CIF list.

5.1.17 Although it is claimed that there are built-in mechanisms for updating of the ASI frame every year, the available evidence clearly demonstrates that the ASI frame has remained grossly incomplete.

5.1.18 In order to assess the seriousness of the problem of non-inclusion of eligible units in the ASI frame, information on number of operating manufacturing and repairing enterprises estimated in ASI, 1994-95, estimated in NSS 51st round (1994-95) and counted in the Fourth Economic Census (EC, 1998) were analysed. The NSS considered only those units that were not included in the ASI. The units included in the 51st Round survey of the NSS, therefore, represent the units that are outside the ASI frame. The findings of the study, given in Annexe 5.5, reveal that:

(a) In 1994-95, as estimated by the NSS 51st Round, about 1.45 lakh *eligible* units (i.e. employing 10 or more workers and using power or 20 or more workers but not using power) were not included in the ASI frame; and

(b) Of these 1.45 lakh missing units, about 1.19 lakh units belonged to the employment size class 10 to 19 and the rest (i.e. about 0.26 lakh units) belonged to the employment size class 20 or more.

5.1.19 Further, the NSS estimate of total number of missing units does not include units that operated less than 30 days (15 days in case of seasonal enterprises) during the last year preceding the date of survey. The ASI, on the other hand, includes factories operating for any number of days during the last year. Thus, the number of units missing in the ASI frame is likely to be larger than 1.45 lakh. This huge magnitude of units missing from the ASI frame seems to raise serious doubt about the efficacy of the functioning of the CIFs in maintaining up-do-date registers of factories. Two conclusions follow: one, that the CIFs' work of ensuring registration of factories by making use of the provisions that are available to them under the Factories Act is unsatisfactory; and two, that the matter requires a further study of the sample units which were eligible for registration but were, in fact, not registered.

5.1.20 The study also assessed the magnitude of non-included or missing units in the ASI frame not only in terms of number of units, but also in the corresponding number of workers and gross value added (Annexe 5.6). The findings are as under:

(a) The ratio of the number of missing units (as estimated from the NSS 51st Round) to estimated number of working units as per ASI was of the order of about 117 per cent for the year 1994-95; and

(b) The corresponding ratios with respect to the other two variables were about 28 per cent for total number of workers and 4.1 per cent for gross value added (GVA).

5.1.21 Thus the ratio of estimated number of missing units to the estimated number of working units as per ASI, as well as the corresponding ratio for the estimated number of workers, was quite substantial. But with respect to GVA, the ratio, say R, of total GVA by missing units to that by units covered under ASI was small (4.1 per cent).

5.1.22 Although the value of R is only 4.1 per cent at the all-India level, there are State-wise variations in it. The States and Union Territories for which the value of R exceeded the all-India ratio of 4.1 per cent are Delhi (14.5 per cent), Gujarat (6.2 per cent), Haryana (4.4 per cent), Meghalaya (8.3 per cent), Nagaland (8.5 per cent), Tamil Nadu (7.1 per cent), Uttar Pradesh (7.7 per cent), Andaman and Nicobar Islands (4.4 per cent), and Chandigarh (21.3 per cent). It is also quite likely that there will be considerable variation in the value of R for different industry groups.

5.1.23 Another deficiency of the lists maintained by the CIFs is that they include a large number of units, which have not been operating for quite some time. An examination of data of six ASI rounds, i.e., from ASI, 1993-94 to ASI, 1998-99 (Annexe 5.2) reveals this deficiency to be of the order of 15 to 20 per cent of the number of factories in the ASI frame.

Recommendations

5.1.24 Taking note of the inadequacies of the ASI frame, the Commission recommends the following:

(i) The Chief Inspectors of Factories (CIFs) should update their own lists by including those units, which ought to be there in the lists and excluding the units that do not operate.

(ii) The CSO and the NSSO should take immediate steps to prepare directories of establishments (that employ at least 10 workers)[2] based on data collected in the

[2] Directories of Establishments should contain identification particulars like name and code of: State or Union Territory, district, tehsil or town, village or block where the establishment is located; name and address of the establishment, if available; type of ownership of the establishment; agency with which registered; description and industry code of the major activity pursued by the establishment; number of workers employed; etc.

Fourth Economic Census and the recent Follow-up Enterprise Surveys of Economic Census, respectively so that these could be made use of by the CIFs in their work of updating the lists maintained by them.

(iii) The work of preparation of a comprehensive frame for selection of samples in the ASI should be taken up jointly as a task on a priority basis by the NSSO and the CSO. This comprehensive frame should be prepared by taking into account the lists maintained by the CIFs, the directories of establishments prepared by the CSO and the NSSO and information available from other sources.

(iv) The comprehensive frame so prepared should be updated on a continuing basis using survey and census data as well as information available from other sources. The additional resource requirements for carrying out the work should also be met.

(v) The State Level Coordination Committee (SLCC) should be reconstituted with the Secretary, Department of Industry, as the Chairman and the Labour Commissioner, Chief Inspector of Factories, Director of Industries, etc. as members so as to ensure greater vigour and discipline in the task of revision of the frames.

(vi) The CIFs should take steps to simplify the process of de-registration of closed units so that units non-operating for a long time could be removed from the registers of factories of the CIFs.

B. Accuracy of the Estimates - Sampling and Non-sampling Errors

Deficiencies

5.1.25 Collection of data in the ASI is based partly on the complete enumeration approach and partly on sample survey. As mentioned before, all factories in the census sector and a sample of those in the sample sector are covered for data collection. As the accuracy of various estimates made from the ASI would be affected by both sampling errors and non-sampling errors, a sound statistical system should continuously endeavour to reduce both kinds of error in the estimates. The following are a few important factors responsible for the sampling and non-sampling errors in the estimates:

(a) Absence of a comprehensive list of factories

(b) Limitation of sample size

(c) Missing entries and typographical errors

(d) Wrong calculations including totalling mistakes, and

(e) Entries left blank due to transcription errors or other reasons.

Of these, the deficiencies in the list of factories have been discussed in detail before.

5.1.26 It is observed that during the last three years, there has been a drastic reduction in sample size. In this context, the Commission attempted to assess the precision of estimates of a few important survey characteristics based on the present sampling design and sample size, using recent survey data. The assessment was done for all industry groups combined, as well as for two- and three-digit industry groups at the all-India level. However, at the State and Union Territory level, the assessment was done for all industry groups combined and for two-digit industry groups (description of two-digit industry groups is in Annexe 5.7). Relative standard errors (RSEs) of the estimates of input, output and gross value added (GVA) were computed from the estimates of

totals based on the two half-samples of ASI, 1997-98[3]. An analysis of the RSEs (see Annexes 5.8 to 5.12) leads to the following conclusions:

(a) For each of the three characteristics, the RSEs of the State and Union Territory-level estimates, as well as the all-India level estimates, for all industry groups combined were less than or equal to 5 per cent except for GVA in case of one State, for which RSE was found to be 6 per cent (see Annexe 5.8).

(b) Of the 2-digit industry groups totalling 29, the number of industry groups with RSE of the all-India estimate greater than 5 per cent is 13 for input, 12 for output and 11 for GVA (see Annexe 5.9).

(c) In 5 industry groups, the RSE of the all-India estimate exceeded 10 per cent for each of the three characteristics. Descriptions of the industries with RSE of an all-India estimate greater than 5 per cent along with the corresponding number of units in the frame and sample size (i.e. number of units surveyed) are given in Annexe 5.10.

(d) The percentage of the 3-digit industry groups for which the RSE of all-India estimate exceeded 10 per cent for all three characteristics was about 41 to 42 per cent (see Annexe 5.11). In 42 to 44 per cent of the 4-digit industry groups, the RSE of the all-India estimate exceeded 10 per cent for all three characteristics.

(e) In a large number of States and Union Territories, the RSEs of estimated output and GVA were above 10 per cent at the level of the 2-digit industry groups (Annexe 5.12). In the case of input, the picture was broadly similar. The situation would in all probability be worse at the 3 or 4- digit level of industry groups for States and Union Territories.

5.1.27 The Reports on ASI published by the CSO do not provide information on sampling errors. Interestingly, as long ago as in 1980, the Committee set up to review the national statistical system had recommended that statistical agencies should provide information on sampling errors along with the estimates based on sample surveys. This does not seem to have been implemented.

5.1.28 The Commission has noted various initiatives taken from time to time for reducing non-sampling errors. These include steps such as training of the personnel of the FOD (NSSO), computerisation of the data, adoption of measures for validation, etc. Despite these initiatives it is seen that non-sampling errors still creep in due to various reasons. Also a wide divergence is often observed of the summary or provisional results from the detailed or final results published afterwards. An examination of the estimates of gross value added based on the summary or provisional and detailed or final results for the five years, i.e. 1993-94 to 1997-98 (see Annexe 5.13) reveals that, except for ASI 1995-96, the divergence between the two varied from 3.6 per cent (ASI, 1994-95) to 16.0 per cent (ASI, 1993-94).

Recommendations

5.1.29 The Commission has studied the changes in the sampling design over the years, including changes in the sample sizes from time to time. It has also identified some of the major factors contributing to the non-sampling errors. After reviewing all these aspects, the Commission recommends that:

[3] As sample selection for ASI, 1997-98 was not done in the form of two independent sub-samples, RSEs were approximated with the help of half-sampling technique by dividing the sample factories into two halves with odd and even orders of selection respectively.

(i) The effect of the changes made from time to time in the sampling design, including changes in sample size, on survey estimates should be analysed and the findings brought out regularly whenever such changes take place.

(ii) The sampling errors of estimates of important survey characteristics should be published along with the survey results.

(iii) The sampling design and the sample size should be reviewed to improve the precision of estimates at industry-group level. There is a need to increase the sample size for at least some of the industries where the sampling errors of the estimates are very high.

(iv) Non-sampling errors in the data should be regularly studied and measures should be taken to minimise them.

(v) Factors responsible for wide divergence of summary or provisional results from detailed or final results need to be identified and steps taken to minimise such divergence.

C. One-time Census of Industries

Deficiencies

5.1.30 The major factors responsible for affecting the quality of ASI data are the deficiencies in the frame and the limitations imposed by the sample size on the task of generating disaggregated level estimates. It has been observed that the present sample design with the existing sample size results in fairly large sampling errors of estimates even at the all-India level for the main variables such as input, output and GVA, in some cases, even at the level of the 2-digit industry groups. Thus, the existing sample design of the ASI with its present sample size does not permit the generation of reasonably precise estimates for many industry groups covered in the survey.

Recommendations

5.1.31 Taking note of the various kinds of shortcomings described above, the Commission recommends the following:

(i) A one-time census of industrial units, which are eligible for registration, should be conducted. While there should be a complete enumeration of all the units already included in the CIF list, the excluded units could be covered either by a sample or on a complete enumeration basis in the census. Such a census will help in generating reliable benchmark estimates at the disaggregated level (by geographical region, industry group, product level, etc.), providing an efficient weighting diagram for revision of the base year of the Index of Industrial Production, and also updating of the ASI frame.

(ii) Before such a census is launched on a full scale, an exercise on a pilot basis should be carried out to explore the usefulness of the various alternative sources of information for preparing a comprehensive frame, and also to estimate resource requirements for conducting the one-time census.

D. Schedule for Data Collection, Computerisation and Use of IT Network

Deficiencies

5.1.32 It is often observed by the respondents that the contents of the schedule canvassed in the ASI do not conform to the pattern and the manner in which the data are maintained by the units. The respondents often argue that they can supply the data in a much better way when the demand for data conforms to the pattern in which they store the data. Further, the users of the data

sometimes argue that the schedules do not collect some useful data that are required for analytical research. For example, some researchers have indicated out that the ASI collects information only on the written-down or depreciated value of capital, whereas information on the original value of capital when capital assets were procured by the undertaking would be more valuable. It is also pointed out that information on expenditure incurred for major repairs of capital assets, etc. could also be useful for analysis. Further, it is observed that the magnitude of the residual catch-all item 'others', in both the input and the output category, is often very large in the filled-in schedules and disaggregated information on this would be appreciated.

5.1.33 The Commission took note of the steps taken in computerising the data- processing work of the ASI. It noted, however, that no significant improvements have been made in collecting data from the industrial units through electronic media although about one third of the factories, according to the survey results, were found to use computers for accounting purposes during 1997-98 (Annexe 5.14).

Recommendations

5.1.34 The Commission recognised the need for rationalisation of the schedule. The Commission recommends that:

(i) The schedule of data collection should be rationalised to make it as respondent-friendly as possible and designed in a computer-readable form.

(ii) The query, 'whether *the industrial unit can supply ASI data on a floppy on software to be provided*' that formed part of the schedule of ASI 1997-98 but was subsequently dropped should be reintroduced. This would help in identifying units that are capable of furnishing information through floppy or other electronic media.

(iii) Information on input and output items clubbed under the large 'others' category *should* be obtained in a more disaggregated form through the schedule. Items having importance in value terms, at least, should be separated from 'others'. This is particularly important for the census sector units.

(iv) For bringing about further improvement in the quality of data and a timely release of results, the cooperation of the factories should be solicited, through the Industry Associations and Chambers of Commerce, for supplying the required information in a pre-designed format in the electronic media.

(v) Steps should be taken for data transmission from factories and field offices of NSSO to the tabulating agency in the form of digitised schedules using the countrywide IT network.

E. Timeliness of Processing

Recommendations

5.1.35 The Commission has noted (Annexe 5.4) that there has been a considerable improvement in the time frame for the release of ASI data during the last few years. The Commission recommends that:

(i) Further measures should be taken to ensure the timely processing of data on a regular basis and release of the final results of ASI within one year of commencement of the fieldwork.

(ii) An advance calendar for release of quick estimates, provisional results, and final results should be declared through appropriate media, including a website.

F. State Participation in ASI

5.1.36 The Commission has noted that five States namely, Assam, Orissa, Rajasthan, Uttar Pradesh and West Bengal, are participating in the ASI by covering a sample of residual units in the frame not covered by the FOD, NSSO. It has also noted that all the States and Union Territories (other than the States of Arunachal Pradesh, Mizoram, Sikkim and the Union Territory of Lakshadweep, which are outside the coverage of ASI) are receiving copies of the schedules canvassed by the respective field offices of NSSO, to meet their specific requirements. The Commission has examined the mechanism of the five State Governments for collection and publication of the ASI data. It is seen that data collected by both the State and the Central agencies are used for tabulation by the respective State Governments.

Recommendations

5.1.37 As the kind of tables generated by the Central agency may not meet all the requirements of the States and Union Territories, the Commission recommends that:

(i) The existing system of independent tabulation of ASI data by both the agencies should continue.

(ii) States and Union Territories should canvass the ASI schedules in the residual units (i.e., not covered by the NSSO) in their respective States and Union Territories, either on a sample or on a complete enumeration basis, whenever the required infrastructure and resources are available. For that purpose, the Government of India should declare, under the Collection of Statistics Act the Directors of the States' Directorates of Economics and Statistics as statistical authority within the respective States, for the collection of ASI data and such other industrial statistics as the Government of India collects in its national programme.

5.2 SURVEYS ON UNREGISTERED MANUFACTURE

Introduction

5.2.1 For the purpose of collection of data relating to manufacturing activities through sample survey, all manufacturing units in the country are classified into two broad sectors namely, registered and unregistered sectors or organised and unorganised sectors–the terms being quite often used interchangeably. While the registered manufacturing sector covers the manufacturing units registered under sections 2m (i) and 2m (ii) of the Factories Act, 1948 or under the *Bidi* & Cigar Workers (Condition of Employment) Act, 1966, i.e. the units employing 10 or more workers and using power or 20 or more workers but not using power, the unregistered manufacturing sector covers all residual manufacturing units.

5.2.2 Data with respect to the unregistered manufacturing units or enterprises are collected through the periodic sample surveys. Apart from these sample surveys specifically designed to collect detailed data relating to employment, fixed assets, working capital, details of input and output, gross value added, etc. from the unregistered manufacturing enterprises, information on number of workers engaged in manufacturing activities are also available from three more sources namely, Employment-Unemployment Surveys (EUS) of the NSSO, decennial Population Censuses and the periodic Economic Censuses. The Economic Censuses also give information on the number of enterprises. It may be mentioned that employment data available from each of these three sources takes into account all types of workers irrespective of whether the employing enterprises are registered or unregistered in nature.

5.2.3 Collection of data on unregistered manufacture has been a regular feature in the NSS. In fact, the very 1st Round of the NSS (October 1950 to March 1951) had Small-*scale manufacture and handicrafts (household),* as one of its subjects in the round. Thereafter, data on

this subject were collected also in the NSS rounds 3–10, 14, 23 and 29 (July 1974–June 1975). It may be mentioned that data pertaining to non-household small-scale manufacture and handicrafts also were collected in the 7th and 23rd Rounds of the NSS. In all these surveys, a list of villages as per the Population Census has been used as the sampling frame for selection of villages. In the urban areas, a list of census enumeration blocks, or list of *Urban Frame Survey* (UFS) blocks as per the NSSO since their availability, has been used as the sampling frame for selection of urban blocks.

5.2.4 With the launching of the First Economic Census (EC) in 1977, the Follow-up Enterprise Surveys (FuS) of Economic Census on unregistered manufacture have thereafter used the village and block-level information on the number of enterprises and workers as per the EC for selection of villages and urban blocks in the FuS. The approach of listing of enterprises in the FuS has also been changed from the household approach as followed earlier to the site approach. Of course, the enterprises operating without any fixed premises are listed against the households of the owners of such enterprises. The subject of unregistered manufacture through the FuS has so far been covered during 1978-79, 1984-85, 1989-90, 1994-95, 1998-99, 1999-2000 and 2000-01.

5.2.5 The FuS adopt a stratified sampling design with villages and urban blocks as the first stage sampling units and unregistered manufacturing units as the ultimate sampling units. For selection of villages, the FuS generally use the list of villages with information on number of enterprises and workers as per the Economic Census (EC) as the sampling frame. For the urban areas, the list of enumeration blocks (EBs) with EB level count of number of enterprises and workers as per the EC is used as the sampling frame for selection of urban blocks subject to their usability, i.e. wherever the EB boundaries were identifiable. In the remaining cases, particularly for Class II to VI towns, lists of *Urban Frame Survey* (UFS) blocks as per the NSSO have generally been used in the past as the sampling frame for selection of urban blocks in the FuS. It is worth mentioning in this context that unlike the previous three ECs, the Fourth EC (1998) was carried out with UFS blocks as the primary geographical units for the urban areas. As a result, in the last survey on unregistered manufacture, i.e. in the 56th Round of NSS (2000-01), the list of UFS blocks with a count of the number of enterprises and workers as per the Fourth EC has been used as the sampling frame for selection of urban blocks from all towns of the country (except the State of Orissa for which the EC frame was not available and 66 towns of the State of Karnataka for which UFS blocks were not used as the primary geographical units in the fourth EC).

5.2.6 As regards selection of unregistered manufacturing units or enterprises for the purpose of collection of data in the FuS, first a frame of unregistered manufacturing enterprises is prepared at the time of survey in each sample village and block (or selected hamlet-groups and sub-blocks in case of large villages and blocks). Then from this frame, a specified number of about 16 enterprises are selected after grouping the enterprises into a certain number of second stage strata. Generally, all own account enterprises[4] together form one stratum, all non-directory establishments[5] together another stratum and the directory establishments[6] together, the third stratum in the FuS.

[4] Own Account Enterprises are the enterprises that work without employing any hired worker on a fairly regular basis, i.e. they do not employ hired workers during the major part of the period of operation during the last year preceding the date of survey.

[5] Non-directory Establishments are the enterprises operating by employing at least one hired worker on a fairly regular basis but with total number of workers as five or less.

[6] Directory Establishments are the enterprises operating by employing at least one hired worker on a fairly regular basis but with total number of workers as six or more.

5.2.7 Data for the selected enterprises are collected by visiting the respective sites. However, for enterprises without fixed premises, requisite information about the entrepreneurial activities are collected by interviewing the owner of the enterprise (or any other suitable respondent) at the household of the owner.

5.2.8 Although the NSS was started as a Central Government project, a scheme has been evolved over the past, according to which a State or Union Territory Government can participate in the NSS by surveying the villages and urban blocks at least on an equal matching basis. At present all the State and Union Territory Governments except Andaman and Nicobar Islands, Dadra and Nagar Haveli and Lakshadweep are participating in the FuS.

5.2.9 With the increasing demand for reliable estimates at the State, Union Territory and regional levels, the sample size of first stage units (FSUs), i.e. villages and urban blocks in the surveys has gradually been increased over time. The sample allocation for the central sample at all-India level increased from 1,174 FSUs in the NSS 3rd Round (August–November 1951) to 15,032 FSUs in the NSS 56th Round (July 2000 – June 2001). The all-India state sample size in the 56th Round of NSS was fixed at 17,096 FSUs.

Current Status

5.2.10 According to the survey results of NSS 55th Round (1999-2000) that covers only *household enterprises*, i.e. proprietary and partnership enterprises, there are about 143 lakh such unregistered manufacturing enterprises in the country employing about 296 lakh workers. The recently concluded NSS 56th Round Survey also collected data relating to the unregistered manufacturing enterprises including non-household enterprises. The survey covers the entire country except: (i) Ladakh and Kargil districts of Jammu and Kashmir, (ii) interior villages of Nagaland situated beyond 5 kms. of a bus route, and (iii) villages in Andaman and Nicobar Islands that remain inaccessible throughout the year. All the State and Union Territory Governments except Andaman and Nicobar Islands, Dadra and Nagar Haveli and Lakshadweep have participated in the survey at least on an equal matching basis.

5.2.11 A sample of 15,032 FSUs, i.e. villages and urban blocks in the *Central sample* and 17,096 FSUs in the *State sample* has been allotted for survey at the all-India level. Enterprise-level data at the village and UFS block level as per the Fourth Economic Census (EC) have been used as the sampling frame for selection of villages and urban blocks except for the State of Orissa for which the EC frame was not available and 66 towns of Karnataka for which the EC did not use UFS blocks as the primary geographical units. For selection of villages in Orissa, the list of villages as per 1991 Population Census constituted the sampling frame. For selection of urban blocks from Orissa and 66 towns of Karnataka, the lists of UFS blocks of the NSSO constituted the sampling frame.

5.2.12 In the 56th Round of NSS, for the purpose of listing of enterprises, the sample FSUs having an approximate present population of more than 1200 or more than 120 non-agricultural enterprises are segmented into a minimum of 4 segments, called hamlet-groups for rural samples and sub-blocks for urban samples. The above cut-offs for segmentation of FSUs are a bit smaller in respect of rural areas of Himachal Pradesh, Sikkim and Poonch, Rajouri, Udhampur and Doda districts of Jammu and Kashmir. From the segments formed in the FSU, a sample of 3 segments – one with certainty, i.e. the segment having a maximum number of Directory Manufacturing Establishments (DMEs) (or with a maximum number of Non-directory Manufacturing Establishments (NDMEs) if there is no DME, or with a maximum number of own-account manufacturing enterprises (OAMEs) if there is no DME/ NDME, or with a maximum population if there is no manufacturing enterprise) and the other two from the remaining by circular systematic sampling with equal probability – is selected for the purpose of listing. While a

separate frame of enterprises is prepared for the segment selected with certainty, a combined frame of enterprises is prepared for the other two segments selected circular systematically.

5.2.13 All the eligible enterprises in any sample FSU (or in the selected segments in case of segmentation of FSUs) that operated for at least 30 days (15 days in case of seasonal enterprises) during the last 365 days preceding the date of listing are considered for sampling in the 56th Round of NSS. All such enterprises in the frame of any FSU or FSU x segments, as the case might be, are grouped into three strata – one consisting of the DMEs and the other two consisting of the NDMEs and OAMEs, respectively. From each of the respective frames, a specified number of enterprises are selected for survey by circular systematic sampling after arranging the enterprises according to broad industry groups. The total number of enterprises surveyed per FSU is restricted to 16. The suitable rule for compensation for a shortfall of the requisite number of enterprises in any frame from the others is provided.

5.2.14 As regards the release of survey results, there has been a tremendous improvement during the past few years. The survey results are now being released almost without any time lag. This is really a great achievement. Data pertaining to the unregistered manufacturing enterprises but with ownership as either proprietary or partnership were last collected in the 55th Round of NSS (1999-2000), along with collection of data for many other industrial activities, household consumer expenditure as well as employment and unemployment. All such enterprises were defined as enterprises belonging to the *informal sector*. The key results based on the survey have been released in December 2000, i.e. only after 6 months of completion of the survey. According to the survey that collected data from a sample of 56,523 manufacturing enterprises spread over 10,170 villages and urban blocks of the country, an estimated 142.5 lakh unregistered manufacturing enterprises in the informal sector, employing about 296.5 lakh workers, were operating in the country during 1999-2000.

Select Issues

5.2.15 The Commission, after reviewing the system of data collection and broadly analysing the survey results of unregistered manufacture, has grouped the important issues into the following broad categories for the purpose of identifying the deficiencies in the present system and thereby recommending measures for improvement of the system:

A. Divergence in the alternative data sets

B. Accuracy of the survey estimates

C. Time frame for conducting the surveys

D. State participation

A. Divergence in the Alternative Data Sets

Deficiencies

5.2.16 It is clear from discussions under paragraph 5.2.2 that data on a number of enterprises are available from the Follow-up Enterprise Surveys (FuS) and Economic Censuses (EC) while the same with respect to number of workers are also available from two more sources namely, the Employment-Unemployment Surveys (EUS) of the NSSO and the decennial Population Censuses. Ideally speaking, the number of enterprises as per the FuS and the EC should be in close agreement as the definition of an enterprise is the same in both the operations. As regards the number of workers engaged in the activity, figures from different sources are not strictly comparable in view of certain differences in defining the same by different sources.

5.2.17 For ascertaining the number of workers, both the FuS and the EC consider the number of workers usually working in the enterprise in a day. But the reference period for determining the number of workers is generally the last month (average month of the last working season for

seasonal enterprises in some surveys) in the FuS and the last year for perennial and casual enterprises or the last working season for seasonal enterprises in case of the EC. As regards the other two sources, the Census 1991 categorised a person as worker if he or she had worked at any time during last year while the EUS 1993-94 classified a person as worker provided he or she, during the last year, pursued some economic activity more or less regularly, even if it was intermittent in nature. Further, the coverage of activities under 'work' was wider in the EUS 1993-94 as compared to the Census 1991. To illustrate, all market activities, the production of all primary commodities for own consumption and own account production of fixed assets are classified as work in the EUS 1993-94. But the Census 1991 recognised all market activities and production for own consumption in cultivation of only certain crops such as cereals, millets, sugarcane, etc. as work. Growing of plantation crops, vegetables, flowers and other crops exclusively for home consumption were not considered as work in the Census 1991.

5.2.18 Recently, an Expert Committee to examine wide variations in data sets on the same subjects (Report released in February 2000) also studied the said divergence in the alternative data sets. According to the Report, the total number of manufacturing enterprises in the country as estimated by the FuS 1989-90 and the EC 1990 (see Annexe 5.15) are about 144 lakhs and 54 lakhs, respectively. Thus FuS estimate is about 2.7 times the EC count despite the fact that the FuS considered only the unregistered enterprises as against the EC taking into account all types of enterprises irrespective of their status of registration or type of ownership. State-wise results as per the alternative sources also reflect a similar pattern with the FuS figure being generally much higher than the figure reported by the EC.

5.2.19 In spite of some differences in the definitions of workers as per the alternative sources as discussed earlier, the estimated total number of workers engaged in the manufacturing activities as per the FuS 1989-90 and ASI 1989-90 can be compared with the total number of workers as per the other three sources, namely, the EC 1990, EUS 1993-94 and Census 1991 for a broad dimensional check on the quality of alternative estimates. This comparison (*Source: Report of the Expert Committee to examine wide variations in data sets on* the *same subjects*) reveals that (see Annexe 5.16) the numbers of workers are smaller in the censuses (EC 1990: 218 lakhs; Census 1991: 299 lakhs) than in the sample surveys (FuS & ASI 1989-90: 431 lakhs, EUS 1993-94: 368 lakhs). Interestingly, the number of workers engaged in unregistered manufacturing enterprises as per the FuS 1989-90, estimated to be about 350 lakhs, exceeded the number of workers as per both the censuses that included workers engaged in both unregistered and registered manufacturing enterprises.

Recommendations

5.2.20 Taking note of the extent of divergences in the alternative data sets, the Commission recommends that:

(i) Uniform concepts and definitions should be adopted in the censuses and the sample surveys in defining the enterprises and workers. In case of non-uniformity, provisions must be made in the census and survey questionnaires so that it is possible to generate comparable estimates for a cross-examination of data and to take remedial measures in case of divergences in the data.

(ii) The advisory working groups and technical committees set up by the National Commission on Statistics should ensure standardisation of concepts and definitions in the censuses and sample surveys, to the extent possible.

(iii) The National Sample Survey Office should regularly study the extent of divergences in the alternative data sets so as to identify the reasons for divergences and suggest remedial measures. As the village and urban block level data of the number of enterprises and workers as per the Economic Census (EC) are used as the sampling

frame for selection of villages and urban blocks in the Follow-up Enterprise Surveys, necessary measures must be taken in the EC to enhance the quality of the data.

B. Accuracy of the Survey Estimate

Deficiencies

5.2.21 The Follow-up Enterprise Surveys (FuS) on unregistered manufacturing enterprises are carried out periodically by following similar concepts and definitions. Thus the results as per the FuS conducted at different points of time should be consistent. Examination of key results (see Annexe 5.17) as per the last three surveys namely, NSS 51st Round (1994-95), Special Enterprise Survey (1998-99) and NSS 55th Round (1999-2000) shows a decline in the estimated number of unregistered manufacturing enterprises at the all-India level during the period 1994-95 and 1998-99 (124 lakhs during 1994-95 and 101 lakhs during 1998-99). But a high rate of growth in the estimated number of unregistered manufacturing enterprises is observed during the next year (101 lakhs during 1998-99 and 143 lakhs during 1999-2000). Consequently, the estimated number of workers engaged in the activity for the periods discussed above also shows a similar trend (296 lakhs during 1994-95, 229 lakhs during 1998-99 and 296 lakhs during 1999-2000).

5.2.22 Thus, according to the FuS estimates, the period 1994-2000 is marked with a reverse trend (i.e. decline for the period 1994-99 and growth during 1999-2000) in the number of unregistered manufacturing enterprises and workers engaged therein. Interestingly, the estimated number of workers engaged in the unregistered manufacturing enterprises in the country remained the same (296 lakhs) during the periods 1994-95 and 1999-2000. To what extent the finding is correct needs to be examined. One way of doing so could probably be to compare the rate of growth for the period in the total number of workers as per the FuS and the Annual Survey of Industries (ASI) with the rate of growth in the corresponding employment figures as per the Employment-Unemployment Surveys of the NSSO conducted during NSS 50th Round (1993-94) and NSS 55th Round (1999-2000). The Commission finds that there is now no regular mechanisms for post-survey evaluation of survey results by cross-validating the same with those available from the alternative sources.

5.2.23 Estimate of gross value added (GVA) per worker as per the FuS is used for the purpose of GDP calculation. Sometimes there are perceptions from the data users that the FuS estimate of GVA per worker does not reflect the reality (see Annexe 5.17) for the estimates of GVA per worker as per the NSS 51st Round: 1994-95 and Special Enterprise Survey: 1998-99). In fact, the perception is that the same is quite often underestimated. Reluctance on the part of the enterprises to supply correct and complete information in the surveys is one of the reasons for likely underreporting of receipts and GVA. This reluctance might be due to various reasons such as apprehension that the information supplied may be utilised for taxation purposes. The perceived underestimation of GVA can be verified by cross-validating the data with other related socio-economic variables. The Commission has noted that the NSSO carried out a pilot survey during April to June 2000 to evolve a better methodology for the collection of more reliable data on GVA from the manufacturing and trading sectors.

5.2.24 The Commission has observed that the survey reports do not give the standard error of estimates. As a result, the users are left with no other choice but to accept the published results in good faith. This is a weakness of the present system of dissemination of survey results.

5.2.25 The FuS covers all manufacturing units not covered under the ASI. Many *bigger* units with a sufficiently large number of workers are also included in the FuS because they are not covered under the ASI as they have not been registered by the Chief Inspector of Factories and

included in their list. Inclusion of these bigger units in the FuS sometimes distorts the FuS estimates to a great extent.

Recommendations

5.2.26 The Commission recommends that:

(i) Standard errors of important estimates should invariably be published in the reports.

(ii) Post-survey evaluation should be regularly carried out to identify the deficiencies in the survey methodology for the purpose of taking remedial measures.

(iii) There should be a regular interaction between the survey agencies and the data users to discuss the limitations of survey results with a view to taking necessary corrective steps for improving the quality of survey data.

(iv) Until action is completed to cover all the bigger units in the ASI frame, steps should be taken in the Follow-up Enterprise Surveys to net such bigger units by proper stratification so as to improve the precision of the survey estimates.

(v) Measures such as strengthening of training, field visits and scrutiny of schedules by higher-level officers, interactive feedback session at the initial stage of the survey, etc. should be taken to minimise non-sampling errors in the surveys.

(vi) Other measures like shortening of schedule and creating public awareness about the data requirements should also be taken to improve the quality of the data.

(vii) It would be worthwhile to extend the provisions of the Collection of Statistics Act for surveys in respect of unregistered manufacture as well as other sectors as in the case of Annual Survey of Industries.

C. Time Frame for Conducting the Surveys

Current Status

5.2.27 The FuS on unregistered manufacture have been carried during 1978-79, 1984-85, 1989-90, 1994-95, 1998-99, 1999-2000 and 2000-01. The surveys carried out during 1998-99 and 1999-2000 also included other subjects under the coverage. Thus, till 1998-99, the subject of unregistered manufacture was taken up almost quinquennially. Thereafter, the subject has however been covered in the next two years. The Commission is of the view that a proper time frame for carrying out the survey should be prepared in advance for the benefit of the users. While doing so, the plan of covering other subjects should also be spelt out.

5.2.28 The Commission has observed that the work of finalisation of schedules and instructions for data collection, validation and report-writing for the surveys carried out during 1978-79, 1984-85 and 1989-90 was the joint responsibility of the NSSO and the CSO (EC Division) - OAME and NDME part looked after by the NSSO and the DME part by the CSO. Data from OAMEs, NDMEs and DMEs in these surveys were collected from the same set of FSUs selected by the NSSO by adopting an integrated sampling design. In the subsequent surveys, all the three enterprise types have been covered by the NSSO.

Recommendations

5.2.29 The Commission recommends that:

(i) The time frame for covering various non-agricultural activities, including unregistered manufacture, through Follow-up Enterprise Surveys (FuS) should be finalised keeping in view the periodicity of data requirements by the users *vis-à-vis* resources available for handling the survey work.

(ii) The collection of data relating to all types of unregistered manufacturing enterprises consisting of OAMEs, NDMEs and DMEs should be integrated in the FuS and it should be the responsibility of the NSSO to conduct such surveys, process the results and bring out the reports.

D. State Participation

Deficiencies

5.2.30 All the State and Union Territory Governments except Andaman and Nicobar Islands, Dadra and Nagar Haveli and Lakshadweep are participating in the NSS at least on an equal matching basis. But as regards data processing and release of survey results are concerned, the performance of the States and Union Territories, barring a few of them, is very discouraging. This is a major weakness of the existing system.

Recommendations

5.2.31 The Commission recommends that:

(i) Views of the State and Union Territory Governments should be solicited and measures should be taken for improving their data processing capabilities.

(ii) The State and Union Territory Governments should actively involve the NSSO and the CSO in regular discussions and exchange of ideas for improvement of their system of data processing.

5.3 SMALL SCALE INDUSTRIES

Introduction

5.3.1 The Small Scale Industries Sector has acquired an important position in the economic structure of the country. As per the published[7] Report of the Development Commissioner, Small Scale Industries (DCSSI), the sector encompasses about 32 lakh units, during 1998-99 which produce over 7500 different items for domestic as well as foreign markets, contributing to about 40per cent of the value added to the manufacturing sector and its share in national exports stands at over 34per cent. The Sector accounts for about 95per cent of industrial units in the country and provides a gainful employment to about 175 lakh persons. However, according to the Expert Committee on Small Enterprises constituted under the Chairmanship of Shri Abid Husain, Former Member, Planning Commission, a substantial share in terms of output of the total Small Scale Sector is covered by the Small Industry Development Organisation (SIDO) but it does not cover all industries of the sector. Further, the available data suffers from sampling problems and are highly aggregated. The Report also mentioned that SIDO figures of the high growth rate of Small Scale Industries under their purview seems to be grossly exaggerated.

Scope

5.3.2 The spectrum of industries extends from the organised large and medium industries to modern Small Scale Industries and unorganised traditional industries. The last two (i.e. modern Small Scale Industries and unorganised traditional industries) are commonly called as Village and Small Industries (VSI). The VSI sector is divided into seven sub-sectors namely, Handicrafts, Handlooms, Khadi and Village Industries, Coir, Sericulture, Power Looms and Small Scale Industries not falling in any of these categories, which are referred to as residuals. The first five sub-sectors are often referred to as "traditional sector" whereas the power looms and residual Small Scale Industries are known as the "modern" Small Scale Sector. For the purpose of

[7] *SSI in India, The Growth Sector for the Millennium*, August 2000.

administration and development of these sub-sectors, there are supervisory bodies or boards at the Central level. These bodies are Development Commissioner for Handicrafts, Development Commissioner for Handlooms, Khadi and Village Industries Commission, Coir Board, Central Silk Board, Textile Commissioner and the Development Commissioner for Small Scale Industries (DCSSI). The Office of DCSSI has the responsibility for the residual Small Scale Industries, which are identified on the basis of investment limits in plant and machinery. However, the definition of Small Scale Industries has undergone a change over the years in terms of investment limit as given in Annexe 5.18. In 1955, for example, the SSI was defined as an establishment with a fixed investment of less than Rs. 5 lakh and employing less than 50 workers using power or less than 100 workers without power. But the employment criterion was subsequently dropped in 1960, and the SSI was defined solely in terms of investment in plant and machinery at original value. The investment ceiling was again revised from time to time generally in the upward direction keeping in view mostly the pace of inflationary effect over time. The upward revisions in the ceiling on the investment in plant and machinery were continued till 1997 when the limit was increased to Rs. 300 lakh. The ceiling was then revised downward to Rs.100 lakh in 1999 and this limit is continued to hold good at the time of submitting the report in August 2001.

Censuses

5.3.3 The First All-India Census of Small Scale Industrial Units was conducted in 1973-74 by Small Industry Development Organisation (SIDO), covering units registered with the State Directorate of Industries and falling in the purview of SIDO to collect detailed data on various parameters of importance namely, production, capacity, employment, investment, borrowings, raw material used, fuel consumed, exports, etc. The census covered 1.4 lakh registered SSI units up to December 1970.

5.3.4 A Plan Scheme known as "Collection of Statistics of SSI" with a 100 per cent central assistance was introduced during the Fifth Five-Year Plan and was implemented with the help of the Small Industries Service Institutes (SISIs), State Directorate of Industries (SDIs) and District Industries Centres (DICs). The scheme aimed at updating the data provided by the Census on an annual basis through registration records. The Plan Scheme was also meant for compilation of the Index of Industrial Production for the Small Scale Sector.

5.3.5 The Office of DCSSI conducted the Second All-India Census of Registered SSI units to collect complete data on the working of all registered SSI Units in 1990-91 with reference year as 1987-88. The data collected through this Census happens to be the latest available data on the SSI sector. Out of a total number of 9.87 lakh registered SSI units, the census revealed that about 37 per cent of the units were either closed or non-traceable.

5.3.6 The Third Census of SSI units, scheduled to be conducted during 2001-02 with the reference year as 2000-01, is aimed to cover for the first time both registered and unregistered units in the SSI sector. The registered sector consists of units registered with State Directorates of Industries. However, traditional industries falling under the purview of Khadi and Village industries, Handlooms, Handicrafts, Sericulture, Coir sectors as well as Powerlooms sector will not be covered in the Third Census of SSI. The units that are registered as on 31 March 2001 will be covered on a complete enumeration basis. The unregistered sector consists of units, which are eligible for registration as per the definition of the SSI but are not registered, as the registration in SSI is voluntary. The unregistered SSI units, which are eligible for registration as on 31 March 2001, will also be covered in the Third Census through a sample survey. In this survey, a sample of about 2500 villages will be selected first and details of about 2.5 lakh sample units will be collected from the selected villages. The census will also cover the aspect of sickness and incipient sickness and their causes, which have not been covered in the earlier censuses. The fieldwork for the Third Census is expected to commence from August 2001 and is likely to

continue till February 2002. Data processing and release of results are planned for completion by 31 March 2003.

Ad hoc Surveys and Studies

5.3.7 To analyse specific aspects of the Small Scale Sector like sickness, size of unregistered SSI sector, etc. *ad hoc* surveys and studies were conducted from time to time. So far, the Office of DCSSI has completed two diagnostic surveys on sickness during 1982-83 and 1994-95. One study for assessing the size and contribution of the unregistered units in the SSI sector was conducted through an independent agency namely, the Socio-economic Research Centre during 1994-95.

Index of Industrial Production – Small Scale Industries

5.3.8 For understanding the trend in production in the Small Scale Sector at the industry group level, a system of collection of production data was introduced in 1976. With these data, the Index of Industrial Production (Small Scale Sector) is being compiled by the Office of DC (SSI) with the object of estimating the growth of production in the Small Scale Sector on a regular basis. For this purpose a 2per cent sample was selected from the frame of working units available from the First All-India Census of Registered Small Scale Industrial Units (reference year 1970). The sample covered 2,400 units from which monthly production data on 356 important items is being collected on a quarterly basis. The quarterly Index of Industrial Production of the Small Scale Sector is being computed by the Office of DC (SSI) with base year 1970 for internal use only.

5.3.9 The Office of DCSSI has launched a revised scheme of data collection to improve the coverage of units in the Index of SSI Production. The scheme envisages the collection of data on about 500 items from 28,000 units capturing about 74per cent of the SSI production.

Representation of SSI in the Index of Industrial Production (IIP) Prepared by CSO

5.3.10 A scheme was introduced during the Sixth Five-Year Plan to give proper representation to the Small Scale Sector in the All-India Index of Industrial Production (IIP) compiled by the CSO. The Office of DCSSI regularly provides monthly production data to the CSO on 18 reserved items collected from about 4,800 SSI units selected from the frame of SSI units registered up to 1984-85 in order to provide representation of the Small Scale Sector in the IIP.

5.3.11 The Office of DCSSI could not supply the monthly production data for any of the additional items included in the 1993-94 series of IIP. Thus the representation of the Small Scale Sector in the All-India IIP remained inadequate. The Working Group on Commerce, Industry and the Corporate Sector under the Chairmanship of Dr. Arun Ghosh also examined this issue and recommended that the IIP should attempt to give a good estimate of the trends in the output of industries in the registered sector and a separate index for SSI Sector could be attempted on a quarterly basis.

Deficiencies

5.3.12 The coverage of units in the unorganised manufacturing sector by the Office of DCSSI is not complete, since the units belonging to Handloom, Power Loom, Handicrafts, Coir, Sericulture, Khadi and Village Industries are under the purview of different All-India Boards and some of them under different ministries. However, an idea of the entire unorganised manufacturing sector could be obtained from the Economic Census conducted by the CSO. But the Economic Census does not capture all the relevant details of the working of these units and there are problems of differences in the definition of SSI as adopted by the Office of DCSSI and that adopted by the CSO for their censuses and surveys. The Economic Census provides

information on broad parameters only like the number of units, employment, type of activity, location, etc. Detailed information on the unorganised manufacturing sector is collected through Follow-up Enterprise Surveys on unorganised manufacturing covering Directory Manufacturing Establishments (DME), Non-Directory Manufacturing Establishments (NDME) and Own Account Enterprises (OAE) in the Ministry of Statistics and Programme Implementation. The results of the Census and Follow up Enterprise Surveys could not provide information for the SSI sector separately. Some of the other deficiencies are as under:

(a) The definition of Small Scale Industry, which is based on investment in plant and machinery (original value), has undergone frequent changes over time (see Annexe 5.18). The changes in the definition restrict the precise temporal comparison in growth of units or of the corresponding contribution.

(b) Many SSI units do not get registered with State Directorate of Industries firstly, because registration is voluntary, and secondly as in metro areas, there are restrictions on registration under municipal rules. Further, no benchmark data is available for an estimation of the economic parameters of the entire SSI sector. However, the data on the registered SSI sector can be culled out by cross tabulation of data collected in the Follow-up Enterprise Surveys of the Economic Census and ASI.

(c) The data collected by the Office of DCSSI are confined to registered SSI units only. There does not exist a system of removing closed units from the frame of registered units as the information regarding such units is not regularly available. The nature of SSI registration is voluntary as there is no legal backing for collection of data from this sector.

(d) The SSI sector overlaps with units covered by the ASI and the unorganised sector on account of varying definition being adopted by the two organisations namely, DCSSI and Ministry of Statistics and Programme Implementation. Since the Ministry of Statistics and Programme Implementation is not collecting the information required to identify the SSI sector uniquely, this poses difficulties in properly estimating the extent of the overlap.

(e) The contribution of the unregistered manufacturing sector in the weighting diagram, estimated on the basis of Gross Value Added in 1993-94, is about 29 per cent in the overall IIP. On account of the non-availability of regular monthly production data, the unregistered manufacturing sector is represented by only 18 reserved items from the SSI sector, which constitutes less than one per cent in the all-India IIP. Further, the production data for these 18 reserved items is based on an outdated sample of about 4800 units selected from the frame of SSI units registered up to 1984-85.

(f) The revised scheme launched by the Office of DCSSI to enhance the coverage of SSI sector in IIP and to improve the timeliness in supplying the data to CSO within 4 to 5 weeks as required under Special Data Dissemination Standards (SDDS), envisages the collection of data in respect of about 500 items from 28,000 units capturing about 74per cent of the SSI production. However, the production data for all the 500 items are not available on a continuous basis since 1993-94. Even the base year data for 1993-94 is not available. In the absence of the availability of base year data, the representation of the SSI sector in IIP was restricted to only 18 items and thus remained inadequate.

(g) The Office of the DCSSI does not cover the entire Village and Small Scale Industries (VSI), as the units in Handicraft, Handloom, Khadi and Village Industries, Coir, Sericulture and Powerlooms are not within its purview.

Recommendations

5.3.13 In view of the above mentioned deficiencies, the Commission recommends the following:-

(i) The representation of the SSI sector in the all-India IIP should be improved by extending the coverage of items for which DCSSI is collecting regular monthly production data.

(ii) Since the frames maintained by the source agencies do not make a distinction between the registered and unregistered units, a mechanism should be devised to avoid overlapping of units belonging to SSI and other source agencies, in respect of common items for which the production data is reported by two agencies.

(iii) The Office of DCSSI should make efforts to compile monthly IIP as against the present practice of compiling quarterly IIP, for monitoring the trend of the Small Scale Industries. Efforts should be made to enlarge the coverage of items in order to make the index more representative of the SSI sector. The base year of the two indices namely, all-India IIP and DCSSI index should be in close proximity if not the same.

(iv) The Office of DCSSI should publish the index for use by the Government, private agencies and researchers.

(v) The Economic Census and the Follow-up Enterprise Surveys should collect the information on "investment in plant and machinery (original value)" and "whether registered as SSI unit or not". The Economic Census would help in providing the number of registered and unregistered SSI units while the Follow-up Surveys would enable estimation of various parameters of these sectors. Similar information in ASI should also be collected to estimate the different characteristics of registered and unregistered SSI units in the total organised sector.

(vi) With the availability of information on the SSI sector from the Economic Census and Follow-up Enterprise Surveys, as mentioned above, the utility of conducting a future census of small-scale units should be examined. The detailed information, if any, required for the sector could be collected through sample surveys.

(vii) To facilitate evaluation over time, the Office of DCSSI should present data to enable time series comparison keeping in view the changes in the definition of the SSI sector.

(viii) The NSSO as a part of their tabulation programme should generate data on the principal characteristics relating to the SSI sector to enable cross comparison with DCSSI data.

(ix) Though administratively, the Small Scale Sector is divided into seven sub-sectors, which are under the control of different ministries and departments, the Office of DCSSI that is controlling the major segment of this Sector, should coordinate with the remaining six departments and generate a database for the sector. Thereafter, efforts should be made to compile an index of the overall Small Scale Sector.

5.4 INDEX OF INDUSTRIAL PRODUCTION

All-India Index of Industrial Production

Introduction

5.4.1 The Central Statistical Organisation (CSO) is responsible for the compilation and publication of the Index of Industrial Production (IIP) since 1950. The IIP is compiled as a simple

weighted arithmetic mean of production relatives by using Laspeyre's formula. The IIP is a quantum index, the production of items being expressed in physical terms. However, the unit of reporting in respect of certain items like machinery, machine tools, ship building, etc. is in value terms. The monthly figure of production value in such cases is first deflated by the Wholesale Price Index (WPI) of the corresponding categories, released by the Office of the Economic Adviser, Ministry of Industry. The scope of the IIP as recommended by the United Nations Statistical Office (UNSO) includes mining, manufacturing, construction, electricity, gas and water supply. But due to constraints of data availability, the IIP compiled in India has excluded construction, gas and water supply sectors.

Current Status of IIP (Base 1993-94)

5.4.2 The Commission discussed the following aspects of the IIP in detail:

A. Base Year
B. Scope
C. Coverage of items
D. Weighting diagram
E. Sources of data
F. Quick Estimates and Revisions

A. Base Year

5.4.3 As the structure of the Industrial Sector changes over time, it is necessary to revise the base period and the weighting diagram of the IIP periodically so as to measure the real growth in the industrial sector. The CSO made such periodical revisions by reviewing the coverage of items and industries and by improving, as far as practicable, the technique used in the construction of IIP and by shifting the base to a recent period. When the compilation of the index commenced in India, the base year adopted was 1946, and this was revised successively to 1951, 1956, 1960, 1970, 1980-81 and 1993-94. The base year, number of items, month of release, number of 2-digit industry groups and the period for which the indices were compiled are given in Annexe 5.19.

5.4.4 The United Nations has recommended that the base period of the index number should be revised quinquennially. The practice of revising the index five-yearly was followed till 1960. Thereafter, two revisions were made after a gap of about ten years each. The last revision of the base period (1980-81) was made after a lapse of 13 years. For the purpose of revising the IIP, the CSO generally constituted expert groups or committees to make suitable recommendations with regard to choice of the base year and necessary modifications in the weighting diagram. The revision of the 1980-81 series of the IIP was guided by a Technical Advisory Committee (TAC) constituted by the CSO in June 1995 to advise on the Compilation of Comparable State IIPs, the corresponding Composite All-India IIP and All-India IIP. The TAC submitted its report in June 1998. The main recommendations of the Committee along with their present status are set out in Annexe 5.20.

B. Scope

5.4.5 The scope of the index has been confined to the mining, manufacturing and electricity sectors, and does not cover gas, water supply and construction. The number of items included in the IIP with 1980-81 and 1993-94 as base years is given in Table 5.1:

Table 5.1: Sector-wise number of items in 1980-81 and 1993-94 series

Sector	No. of Items	
	1980-81	1993-94
Mining and Quarrying	61	64
Manufacturing	290	478
Electricity	1	1
Total	352	543*

Note: *clubbed into 287 item groups: Mining-1, Manufacturing -285 and Electricity-1.

C. Coverage of Items

5.4.6 In the revised IIP, the approach adopted for selection of items for inclusion in the item basket is as follows:

(a) Each item should generally account for at least Rs. 80 crore of gross value of output at the item level and Rs. 20 crore of gross value added at the ultimate (4-digit) level of NIC 1987. The criteria have, however, been applied with flexibility in the case of industry groups which were not represented by a sufficient number of items;

(b) In order to improve the representativeness of the item basket at the 2-digit level of NIC, some of the important items of the IIP series with base 1980-81 were also included.

5.4.7 The item basket so identified captured about 80 per cent of the output of the manufacturing sector. It was finalised after extensive discussions with source agencies for production data especially the Department of Industrial Policy and Promotion (DIPP), Textile Commissioner, Directorate of Vanaspati and Development Commissioner for Iron & Steel (DCI&S), keeping in view the distinctive character of the items and the availability of a regular flow of monthly production data. Also, to capture at least 60 per cent of the output at the 2-digit level for improving the representativeness of the items, the criterion for item selection was relaxed and some additional items of 1980-81 series were included in the basket.

5.4.8 In this section of the Report, the unregistered manufacturing sector is defined as those units which are not registered under the Factories Act, 1948. On account of non-availability of regular monthly production data, the unregistered sector has been represented by the units belonging to the Small Scale Sector only. Since the Office of the Development Commissioner, Small-Scale Industries (DCSSI), could not provide data on any of the additional items identified for the new series, all the 18 items of the Small Scale Sector included in the 1980-81 series were retained in the revised series.

D. Weighting Diagram

5.4.9 The weights of the mining, manufacturing and electricity sectors (1-digit level of NIC) have been allocated on the basis of gross value added for 1993-94 as published in the National Accounts Statistics. For the first time, the weighting diagram with base 1993-94 took into account the contribution of the unregistered manufacturing sector along with that of the registered sector. For estimating the 1993-94 gross value added for the unregistered sector, the data from the Follow-up Enterprise Surveys of the Economic Census namely, Directory Manufacturing Establishments (DME), Non-Directory Manufacturing Establishments (NDME) and Own-Account Manufacturing Enterprises (OAME), for the years 1989-90 and 1994-95 have been used. After interpolating the GVA at the 2-digit level for the year 1993-94, further allocation at the 3-digit and 4-digit levels of NIC has been done using the ratios of 1994-95 surveys, it being in close proximity to 1993-94. The total contribution at 2, 3 and 4-digit level of NIC has been arrived at

by using registered sector data along with data for the unregistered sector for the corresponding groups and sub-groups. Further the allocation of weights to the items within the 4-digit industry groups has been done using Value of Output as available from ASI 1993-94.

5.4.10 The recommendation of the TAC on the issue of using Gross Value of Output instead of Gross Value Added as a criterion for allocation of weights for the compilation of the revised series of IIP was referred to a Special Committee. Following the use of GVA, as recommended by the Special Committee, the distribution of weights at the sectoral level for the IIP series with base year 1993-94 is given in Table 5.2.

Table 5. 2: Comparison of Weights at Sectoral level in 1980-81 and 1993-94 series

NIC Section	Description	Weight	
		1980-81	**1993-94**
1	Mining and Quarrying	114.64	104.73
2 and 3	Manufacturing	771.07	793.58
	Registered		505.13
	Unregistered		288.45
4	Electricity	114.29	101.69
Total		1000.00	1000.00

E. Sources of Data

5.4.11 For the 1980-81 series, the CSO used to get monthly production data from as many as eighteen source agencies. The source agencies, in turn, collect data from the production units spread all over the country. For the revised series with base 1993-94, the same set of source agencies has been retained except for Railways, for which the data are now being supplied in a consolidated form by the Railway Board, instead of by four agencies as was done earlier. This has reduced the number of source agencies to fifteen. In terms of the number of items covered, the largest source is the DIPP, which supplies data on as many as 213 out of 285 groups of items in the manufacturing sector, constituting more than 52 per cent in terms of weight of All-India IIP. The index relating to Mining and Quarrying sector is being supplied by the Indian Bureau of Mines, Nagpur, which is combined with manufacturing and electricity indices compiled by the CSO to arrive at the General Index of Industrial Production. The data on the electricity sector is furnished by the Central Electricity Authority. The source-wise number of items proposed by the CSO, finalised after discussion with source agencies, item groups, corresponding weights and the number of units in the frame is given at Annexe 5.21.

F. Quick Estimates and Revisions

5.4.12 By the Special Data Dissemination Standards (SDDS) of the IMF, the index for any reference month is to be released within six weeks from the end of that month. In order to achieve this norm for the IIP, all the fifteen source agencies are required to furnish data to the CSO within four to five weeks from the close of month. As all the production units do not furnish data within the stipulated time, the source agencies have to resort to estimation for the non-responding units and thus supply provisional data to the CSO. These provisional data are used for computing the quick index for a given month, which is released by the CSO in six weeks. On the basis of revised production data received later from the source agencies, this index is revised subsequently in the next month and finally, two months thereafter, along with the quick index.

Deficiencies

5.4.13 The current IIP has the following specific problems:

(a) *Non-response*: The CSO expects to have at least 60 per cent response in terms of production for release of the Quick Estimate and 80 per cent response at the time of final revision of the IIP. The response rate is worked out on the basis of data supplied by the source agencies, which collect the data primarily through mail enquiry method. The response position is quite good for some of the source agencies, but not satisfactory in respect of others, particularly DCSSI, Directorate of Vanaspati and DIPP, which is a major source of data for the IIP. The response rates in terms of weighted item-wise production of responding units for the items on which the data was furnished by DCSSI, Directorate of Vanaspati and DIPP for the months of January, February and March 2000 were in the range of 9 to 16 per cent, 19 to 43 per cent and 37 to 54 per cent, respectively, at the time of quick estimates. The corresponding percentages at the time of final estimates were 56 to 64 per cent, 76 to 83 per cent and 62 to 66 per cent (see Annexe 5.22). Annexe 5.23 indicates distribution of the number of items by percentage of variation in the production reported at the time of quick and final estimates for the three months from January to March 2000. In the case of 73 items, production reported by DIPP varied by five per cent or more, on an average, over the three months. The number of such items were 10, 6, 3 and 2 for DCI&S, DCSSI, Textile Commissioner and Directorate of Vanaspati, respectively.

(b) *Repetition of Production data*: The total production of an item depends on the number of active units registered with the source agencies for that specific item. It is quite unlikely that the production of an item, which itself depends on a number of endogenous and exogenous factors, will get repeated from one month to the next and that, too, at the national level. Such repetition of production figures for a particular item exposes the weaknesses in the system of collection of data along with inadequacy of the estimation procedure being used by some source agencies (see Annexe 5.24).

(c) *Nil and abnormally high or low Production*: It is also quite unlikely that true production of a particular item at the national level would be 'Nil'. But such data can appear when there are only one or two production units at the national level and they have not reported the production data. Again, it is not uncommon that abnormally high or low production figures are reported for an item compared to the previous months (see Annexe 5.25). On account of extreme fluctuations in the production data being reported by the producer to DIPP, the CSO has recently deleted 4 items namely, photosensitised paper, engines, chassis (assembly) for heavy commercial vehicles (bus, truck) and radio receivers from the item basket with effect from April 1998.

(d) *Very few units*: Data on about 45 items reported by the DIPP are based on five or less units (see Annexe 5.26). For three items, there is only one production unit in the DIPP frame. Such a situation coupled with non-response may lead to extreme variation in estimates of production, thereby affecting the index value considerably.

(e) *Monitoring of Frame*: Some shortcomings have been noticed in the frame of the units being maintained by the DCSSI, Office of Textile Commissioner, Directorate of Vanaspati and the DIPP. The frame of the units now in use at DIPP for reporting industrial production was earlier maintained by the then Directorate-General of Technical Development (DGTD). This frame covers all industrial establishments within the purview of the Industrial Development and Regulation (IDR) Act. However, it is observed that after liberalisation and the transfer of work to DIPP, the frame has become incomplete in respect of coverage and inclusion of new units. In the pre-liberalisation days, the DGTD was in a position to update the frame on the

basis of licenses issued. Now, with de-licensing of certain sectors, the DIPP remains unaware of the setting up of new units in these sectors and can suitably update the frame only when new units inform the DIPP of the commencement of production. Under these circumstances, the frame is very likely to be incomplete. For the same reason, it would continue to include units, which have gone out of existence.

(f) *Inadequate Representation*: The item basket for the All-India IIP with base 1993-94 was selected using detailed results of ASI, 1993-94. The provisional item basket contained 674 items capturing about 80 per cent of the total output of the registered manufacturing sector. The criteria for item selection were relaxed, wherever necessary, to ensure that the provisionally selected items in all the 2-digit industry groups capture at least 60 per cent of the value of output of the particular group. The overriding criterion for finalisation of the item basket was the regular flow of monthly production data from the source agencies. The final item basket contains only 478 items. The 196 items on which data could not be furnished by the source agencies mainly confined to the four agencies: DIPP (80 per cent), Development Commissioner for Iron & Steel (7 per cent), Directorate of Vanaspati (5 per cent) and Office of the Textile Commissioner (4 per cent). The shrinkage in the item basket on account of non-availability of data on nearly 30per cent of the items, contributing about 22 per cent of the total output of the manufacturing sector, has affected the representativeness of the index. While such a compromise has been considered necessary for the feasibility, as one may call it, of the monthly index, there is no denying the fact that the ability of the IIP to measure industrial growth has been severely affected. The problem will persist unless corrective steps are taken by the source agencies.

(g) *Representation of the Unregistered Sector*: While the contribution of the unregistered sector was included in the weighting diagram, this sector was not adequately represented in deriving the production relatives as regular monthly production data remain hard to come by. Only 18 items representing the unregistered sector, which were included in the IIP in the 1980-81 series, continue to be included in the current IIP. Thus, the IIP has failed to adequately represent the unregistered sector in the overall index.

(h) *Weaknesses in the Data Collection Mechanisms of the Source Agencies*: DCSSI, Directorate of Vanaspati, DIPP and the Office of Textile Commissioner do not have an appropriate data collection mechanism. This has resulted in a poor response from the manufacturing units included in their frame for monthly reporting of production data. Most of the source agencies are not geared for collection of data on all items that are being produced by the units within their purview. Ideally, the source agencies need to monitor the performances of all units under their jurisdiction and provide information on the complete set of items identified during the base year revision. But they have not been able to furnish information on most of the new items. Further, it appears that the source agencies do not have an adequate system for validating data before sending the same to the CSO.

5.4.14 The Working Group on Commerce, Industry and the Corporate Sector constituted in the Modernisation of Statistical System in India under the Chairmanship of Dr. Arun Ghosh, after careful consideration of all the issues pertaining to the IIP, felt that it would be useful if, alongside the index of production in the medium and large-scale sector, a separate index for the Small Scale Industrial Sector is computed. The Working Group, therefore, recommended compilation of:

(a) An alternative IIP based on large manufacturing units (units having 200 or more workers); and

(b) A separate quarterly index for the Small-Scale Sector.

5.4.15 According to the Working Group, the Index of Production in large and medium industries and the present IIP are to be run in parallel at least for a period of one year or till the revision of the base for the IIP is taken up. The CSO should also solicit the cooperation of the industry associations in the process of data collection and cross-validation. The Working Group was, however, not in favour of publishing two parallel indices, but felt a change-over could be made after one year of experimentation. The index so released should specifically clarify that it mainly pertains to the output of large and medium industries.

Use of Other Administrative Data

5.4.16 The Commission discussed the feasibility of using the Central Excise data for compilation of IIP. Almost all manufacturers are required to file the RT–12 return containing production data within 5 days from the close of a month to the Range Offices of Central Excise. The RT–12 return is being submitted by more than 100,000 units producing excisable products of which 45 to 50 per cent belong to Small Scale Sector and the remaining are from medium and large factories. At present, about 80 per cent of the RT–12 returns have been computerised and such data are available on the computer system since April 2000. The potential of this vast source of administrative data needs to be examined properly for the compilation of IIP. The feasibility of making use of data from other administrative sources, like sales tax, for compilation of IIP, at least at the State level, should also be explored.

Recommendations

5.4.17 Against the background of the above analysis of deficiencies in the IIP, the Commission makes the following recommendations which are grouped according to the areas of action:

Improvements in the Existing IIP

(i) The item basket of the Index of Industrial Production (IIP) should be selected in such a way that the indices are representative of the growth in the Industrial Sector at least at the 2-digit level of NIC.

(ii) The source agencies should make available the data on the additional items to be included in the item basket. The agencies should expand their database to capture new units and new items.

(iii) To ensure the availability of data on new items, the Central Statistical Organisation (CSO) should regularly provide the source agencies with:

  (a) The list of items that are just below the cut-off criteria of item selection and likely to figure in the revised item basket on the basis of the current series.

  (b) Items identified on the basis of detailed results of Annual Survey of Industries (ASI).

(iv) The source agencies should also identify the important and fast-moving items for inclusion in their database for the purposes of administration and revision of IIP.

(v) The base year of the Index should be revised quinquennially by the Central Statistical Organisation to adjust to the structural changes in the industrial sector.

Strengthening of Source Agencies

(vi) The statistical set-up in DIPP needs restructuring in terms of statistical manpower and infrastructure, by creating a full-fledged statistical unit under the overall guidance of a professional statistician.

(vii) The proposed statistical unit should be vested with the responsibility of maintenance of the frame, timely supply of monthly production data with an adequate response rate, exploring of suitable methodologies for dealing with non-response and improving the overall quality of data.

(viii) The statistical set-up of other source agencies of the IIP also needs to be adequately strengthened.

(ix) Since such strengthening will take some time, the agencies should, in the mean time, attempt to achieve a minimum standard for ensuring the quality and reliability of the Index, by adopting a suitable monitoring mechanism to target a response rate in terms of production of at least 60 per cent in the first month and 80 per cent at the final revision.

(x) The source agencies should correspond with the production units through fax, e-mail and telephone followed by a personal visit, if necessary, to minimise non-response. Cooperation from the Industrial Associations and State Governments should also be solicited in this context.

(xi) Source agencies should preferably avoid inclusion of items for which very few units (say, less than 5) are reporting production, in order to avoid extreme fluctuations in the production data due to non-response. If, however, it is necessary to include some such items, the source agencies should make all efforts to closely monitor and collect data for these items.

(xii) The problem of non-response needs greater and more detailed examination. Therefore, technical experts from the fields of industry and statistics should go into the question of whether statistical methods could be useful for the solution of this problem.

Additional All-India Index of Industrial Production

(xiii) In view of the difficulties faced in the collection of data for compilation of IIP by the mail enquiry method, the possibilities of constructing an additional Index of Industrial Production by direct collection of monthly production data on selected items from factories with 200 or more workers should be explored. This should first be done for one year on an experimental basis.

(xiv) For this purpose, the Field Operations Division (FOD) of the National Sample Survey Organisation (NSSO) should be entrusted with the task of collection of monthly production data under the existing legal provisions. The requirement of additional resources for this purpose should be met.

(xv) Before the above suggestion of compilation of the Index is taken up, a study should be conducted to compare the annual growth rate in production, based on ASI data of recent years (for factories with 200 or more workers) and current IIP. The findings should be examined by the Standing Committee on Industrial Statistics regarding the workability and adoptability of this approach for compilation of the Additional Index of Industrial Production.

Use of other administrative data

(xvi) An exploratory study should be undertaken to examine the feasibility of using the production data as available with Central Board of Excise and Customs for compilation of an All-India Index of Industrial Production. The possibility of utilising data from other sources like sales tax for compilation of IIP, at least at the State level, should also be examined.

Comparable State-level Indices of Industrial Production

Introduction

5.4.18 Apart from the monthly IIP compiled by the CSO, a number of State Directorates of Economics and Statistics are engaged in the compilation of State-level Indices of Industrial Production (IIPs). However, these indices lack comparability due to differences in the choice of base year, periodicity of release, data sources used, etc. The need for comparable State-level IIPs has been felt for quite some time, for making comparative studies on the state-wise performance of the industrial sector. Recognising the need, a Technical Advisory Committee (TAC) was constituted for an in-depth examination of various technical issues relating to compilation of comparable State-level IIPs. The Committee submitted its report in June 1998. The main recommendations of the TAC pertaining to comparable State IIPs along with their present status are listed in Annexe 5.27.

Current Status

5.4.19 Some of the States have undertaken the compilation of monthly IIPs with base 1993-94. Tamil Nadu, Andhra Pradesh and West Bengal have released the monthly comparable State IIPs. Karnataka and Pondicherry have released the State-level IIPs on an annual basis with base 1993-94 and are making efforts to compile quarterly or monthly IIPs. Most of the States and Union Territories (UTs) have identified the item basket, prepared the weighting diagram and selected sample units from the frame of factories or units for collection of data for compilation of comparable State-level IIPs.

5.4.20 The State Governments desired that the regular monthly production data may be collected by the NSSO and supplied to them. The TAC was not in favour of a Central agency for collection of production data on behalf of the States. The Committee, therefore, recommended that States and UTs should make necessary augmentation in infrastructure for collection of regular data for the manufacturing sector. It was decided that for the mining sector, the requisite data for the preparation of the weighting diagram and regular production data for compilation of index may be made available to the States by IBM, Nagpur and for the electricity sector, the CSO may send the necessary data to the States after procuring them from the Central Electricity Authority.

Deficiencies

5.4.21 Most States find difficulty in regular collection of data for compilation of the State-level IIPs due to constraints of resources and manpower. The CSO has been emphasising the importance of comparable State-level IIPs and the need for action to augment the States' resources for this purpose. Pending such augmentation, the CSO has advised the States to try the mail method of data collection. In this regard, the CSO has directed the States to impress upon the units, Industrial Associations and State Industrial Departments to cooperate in order to make the mail method a success for optimum data collection, as it is impossible to provide resources for data collection by the interview method, even in the case of very limited information on the production of only a few items from the factories.

5.4.22 Some State Governments have indicated that they are facing difficulties in the collection of monthly production data from the selected factories, as the response is not adequate. Under the Collection of Statistics Act, 1953, all the units registered under the Factories Act, 1948, are obliged to supply information required by the Government. The NSSO gets annual information from the factories under the above Act for the Annual Survey of Industries. Some States have pointed out that the DESs are not the authority under the Collection of Statistics Act and in the absence of any legal backing, it is difficult for them to collect production data from the factories. As such, it is necessary to delegate the authority for data collection under the Collection of Statistics Act to the State DESs for smooth and regular collection of monthly production data.

5.4.23 To some extent, the resource problem faced by the States in a monthly collection of data can be solved if a proper coordination mechanism between the source agencies of All-India IIP and various State DESs is established. A State or UT will then be able to use the information collected by the source agencies from units located in it for compilation of comparable State-level IIPs. This will reduce the requirement of additional resources by the States for compilation of State IIPs. However, for the purpose of compilation of the IIP, the States may need to augment their resources for collection of data on additional items from additional units, which are not included in the database of the source agencies.

5.4.24 The ASI, 1997-98 shows that about one-third of the units covered were making use of computers in their accounting work (see Annexe 5.14). This percentage is likely to be much higher in case of the Census Sector, which comprises large factories with substantial resources including IT facilities. For impressing upon the units the need to use computer and information technology for sending the information to the data collecting agencies, the cooperation of associations such as Confederation of Indian Industries (CII), Associated Chambers of Commerce and Industry (ASSOCHAM), Federation of Indian Chambers of Commerce and Industry (FICCI) and others may be solicited.

Recommendations

5.4.25 The Commission, therefore, recommends that:

(i) The present practice of using Gross Value Added (GVA) for preparation of weighting diagram for All-India Index of Industrial Production and Gross Value of Output for State Comparable Indices of Industrial Production would result in incomparability in the two methodologies. GVA should, therefore, be used for the State IIPs.

(ii) Industrial Associations and State Industry Departments should be requested to impress upon their members and units to cooperate with the State and UT Governments in supplying regular monthly production data to the State Directorates of Economics and Statistics so that the Comparable State-level Indices can be compiled and released regularly.

(iii) Coordination mechanism needs to be established between the source agencies and the States and UTs for supply of regular production data.

(iv) For the purpose of collection of necessary data, the State DESs should be given authority as recommended by the Commission under 5.1.37(ii).

(v) Vigorous efforts on the part of the States, with the help of industrial associations and State Industrial Departments, are required to try out the mail methods i.e. fax, e-mail, etc. for collection of regular monthly production data.

(vi) Additional resources to the States for compilation of State-level Comparable IIPs should be provided.

Annexe 5. 1

Salient Features of the Sampling Design of ASI 1973-74 to ASI 1998-99

The sampling design of the Annual Survey of Industries (ASI) has undergone considerable changes from time to time keeping in view the technical and other requirements. However, the sampling design was broadly standardised from ASI, 1973-74. The salient features of the sampling designs of ASI, 1973-74 to ASI, 1998-99 are discussed in the following paragraphs.

2. For ASI, 1973-74 to ASI, 1986-87, factories employing 50 or more workers and using power and those employing 100 or more workers but not using power constituted the census sector. A systematic sample of one half of the remaining factories (i.e. those employing 10 to 49 workers and using power or 20 to 99 workers but not using power that constituted the sample sector) was covered in the first year of the cycle and the remaining in the second year.

3. For ASI, 1987-88 to ASI 1996-97, all factories in the frame were first grouped into the following four broad classes:

(i) Factories employing 100 or more workers;

(ii) All electricity undertakings irrespective of the number of workers;

(iii) Factories located in twelve less industrialised States and Union Territories[1]; and

(iv) The rest.

4. The rest of the factories under (iv) were further classified within a State or UT into different strata by treating each of the 3-digit industry groups as a separate stratum. All strata having 20 or less number of units formed Category I. While strata having 21 to 60 units formed Category II, those with 61 or more units formed Category III. All the factories under (i), (ii), (iii) and Category I under (iv) were surveyed on a complete enumeration basis. A fixed sample of 20 factories from Category II and one third of those from Category III under (iv) were selected for the survey. In each of the strata of Categories II and III, sampling was done circular systematically with a random start after arranging the factories in a certain order. The constituent factories were first listed in the ascending order of their 4-digit industry codes. Within each 4-digit code, the factories were arranged in ascending order of district codes. Within the district, the factories were finally arranged in descending order of employment.

5. In ASI, 1997-98, the following categories of units were surveyed on a complete enumeration basis:

(i) All units having 200 or more workers;

(ii) All electricity and public sector undertakings not covered under (i);

[1] These States and Union Territories are Goa, Himachal Pradesh, Jammu and Kashmir, Manipur, Meghalaya, Nagaland, Tripura, Andaman and Nicobar Islands, Chandigarh, Dadra and Nagar Haveli, Daman and Diu, and Pondicherry

(iii) Additional units having *significant* input or output or gross value added (GVA) or net value added (NVA) which jointly contributed with (i) and (ii) not less than 90% of NVA within a State or Union Territory; and

(iv) All units located in each of 12 less industrialised States and Union Territories.

6. The remaining units within each State or Union Territory were grouped into different strata by treating each 4-digit industry code (National Industrial Classification, i.e. NIC 1987) as a separate stratum. From each stratum, a sample of factories was selected circular systematically with a random start after arranging the units or factories according to district x worker categories.

7. ASI, 1998-99 broadly followed the design of ASI, 1997-98 with the following changes:

(i) Electricity, gas and water supply as well as cold storage sub-sectors were kept out of the coverage of ASI, 1998-99 onwards;

(ii) Public sector undertakings were not given any special treatment for the purpose of complete enumeration;

(iii) All units in the frame of 5 only States and Union Territories namely, Manipur, Meghalaya, Nagaland, Tripura, and Andaman and Nicobar Islands were surveyed on a complete enumeration basis; and

(iv) While forming strata of sample sector units within a State or Union Territory, 4-digit industry code as per NIC 1998 was considered in place of NIC 1987.

Annexe 5. 2

Number of factories in the frame, number allotted for survey and number actually surveyed during ASI 1993-94 to ASI 1998-99

Reference Year	Number of factories in the frame	Gross Allotment			Net Allotment*			Completion		
		Census	Sample	Total	Census	Sample	Total	Census	Sample	Total
1	2	3	4	5	6	7	8	9	10	11
1993-94	1,21,594	38,035	46,282	84,317	33,258	35,672	68,930 (81.8)	32,330	34,024	66,354 (96.3)
1994-95	1,23,010	40,129	48,238	88,367	34,878	36,105	70,983 (80.3)	33,617	34,203	67,820 (95.5)
1995-96	1,34,571	38,211	47,667	85,878	34,222	37,214	71,436 (83.2)	32,074	35,515	67,589 (94.6)
1996-97	1,34,556	40,932	50,294	91,226	35,739	37,859	73,598 (80.7)	34,251	36,028	70,279 (95.5)
1997-98	1,67,857	19,459	21,387	40,846	17,795	17,095	34,890 (85.4)	17,061	16,247	33,308 (95.5)
1998-99	1,71,675	10,715	23,661	34,376	9,440	18,339	27,779 (80.8)	9,008	17,839	26,847 (96.6)

Notes: (1) Figures of number of factories in the frame and those in the census sector are not strictly comparable in view of certain changes made in defining the factories in ASI 1998-99 and also in defining the census sector in ASI 1997-98 as well as in ASI 1998-99.

(2) Figures in parentheses of column 8 are % Net Allotment to Gross Allotment.

(3) Figures in parentheses of column 11 are % Completion to Net Allotment.

* Obtained by subtracting non-operating cases from 'gross allotment'.

Annexe 5. 3

Items of information under the coverage of ASI, 1999-2000

I. Part-I of the Schedule

Block No.	Title of the Block	Items of information included in the block
1	**2**	**3**
A	For official use	Identification details of the factory; description of industry; industry codes as per frame and return; schedule dispatch number.
B	Some details about the factory (to be filled by owners)	Name and address of the factory; name and designation of contact person with telephone, fax and e-mail number; some details about the factory, viz. type of organisation, type of ownership, year of initial production, accounting year and number of months of operation.
C	Fixed assets	Gross value of fixed assets (beginning of the year, addition and deletion during the year and end of the year); depreciation (up to year beginning, adjustment during year and up to year end) and net value of fixed assets (beginning of the year and end of the year).
D	Working capital and loans	For year beginning and year end by detailed category of items.
E	Employment and labour cost	Man days worked (manufacturing, non-manufacturing and total), average employment, wages or salaries, bonus, contribution to provident and other funds, workmen and staff welfare expenses by category of staff; total number of working days; total cost of production.
F	Other expenses	Details of expenses (by category of items) other than those incurred on inputs consumed and reported in blocks H & I.
G	Other output or receipts	Details of receipts (by category of items) other than those on products and by-products manufactured and reported in block J.
H	Input items – indigenous items consumed	Item code, unit of quantity, quantity consumed and purchase value for major five basic items; quantity consumed (wherever applicable) and purchase value for other basic items (indigenous) put together, total basic items, non-basic chemicals, packing items, electricity purchased, fuel consumed (by category of fuel), consumable store; total non-basic items and total inputs.

(contd.)

I	Input items – directly imported items only consumed	Item code, unit of quantity, quantity consumed and purchase value at delivery for each of major five imported items, other imported items put together and total inputs.
J	Products and by-products (manufactured by the unit)	Item code, unit of quantity, quantity manufactured, quantity sold, gross sale value, details of distributive expenses, per unit sale value and ex-factory value of output – for ten major items, other products and by-products put together and total.
K	Particulars of field operations	Names of Assistant Superintendent and Superintendent; dates of scrutiny and dispatch of schedule.
L	Comments of Assistant Superintendent or Superintendent (Reasons for negative working capital and for any abnormal entries).	

II. Part-II of the Schedule

Block No.	Title of the Block	Items of information included in the block
1	**2**	**3**
1	Identification and other particulars	Identification details; type of organisation; type of ownership; accounting year; names of Assistant Superintendent and Superintendent
2	Man days worked, absenteeism, labour turnover for regular workers directly employed for each month of the year	For each of 12 months: scheduled working days for workers; number of man days worked; number of man days lost due to absence; number of workers in employment on 1st day of month and last day of month; accessions during the month; separations during the month due to (i) death or retirement, and (ii) other causes

III. Summary blocks

Block No.	Title of the Block	Items of information included in the block
1	**2**	**3**
1	Identification particulars	Important identification particulars
2	Summary data (provisional: for the period 1.4.99 to 31.3.2000)	Total number of employees; total wage bill; total items consumed; total other expenses; gross sale; total distributive expenses; total other receipts; variation in stock of finished goods; depreciation on fixed assets provided during the year; addition to fixed assets.

Annexe 5. 4

Annual Survey of Industries - Release of Results

Reference Year	Summary or Provisional		Detailed or Final
	Main	Supplement	
1	2	3	4
1983-84	July, 1987	September, 1987	December, 1989
1984-85	January, 1988	February, 1988	⊙
1985-86	April, 1989	May, 1989	Not tabulated
1986-87	April, 1990	May, 1990	Not tabulated
1987-88	March, 1991	June, 1991	Not tabulated
1988-89	August, 1992	August, 1992	Not tabulated
1989-90	April, 1993	January, 1994	January, 1997
1990-91	May, 1994	October, 1994	Not tabulated
1991-92	March, 1995	April, 1995	Not tabulated
1992-93	July, 1995	November, 1995	May, 1997 *
1993-94	November, 1996	November, 1996	April, 1997
1994-95	November, 1997	November, 1997	February, 1998
1995-96	September, 1998	✱	May, 1999
1996-97	September, 1999	✱	February, 2000
1997-98	September, 1999	✱	February, 2000

Notes: ✱ Not released in hard print but are available on E-media against payment; ⊙ Not released but are available in computer printout; * Tabulation was undertaken for the units having 200 or more workers.

Annexe 5. 5

Number of Manufacturing and Repairing Units as per ASI 1994-95, NSS 51st Round (1994-95) and Fourth Economic Census (EC 1998) **

India (excluding Arunachal Pradesh, Mizoram, Sikkim and Lakshadweep)

Employment size class	Estimated number of working units (registered) ASI '94-95	Estimated number of units (unregistered) NSS '94-95	Number of units (registered and unregistered) EC '98 (excluding Orissa)
1	2	3	4
0 – 9 #	29,619		
10 – 12	11,958	72,647*	⊙
13 – 15	10,598	28,210*	⊙
16 - 19	10,159	17,910*	⊙
10 – 19	32,715	1,18,767* (1,60,502)	96,954* (1,79,218)
20 – 49	31,321	23,566	71,638
50 – 99	16,768	2,791	19,701
100 – 199	7,366	254	9,122
200 – 499	4,247	0	4,078
500 +	2,499	0	1,792
20 or more	62,201	26,611	1,06,331
10 or more	94,916	1,45,378* (1,87,113)	2,03,285* (2,85,549)@
All (incl. <10)	1,24,535		

Notes: ** ASI, NSS and EC results quoted here are based on quick special tabulation of corresponding data, undertaken by the CSO (Industrial Statistics Wing) and NSSO, and may not tally with the official results; # Eligibility criterion for the factory being included in the frame permits the factory having less than 10 workers as per actual survey data; * Considers only those units using power in 10 -19-employment size class category; ⊙ Break-up was not readily available; ( ) Includes all units irrespective of whether they use power or not; @ Excludes Orissa State for which the number of units in 10 or more size class was 3699 in EC'90.

Annexe 5. 6

Ratio of estimated number of non-included units (Manufacturing and repairing only) to the estimated number of working units in ASI and the corresponding ratios for selected variables during 1994-95

India (excluding Arunachal Pradesh, Mizoram, Sikkim and Lakshadweep)

Employment size class	Number of units		Ratio for**		
	ASI	NSS	Number of enterprises	Employment	GVA
1	2	3	4	5	6
0 – 9	29,619				
10 - 19	32,715	1,18,767*	363 (95)	326 (18)	90 (2.83)
20 or more	62,201	26,611	43 (21)	11 (10)	1.34 (1.26)
10 or more	94,916	1,45,378*	153 (117)	28 (28)	4.20 (4.08)
All (incl. <10)	1,24,535				

Notes: * Considers only those units using power in 10 -19 employment size class category; ** For each of the three variables, the ratio relates to the corresponding employment size class; Figures within parentheses are obtained by dividing the NSS estimate for a particular class by the aggregate estimate for all worker size classes as per ASI.

Annexe 5. 7

Description of 2-digit Codes of National Industrial Classification (NIC) 1987 under the Coverage of ASI

2-digit codes of NIC 1987	Description
1	2
	Manufacture of:
20-21	Food Products
22	Beverages, Tobacco and related Products
23	Cotton Textiles
24	Wool, Silk and man-made fibre textiles
25	Jute and other vegetable fibre textiles (except cotton)
26	Textile Products (including Wearing Apparel)
27	Wood and Wood Products; Furniture and Fixtures
28	Paper & Paper Products and Printing, Publishing and Allied Industries
29	Leather and Leather & Fur Products
30	Basic Chemicals & Chemical Products (except products of Petroleum & Coal)
31	Rubber, Plastic, Petroleum and Coal Products
32	Non-Metallic Mineral Products
33	Basic Metal and Alloy Industries
34	Metal Products and Parts, except Machinery and Equipment
35-36	Machinery and Equipment other than Transport equipment
37	Transport Equipment and Parts
38	Other Manufacturing Industries
39	Repair of capital goods
40	Electricity generation, transmission and distribution
41	Gas and Steam generation and Distribution through pipes
42	Water works and supply
43	Non-conventional Energy Generation and Distribution
74	Storage and Warehousing services
91	Sanitation and similar services
95	Motion picture and video film production
96	Laundry, cleaning and dyeing services
97	Repair services

Annexe 5. 8

Relative Standard Errors of State, Union Territory and All-India Level Estimates of Input, Output and Gross Value Added for All Industry Groups Combined

(ASI 1997-98)

State and Union Territory	Relative standard errors (in per cent)		
	Input	Output	Gross value added
1	2	3	4
1. Andhra Pradesh	3	2	3
2. Assam	5	4	1
3. Bihar	1	1	1
4. Gujarat	3	3	2
5. Haryana	3	2	2
6. Karnataka	5	4	5
7. Kerala	3	2	3
8. Madhya Pradesh	5	5	6
9. Maharashtra	2	2	3
10. Orissa	1	1	2
11. Punjab	2	2	3
12. Rajasthan	4	4	4
13. Tamil Nadu	3	2	3
14. Uttar Pradesh	4	4	3
15. West Bengal	2	2	2
16. Delhi	4	3	4
17. All-India	1	1	1

Annexe 5. 9

Industries with Different Levels of Relative Standard Errors (RSEs) of Estimated Input, Output and Gross Value Added (GVA) at All-India Level

(ASI 1997-98)

Value of RSE	2-digit industry (NIC 1987) codes* with different values of RSE for three characteristics stated below		
	Input	Output	GVA
1	2	3	4
< = 5%	20,22,23,25,26,28, 30,31,32,33,35,37, 39,40,41,43	20,22,23,25,26,28, 30,31,32,33,35,37, 39,40,41,42,43	20,22,23,25,28,30, 31,32,33,35,36,37, 39,40,41,42,43,74
6% – 10%	21,24,27,29,34,36,38,42	21,24,27,29,34,36,38	21,24,26,27,29,34
< = 10%	20 to 43	20 to 43	20 to 37, 39 to 43, 74
11% – 20%	91, 95, 97	74, 91, 96, 97	38, 96, 97
> 20%	74, 96	95	91, 95

Note: * See Annexe 5.7 for description of all the 2-digit industry codes.

Annexe 5. 10

Number of Units in the Frame and Sample Size for 2-digit Industries with Relative Standard Error (RSE) of All-India Estimate of either of Input, Output or Gross Value Added (GVA) Exceeding 5 Per cent

(ASI 1997-98)

Industry Code (NIC-87)	Description	Value of RSE (%) *	Number of units in the frame	Sample size (all-India)
1	2	3	4	5
	Manufacture of:			
21	Other Food Products	6, 6, 8	9,893	1,494
24	Wool, Silk and man-made fibre textiles	7, 6, 8	5,676	724
26	Textile Products (including Wearing Apparel)	4, 5, 7	7,288	1,158
27	Wood and Wood Products; Furniture and Fixtures	6, 6, 8	4,868	661
29	Leather and Leather & Fur Products	7, 7, 8	2,605	354
34	Metal Products and Parts, except Machinery and Equipment	9, 8, 8	10,706	1,263
35-36	Machinery and Equipment other than Transport equipment	6, 6, 5	6,978	1,248
38	Other Manufacturing Industries	6, 8, 13	2,839	579
42	Water works and supply	7, 5, 2	326	237
74	Storage and Warehousing services	25, 18, 4	1,262	170
91	Sanitation and similar services	11, 16, 22	100	96
95	Motion picture and video film production	11, 25, 34	64	18
96	Laundry, cleaning and dyeing services	23, 17, 12	127	30
97	Repair services	12, 12, 18	2,154	444

Note: * In the triplet, values of RSEs are indicated for estimates of input, output and GVA in the order Specified.

Annexe 5. 11

Distribution of 3 and 4-digit Industry Codes by Value of Relative Standard Error (RSE) of Estimated Input, Output and Gross Value Added (GVA) at All-India Level

(ASI 1997-98)

Characteristic	Distribution of 3 and 4 digit industry codes (NIC 1987) with RSEs of estimates as stated below				
	< = 5 per cent	6 – 10 per cent	11 – 20 per cent	> 20 per cent	All
1	2	3	4	5	6
For 3-digit industry codes					
Input	78 (37.7)	45 (21.7)	45 (21.7)	39 (18.8)	207 (100.0)
Output	86 (41.5)	37 (17.9)	48 (23.2)	36 (17.4)	207 (100.0)
GVA	84 (40.6)	36 (17.4)	44 (21.3)	43 (20.8)	207 (100.0)
For 4-digit industry codes					
Input	162 (37.9)	79 (18.5)	89 (20.8)	98 (22.9)	428 (100.0)
Output	179 (41.8)	68 (15.9)	88 (20.6)	93 (21.7)	428 (100.0)
GVA	172 (40.2)	73 (17.1)	71 (16.6)	112 (26.2)	428 (100.0)

Note: Number of industry codes are shown before brackets and their percentage shares to total number of industry codes are indicated within brackets.

Annexe 5. 12

Industries with Relative Standard Errors (RSE) of Estimated State and Union Territory Level Output and Gross Value Added (GVA) Exceeding 10%

(ASI 1997-98)

State and UT	Industries* with RSE of the characteristic exceeding 10 per cent			
	Name of characteristic			
	Output		GVA	
	11 – 20 per cent	> 20 per cent	11 – 20 per cent	> 20 per cent
1	2	3	4	5
1. Andhra Pradesh	21, 23, 30, 32, 37, 38, 74	27, 91, 95, 96, 97	26, 28, 30, 32, 34, 37, 38	21, 23, 27, 29, 31, 42, 91, 96, 97
2. Assam	34	20, 36, 97	20, 34, 36, 41	97
3. Bihar	27, 28, 34	21, 26	39	21, 26, 27, 28, 34
4. Gujarat	24, 26, 34, 35, 38, 39, 74	21, 22, 27, 29, 42, 91, 97	28, 29, 32, 41, 97	21, 22, 27, 34, 39, 42, 74, 91
5. Haryana	23, 33, 36	22, 27, 29, 34	20, 21, 26, 30, 31, 33, 36, 38, 74, 97	27, 29, 34
6. Karnataka	27, 34	21, 24, 25, 29, 33, 95, 97	21, 23, 26, 27, 29, 30, 34, 36	24, 25, 33, 41, 42, 95, 96, 97
7. Kerala	20, 25, 26, 27, 32, 34, 36, 97	38	21, 25, 28, 32, 34	26, 27
8. Madhya Pradesh	20, 21, 23, 26, 31, 33	97	26, 30, 33, 37, 38	20, 21, 31, 97
9. Maharashtra	22, 24, 25, 28, 32, 34, 36, 38, 41, 42	27, 29, 74	21, 24, 31, 34, 36	27, 29, 32, 33, 38, 41
10. Orissa	20, 26, 74	22, 34, 36, 37, 95, 97	74	20, 22, 26, 34, 36, 37, 95, 97
11. Punjab	21, 35	26, 27, 38, 74, 96, 97	28, 31, 33, 34, 39, 74, 96	21, 26, 27, 35, 38, 97

(Contd.)

12. Rajasthan	23, 24, 26, 29, 34, 36	21, 27, 33, 38, 74	24, 32	21, 26, 27, 33, 34, 36, 38, 74
13. Tamil Nadu	27, 28, 34, 42	21, 95	28, 30, 33, 34, 36, 96	21, 24, 26, 42, 95, 97
14. Uttar Pradesh	24, 27, 28, 38	21, 23, 26, 29, 34, 36, 96, 97	21, 24, 27, 36, 37	23, 26, 28, 29, 34, 96, 97
15. West Bengal	26, 28, 34, 95	22, 23, 29, 97	20, 21, 27, 28, 29, 33, 34, 97	23, 95
16. Delhi	24, 29, 30, 31, 32, 33, 38	34, 35, 37, 96, 97	21, 26, 30, 31, 36	24, 29, 32, 34, 37, 38, 96, 97

Note: * See Annexe 5.7 for description of all the 2-digit industry codes.

Annexe 5. 13

Estimated Gross Value Added
Divergence between Summary/Provisional and Detailed/Final Results

NIC-87	Summary or Provisional Results (Rs.lakh)					Detailed or Final Results (Rs. lakh)					Percentage difference				
	1993-94	1994-95	1995-96	1996-97	1997-98	1993-94	1994-95	1995-96	1996-97	1997-98	1993-94	1994-95	1995-96	1996-97	1997-98
20-21	773325	1010845	1064995	1307557	1335853	1048427	1103656	1064682	1069260	1444264	35.57	9.18	-0.03	-18.22	8.12
22	225653	287966	291480	390573	429800	245914	255424	291432	404216	462342	8.98	-11.30	-0.02	3.49	7.57
23	425071	582680	543748	722355	703420	739891	527759	543512	741503	773708	74.06	-9.43	-0.04	2.65	9.99
24	445698	478428	468780	485666	613083	346826	380077	468713	621284	619679	-22.18	-20.56	-0.01	27.92	1.08
25	60982	75933	99755	102362	122524	80436	71349	99739	101378	128365	31.90	-6.04	-0.02	-0.96	4.77
26	273595	329972	353352	365369	358546	212048	264701	353412	358451	359244	-22.50	-19.78	0.02	-1.89	0.19
27	32864	34527	39379	62181	43356	36375	32270	39158	55540	44530	10.68	-6.54	-0.56	-10.68	2.71
28	324757	390303	533678	472665	432821	331127	404024	533561	541176	457560	1.96	3.52	-0.02	14.49	5.72
29	109284	94688	101947	108966	130307	115842	99913	102379	92601	131933	6.00	5.52	0.42	-15.02	1.25
30	1562825	1868737	2670586	2684560	2744686	1892280	2223648	2670453	3073350	3088156	21.08	18.99	0.00	14.48	12.51
31	736278	817799	1040204	1239530	951879	822542	789522	1047398	1458198	1349749	11.72	-3.46	0.69	17.64	41.80
32	376628	465857	686250	616841	718413	503042	476257	686110	953052	771875	33.56	2.23	-0.02	54.51	7.44
33	974592	1296620	1742187	1661504	2395261	1133127	1632587	1742199	1984825	2027421	16.27	25.91	0.00	19.46	-15.36
34	209423	251085	362659	346906	369799	259315	270689	362503	418030	384239	23.82	7.81	-0.04	20.50	3.90
35-36	1117423	1587983	1950855	1966906	2052908	1377035	1515357	1950943	2104527	2158463	23.23	-4.57	0.00	7.00	5.14
37	549282	712332	1194051	1317031	1162956	591908	726298	1188701	1220093	1222638	7.76	1.96	-0.45	-7.36	5.13
38	176662	155814	212535	216408	263128	127758	152417	212467	232148	286657	-27.68	-2.18	-0.03	7.27	8.94
39	115722	125792	145801	189926	249449	111517	131061	145700	152655	245385	-3.63	4.19	-0.07	-19.62	-1.63
40	1840241	2055377	2659288	2607646	3485580	2014648	2030906	2659274	2654758	3642562	9.48	-1.19	0.00	1.81	4.50
41	78558	21287	47537	80113	88537	53106	21523	47076	110347	88553	-32.40	1.11	-0.97	37.74	0.02
42	16037	20808	23617	26662	22897	48206	14581	24096	23331	23002	200.59	-29.93	2.03	-12.49	0.46
43	627	364	659	1537	2518	992	38	659	2018	2517	58.21	-89.56	0.00	31.29	-0.04
74	10015	13467	21086	26560	17662	9827	10856	21073	27774	17662	-1.88	-19.39	-0.06	4.57	0.00
97	33365	40560	47878	55266	82438	36906	38083	47811	55494	84007	10.61	-6.11	-0.14	0.41	1.90
Total	**10468907**	**12719224**	**16302307**	**17055090**	**18777821**	**12139095**	**13172996**	**16303051**	**18456009**	**19814511**	**15.95**	**3.57**	**0.00**	**8.21**	**5.52**

Annexe 5. 14

Number of Units using Computers for Accounting Purposes for Different 2-digit Industry Codes (NIC 1987)

(ASI 1997-98)

NIC-87 *	Number of units		Percentage of units using computer
	Total	Using Computers	
1	**2**	**3**	**4**
20	14,710	1,912	13.00
21	8,123	1,961	24.14
22	8,675	4,145	47.78
23	9,269	2,056	22.18
24	4,010	1,968	49.08
25	506	84	16.60
26	5,434	2,777	51.10
27	3,789	341	9.00
28	6,324	2,427	38.38
29	1,745	655	37.54
30	9,413	4,744	50.40
31	7,611	3,234	42.49
32	11,399	1,521	13.34
33	6,931	2,900	41.84
34	8,251	2,603	31.55
35	8,219	3,646	44.36
36	5,770	3,204	55.53
37	4,008	1,878	46.86
38	2,248	1,077	47.91
39	2,241	581	25.93
40	3,644	2,358	64.71
41	81	60	74.07
42	293	32	10.92
43	4	2	50.00
74	1,079	105	9.73
91	103	4	3.88
95	52	33	63.46
96	94	18	19.15
97	1,976	740	37.45
Total	**1,36,002**	**47,066**	**34.61**

Note: * See Annexe 5.7 for description of all the 2-digit industry codes

Annexe 5. 15

Number (in '000) of Enterprises engaged in Unregistered Manufacturing Activities According to Economic Census (EC) 1990 and 1989-90 Follow-up Enterprise Survey (FuS) in the Major States.

State and UT		All unregistered manufacturing enterprises						Unregistered manufacturing establishments+					
		Rural		Urban		Combined		Rural		Urban		Combined	
		EC `90	FuS (`89-90)	EC `90	FuS (`89-90)	EC `90	FuS (`89-90)	EC `90	FuS (`89-90)	EC `90	FuS (`89-90)	EC `90	FuS (`89-90)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Andhra Pradesh	439	1229	136	268	575	1497	88	73	42	48	130	121
2.	Assam	33	125	14	14	47	139	13	17	10	7	23	24
3.	Bihar	187	883	48	92	235	975	30	81	23	23	53	104
4.	Gujarat	115	240	139	225	254	465	29	47	76	124	105	171
5.	Haryana	42	81	42	60	84	141	8	7	20	22	28	27
6.	Himachal Pradesh	44	135	4	5	48	140	5	12	2	2	7	14
7.	Karnataka	186	586	120	205	306	791	52	42	54	45	106	87
8.	Kerala	150	471	70	95	220	566	56	72	38	31	94	103
9.	Madhya Pradesh	349	499	139	119	488	618	28	18	35	27	63	45
10.	Maharashtra	236	591	248	302	484	893	43	72	145	143	188	215
11.	Orissa	247	928	27	52	274	980	27	18	11	11	38	29
12.	Punjab	45	123	65	99	110	222	11	15	36	48	47	63
13.	Rajasthan	160	390	93	184	253	574	21	27	32	33	53	60
14.	Tamil Nadu	312	742	251	572	563	1314	84	104	106	128	190	232
15.	Uttar Pradesh	359	1651	254	275	613	1926	68	131	105	120	173	251
16.	West Bengal	479	2418	161	331	640	2749	69	114	86	109	155	223
17.	Delhi	4	4**	88	88	92	92	3	4**	68	73	71	77
	All India *	**3430**	**11189**	**1921**	**3210**	**5351**	**14399**	**647**	**862**	**901**	**1004**	**1548**	**1866**

Notes: + Enterprises employing at least one hired worker; * Excluding Jammu & Kashmir; ** Only Directory Establishments (i.e. establishments with 6 or more workers), since figures of Own Account Enterprises and Non-directory Establishments (i.e. establishments with 5 or less number of workers) are not available for rural Delhi.

Annexe 5. 16

Number of Workers Engaged in Manufacturing Activities

State and UT	Number of workers ('000)											
	Rural				Urban				Combined			
	EC `90	'91 Census	FuS ('89-90) *	NSS 50th Rd. (`93-94)	EC `90	'91 Census	FuS ('89-90) *	NSS 50th Rd. (`93-94)	EC `90	'91 Census	FuS ('89-90)	NSS 50th Rd. (`93-94)
1	2	3	4	5	6	7	8	9	10	11	12	13
1. Andhra Pradesh	1501	1519	2469	1926	649	1105	730	1279	2150	2624	3199 (4016)	3205
2. Assam	353	193	247	245	88	107	61	82	441	300	308 (430)	327
3. Bihar	546	669	1815	895	336	404	312	515	882	1073	2127 (2491)	1410
4. Gujarat	504	896	639	1213	1029	1402	1047	1524	1533	2297	1686 (2393)	2737
5. Haryana	196	229	216	183	281	275	207	355	477	504	413 (655)	538
6. Himachal Pradesh	87	59	261	85	18	14	17	6	105	73	278 (331)	91
7. Karnataka	716	764	1188	1072	604	1154	638	1171	1320	1918	1806 (2221)	2243
8. Kerala	550	823	1037	1042	344	474	314	544	894	1296	1351 (1610)	1586
9. Madhya Pradesh	834	878	951	803	590	953	390	827	1424	1831	1341 (1755)	1630
10. Maharashtra	782	1197	1334	1240	1870	3020	1221	2703	2652	4217	2555 (3779)	3943
11. Orissa	579	553	2224	772	133	218	180	240	712	771	2404 (2563)	1012
12. Punjab	164	288	252	273	390	465	355	488	554	753	607 (1009)	761
13. Rajasthan	354	479	807	609	391	609	495	652	745	1087	1302 (1562)	1261
14. Tamil Nadu	1135	1451	1710	2546	1123	1847	1666	2287	2258	3298	3376 (4315)	4833
15. Uttar Pradesh	1285	1640	3647	2694	1146	1679	1566	1990	2431	3319	5213 (6010)	4684
16. West Bengal	1254	1832	5106	2988	1082	1244	1032	2036	2336	3076	6138 (6876)	5024
17. Delhi	25	63	28	197	611	671	510	417	636	734	538 (671)	614
All India (excl. J & K)	**11009**	**13657**	**24121**	**19212**	**10807**	**16285**	**10860**	**17583**	**21816**	**29942**	**34981 (43124)**	**36795**

Notes: Figures within brackets in col.12 include employees engaged in the organised sector covered through the ASI, 1989-90; * excludes workers engaged in the factories covered under ASI

Annexe 5. 17

Key Results Pertaining to Unregistered Manufacturing Enterprises as per NSS 51st Round (1994-95), Special Enterprise Survey (1998-99) and NSS 55th Round (1999-2000)

Source	Rural India	Urban India	India
1	2	3	4
Estimated number of enterprises (in lakhs)			
NSS 51st Round (1994-95)	93.5	30.7	124.2
Special Enterprise Survey (1998-99)	71.4	29.3	100.7
NSS 55th Round (1999-2000)	96.0	46.6	142.5
Estimated number of persons (in lakhs)			
NSS 51st Round (1994-95)	205.32	90.22	295.54
Special Enterprise Survey (1998-99)	147.65	81.33	228.98
NSS 55th Round (1999-2000)	176.78	119.69	296.47
Gross value added per worker (in Rupees)			
NSS 51st Round (1994-95)	5,762	17,398	9,314
Special Enterprise Survey (1998-99)	8,521	20,844	12,898
NSS 55th Round (1999-2000)		Not released	

Notes:(1) NSS 51st Round estimates do not consider repairing enterprises to maintain their comparability with those based on the other two surveys;
(2) Special Enterprise Survey results are based on Sub-round 1 only (survey period: August – November 1998);
(3) NSS 55th Round covered only enterprises with type of ownership as either proprietary or partnership.

Annexe 5.18

Small Scale Sector – Definitions

Year	Investment limits	Additional Conditions
1	**2**	**3**
1955	Upto Rs.5 lakh in Fixed Assets	Less than 50/100 persons with or without power
1960	Upto Rs.5 lakh in Fixed Assets	-
1966	Upto Rs.7.5 lakh in Plant & Machinery	-
1975	Upto Rs.10 lakh in Plant & Machinery	-
1980	Upto Rs.20 lakh in Plant & Machinery	-
1985	Upto Rs.35 lakh in Plant & Machinery	-
1991	Upto Rs.60 lakh in Plant & Machinery	-
1997	Upto Rs.300 lakh in Plant & Machinery	-
1999	Upto Rs.100 lakh in Plant & Machinery	-

Annexe 5. 19

Index of Industrial Production Base Year, Number of Items, Number of 2-Digit Industry Groups, Month of Release and Period of Compilation

Base Year	Number of Items	Number of 2-digit Industry groups	Month of Release	Period of Compilation	
				From	To
1	2	3	4	5	6
1946	35	19✯	*	1947	1955
1951	88	15	Oct 1955	1952	1961
1956	201	16	July 1962	1951	1966
1960	312	16	July 1967	1961	1973
1970	352	18 **	Mar 1975	1971-72	1984-85
1980-81	352	17	Feb 1987	1981-82	1997-98
1993-94	543	17 ◂	May 1998	1994-95	Till date

Notes: ✯ Individual Industries only; * Information not available; ** Industry groups 20 & 21 shown separately; ◂ Industry groups 35 & 36 clubbed together

Annexe 5. 20

Main Recommendations of TAC on All-India IIP

(a) The 1980-81 series of all-India IIP may be revised by shifting its base to 1993-94;
(b) On account of non-availability of item-wise monthly production data for small-scale sector, the selection of item basket may be based only on the detailed results of ASI 1993-94. At least the 18 items of small scale sector included in the 1980-81 series may be included in the new series;
(c) The item basket for the new series should account for nearly 80 per cent of the total output for the manufacturing sector. However, the criteria may be used with certain flexibility. The criteria may be relaxed, if necessary, to ensure that the selected items in all the 2-digit industry groups captured at least 60 per cent of the value of output of the particular group. The over-riding criteria for finalisation of item basket would be the regular flow of monthly production data from the source agencies;
(d) For allocation of weights, gross value of output (GVO) may be used uniformly for sectoral (1-digit level of NIC) to the item level. This will be a significant departure from the practice of using gross value added (GVA) for the preparation of weighting diagrams by the CSO and the States;
(e) The weighting diagram of the revised series should take into account the total production of both the registered and un-registered manufacturing sectors;
(f) The revised series would follow the National Industrial Classification (NIC) 1987.

The above-mentioned recommendations of the TAC were adopted while revising the 1980-81 series except for the recommendation on using of GVO instead of GVA as a criterion for allocation of weights in the compilation of the revised series of IIP. This was deliberated in different forums including a Special Committee and it was decided that the GVA should be used for allocation of weights for the sake of continuity, consistency, the international practices and the UN recommendations on the subject.

Annexe 5. 21

Source-wise Number of Items in the Basket of IIP

(Base: 1993-94)

S.No	Source Agency	Number of items		Item groups	Weight	Number of Units
		Proposed	Final			
1	2	3	4	5	6	7
1.	Indian Bureau of Mines	64	64	1	104.73	2334
2.	Directorate of Sugar	4	1	1	22.43	156
3.	Salt Commissioner	1	1	1	0.52	8700
4.	Directorate of Vanaspati	27	12	11	16.97	965
5.	Tea Board	6	1	1	7.63	1400
6.	Coffee Board	2	1	1	1.00	NA
7.	Textile Commissioner	55	50	9	123.03	2701
8.	Jute Commissioner	5	7	5	5.90	204
9.	Coal Controller	6	3	3	1.22	55
10.	M/o Petroleum	20	16	14	23.87	141
11.	Development Commissioner for Iron & Steel	53	43	20	59.10	2169
12.	Railway Board	5	4	4	4.68	26
13.	D/o Industrial Policy & Promotion	491	337	213	520.73	3128
14.	Development Commissioner, SSI	491	18 *	18 *	6.50	4369
15.	Central Electricity Authority	1	1	1	101.69	253
	All Sources	674 φ	543	287	1000.00	26601

Note: * 15 out of 18 are common with those of DIP&P and 1 with DCI&S, φ -Pertains to Manufacturing Sector only. Total may not tally on account of overlapping of items among the source agencies.

Annexe 5. 22

Source-wise Response Rates in terms of Number of Units and Production at Quick and Final Releases of IIP during January to March 2000

S.No	Source Agency	Weight	Month	quick-N	Final-N	quick-P	Final-P
1	2	3	4	5	6	7	8
1	Indian Bureau of Mines	104.73	January	54.00	88.00	69.00	98.00
			February	57.00	91.00	78.00	98.00
			March	53.00	88.00	69.00	98.00
2	Directorate of Sugar	22.43	January	94.20	94.20	97.66	97.66
			February	90.63	90.63	97.64	97.64
			March	95.50	95.50	96.00	96.00
3	O/o Salt Commissioner	0.52	January	NA	100.00	NA	100.00
			February	NA	100.00	NA	100.00
			March	NA	100.00	NA	100.00
4	Directorate of Vanaspati	16.97	January	6.21	49.46	19.08	76.65
			February	11.02	49.99	41.95	82.65
			March	14.31	50.09	42.55	80.11
5	O/o Textile Commissioner	123.03	January	26.19	80.70	39.14	90.04
			February	41.05	80.61	55.68	89.65
			March	47.46	80.61	64.52	89.54
6	O/o Jute Commissioner	5.90	January	75.49	75.49	96.71	96.76
			February	73.53	75.49	93.43	98.09
			March	72.55	72.55	93.40	93.67
7	O/o Coal Controller	1.22	January	80.70	100.00	71.23	100.00
			February	80.70	100.00	69.09	100.00
			March	80.70	100.00	69.19	100.00
8	M/o Petroleum	23.87	January	100.00	100.00	100.00	100.00
			February	100.00	100.00	100.00	100.00
			March	100.00	100.00	100.00	100.00
9	O/o DC for Iron & Steel	59.10	January	52.10	56.97	82.10	91.37
			February	50.90	56.02	83.75	86.10
			March	52.07	55.97	85.17	87.44
10	Railway Board	4.68	January	96.15	100.00	97.45	100.00
			February	100.00	100.00	100.00	100.00
			March	100.00	100.00	100.00	100.00
11	O/o DCSSI *	6.50	January	27.03	64.95	15.94	63.63
			February	7.38	64.95	9.00	63.71
			March	9.21	50.43	10.72	56.71
12	Central Electricity Authority	101.69	January	100.00	100.00	100.00	100.00
			February	100.00	100.00	100.00	100.00
			March	100.00	100.00	100.00	100.00
13	DIPP	520.73	January	35.38	48.67	52.77	65.89
			February	38.50	48.10	53.27	64.32
			March	33.79	47.92	37.82	62.47

Note: The rates for Tea and Coffee Boards are not available; N Based on number of units; P Based on Production; * For sampled units only.

Annexe 5.23

Distribution of Number of Items by Percentage of Variation in Quick and Final Estimates of Production for IIP during January to March, 2000

S.No.	Source Agency	Number of item groups	Month	Number of items having percentage of Variation				
				zero	-5 to 0 & 0 to 5	-5 to –10 & 5 to 10	-10 to –20 & 10 to 20	Less than –20 &greater than 20
1	2	3	4	5	6	7	8	9
1	Indian Bureau of Mines	1	January		1			
			February		1			
			March		1			
2	Directorate of Sugar	1	January	1				
			February	1				
			March	1				
3	Salt Commissioner	1	January					1
			February					1
			March					1
4	Directorate of Vanaspati	11	January	5	2		1	3
			February	9	1			1
			March	7	2		2	
5	Tea Board	1	January	1				
			February	1				
			March	1				
6	Coffee Board	1	January	1				
			February	1				
			March	1				
7	Textile Commissioner	9	January	1	4	4		
			February		5	3		1
			March	1	6	1		1
8	Jute Commissioner	5	January	1	3			1
			February	4	1			
			March	1	1	1		2

(Contd.)

S.No.	Source Agency	Number of item groups	Month	Number of items having percentage of Variation				
				Zero	-5 to 0 & 0 to 5	-5 to –10 & 5 to 10	-10 to –20 & 10 to 20	Less than –20 &greater than 20
1	2	3	4	5	6	7	8	9
9	Coal Controller	3	January		3			
			February		2	1		
			March		3			
10	M/o Petroleum	14	January	14				
			February	14				
			March	4	9		1	
11	Dev. Commissioner for Iron & Steel	20	January	3	6	3	5	3
			February	5	10	4	1	
			March	2	4	2	7	5
12	Railway Board	4	January	3	1			
			February	4				
			March	4				
13	D/o Industrial Policy & Promotion	213	January	60	85	11	22	35
			February	75	84	17	17	20
			March	34	83	37	25	34
14	Development Commissioner, SSI	18	January	1	13	4		
			February	4	7	5	2	
			March	6	6	4	2	
15	Central Electricity Authority	1	January		1			
			February		1			
			March			1		

Annexe 5. 24

Month-wise Production Data from DIPP Showing Repetitions

Wheat flour/maida (Unit : Th. Tonnes)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
1995-96	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
1996-97	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00	400.00
1997-98	400.00	400.00	400.00	400.00	430.00	430.00	430.00	430.00	430.00	430.00	430.00	430.00
1998-99	430.00	430.00	430.00	430.00	431.00	432.00	162.38	148.73	279.75	151.08	144.49	155.08
1999-00	169.40	193.27	184.52	227.38	219.99	196.37	212.42	165.42	168.90	201.90	202.79	181.01
2000-01	171.20	201.78	207.70	204.05								

Ampicillin (Unit : Kg.)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	23029	21892	22134	22140	22390	22390	22100	22100	23683	24445	22150	24600
1995-96	23075	25100	26807	26807	26807	26807	25264	25264	28028	27426	27426	27426
1996-97	27426	27426	27426	27426	27426	27426	27426	27426	27426	27426	25426	25426
1997-98	25426	30426	30426	30426	30426	30426	30426	30426	30426	30426	30426	28426
1998-99	28426	29426	34126	29426	31326	29426	31330	29428	31326	40455	34065	34456
1999-00	34456	34826	34456	34456	34456	24326	34702	24537	24407	24407	24328	24648
2000-01	24408	24408	24328	24328								

Trimethoprim (unit : Kg.)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	17000	17000	24460	18586	20021	21656	20482	20965	21170	24079	22650	24216
1995-96	21195	23382	23382	23382	20979	16026	39300	23390	18533	18841	14833	16910
1996-97	14220	21331	17672	20169	21633	16245	35956	35955	16295	16547	15955	15955
1997-98	15955	25331	25331	25331	22446	22446	20800	22446	20800	22446	20800	21446
1998-99	20800	21800	22923	21800	22923	21800	22423	22800	22423	22423	22423	14223
1999-00	14223	14223	14223	17823	14223	14223	14223	14223	14223	14223	14223	14223
2000-01	14223	14223	14223	14223								

Vitamin A (Unit : MMU)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	10.75	6.60	9.95	8.52	8.52	10.52	10.34	10.35	1.24	7.52	5.04	4.14
1995-96	10.05	10.00	9.00	9.00	7.77	9.70	8.57	9.01	7.88	7.95	0.59	0.59
1996-97	7.95	12.00	3.01	3.01	3.81	3.66	5.86	5.89	2.46	3.42	2.46	2.46
1997-98	4.46	6.81	5.77	5.46	5.46	5.46	5.46	5.46	5.46	5.46	5.46	5.46
1998-99	6.64	6.93	6.98	6.93	6.37	3.42	3.42	3.95	4.27	4.27	10.46	4.27
1999-00	4.27	5.17	4.55	6.51	6.61	7.65	4.37	3.65	5.34	7.47	3.79	5.00
2000-01	3.40	4.80	3.84	4.49								

(Contd.)

Photo sensitised Paper (Unit : Th. rolls)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	0.00	15.00	15.00	15.00
1995-96	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
1996-97	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
1997-98	17.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00
1998-99	18.00	19.00	18.00	19.00	18.00	19.00	18.00	19.00	18.00	18.00	18.00	18.00
1999-00	18.00	18.00	18.00	18.00	18.00	24.70	18.00	431.00	431.00	431.00	443.00	434.00
2000-01	0.00	29.00	69.00	29.00								

Bicycle Tubes (Unit : Mill. Nos.)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	1.54	1.54	0.92	0.92	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54
1995-96	1.54	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
1996-97	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
1997-98	1.90	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92	1.92
1998-99	1.92	1.29	1.16	1.23	1.30	1.27	1.30	1.27	1.30	1.30	1.30	1.30
1999-00	1.30	1.30	1.31	1.30	1.32	1.31	1.31	1.31	1.31	1.30	1.31	1.30
2000-01	1.30	1.30	1.31	1.31								

Bicycle Tyre (Unit : Mill. Nos.)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	0.94	0.89	0.89	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
1995-96	0.85	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
1996-97	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
1997-98	1.32	1.33	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
1998-99	0.97	0.96	0.96	1.08	1.19	1.20	1.06	1.20	1.06	1.06	1.06	1.06
1999-00	1.06	1.06	1.08	1.06	1.09	1.08	1.08	1.08	1.08	1.07	1.07	1.07
2000-01	1.06	1.07	1.08	1.08								

Rubber Footwear (Unit : Mill. Pairs)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	2.83	2.78	2.99	1.78	2.99	2.52	1.92	2.70	2.54	3.13	2.74	2.80
1995-96	2.41	2.21	1.98	2.34	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36
1996-97	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.37	2.36
1997-98	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.27	2.12	2.26
1998-99	2.44	2.93	2.12	3.00	2.11	2.35	1.51	1.87	1.91	2.29	2.38	2.31
1999-00	2.75	2.29	1.72	1.68	2.33	2.41	2.12	2.19	1.61	1.74	1.49	1.35
2000-01	1.54	1.35	1.12	1.60								

(Contd.)

L.D.P.E. (Unit: Tonnes)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	17476	15077	20029	22461	25125	22461	22461	22461	22461	22461	20800	19395
1995-96	10661	16973	18107	19892	19993	19738	20055	20055	19456	19586	19550	19594
1996-97	19586	19577	19586	19586	19843	19843	19843	19843	19843	19843	19843	19843
1997-98	20100	19983	22803	25459	25459	25459	25459	25459	23733	25459	25459	28620
1998-99	24879	22825	23411	24876	24081	27955	29874	25334	23710	25855	25025	21491
1999-00	22738	27200	25038	28405	23878	27443	27836	26194	26087	27340	29453	28835
2000-01	26002	30422	29918	28439								

Di-Methyl Tetra Phthalate (DMT) (Unit: Tonnes)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	11410	11770	11861	11948	12545	11939	12527	12527	12527	12527	12500	12804
1995-96	14850	16641	16641	16641	16641	18862	18862	18863	18863	18863	18863	18366
1996-97	18863	18863	18863	18863	18863	18863	18865	18864	18862	18863	18863	18366
1997-98	18862	23162	23162	23162	23162	23162	23162	23162	23162	23162	23162	23761
1998-99	22127	22127	22063	21923	21722	21055	21890	21875	22226	22285	21812	21865
1999-00	19521	13470	15746	15957	15957	15957	15957	15957	15957	15957	15957	15957
2000-01	15957	15957	15957	15957								

AC Polyphase House Service Meter (Unit: Mill. Nos)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	0.02	0.01	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.04	0.03	0.03
1995-96	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.04
1996-97	0.02	0.02	0.03	0.02	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.04
1997-98	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04
1998-99	0.02	0.02	0.02	0.03	0.03	0.03	0.02	0.03	0.02	0.02	0.02	0.04
1999-00	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.03	0.03	0.02	0.04
2000-01	0.02	0.02	0.02	0.02								

Leather footwear (Indian Type) (Unit: Th. pairs)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	743.64	485.05	425.42	430.50	431.48	349.87	254.80	298.42	300.41	446.04	342.41	142.50
1995-96	410.46	448.52	448.52	448.52	448.52	448.52	443.15	443.54	443.54	443.54	447.39	446.74
1996-97	443.54	443.54	404.25	405.93	401.77	401.77	403.70	403.70	403.70	403.70	422.74	426.38
1997-98	448.09	408.89	408.89	464.65	473.59	436.69	432.32	500.14	465.44	503.74	315.43	352.44
1998-99	432.88	472.07	490.50	472.45	512.14	473.21	470.54	523.06	503.34	516.02	402.09	390.81
1999-00	430.29	328.84	466.92	348.21	546.90	557.94	535.10	609.90	901.82	1056.53	837.19	814.05
2000-01	859.21	855.60	550.89	721.45								

(Contd.)

Radio Receiver (Unit : Th. Nos)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	31.70	24.52	37.09	33.86	7.18	32.00	14.06	7.20	3.44	0.00	18.65	0.11
1995-96	15.25	1.90	11.96	0.07	24.47	38.92	8.12	8.11	6.16	0.01	0.01	1.89
1996-97	7.68	6.90	9.99	1.26	1.26	1.25	3.42	3.13	3.13	3.13	3.13	3.13
1997-98	4.25	4.27	4.27	4.13	1.01	3.16	3.01	3.16	1.96	1.38	0.92	1.02
1998-99	0.20	0.19	0.19	0.17	0.18	0.25	0.20	0.19	0.01	0.01	0.01	0.01
1999-00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00
2000-01	0.00	0.00	0.00	0.00								

Titanium Dioxide (Unit : Tonnes)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	2756	1925	2165	2185	3134	1845	2880	2850	3134	3134	1302	3134
1995-96	1400	1402	1402	1402	1402	1402	1401	1402	1140	1139	1031	1031
1996-97	1247	688	796	1203	1200	1363	1222	1112	1112	1112	1112	1112
1997-98	1112	1400	775	1259	1416	1416	1416	1416	1416	1355	1385	1355
1998-99	1554	1654	1877	1678	1877	2004	1904	2004	1904	1874	1904	1896
1999-00	1885	1885	1767	2054	1857	1772	2099	1949	2136	1884	1851	1851
2000-01	1851	2057	1951	1958								

Hair oil/ Aurvedic hair oil (Unit : K. Litre)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	55	87	86	114	70	94	107	87	72	90	90	62
1995-96	86	42	55	43	33	39	29	49	67	89	36	60
1996-97	43	34	39	35	33	38	59	58	40	67	20	88
1997-98	39	40	35	67	75	87	59	76	79.8	76	57	76
1998-99	66	71	66	71	66	71	66	71	66	66	66	66
1999-00	66	66	66	66	66	66	66	66	66	66	66	66
2000-01	66	66	66	66								

Match Boxes (Unit : Mil. Boxes)

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1994-95	388	348	380	369	396	388	396	396	396	396	396	396
1995-96	382	405	388	389	390	395	367	367	383	366	354	374
1996-97	371	362	363	361	365	361	358	361	362	347	328	325
1997-98	318	289	311	312	325	337	338	288	341	279	332	308
1998-99	319	303	309	316	309	316	309	316	309	309	309	309
1999-00	309	309	309	292	293	296	290	295	303	305	311	311
2000-01	317	312	295	269								

(Contd.)

Wheel MTD Dump loaders (Unit : Numbers)												
Year	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**
1994-95	10	14	21	11	18	25	17	22	17	11	17	18
1995-96	2	13	13	15	13	20	8	19	16	17	21	30
1996-97	10	15	16	20	20	10	9	8	6	5	9	5
1997-98	6	3	5	7	5	8	8	10	3	10	7	10
1998-99	6	5	5	6	6	6	6	6	6	6	6	6
1999-00	6	6	7	10	6	8	10	13	13	18	12	16
2000-01	13	11	5	15								

Note: The figures underlined represent unlikely repetition of monthly production

Annexe 5. 25

Production Reported as Nil

Radio Receiver: The production reported as 'Nil' for January'95 and Dec'99 - July 2000.

Photo-sensitised paper: Production reported as 'Nil' for Dec' 94 and April, 2000. There have been unusual variations in the production figures of this item, leading to fluctuations in the index.

Unusual (Extreme) Production

Printing Machinery: The production, which has been ranging between Rs. 400-600 lakh has been reported unusually high for Dec'94 (Rs. 1,69,043 lakh).

Glazed/Ceramic Tiles: The production which has been ranging between 20-40 tonnes has been reported an unusually high, i.e. 83,001 Tonnes for Dec'97.

Finished Leather: The production which has been ranging between 3000 - 4500 Thousand pieces has been reported as unusually low, i.e. 1511 thousand pieces for Jan'98.

Annexe 5. 26

Statement Showing the Items Having a Few Total Number of Units

Sr.No	Item description	Jan 2000	Feb 2000	Mar 2000	Apr 2000	May 2000	Jun 2000	Jul 2000
1	2	3	4	5	6	7	8	9
	Statement showing the items having total number units less than two from January 2000 to July 2000							
1	Engines	0	0	0	0	0	0	1
2	Phtosenstised paper	1	1	1	1	1	1	1
3	Chasis (assem) for HCVs (Bus, truck)	1	1	1	1	1	1	1
	Statement showing the items having total number units two from January 2000 to July 2000							
1	Titanium dioxide	2	2	2	2	2	2	2
2	Caprolactum	2	2	2	2	2	2	2
3	Cooling towers	2	2	2	2	2	2	2
4	Sewing machines	2	2	2	2	2	2	2
5	Radio receivers	2	2	2	2	2	2	2
6	Vitamin C	2	2	2	2	2	2	2
7	Hair oil/ayurvedic hair oil	2	2	2	2	2	2	2
8	Agarbathi	2	2	2	2	2	2	2
9	Well/off shore platforms	2	2	2	2	2	2	2
10	Syringes all types	2	2	2	2	2	2	2
11	Lighting fitting & fixtures	2	2	2	2	2	2	2
12	Writing instruments	2	2	2	2	2	2	2
13	Photo film/roll film	2	2	2	2	2	2	2
14	High explosive Nitro-glycerine based	2	2	2	2	2	2	2
	Statement showing the items having total number units three from January 2000 to July 2000							
1	Copper metal (Cathode)	3	3	3	3	3	3	3
2	Dumper	3	3	3	3	3	3	3
3	Parts & accessories (Pumps & compressor)	3	3	3	3	3	3	3
4	Metalic utensils excl. pressure cooker	3	3	3	3	3	3	3
5	Pencillin	3	3	3	3	3	3	3
6	Viscose tyre cord	3	3	3	3	3	3	3
7	Di-methy tetra phthalate (dmt)	3	3	3	3	3	3	3
8	Ethylene	3	3	3	3	3	3	3
	Statement showing the items having total number units four from January 2000 to July 2000							
1	PF moulding powder	4	4	4	4	4	4	4
2	Rubber chemicals	4	4	4	4	4	4	4
3	Bicycle tubes	4	4	4	4	4	4	4
4	PVC pipes & tubes	4	4	4	4	4	4	4
5	Calcium carbide	4	4	4	4	4	4	4
6	Graphite electrodes & anodes	4	4	4	4	4	4	4
7	Linear alkyl benzene	4	4	4	4	4	4	4
8	Viscose staple fibre	4	4	4	4	4	4	4
9	Azo dyes	4	4	4	4	4	4	4
	Statement showing the items having total number units five from January 2000 to July 2000							
1	Leather footwear Indian type	5	5	5	5	5	5	5
2	H.D.P.E.	5	5	5	5	5	5	5
3	Toothpowder	5	5	5	5	5	5	5
4	Matches	5	5	5	5	5	5	5
5	Bicycle tyres	5	5	5	5	5	5	5
6	Rayon grade pulp (machine-made pulp all)	5	5	5	5	5	5	5
7	Monoblocks	5	5	5	5	5	5	5
8	Sheets (PVC/Rubber)	5	5	5	5	5	5	5
9	Typewriters	5	5	5	5	5	5	5
10	Contraceptives	5	5	5	5	5	5	5
11	L.D.P.E	5	5	5	5	5	5	5

Annexe 5. 27

Main Recommendations of TAC on Comparable State IIPs

(i) All States and UT Directorates of Economics and Statistics should compile Comparable State-Level IIPs using uniform methodology and criteria. The term "Comparability" was defined to mean that all IIPs are based on (a) same base year, (b) use the same procedure for selection of the item basket and for preparation of weighting diagram, and (c) should have the same periodicity for release of indices.

(ii) The base year for compilation of Comparable State IIPs may be chosen as 1993-94. Initially, the States may compile indices using the recommended methodology on a quarterly or annual basis depending on whether they are currently preparing annual indices or not compiling an index at all. However, those, which are already compiling monthly indices, may only switch over to the new base year using the methodology approved by the TAC.

(iii) The Committee was not in favour of a Central Agency for collecting production data on behalf of the States. The States and UTs, which are already compiling IIPs and have got necessary infrastructure for collection of requisite production data may themselves collect regular data for compilation of Comparable State-level IIPs. Those, which do not have necessary infrastructure and are at present not compiling IIPs may create a suitable mechanism for collection of data by preparing plan schemes for inclusion in the respective State plans.

(iv) The State IIP should include the three sectors of mining, manufacturing and electricity.

(v) The item basket for the State IIPs may be selected in such a manner that about 80 per cent of the value of output of the respective State manufacturing sector is captured by the selected items. The criteria will however be applied with flexibility keeping in view the representative-ness of the items selected and the manageability of fieldwork for collection of production data in respect of items in the item basket.

(vi) The weighting diagram for comparable State IIPs should take into account the total production of both the registered as well as the un-registered sectors. On account of negative gross value added (GVA) in the electricity sector and in some 2-digit industry groups of the manufacturing sector in some of the States and UTs, the gross value of output (GVO) may be used for allocation of weights uniformly from sectoral to item level.

(vii) In view of the practical problems involved in the compilation of a composite all-India IIP based on aggregation of State-level item-baskets or indices and the fact that the comparative industrial performance of Industrial growth at the all-India level would any way be reflected by the proposed all-India IIP, the TAC held the view that compilation of a composite all-India IIP was neither feasible nor desirable.

(viii) CSO would make available the relevant ASI data and also provide technical guidance to the States and UTs.

(ix) The above-mentioned recommendations of the TAC have been followed by the States while compiling the comparable State IIPs.

Annexe 6. 1

Status of Important Publications of DGCI&S (Foreign Trade)

S.No	Name of the publication	Issue	Date of release
1	**2**	**3**	**4**
1	Monthly Statistics of Foreign Trade of India Vol.I (Export)	August, 2000	05.01.2001
		September, 2000	19.01.2001
		October, 2000	01.03.2001
		November, 2000	30.03.2001
		December, 2000	03.05.2001
2	Monthly Statistics of Foreign Trade of India Vol.II (Imports)	August, 2000	09.01.2001
		September, 2000	25.01.2001
		October, 2000	05.03.2001
		November, 2000	26.03.2001
		December, 2000	25.04.2001
3	Statistics of the Foreign Trade of India by Countries, Vol.I (Export)	December, 1999	06.05.2001
		September, 2000	12.05.2001
		December, 2000	26.05.2001
4	Statistics of the Foreign Trade of India by Countries, Vol.II (Imports)	September, 2000	30.04.2001
		December, 2000	21.05.2001
5	Foreign Trade Statistics of India (Principal Commodities & Countries)	October, 2000	07.01.2001
		November, 2000	12.02.2001
		December, 2000	10.03.2001
		January, 2001	08.04.2001
		February, 2001	30.04.2001

Annexe 6. 2

Status of Important Publications of DGCI&S (Inland Trade)

S.No	Name of the publication	Issue	Month of release
1	**2**	**3**	**4**
1	Inter State Movements/ Flows of Goods by Rail, River and Air	1995-96	Jun., 1999
		1996-97	Jun., 1999
		1997-98	Under printing
		1998-99	Aug., 2001
		1999-2000	Under printing
2	Statistics of Inland Coasting Trade Consignment of India	1994-95	Nov., 1995
		1995-96	Nov., 1996
		1996-97	May, 1998
		1997-98	May, 2000
		1998-99	Aug., 2000

6 TRADE STATISTICS

6.1 INTRODUCTION

6.1.1 In India, Trade Statistics are obtained as a by-product of administrative activity. In the case of External Trade, there are three stages of administrative activity namely, licensing, actual shipment and arrival of goods, and the receipt and remittance of payments. The Director General of Foreign Trade (DGFT) is responsible for licensing statistics; the Director General of Commercial Intelligence and Statistics (DGCI&S) for the balance of trade statistics and the Reserve Bank of India (RBI) for the balance of payment statistics. The merchandise trade statistics disseminated by the DGCI&S captures the movement of goods across the customs frontier of the country and are based on the Daily Trade Return (DTR) generated at the various custom houses. On the other hand, the External Trade data in the standard format of balance of payments (BoP) statistics is prepared by the RBI and has been dealt with in the chapter on Financial and External Sector Statistics. The present chapter discusses issues relating to improvement in the existing system of DGCI&S External and Internal Trade, generation of data on exports by State of Origin, index numbers of foreign trade and harmonisation of codes used by various organisations dealing with product-level data.

6.2 IMPROVEMENTS IN THE EXISTING SYSTEM OF TRADE DATA

Current Status

6.2.1 The main sources for India's Foreign Trade Statistics are Shipping Bills and Bills of Entry – declarations made and submitted by exporters and importers, respectively to the authorities of customs at the ports. These bills are statutory documents, which contain the customs' permission to ship or land the goods, as the case may be. These Shipping Bills and Bills of Entries for each item of export and import contain relevant details of the transactions such as Code Number of the Commodity according to Indian Trade Classification based on Harmonised Commodity Description and Coding System {ITC(HS)}, description of the commodity, license particulars of the goods in the case of imports, value of exports or imports, quantity (gross and net), amount of duty, name of exporter or importer, country of destination or consignment, Importer and Exporter Code (IEC), etc. These particulars are transcribed into a return – called Daily Trade Return (DTR) by the Statistical Division of the concerned customs authorities and are subsequently forwarded to the Directorate General of Commercial Intelligence and Statistics (DGCI&S), which is the nodal agency for collection, compilation, publication and dissemination of Foreign Trade Statistics of India. The duplicate copy of the Shipping Bill, which is adjusted for any short or shut out shipment, is used for preparing the DTRs for recording of exports. The Foreign Trade Statistics cover only commercial transactions of the merchandise trade. Items on Defence Goods are not covered in Foreign Trade Statistics as a matter of principle, set earlier. This apart, non-commercial transactions such as, personal baggage and effects, exhibition goods, samples, etc. are not covered in Foreign Trade Statistics. The direct transit trade, i.e. goods of other countries passing and transit goods warehoused not for the purpose of disposal, are excluded completely. Although the exports and imports of crude oil and petroleum products are included in the Foreign Trade Statistics, the detailed commodity-wise or country-wise break-ups are not published by the DGCI&S due to non-availability of detailed information.

6.2.2 The DGCI&S receives trade data from about 40-50 major ports and some small ports in three different modes namely, Electronic Data Interchange (EDI), Non-EDI and manual. The

data transcribed manually from Shipping Bills and Bills of Entry into DTR formats has about a 15 per cent share in the total merchandise trade, the remaining 85 per cent share being accounted for by EDI and non-EDI modes. In the EDI mode, customs clearance of Shipping Bills and Bills of Entry are given through the computer itself and the relevant information as required in the DTRs is furnished to DGCI&S. The major ports are covered by the EDI system. The non-EDI mode relates to manual clearance of Shipping Bills and Bills of Entry but the DTRs are prepared through the help of the computer and the data are transmitted to the DGCI&S in floppies.

6.2.3 Before validating the data contained in the DTRs, the DGCI&S prepares the aggregated data of Exports and Imports within about 25 days from the close of the month in the form of a Draft Press Note. As per the existing system, the Draft Press Note is sent to the Ministry of Commerce for approval before its release. Quick Estimates of Exports and Imports by Principal Commodities are prepared at the same time with a view to make a broad assessment of the performance of India's Foreign Trade and to study the impact of various trade policies, enabling the Government to initiate suitable corrective measures, if necessary, in attaining the desired objective in the sphere of External Trade. A monthly brochure entitled, *Foreign Trade Statistics of India (Principal Commodities and Countries*) is then brought out in about two months time from the reference month. At the final stage, detailed data of India's Foreign Trade are released in two publications, namely, *Monthly Statistics of Foreign Trade of India (MSFTI*) containing Commodity by country details and *Statistics of Foreign Trade of India by Countries (SFTIC)* containing country by commodity details. The former is a monthly publication while the latter is a quarterly one though the two publications are based on the same data set with varying presentation. The data reported in these publications are according to 8-digit ITC (HS) and is available with a time lag of about 3 to 4 months from the reference month. The status of the various publications brought out by the Office of DGCI&S on Foreign Trade is given in Annexe 6.1.

Deficiencies

6.2.4 In the recent past, a substantial amount of exports and imports has been taking place through satellite communications comprising software, technical know-how, etc. This mode of transaction is commonly known as e-commerce and takes place mostly in the digital mode. This poses a problem in capturing such transactions in the existing traditional system of DGCI&S.

6.2.5 The 8-digit ITC(HS) Codes filled up in the Shipping Bills and Bills of Entry forms the basic input for generation of export and import data at the disaggregated level. It has been experienced that the exporters or importers or their agents do not report these Codes properly. To improve the situation, the Directorate General of Foreign Trade (DGFT) has issued a notification on 11 September, 2000 making it mandatory to mention 8-digit ITC(HS) Codes prepared by the DGCI&S against each export product that figures in the Shipping Bill. It has been mentioned in the notification that no benefit under the policy will be disbursed to the exporters unless the Code appears on the Shipping Bill and this measure has been made effective from 1 October, 2000. The DGCI&S has reported that after the issue of the above notification, though the exporters are reporting valid codes in the Shipping Bills, but it has been noticed that the problem of mismatching, i.e. codes *vis-à-vis* the description of the items, still persists. As regards imports, no such notification has been issued.

6.2.6 Problems like late receipt of DTRs from the customs' ports, illegibility of manually-prepared DTRs and invalid or valid but incorrect item codes often result in delay in the processing of Foreign Trade data.

6.2.7 The DGCI&S has reported that the possibility of some of the transactions not being reported for the purpose of compilation of Foreign Trade Statistics cannot be totally ruled out. To what extent the existing data-capture-mechanism can check this situation needs examination.

6.2.8 Both the detailed publications namely, MSFTI and SFTIC are voluminous and hard copies are difficult to deal with particularly the issues relating to the end of the financial year. Further, at present, the DGCI&S does not have a website for dissemination of the data compiled by them.

Conclusions and Recommendations

6.2.9 After reviewing the existing mechanism for compilation of Foreign Trade Statistics, the Commission recommends that:

(i) Measures such as making available the entire code list on the website; introducing the standard query system for assigning an appropriate code for each item and feedback system from the exporters for amendment and widening the coding structure, etc. should be taken to assist the exporters in reporting the proper Codes as envisaged in the DGFT notification. A similar notification for imports should also be issued.

(ii) The possibility of releasing commodity-wise and country-wise details of imports and exports of crude oil and petroleum products should be explored.

(iii) An effective mechanism between the customs houses and DGCI&S to ensure complete coverage of all transactions in the compilation of Foreign Trade Statistics should be evolved.

(iv) All the Customs Houses and Ports including DGCI&S should be brought under the EDI system in a phased manner to eliminate the errors in data transfer and minimise the time-lag in the processing and release of data. Priority to bring the remaining customs houses under EDI scheme should be given to those ports where the volume of trade transaction is significant.

(v) DGCI&S should take steps to bring out the publications, *Monthly Statistics of Foreign Trade of India* and *Statistics of Foreign Trade of India by Countries* within a period of about one month from the release of aggregate foreign trade data through the press note. In such a situation, the monthly Brochure entitled, *Foreign Trade Statistics of India (Principal Commodities and Countries)* can be dispensed with.

(vi) DGCI&S should make available on website the key results of Foreign Trade Statistics released through its various publications.

6.3 INTER-STATE MOVEMENT/FLOWS OF GOODS

6.3.1 The inter-state trade between the various States of India is commonly known as Inland Trade, which involves movement of goods by five modes namely, (a) sea, (b) air, (c) rail, (d) river, and (e) road. Information on entry of goods, which add to the stock of material resources, and exit thereof, which depletes the stock of the State, forms the basis of Inland Trade Statistics. The entry and exit of goods from a State are commonly known as inward and outward movements. But the movements of goods within the boundaries of any State do not come under the purview of inland trade. Inter-State Trade Statistics provides an idea about the demand of commodities produced in a State along with flow thereof to other States. There has been a substantial growth in the Inter-State Trade but the system of data collection in this field has not developed to get the comprehensive coverage.

Sea-borne Trade

6.3.2 Sea-borne Inland Trade data is published by the DGCI&S in the publication entitled, *Statistics of Inland & Coasting Trade Consignment of India* (see Annexe 6.2). This is an annual publication and the issue for 1998-99 has been released in August 2000. The basic documents for compilation of these statistics are received from customs authorities in the form of Coastal Daily

Trade Returns. Compilation of Sea-Borne Inland Trade, which is also commonly known as Coasting Trade, is done by recording the inward and outward movements of all goods classified into around 500 items between 12 maritime blocks. These maritime blocks correspond to an equal number of maritime States or Union Territories of India, which are as follows:

- Andaman and Nicobar Islands
- Andhra Pradesh
- Goa
- Gujarat
- Karnataka
- Kerala
- Laccadive, Minicoy and Amindivi Islands
- Maharashtra
- Orissa
- Pondicherry
- Tamil Nadu
- West Bengal

6.3.3 In the publication both inward and outward movements of goods are shown separately for each maritime block besides a separate presentation for internal movements among the ports within a block. In the case of maritime blocks, a further sub-division into two or more trade blocks have also been made to identify the importance of the chief ports, the minor ports and the remaining ports of the State or Union Territory.

Air-borne Trade

6.3.4 Air-borne Trade data is published by the DGCI&S in its annual publication, *Inter-State Movements/Flows of Goods by Rail, River and Air* which shows gross weight of cargo moved by air from airport to airport within the country (see Annexe 6.2). Besides this, the State-wise total movements of air cargo are also indicated. Only the quantities expressed in gross weight (kgs.) as figuring in the invoices submitted to the Indian Airlines are compiled in respect of the cargo moved. No information is furnished on the values of air cargo moved since the value figures do not find place in the invoice. Compilation of Air-borne Trade is done on an outward consignment basis, i.e. the consignment from a block airport as reported by the reporting agency along with the destination. The source of air cargo data is the Indian Airlines who collects the airway bills from the consignor or consignee and compiles airport-wise cargo movements and supplies data to the DGCI&S in the standard format on financial-year basis for publication. Commodity-wise details of the cargo moved are not furnished by the Indian Airlines to the DGCI&S. Further, the information on cargo moved by private airlines are also not made available to the DGCI&S. Amongst all the modes of transport, air transport has the advantage of taking the least time for carriage and handling high valued and perishable goods. The disadvantages are comparatively high transportation cost and unsuitability for transportation of bulk commodities. The carriage of goods in Inter-state Trade by air *vis-à-vis* other modes of transport is primarily governed by factors such as unit value of commodities, need or adherence to delivery schedule, perishability of the commodity, location of destination with respect to the point of origin, etc.

River-borne Trade

6.3.5 River-borne Trade data is published annually by the DGCI&S in its publication, *Inter-State Movements/Flows of Goods by Rail, River and Air* (see Annexe 6.2). But since the share of River-borne Trade in the total trade is very insignificant the same is not shown separately but clubbed with Rail-borne Trade data.

6.3.6 The statistics of River-borne Trade cover the river-borne consignments between the trade blocks of Eastern India consisting of Assam, Bihar and West Bengal carried by Central Inland Water Transport Corporation of India (CIWTCI) Ltd., Kolkata. The basic documents for the statistics are the invoices relating to consignments of the selected commodities dispatched from each steamer station to trade block other than the one in which it is situated. Each steamer company consolidates the figures in respect of the steamer stations with which it is concerned and submits returns to the CIWTCI Ltd. and, in turn, the CIWTC Ltd. sends the consolidated statements to the DGCI&S at the end of each month.

Rail-borne Trade

6.3.7 Rail-borne Trade is published by the DGCI&S in its annual publication, *Inter-State Movements/Flows of Goods by Rail, River and Air* (see Annexe 6.2).

6.3.8 In case of Rail-borne Trade also, only quantity figures are available from railway authorities, as railway invoices do not contain the provision for showing the value figures of the goods to be transported. This is primarily because the freight of the goods to be transported by rail is directly related to the quantum of goods to be carried and not on the value of the goods.

6.3.9 For convenience of presentation of Inland Trade Statistics by rail, India has been divided into 38-trade blocks. Each block or a select group thereof normally corresponds to a State of the Union of India. Thus, all railway stations in a particular State are included in the same trade block even if some of them may belong to different administrative zones according to the railway authorities. In the presentation of Inland Trade data in respect of commodities only important ones are given a separate identity and the rest are classified into several homogeneous groups. The DGCI&S is receiving data on inter-State movement for about 1000 commodities, which are for convenience of presentation, classified into 78 commodity groups. Besides State-wise total movements, inter block movement for each commodity or commodity group in a matrix form is also published. This matrix gives an idea about the inter-State movement of each commodity or commodity group within India. As per the existing arrangement, the basic information is entered by the zonal railways and a hard copy of the information is provided to DGCI&S on a quarterly basis. For this purpose an amount of about Rs.57 lakhs is paid at present by the DGCI&S to the Railway Board as the annual service charges. The DGCI&S, however, compiles manually the required format for presentation of these data from the computer printouts furnished by the railway authorities.

Road-borne Trade

6.3.10 Railways and road transport dominate the multi-mode transportation system in the country. These two modes together account for a significant portion of the passenger and freight movement. The share of the remaining modes, namely, inland water transport, shipping, air transport, pipelines, ropeways, etc. is insignificant. Several studies conducted so far show that the share of passenger and freight between road transport and rail transport has changed, in fact reversed, in favour of the former over the period since India attained independence. Thus indicating the emergence of road transport as the prime mode of transport and the trend in favour of the road is rising unabatedly. While the railways, air transport, shipping, etc. due to their centralised ownership and administrative set-up have a statistical system for data generation, the goods carried by road transport are characterised by a poor database. This is, because the goods road transport is mainly in the private sector, dominated by lakhs of micro-truck operators. These operators mostly do not maintain road transport operational statistics partly due to limited resources, a poor understanding of the provisions of the Motor Vehicles Act, income-tax phobia, etc. and also do not like to part with whatever information they have.

Road Transport Statistics

6.3.11 Data on road transport can be classified into three main categories namely:

(a) General Motor Statistics;

(b) Passenger Transport Statistics; and

(c) Goods Transport Statistics.

6.3.12 The General Road Transport Statistics published by the Ministry of Surface Transport, Government of India, flow from the administration of the Motor Vehicles Act, 1994 (MVA) and the State Motor Tax on Passengers and Goods Acts. These statistics are compiled from the returns submitted by the Transport Commissioners to Directors of Transport in the States/Union Territories who, in turn, send these data to the Ministry of Transport. These statistics include:

(a) Total number of registered motor vehicles (taxed and tax-exempted), number of buses owned by private and public-sector, Government revenue from road transport (taxes and fees), newly-registered motor vehicles – year-wise;

(b) State-wise motor vehicle taxation rates for personalised vehicles, taxis, auto rickshaws, motor vehicle taxes on goods transport and passenger transport, accident statistics based on reports of police authorities;

(c) State Governments publish in their Statistical Abstracts – Road transport-related statistics of the number of motor vehicles of different classes and categories, motor driving licenses issued district-wise, working of the State road transport corporation, motor vehicle accidents, etc.

6.3.13 The operational statistics like the output of services, material consumption, employment, cost of operations, earnings, etc. are at present collected from public sector transport undertakings for passenger services only. In the case of goods transport by road, no statistics are available except for data from the few public sector undertakings in respect of their negligible small fleet. No data on goods transport by road is published, either by the Central Ministry of Surface Transport or State Transport Directorates. In order to fill up the data gaps for the non-agricultural sector including transport activities, the Central Statistical Organisation launched a scheme known as 'Economic Census and Surveys' in the year 1977. So far, four Economic Censuses have been carried out, the last one conducted during 1998. As regards, the Follow-up Enterprise Survey on transport sector, six surveys have been carried out, the last conducted during July 1999- June 2000 (55^{th} Round of NSSO). All these Follow-up Enterprise Surveys provide only basic information on the location, employment, fixed assets, working capital and receipts and expenditure details of the enterprises. These surveys do not normally provide information on total number of vehicles, quantity and value of goods carried.

Deficiencies

6.3.14 One of the principal shortcomings in respect of availability of inter-State goods transport data is on account of incomplete coverage of modes of transport. Apart from deficiency in coverage, another area, which needs attention, is that available data from the different modes is not comparable. Uniformity in the system of classification of commodities for presentation of Inland Trade Statistics is not followed at present. As a matter of fact, the classification followed for recording Rail and River-borne Trade is different from that followed for recording Sea-borne and Air-borne Trade. Further, the classification followed for compiling Foreign Trade data is different from Rail, River, Sea or Air-borne Trade. As such comparison of these data with External Trade is practically not possible.

6.3.15 A complete picture on the Inter-State Trade will not be available unless data on movements of all the commodities and commodity groups by all modes of transport are available. It is not possible, at present, to get such comprehensive information because of the inherent difficulties in the data collection mechanism. Presently, some important characteristics like value figures of goods carried by rail, river or air are not reported in the source documents. Further, the basic units of area like trade block, maritime block, etc. for which data are captured or presented and also the unit of quantity of goods moved by the various modes of transport are not the same.

6.3.16 At present, the available information on rail-borne trade statistics, covers only 78 major commodities and commodity groups involving around 1000 items. Thus there is a need to enlarge the coverage of commodities. The data from the railways are received quarterly and there is a time lag of about two months in furnishing such data to the DGCI&S. The basic information is entered into the computer media by the railway offices and the data are made available to DGCI&S in the form of computer printouts by nine zonal railway offices. These data are consolidated and tabulated manually for publishing in DGCI&S's annual publication *Inter-State Movements/Flows of Goods by Rail, River and Air*. As River-borne Trade Statistics are available only in respect of three States namely, Assam, Bihar and West Bengal, this necessitates the enhancement of the geographical coverage. Further, both for Rail and River-borne Statistics, only quantity figures are available. No separate data for river-borne cargo is available. The information on cargo in gross weight moving by air from airport to airport and also from State to State within the country is available. However, the available information relates to the total movement of air cargo and does not give commodity-wise detail. Further, the goods moved by the private airlines are not being considered at present. The available information on movement of goods by road is also grossly inadequate.

Conclusions and Recommendations

6.3.17 In order to maintain comparability among the different modes of transport, there is a need for a common classification of commodities for presenting data on Inter-state Trade, which may also entail its comparison with that of Foreign Trade.

6.3.18 In case of Road-borne Trade no statistics are compiled on a regular basis either by DGCI&S or by any other organisation. Since the bulk of the Internal Trade is presently carried out by road, it is necessary to develop some innovative system for estimation of the volume of Road-borne Trade by utilising the existing provisions of the Motor Vehicles Act. Maintenance of the logbook by the truck operators and submission of the same by them to their respective RTOs could be one of the methods. Since complete enumeration would be very expensive and time consuming, the feasibility of conducting properly-designed sample surveys to get reliable estimates on Inter State Trade by road at the State level should be explored. The system of collection of copies of invoices at check-posts of the State borders by the revenue or transport authorities may also be considered as a means to gauge the volume of Inter-State Trade by road.

6.3.19 Taking note of the inadequacies in the system, the Commission recommends that:

(i) DGCI&S should devise a standard format for collection and presentation of data on Inter-State Trade for all modes of transport. This method of presentation should also enable its comparison with Foreign Trade data. The possibility of using National Product Commodity Codes developed by CBEC and others should be explored.

(ii) DGCI&S should be given the responsibility for coordinating and monitoring of data collection from the various agencies associated with different modes of transport.

(iii) Forms used by the different agencies in recording the basic information for the various modes of transport should be standardised.

(iv) The DGCI&S should take data from the zonal railways through electronic media instead of computer printouts in a standard format for the purposes of computer processing and inclusion in their publications.

(v) A specially-designed Enterprise Survey should be conducted for collection of data on movement of goods by road transport. The feasibility of conducting sample surveys by the revenue or transport authorities to assess the volume of Inter-State Trade by road through copies of invoices collected at check-posts of the State borders should also be examined.

(vi) Feasibility of collecting relevant data by introducing logbook system should be explored.

(vii) The River-borne Trade data should be shown separately and should not be clubbed with Rail-borne Trade as is presently being done.

(viii) The commodity-wise details of air-cargo movement should be collected and presented as in case of other modes of transport. The movement of cargo by private airlines should also be covered.

6.4 GENERATION OF DATA ON EXPORTS BY STATE OF ORIGIN

6.4.1 The issue of exports by State of Origin has received attention from time to time and at present greater significance has been attached to it especially in the light of WTO data requirements. Till today, no official statistics of the country's exports according to the State of Origin are available and this is a major gap in the DGCI&S data on Foreign Trade. The transition to a liberalised World Trade and in order to derive benefits from the expanding overseas market, the Centre and States need greater mutual cooperation with each other in the national endeavour for improving the export performance of the country. The need for greater encouragement to the States based on their shares in the total export performance has been long felt. In order to develop a suitable mechanism for assisting the States in proportion to their contribution to the national exports, the generation of data on exports by State of Origin is of great significance.

6.4.2 For capturing the data on exports by State of Origin, one additional field of information indicating the State of Origin is needed in the DTRs. So far, this information is available only in case of EDI-based computerised DTRs. The basis of this information is the declarations of the exporters. Though this information on the State of Origin can be made available by the exporter, such information needs to be checked as it could be mixed up with the place where the goods were procured but not produced. This information is to be particularly checked for non-manufacturer exporter. The manufacturer exporter will, however, be in a position to furnish this information with a fair degree of accuracy. Thus if the information is collected from both manufacturer and non-manufacturer exporter without making a proper distinction between these two, the information so collected might mix up the place of procurement with the production of goods. There is a need to, (a) analyse the information filled by the exporters in the computerised DTRs, and (b) conduct pilot surveys to assess whether the exporters are aware of the State of Origin of the goods or can give information only on the State of Procurement.

Recommendations

6.4.3 The Commission recommends that:

(i) Pilot surveys based on the addresses of exporters as available in EDI and non-EDI data should be conducted to know whether exporters are aware of the actual origin of the goods or can give information only on the place or State of Procurement.

(ii) If found feasible, appropriate modification in the Shipping Bills should be made to collect the information relating to place of procurement and State of Origin.

6.5 INDEX NUMBERS OF FOREIGN TRADE OF INDIA

6.5.1 The indices of Unit Value and Quantum of Foreign Trade of India as well as the 'terms of trade' are compiled on a regular basis by DGCI&S. The three indices namely, gross, net and income terms of trade are derived from the Unit Value and Quantum of Foreign Trade indices[1]. At present, DGCI&S is releasing the indices with base 1978-79. On account of the changes effected in the Indian Trade Classification since April, 1987, the old commodity baskets have been recast to suit the new Classification System for compilation of the index number series besides maintaining a temporal comparability.

6.5.2 A Technical Committee was set up in January 1992 for the purpose of formulation and construction of Global and Bilateral Foreign Trade indices with commodity break downs for India. The final report of the committee was submitted to the Government in January 1993. In the Report a new methodology for compilation of the unified Bilateral Foreign Trade indices was evolved and recommended for implementation. Later on, an Expert Group was constituted in the Ministry of Commerce under the Chairmanship of the then Economic Adviser, Ministry of Commerce to review the recommendations of the Technical Committee. In September 1995, the Group decided that for computing Bilateral Index Numbers, 1992-93 might be considered as the base year and the country- specific Commodity Basket may be compiled. Accordingly, the global and bilateral indices for the year 1996-97 were calculated, but could not be released as the unit of quantity in the ITC (HS)-1996 had been changed from that of ITC(HS)-1992 for many items. On account of changes in the units of commodities included in the Commodity Basket and 1992-93 being too distant to be considered as a base year, DGCI&S has decided to compile Index Numbers with 1998-99 as the base year.

6.5.3 The Commission has observed that the Technical Committee submitted its Report in 1993 and during its tenure of a year, it not only developed the methodology but also actually compiled the Bilateral Trade indices for four years. But even after a gap of more than 8 years, the revised series of indices could not be compiled and released by DGCI&S. Further, the base year of indices of Unit Value and Quantum of Foreign Trade of India being compiled at present by DGCI&S is very old (1978-79) and has a different classification, thus limiting the utility of the indices.

Recommendations

6.5.4 The Commission, therefore, recommends that:

(i) DGCI&S should immediately revise the current base year (1978-79) of indices of Unit Value and Quantum of Foreign Trade and the corresponding indices of terms of trade.

(ii) DGCI&S should compile and release the series of indices on Bilateral Foreign Trade following the methodology suggested by the Technical Committee constituted within a period of one year.

6.6 PRODUCT CLASSIFICATION: HARMONISATION OF CODES

6.6.1 The need for harmonisation of activity, product and trade data has often been desired as this will enable cross-classification of activity and product data. The primary organisations,

[1] 'Gross terms of trade' is defined as the ratio of Quantum Index of Import and that of Export, 'Net terms of trade' is defined as the ratio of Unit-value Index of Export and that of Import while 'Income terms of trade' is defined as the product of 'Net terms of trade' and 'Quantum Index of Export'.

which deal with product-level data are: Central Board of Excise & Customs (CBE&C), Directorate General of Foreign Trade (DGFT) and Directorate General of Commercial Intelligence and Statistics (DGCI&S). At present, the codes used by these organisations are not uniform compelling the user to refer to different documents in order to know the excise tariff duty, custom duty, quantum of exports and imports, and the Trade Statistics of a product.

6.6.2 In this context, a Task Force was constituted with the objective of developing a National Classification Code for Customs, Central Excise Statistics and Trade purposes. The Task Force is represented by officials from CBE&C, DGFT and DGCI&S. The objective of the Task Force is to undertake harmonisation of the product codes being adopted by the above-mentioned agencies. At present, the Harmonised Commodity Description and Coding System (HS) is being used in India for the purpose of classifying goods under the Customs and Central Excise Tariff, for collecting Trade Statistics by DGCI&S and for determination of the importability of a product by DGFT. In the coding system being used by these organisations, HS has been used as the basis for the purpose of classification, irrespective of the objectives and purposes of the concerned organisation.

6.6.3 The present Task Force is attempting to develop an 8-digit coding system to fulfill the requirements of the various users. ITC(HS) codes developed by the DGIC&S fully conform to 6-digit (sub-headings) of the HS system, and these would form the basis for development of the ensuing 8-digit classification code. The extension of the seventh and eighth digits would be done as per the HS principles. The proposed 8-digit classification code would also encompass the goods, which do not come within the preview of the Excise Act. The task force would also prepare concordance tables between the existing Customs, Excise, DGCI&S and DGFT Codes and the proposed new codes and vice-versa, to enable smooth transference of the new coding system and to make use of the past data.

Recommendations

6.6.4 The Commission recommends that:

(i) The 8-digit coding system being developed by the Task Force constituted by CBEC should be finalised urgently and also stress upon the need to adopt this national classification code based on HS System by all the producer and user organisations engaged in product-level data. The use of national classification would eliminate the multiplicity of the product-level coding system and would also enable a study of the flow of output through various economic systems apart from cross-classification of activity and product data.

7 SERVICES SECTOR STATISTICS

7.1 INTRODUCTION

7.1.1 The Services Sector constitutes a large part of the Indian economy both in terms of employment potential and its contribution to national income. The Sector covers a wide range of activities from the most sophisticated in the field of Information and Communication Technology to simple services pursued by the informal sector workers, for example, vegetable sellers, hawkers, rickshaw pullers, etc. The following broad grouping of activities can be considered to form part of the Services Sector:

Box 7.1: Activities Comprising the Services Sector

(a) Trade
(b) Hotels and restaurants
(c) Transport including tourist assistance activities as well as activities of travel agencies and tour operators
(d) Storage and communication
(e) Banking and insurance
(f) Real estate and ownership of dwellings
(g) Business services including accounting; software development; data processing services; business and management consultancy; architectural, engineering and other technical consultancy; advertisement and other business services
(h) Public administration and defence
(i) Other services including education, medical and health, religious and other community services, legal services, recreation and entertainment services
(j) Personal services and activities of extra-territorial organisations and bodies

7.1.2 The Services Sector has been the most dynamic sector of the Indian economy, especially over the last ten years. Table 7.1 shows the changes that have been taking place in the Services Sector over the last few decades.

7.1.3 From a low level of 27.52 per cent of GDP in 1950-51, the share of services increased to 47.88 per cent in 1999-2000. Between 1950-51 and 1990-91, the share of Services Sector in GDP rose by only 13.07 percentage points, which is an increase of about 0.33 percentage points per annum. However, between 1990-91 and 1999-2000, the share had increased by 7.29 percentage points, which is an increase of 0.81 percentage points per annum. Clearly, the rate of growth is significantly higher in the 1990s.

Table 7.1: Sectoral Shares in GDP

(*in per cent*)

Year	Agriculture #	Manufacturing Ψ	Services*
1950-51	59.19	13.29	27.52
1960-61	54.74	16.61	28.65
1970-71	48.12	19.91	31.97
1980-81	41.82	21.59	36.59
1990-91	34.92	24.49	40.59
1991-92	34.08	23.93	41.99
1992-93	34.17	23.74	42.09
1993-94	33.54	23.69	42.77
1994-95	32.94	24.35	42.71
1995-96	30.58	25.47	43.95
1996-97	30.86	25.45	43.69
1997-98	29.03	25.20	45.77
1998-99	29.03	24.51	46.46
1999-2000	27.49	24.63	47.88

Notes: Among the following symbols,
includes forestry and logging, fishing, mining and quarrying;
Ψ includes construction, electricity, gas and water supply;
* includes (a) transport, communication and trade;
(b) banking and insurance, real estate, dwellings and business services; and
(c) public administration and defence and other services.

Source: Economic Survey 2000-2001.

7.1.4 Although the Services Sector has a very pivotal role in the country's economic development, the database in this Sector is highly disorganised. A major limitation of the existing statistical system in this respect is the absence of a well-organised mechanism for maintaining a regular and proper database for this Sector. Like the Annual Survey of Industries (ASI) that is devoted to collection of data from manufacturing and few other categories of units included in the lists maintained by the Chief Inspectors of Factories, there is no such scheme in the Services Sector for annual collection of data from the units either having a large number of workers or contributing significantly in terms of annual turnover. The main difficulty in this regard is the non-availability of an up-to-date frame of such units. The problem of data collection from this Sector through the Follow-up Enterprise Surveys of Economic Census is compounded by the fact that the Sector is dominated by a large number of *unorganised* units. Further, the composition of units in the domain undergoes changes at a rapid pace because new units or newer service areas come into existence and others disappear with alarming frequency. Thus, a sound official statistical system should endeavour to address all these methodological issues for properly estimating the size and contribution of the Services Sector marked by a rapid change in its composition.

7.1.5 The Services Sector of the economy can be broadly grouped into three broad segments namely, the public sector, private corporate sector and the household sector. The first two are generally referred to as the organised part of the economy, as the accounts of all the business transactions of these sectors are recorded in specified documents and are made available as public documents at regular intervals. The remaining part of the economy, that is the

household or unorganised sector, constitutes all unincorporated enterprises including all kinds of proprietorship and partnerships run by the individuals.

7.1.6 As regards the organised sector, the data contained in various budget documents or reports and the accounts provide the basis for the estimates for the public sector. For the Private Corporate Sector, the annual reports of the companies are the main source of data for estimation of number of workers, gross value added (GVA), etc. The estimation of various characteristics is based on the company finance studies carried out by the Reserve Bank of India taking the annual reports of a sample of companies. The estimates so obtained are suitably inflated to derive the current estimates for the entire population of joint stock companies registered with the Registrars of Companies (ROCs) in the various zones or States of the country.

7.1.7 The Follow-up Enterprise Surveys of the Economic Census (EC) periodically conducted by the Ministry of Statistics and Programme Implementation (MoS&PI) provide estimates of number of enterprises, workers, GVA, etc. for the unorganised Services Sector. The estimates of GVA per worker obtained from these surveys are used as a benchmark for the subsequent years, till the results of the next survey on the same subject are available. The benchmark estimates of GVA per worker are carried forward using suitable indices.

7.1.8 All the joint stock companies registered under the Companies Act are required to submit their annual reports to the Department of Company Affairs (DCA). However, this is an area where there exists huge data gap. The estimates based on the study of a sample of companies, carried out by the Reserve Bank of India, suffer from serious limitations. The sample drawn for this purpose is not based on a scientific sampling procedure, as there is no authenticity in the total frame available with the DCA. Moreover, the size of the sample is not adequate enough to provide satisfactory estimates for the private corporate segment.

7.1.9 As regards data relating to the unorganised Services Sector, it is argued that the estimates of GVA per worker based on the Follow-up Enterprise Surveys of EC are often too low. Further, the estimates of the number of workers in different sub-sectors as per these surveys differ widely with those available from other sources like Employment-Unemployment Surveys of the National Sample Survey Organisation (NSSO) and decennial Population Censuses.

7.1.10 The departments outside the MoS&PI generate a huge volume of data, either as a by-product of their regular activity or through studies meant for generating the required data. However, it appears that these agencies do not take into account the exact data requirements of the Central Statistical Organisation (CSO) for national accounting purposes.

7.1.11 With the increasing use of computers and telecommunication in business transactions, the domain of the Services Sector is growing bigger day by day. The software industry, and particularly its share in external transactions, has grown at a rapid pace during the last decade. Much of these external transactions are carried through the Internet, and thus are not reflected in the regular imports and exports data obtained from the custom ports. The area of mobile commerce (e-commerce) is another emerging field that falls beyond the coverage of the present system of data generation.

7.1.12 After reviewing the existing mechanism for the compilation of Services Sector statistics and the deficiencies of the system, the Commission decided to deliberate on the following important issues for suggesting improvements in the database of the Services Sector:

(a) Devising a Proper Classification of Services;

(b) Assessing the Quality of the Survey Estimates;

(c) Finding out Ways and Means to Collect Data for Emerging Areas;

(d) Introducing a Survey of Non-Manufacturing Industries (Bigger Units); and

(e) Working out a Proper Time Frame for Follow-up Enterprise Surveys of Economic Census.

7.2 DEVISING A PROPER CLASSIFICATION OF SERVICES

Current Status

7.2.1 In India, a wide variety of industrial classifications, including services, have been used by various organisations entrusted with the task of collection of statistical data in various censuses, surveys, etc. The need to evolve a common industrial classification for the use by different agencies was felt to be extremely important. Accordingly, the CSO took up the task of evolving an industrial classification as early as 1960 and evolved a Standard Industrial Classification (SIC) in 1962.

7.2.2 To incorporate the significant changes in the organisation and structure of industries taking place over a period of time, the necessity to periodically revise the industrial classification has often been felt. With this objective, the CSO revised SIC 1962 in 1970 and accordingly brought out the National Industrial Classification (NIC-70). This was subsequently revised in 1987 (NIC-87), which was further revised in 1998 (NIC-98).

7.2.3 All the industrial classifications developed by the CSO broadly accepted the major features of the International Standard Industrial Classifications (ISIC), with further extension of codes at the ultimate digit level. This was done to give due recognition to the special features of the Indian economy and also to meet the emerging requirements of user organisations.

7.2.4 The NIC-98, which followed the principles of the ISIC-1990 (Revision 3), is a classification of all economic activities, including services, undertaken by the economic units. The NIC-98 codes extend up to the 5-digit level. Total number of such 5-digit codes in NIC-98 is 1021 (see Annexe 7.1 for details).

7.2.5 The NIC classification of the CSO has found wide use in the country. These classifications are used by various divisions of the MoS&PI for carrying out Economic Censuses and sample surveys, for releasing national accounts statistics as well as for other purposes. Further, other important organisations outside the Ministry, like the offices of the Registrar General and Census Commissioner, India and the Development Commissioner, Small Scale Industries have also found significant use of the NIC classification. The adoption of the NIC by the important organisations mentioned above gives ample scope for cross-examining alternative data sets by industrial categories as available from different sources.

Deficiencies

7.2.6 As stated already, NIC-98 is based on the ISIC (Revision 3), which was brought out a decade ago. But newer and newer types of services are coming into existences that have a parallel in other countries. Clearly, there is an urgent need to have an inventory of the emerging service areas and have a detailed classification of these. It may be desirable to have a classification of services in India such that it is comparable with other countries. In this context, the World Trade Organisation's (WTO's) List of Services (see Annexe 7.2) sheds important light on the various service areas that have been recognised. While it is likely that the importance of many service areas may differ from country to country, it will be noticed from this List that none of the areas seem irrelevant for the Indian context. It is possible that the level of operation of some of these services may be very low at present in the Indian context, but with progressive development they will tend to change. With increasing communications and free flow of information, it is very likely that services, which seem unimportant today, could acquire significance in the near future. At any rate, the objective to study the WTO's list is to merely provide an indicative list of services. In the WTO's List of Services presented in Annexe 7.2, an indication is given as to

whether the various services listed are provided with specific Codes in the NIC-98 or not. A comparison of the two lists reveals the following:

(a) Number of sub-categories or activities in the WTO's list – 155;

(b) Those listed as 'others' in the WTO's list – 17;

(c) Remaining sub-categories with proper description of activities – 138.

Out of (c):

(i) Number of activities not listed in the NIC – 35;

(ii) Number of activities that are clubbed with other activities in the NIC –25;

(iii) Number of activities where the NIC either gives specific codes to the activities or splits the activity in the WTO's list into more than one activities – 78.

Conclusions and Recommendations

7.2.7 It may be seen that there are cases where NIC-98 gives a more elaborate classification than the WTO list. But in many cases, NIC-98 has scope for further detailing. Thus there is a need for developing a proper Classification of Services. For the purpose of developing the suggested Classification, it is necessary to identify first the variety of services already in existence in India by considering all available sources. The task would involve identification of new activities by:

(a) Looking at the international documents, websites and list of service providers that have made their appearance in the plethora of Yellow Pages of numerous cities and towns across India or in telephone directories;

(b) Interacting with various agencies or associations that will be in a position to throw light on emerging areas or new activities; and

(c) Examining alternative data sets like those of Follow-up Enterprise Surveys, Annual Survey of Industries as well as production data available from other sources.

7.2.8 Once the new but important activities are identified, the next task would be to classify them appropriately for meeting the requirements of the users. It may be mentioned that at the international level, including WTO, UN systems, IMF and World Bank, an effort is being initiated for properly coding commercial trading in Services, which has been already classified into 12 categories and 155 sub-categories in the WTO's list.

7.2.9 It may also be mentioned that ISIC (Revision 3) took place during the year 1990. But the National Industrial Classification (NIC-98) was developed in 1998, i.e. after a gap of eight years. For maintaining international comparability, there is a need to reduce such gaps in future. In other words, when the next revision of the ISIC takes place, the CSO may immediately consider revising the existing National Industrial Classification. Of course, in the event of no such revision taking place at the international level in near future in the industrial classification, India has yet a case for revising the NIC-98 by properly classifying all important activities that have already assumed significance in the country's economy, or are likely to do so in near future.

7.2.10 The Commission accordingly recommends that:

(i) The work of identification and the preparation of a list of new activities in the Services Sector that are coming into existence should be carried out on a regular basis.

(ii) All such activities should be assigned proper codes within the framework of NIC and International Classification, periodically by the CSO for the benefit of user organisations with a view to maintaining international comparability.

(iii) The suggested list of new activities with their codes should be released through the website as well as other media.

(iv) Of these new activities, those, which are important at the international level, should be taken up with the organisations like WTO, IMF, etc. for their proper representation in the international classification.

(v) Periodic revision of NIC should be attempted within a reasonable time frame after revision of the classification takes place in the international scenario.

(vi) The CSO should monitor the work stated above.

7.3 ASSESSING THE QUALITY OF THE SURVEY ESTIMATES

Deficiencies

7.3.1 The main sources of data in the Services Sector are (a) the Follow-up Enterprise Surveys of Economic Census conducted by the MoS&PI, (b) Department of Company Affairs (DCA), and (c) Reserve Bank of India (RBI). So far as data pertaining to the Corporate Sector are concerned, the DCA and Registrars of Companies are not processing and disseminating the information contained in the annual reports or balance sheets at present. As a result, the estimates of capital formation and valued added for the Corporate Sector are at present based on the company finance studies of the RBI which also suffer from an inadequacy of the sampling frame and limitation of sample size.

7.3.2 The Expert Group on Savings and Capital Formation under the Chairmanship of Dr. Raja J. Chelliah examined the estimates of the Corporate Sector. The Group submitted the report in December 1996. While recognising the weaknesses of the sampling procedure, the Group recommended that the present database of the DCA should be sufficiently broadened so that the reliability of the estimates obtained from the RBI studies is improved substantially. The Commission has studied the deficiencies of the Corporate Sector Statistics in great detail and made a number of wide-ranging recommendations for improvement of the database.

7.3.3 As regards the Follow-up Enterprise Surveys (FuS) of the Economic Census (EC) on the Services Sector, so far twelve such surveys have been conducted (see Annexe 7.3) after the EC was introduced in 1977. In the FuS, a stratified sampling design with villages and urban blocks as the first-stage units and enterprises as the ultimate-stage sampling units is adopted. For selection of the villages and urban blocks, generally the village and urban block-level data of the number of enterprises or workers as per the EC are used as the sampling frame subject to their availability or usability. The FuS provide detailed information on the estimated number of enterprises, workers, fixed assets, working capital, gross value added, etc. for various activities covered in the survey. Apart from the FuS, information on the number of enterprises is also available from the EC and the data of number of workers are available from three more sources namely, the EC, Population Census and Employment-Unemployment Surveys (EUS) of the NSSO.

7.3.4 Normally, a wide divergence between the numbers of enterprises as per the EC and FuS is observed, with EC figures being much lower than the FuS estimates. A similar trend is also observed in the estimates of number of workers as per the two sources. This is despite the fact that the FuS do not take into account the public sector enterprises while the EC does so. A wide divergence in the figures of number of workers as per the FuS, Population Census and EUS is also observed.

7.3.5 The Expert Committee to examine wide variations in data sets on the same subjects (Report submitted in February 2000) examined in great detail the said alternative data sets of the number of enterprises and workers as per the Third EC (1990), FuS conducted around the year 1990 for different activities, Population Census (1991) and EUS (1993-94). A comparative

picture of the estimated number of enterprises and workers as per the alternative sources as included in the Report of the Expert Committee is presented in Annexes 7.4 – 7.9. The all-India figures as per the alternative sources are quoted in Box 7.2. It may be seen that there are wide divergences in the alternative data sets. The divergence is very pronounced for the transport activity.

7.3.6 The EC and the FuS define an enterprise in exactly the same manner. Hence the numbers of enterprises as per these two sources should ideally be in fair agreement. Studies carried out in the past revealed that the divergences in the number of enterprises as per the two sources are mainly due to an under-listing of enterprises by the enumerators in the EC.

Box 7.2:Estimated Number of Enterprises and Workers as per the Alternative Sources for Selected Activities: All-India

(a) Number of enterprises (in lakh)

Activity	EC'90	FuS
Trading	88.51	118.20
Hotels & Restaurants	10.78	16.84
Transport	5.03	10.34

(b) Number of workers (in lakh)

Activity	EC'90	'91 Census	FuS	EUS'93-94
Trading	150.30	215.90	192.11	229.91
Hotels & Restaurants	27.69	*	35.55	31.72
Transport	13.36	*	15.79	90.41

Notes: 1. Survey periods of FuS were 1990-91 for trading and 1988-89 for hotels & restaurants as well as transport

2. FuS figures exclude public sector whereas those as per all other sources include public sector.

* Not readily available

7.3.7 As regards the number of workers, the estimate as per the EC is expected to be low because of under-listing of enterprises in the EC as stated above. Another reason for divergences could be the differences in the definition of workers and in the reference period for determining the number of workers as per the alternative sources (see paragraph 5.2.17 of chapter 5 on Industrial Statistics). Divergences in the estimates of number of workers as per the FuS and EUS could partially also be due to the difference in the approaches of the two sources in counting workers. While the former counts the workers by visiting the enterprises, the latter does so by visiting the households. To what extent the observed divergences are explainable due to the differences in the concepts and definitions as stated above needs to be assessed.

7.3.8 In the opinion of the data users the estimates of gross value added (GVA) per worker based on the FuS are sometimes unrealistic and, in fact, they are alleged to be underestimated. Much of the reported data may be based on the accounts, which may be inaccurate. The Commission has observed that there is no regular mechanism to address this grievance by cross validating the estimate of GVA per worker with the estimates of other correlated socio-economic variables available through different surveys or censuses. For example, in the survey on trade, one could explore the possibilities to derive estimate of sales by applying the data on trade margin over the purchase data and accordingly obtain an alternative estimate of GVA per worker based on this derived sale data. Similarly, efforts could be made to evolve a suitable method of data collection for improving the estimate of GVA per worker in respect of certain categories of service providers say, doctors, medical specialists, advocates, etc. The Commission has further observed that the survey reports do not generally discuss the quality of the FuS estimates.

Recommendations

7.3.9 After reviewing the deficiencies, the Commission recommends that:

(i) A unit in the proposed National Sample Survey Office of the National Statistical Organisation should be set up to regularly undertake studies for bringing about improvement in the survey methodologies, including method of data collection, and also suggest measures for minimising non-sampling errors in the surveys. The National Sample Survey Office should publish standard errors of important estimates in the survey reports. These recommendations on the improvement of data quality and release of standard errors of estimates are relevant for surveys pertaining to numerous areas including the Services Sector.

7.4 FINDING OUT WAYS AND MEANS TO COLLECT DATA FOR EMERGING AREAS

7.4.1 That the Information Technology, Communication and Entertainment Sector (ICE Sector) has already emerged as a significant economic sector is known. Over a period of time, the ICE Sector will be a major driving force for the growth of the Services Sector in particular and the economy in general. But there are obvious problems and limitations for gathering reliable and timely data, on the ICE segment of the Services Sector. Therefore, it is pertinent that data gathering of the ICE Sector needs proper attention. Although such data will largely fall in the area of National Income System, the Commission makes certain recommendations in the subsequent paragraphs for improvement of the database of this sector.

7.4.2 Within the Services Sector the share of newly-emerging areas, like software exports, e-commerce, etc. and the ICE areas in the GDP is increasing at a fast rate. As e-commerce transactions are unlikely to take place in "Physical space", the Commission recognised the need to develop a suitable methodology for estimating this. In this context, it was also felt that the information available on the Internet as also that collected by various associations from their members for meeting their own requirements could be utilised for cross validating the existing data in the Services Sector and taking appropriate measures to improve the reliability of data.

7.4.3 The sphere of entertainment is also one of emerging importance in the Indian context. This is no doubt aided by the boom in satellite TV, cable networks, music (both audio and video) and national and State-level cinema. It is also an area that provides employment to a large number of people. Even though film making has been given industry status recently, a large part of the entertainment industry is still in the unorganised sector and information is hard to come by. However, there is no doubt that the size of one component of the Entertainment Sector, i.e. the film industry is quite large. A recent *Study on Copyright Piracy in India* (1999), sponsored by the Ministry of Human Resource Development, Government of India, stated in its third chapter: "The total turnover of the film industry during 1996 was about Rs.2500 crores." As far as cable and satellite television network is concerned the same study estimated the turnover from the country's cable industry to be Rs. 1101.60 crores in the year 1997. Clearly, there is a need to look at the Entertainment Sector as an important emerging service area from an economic point of view.

7.4.4 There are a large number of Non-Profit Institutions Serving Households (NPISHs) including Non-Governmental Organisations (NGOs) operating in India. These should also be part of services. Given that NPISHs including NGOs offer employment to a large number of individuals and provide valuable service, it is necessary to obtain detailed information on these. Although there exits a system of filing returns by the NPISHs including NGOs, a mechanism to compile data relating to them needs to be evolved. In this context, the availability of information from the Charity Commissioner and Registrar of Cooperative Societies should be evaluated. Even though all NPISHs including NGOs may not be registered with the Charity Commissioner and/or

Registrar of Cooperative Societies, this can be a starting point for such an evaluation. Further, the Directorates of Economics and Statistics in the States should be involved in this task.

7.4.5 The existing data on scientific and technical manpower ('knowledge workers') not only have several limitations but such data are also not readily available. Although such data have a demographic and socio-economic connotation, these data should also be a sub-set of Services Sector data. This is particularly because the role of knowledge workers is significantly increasing within what Peter Drucker has described as a 'knowledge society'. There is an urgent need to develop a mechanism so that data on knowledge workers are regularly collected. At present such data are usually compiled by the Ministry of Human Resource Development, Department of Science and Technology, etc. Certain data are also obtained through the Education Census. There has to be an integrated system so as to obtain data on knowledge workers.

7.4.6 The Commission therefore recommends that:

(i) A suitable methodology should be developed to estimate the contribution of emerging areas like software exports, e-commerce, Entertainment Sector, and related fields in employment, GVA, etc.

(ii) An appropriate mechanism to compile data related to the NPISHs including NGOs at the national and State level should be evolved.

(iii) An integrated system to improve the database on scientific and technical manpower (knowledge workers) should also be evolved.

(iv) The MoS&PI should be entrusted with the responsibility to operationalise these recommendations.

7.5 INTRODUCING A SURVEY OF NON-MANUFACTURING INDUSTRIES (BIGGER UNITS)

Current Status

7.5.1 At present the independent scheme of collection of data pertaining to bigger units or enterprises on an annual basis exists only for those enterprises belonging to the manufacturing and repair sub-sectors. The Annual Survey of Industries (ASI) aims to collect data with respect to the units in these sub-sectors that are registered under sections 2m (i) and 2m (ii) of the Factories Act 1948 or under *Bidi* and Cigar Workers (Condition of Employment) Act, i.e. the units employing 10 or more workers and using power or 20 or more workers but not using power. The sub-sectors of (a) electricity, gas and water supply, and (b) storage and warehousing, covered so far under the ASI till recently, have also been discontinued from such coverage since ASI 1998-99 for which the survey was carried out during 1999-2000.

7.5.2 For sub-sectors other than manufacturing and repairing, there exists no such scheme of independent collection of data from bigger units on a regular basis. The existing Follow-up Enterprise Surveys (FuS) on the Services Sector, carried out by the MoS&PI, collect data for all types of enterprises (other than those in the public sector), irrespective of their size, through these integrated surveys by bringing all such enterprises under the same survey coverage.

Deficiencies

7.5.3 The existing approach to data collection for all types of enterprises, irrespective of their size, through the same integrated survey (i.e. FuS) has the following *limitations*:

(a) The integrated survey may not ensure adequate representation of bigger units in the sample (such units are fewer in number as compared to the smaller units but their contribution to the total work force and GDP is quite substantial);

(b) Inclusion of few such bigger units in the sample may distort the estimated results to a great extent;

(c) Non-inclusion of bigger units in the sample may underestimate survey parameters; and

(d) Due to the highly-skewed distribution of enterprises in the population in terms of number of workers, estimates based on the existing integrated Follow-up Enterprise Surveys are likely to be subject to a large margin of sampling error.

Conclusions and Recommendations

7.5.4 To overcome the above limitations and to improve the database, a Survey of Non-Manufacturing Industries (SNMI) for bigger units, other than those in the public sector, should be introduced on the lines of ASI. The term 'non-manufacturing' used in the SNMI would refer to all non-agricultural activities other than manufacturing and repairing. 'Bigger units' would refer to those units or enterprises having a certain *minimum* number of workers and/or those contributing significantly in terms of annual turnover. The residual category of smaller units should be covered through the usual Follow-up Enterprise Surveys of Economic Census (EC).

7.5.5 The development of the list of bigger units or Business Register (BR), discussed by the Commission in paragraphs 14.2.26 to 14.2.28 of Chapter 14 on Indian Statistical System, would make available a proper frame of eligible enterprises to be covered under the SNMI. The ultimate objective should be to bring all units with at least 10 workers and other units having a significant annual turnover under the coverage of the SNMI. However, in case a problem occurs in the effort to immediately develop a list of all bigger units with at least 10 workers; a higher cut-off point (say, 20 or more workers in the enterprise) could also be considered for implementation of the scheme. Thereafter, the ultimate objective should be achieved in a gradual manner. The residual category of smaller enterprises, i.e. those not covered under the SNMI, should be surveyed through the usual Follow-up Enterprise Surveys of EC by adopting a two-stage sampling design as done at present.

7.5.6 It may be re-iterated that the survey coverage of the SNMI should also include enterprises in emerging areas like e-commerce, software development, hardware manufacturing and marketing, etc. if they qualify as per the definition of 'bigger units' discussed above.

7.5.7 The Commission desired to form an idea about the composition of units in the frame of the SNMI in terms of the number of units and their distribution by size class of employment for various activity groups before making the recommendations on the scheme. Annexe 7.10 gives the distribution of enterprises (other than manufacturing and repairing) as per the Fourth Economic Census (1998). It may be seen from the Annexe that the total number of eligible units in the frame of SNMI would be about 3 lakhs if units with at least 10 workers are included under the coverage. However, if the survey considers enterprises employing at least 20 workers and other significant units, the total number of such units in the frame would be of the order of about 1 lakh. A technical committee should be appointed to go into the details of the survey coverage, sample size, sample design, method of data collection, etc.

7.5.8 As the existing database for the Corporate Sector suffers from serious limitations, the SNMI should also take into account the Private Corporate Sector units. The Commission has recommended the strengthening of the Department of Company Affairs (DCA) and Registrars of Companies (ROCs) for processing and dissemination of Corporate Sector Statistics in respect of a set of variables for monitoring and policy formulation. Once this is achieved, the coverage of the SNMI should be modified to exclude the Corporate Sector units so as to avoid duplication of work.

7.5.9 Thus the Commission recommends the following:

(i) To improve the database, it would be desirable to carry out a survey of bigger units in the sub-sectors other than manufacturing and repairing. For this, an appropriate method of data collection and other methodological aspects need to be first worked out. Also, as the subjects of trade and services are in the States' domain, it will be necessary to decide upon an appropriately decentralised survey mechanism in collaboration with States.

7.6 WORKING OUT A PROPER TIME FRAME FOR FOLLOW-UP ENTERPRISE SURVEYS OF ECONOMIC CENSUS

7.6.1 The Follow-up Enterprise Surveys (FuS) of the EC are periodically carried out by the MoS&PI to collect detailed information about employment, fixed assets, working capital, receipts, expenditure, gross value added, etc. from the enterprises. With the stabilisation of the system of regular flow of information by the SNMI and the DCA, the coverage of the FuS should be confined to the units or enterprises (other than those in the public sector) that are not included in the frame of the above two sources.

7.6.2 Gross value added per worker as per the FuS for different industry groups is required to estimate the share of the respective industry groups in GDP. Apart from this, estimates of important characteristics as per the FuS have got various other uses. It is, therefore, necessary that a proper time frame for covering various industry groups in the FuS is worked out keeping in view the requirements of the data users as well as availability of resources for carrying out the survey. Annexe 7.3 lists out the surveys devoted to Services Sector since the First Economic Census came into being in 1977.

7.6.3 The following important facts emerge from Annexe 7.3:

(a) Activities of trade, hotels and restaurants as well as transport have been covered more or less regularly in the FuS;

(b) Construction activity has been covered only once, i.e. during 1999-2000;

(c) Activities of electricity (other than those pursued by the undertakings registered with the Central Electricity Authority), gas and water supply have not been covered in the FuS;

(d) Activities of storage and warehousing, and 'other services' were covered after a gap of 9 years and 8 years, respectively after the year1983-84;

(e) Out of 6 broad activity groups (listed under Sl. No. 12, Annexe 7.3), all of them were covered in 1999-2000, 5 activity groups in each of 1979-80 and 1998-99, and 4 activity groups in 1983-84; and

(f) Certain survey years were devoted to only single activity groups (i.e. years 1985-86, 1990-91, 1991-92 and 1992-93) as against some years being burdened with the coverage of a large number of activity groups.

7.6.4 The Commission recommends that:

(i) A proper time schedule for covering various activity groups with specified periodicity should be framed by the MoS&PI and strictly implemented for providing benchmark estimates required for national accounting.

(ii) While finalising the said time schedule, efforts should be made to evenly group various activities among different survey years.

Annexe 7.1

Distribution of NIC 1998 Codes for Different Tabulation Categories

Tabulation Category	Corres-ponding Section Code (1-digit)	Total number of Divisions (2-digit Codes)	Total number of Groups (3-digit Codes)	Total number of Classes (4-digit Codes)	Total number of Sub-classes (5-digit Codes)
1	**2**	**3**	**4**	**5**	**6**
A. Agriculture, Hunting and Forestry	0	2	6	9	41
B. Fishing	0	1	1	1	5
C. Mining and Quarrying	1	5	10	12	42
D. Manufacturing	2 & 3	23	61	127	611
E. Electricity, Gas and Water Supply	4	2	4	4	12
F. Construction	5	1	5	5	19
G. Wholesale and Retail trade; Repair of motor vehicle, motor cycle and personal & household goods	6	3	17	29	110
H. Hotels and Restaurants	6	1	2	2	11
I. Transport, Storage and Communication	7	5	10	17	28
J. Financial intermediation	8	3	5	12	19
K. Real estate, Renting and Business activities	8	5	17	31	43
L. Public administration and Defence, Compulsory social security	9	1	3	8	19
M. Education	9	1	4	5	12
N. Health and Social work	9	1	3	6	12
O. Other community, Social and Personal Services	9	4	9	22	35
P. Private household with employed persons	9	1	1	1	1
Q. Extra territorial organisations and bodies	9	1	1	1	1
All		**60**	**159**	**292**	**1021**

Source: National Industrial Classification [All Economic Activities], 1998

Annexe 7.2

World Trade Organisation's List of Services

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
1.	**BUSINESS SERVICES**			
	A.	**Professional Services**		
		a. Legal services	74110	
		b. Accounting, auditing and book-keeping services	74120	Clubbed with 1Ac.
		c. Taxation services	74120	Clubbed with 1Ab.
		d. Architectural services	74210	Clubbed with 1Aefg.
		e. Engineering services	74210	Clubbed with 1Adfg.
		f. Integrated engineering services	74210	Clubbed with 1Adeg.
		g. Urban planning and landscape architectural services	74210	Clubbed with 1Adef.
		h. Medical and dental services	85120	
		i. Veterinary services	85200	
		j. Services provided by midwives, nurses, physiotherapists and paramedical personnel	85194	
		k. Others		
	B.	**Computer and Related Services**	**72**	
		a. Consultancy services related to the installation of computer hardware	72100	
		b. Software Implementation services	72200	
		c. Data processing services	72300	
		d. Database services	72400	
		e. Others		

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
C.	**Research and Development Services**		**73**	
	a.	R&D services on natural sciences	73100	Clubbed with 1Cc.
	b.	R&D services on social sciences and humanities	73200	
	c.	Interdisciplinary R&D services	73100	Clubbed with 1Ca.
D.	**Real Estate Services**		**70**	This activity is elaborated more in NIC-98.
	a.	Involving own or leased property	7010	-do-
	b.	On a fee or contract basis	70200	
E.	**Rental/Leasing Services Without Operators**		**71**	This activity is elaborated more in NIC-98.
	a.	Relating to ships	71120	Clubbed with other water transport equipments.
	b.	Relating to aircraft	71130	
	c.	Relating to other transport equipment	71110	NIC-98 is more detailed.
	d.	Others		
F.	**Other Business Services**		**74**	
	a.	Advertising services	74300	
	b.	Market research and public opinion polling services	74130	
	c.	Management consulting service	74140	Clubbed with 1Fd.
	d.	Services related to management consulting	74140	Clubbed with 1Fc.

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
	e.	Technical testing and analysis services	74220	
	f.	Services incidental to agricultural, hunting and forestry	0140, 01500, and 0200.	NIC-98 has elaborated more on this activity.
	g.	Services incidental to fishing	05005	------do------
	h.	Services incidental to mining	NIC-98 has elaborated more on this activity.	
	i.	Services incidental to manufacturing	------do------	
	j.	Services incidental to energy distribution	------do------	
	k.	Placement and supply services of personnel	No such activity	
	l.	Investigation and security	74920	
	m.	Related scientific and technical consulting services	No such activity	
	n.	Maintenance and repair of equipment (not including maritime vessels, aircraft or other transport equipment)	NIC-98 has elaborated more on this activity.	
	o.	Building-cleaning services	74930	
	p.	Photographic services	74940	
	q.	Packing services	74950	
	r.	Printing, publishing	This activity has been elaborated more in Division-22 of NIC-98.	
	s.	Convention services	No such activity	
	t.	Others		
2.	**COMMUNICATION SERVICES**			
	A.	**Postal Services**	**64110**	
	B.	**Courier Services**	**64120**	

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
C.	**Telecommunication Services**		**6420**	
	a.	Voice telephone services	64201	Clubbed with other activities under Code 642.
	b.	Packet-switched data transmission services	No such activity	
	c.	Circuit-switched data transmission services	No such activity	
	d.	Telex services	64201	Clubbed with other activities under Code 642.
	e.	Telegraph services	64201	------do------
	f.	Facsimile services	64201	------do------
	g.	Private leased circuit services	64204	
	h.	Electronic mail	64202	Clubbed with other activities under Code 642.
	i.	Voice mail	64202	------do------
	j.	On-line information and data base retrieval	64202	------do------
	k.	Electronic data interchange (EDI)	64202	------do------
	l.	Enhanced/value-added facsimile services including store and forward, store and retrieve	64201	------do------
	m.	Code and protocol conversion	No such activity	
	n.	On-line information and/or data processing (including transaction processing)	No such activity	
	o.	Others	Maintenance of telecom network is available under NIC-98 as 64203.	

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
D.	**Audiovisual Services**			
	a.	Motion picture and video tape production and distribution service	9211	Class 9211 of NIC-98 has further elaborated on this activity.
	b.	Motion picture projection service	92120	
	c.	Radio and television services	9213	92131-Radio activities, 92132-Television activities.
	d.	Radio and television transmission services	9213	
	e.	Sound recording	9214	Clubbed with other activities.
	f.	Others		
E.	**Others**			
3.	**CONSTRUCTION AND RELATED ENGINEERING SERVICES**			
	a.	General construction work for building	45201, 45202	45201 for residential buildings and 45202 for non-residential buildings
	b.	General construction work for civil engineering	4520	NIC-98 has further elaborated on this activity.
	c.	Installation and assembly work	4530	
	d.	Building completion and finishing work	4540	------do-------
	e.	Others		

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
4.	**DISTRIBUTION SERVICES**			
	a.	Commission agents' services	5110	Class 5110 of NIC-98 is more elaborate.
	b.	Wholesale trade services	512 to 519	Group 512 to 519 of NIC-98 is more elaborate.
	c.	Retailing services	Group 521 to 525	Group 521 to 525 of NIC-98 is more elaborate.
	d.	Franchising	No such activity	
	e.	Others		
5.	**EDUCATIONAL SERVICES**		**80**	
	a.	Primary education services	8010	NIC-98 is more elaborate.
	b.	Secondary education services	802	NIC-98 is more elaborate.
	c.	Higher education services	8030	NIC-98 is more elaborate.
	d.	Adult education	80901	
	e.	Other educational services		
6.	**ENVIRONMENTAL SERVICES**			
	a.	Sewage services	9000	Codes 90001, 90002 and 90009 are provided.
	b.	Refuse disposal services	9000	
	c.	Sanitation and similar services	9000	
	d.	Others		

Description as per WTO's list of services	Status as per NIC-98	
	Code	**Remarks**
7. FINANCIAL SERVICES		
A. All Insurance and Insurance-Related Services		
a. Life, accident and health insurance services	66010	
b. Non-life insurance services	66030	
c. Reinsurance and retrocession	No such activity	
d. Services auxiliary to insurance (including brokering and agency services)	67200	
B. Banking and other Financial Services (excluding insurance)		
a. Acceptance of deposits and other repayable funds from the public		Descriptions of services and activities as per the two lists do not generally match. NIC-98 provides quite a few 5-digit codes for the related services under NIC Divisions 65 to 67.
b. Lending of all types, including consumer credit, mortgage credit, factoring and financing of commercial transaction		
c. Financial leasing		
d. All payment and money transmission services		
e. Guarantees and commitments		
f. Trading for own account or for account of consumer, whether on an exchange, in an over-the-counter market or otherwise, the following:		
- Money market instruments (cheques, bills, certificates of deposits, etc.)		
- Derivative products including, but not limited to, futures and options		
- Exchange rate and interest rate instruments, including products such as swaps, forward rate agreements, etc. transferable securities		
- Other negotiable instruments and financial assets, including bullion		

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
	g.	Participation in issue of all kinds of securities, including under writing and placement as agent (whether publicly or privately) and provision of service related to such issues		
	h.	Money binding		
	i.	Asset management, such as cash or portfolio management, all forms of collective investment management, pension fund management, custodial depository and trust services		
	j.	Settlement and clearing services for financial assets, including securities, derivation products and other negotiable instruments		
	k.	Advisory and other auxiliary financial services on all the activities listed in article 1B of MTN.TNC/W/50, including credit reference and analysis, investment and portfolio research and advice, on acquisitions and own corporate restructuring and strategy		
	l.	Provision and transfer of financial information and financial data procession and related software by providers of other financial services		
	C.	**Other**		
8.	**HEALTH-RELATED AND SOCIAL SERVICES**			
	(OTHER THAN THOSE LISTED UNDER 1. A. H-J)			
	a.	Hospital services	85110	
	b.	Other human health services	8519	NIC-98 is more elaborate and has provided codes 85191 to 85196 and 85199.
	c.	Social services	85310, 85320	NIC-98 is more elaborate.

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
	d.	Others		
9.	**TOURISM AND TRAVEL-RELATED SERVICES**			
	a.	Hotels and restaurants (including catering)	5510, 5520	NIC-98 is more elaborate and a total number of eleven 5-digit codes are provided.
	b.	Travel agencies and tour operators services	63040	Clubbed with 9c.
	c.	Tourist guides services	63040	Clubbed with 9b.
	d.	Others		
10.	**RECREATIONAL, CULTURAL AND SPORTING SERVICES**		**92**	
	(OTHER THAN AUDIOVISUAL SERVICES)			
	a.	Entertainment services (including theatre, live bands and circus services)	921	Group 921 under NIC-98 is more elaborate for this activity.
	b.	New agency services	92200	
	c.	Libraries, archives, museums and other cultural services	923	Group 923 under NIC-98 is more elaborate for this activity.
	d.	Sporting and other recreational services	924	Group 924 under NIC-98 is more elaborate for this activity.
	e.	Others		

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
11.	**TRANSPORT SERVICES**			
	A.	**Maritime Transport services**		
		a. Passenger transportation	Not available (N.A.)	WTO's List is more elaborate. NIC-98 does not distinguish between Passenger Transport and Freight Transport.
		b. Freight transportation	N.A.	
		c. Rental of vessels with crew	N.A.	
		d. Maintenance and repair of vessels	N.A.	
		e. Pushing and towing services	63090	
		f. Supporting services for maritime transport	63032	
	B.	**Internal waterways transport**	**61200**	Same remarks as above
		a. Passenger transportation	N.A.	
		b. Freight transportation	N.A.	
		c. Rental of vessels with crew	N.A.	
		d. Maintenance and towing services	63090	
		e. Supporting services for internal waterways transport	63032	
	C.	**Air Transport Services**	**62**	Same remarks as above
		a. Passenger transportation	N.A.	
		b. Freight transportation	N.A.	
		c. Rental of aircraft with crew	N.A.	
		d. Maintenance and repair of aircraft	N.A.	
		e. Supporting services for air transport	63033	
	D.	**Space Transport**	Covered under 11C in NIC-98.	

Description as per WTO's list of services			Status as per NIC-98	
			Code	**Remarks**
E.	**Rail Transport Services**		**6010**	
	a.	Passenger transportation	60100	WTO's List is elaborate.
	b.	Freight transportation	60100	
	c.	Pushing and towing services	60100	
	d.	Maintenance and repair of rail transport equipment	N.A.	
	e.	Supporting services for rail transport services	63031	Clubbed with 11Fe.
F.	**Road Transport Services**		**602**	
	a.	Passenger transportation	6021	
	b.	Freight transportation	60231	
	c.	Rental of Commercial vehicles with operator	N.A.	
	d.	Maintenance and repair of road transport equipment	N.A.	
	e.	Supporting services for road transportation services	63031	Clubbed with 11Ee.
G.	**Pipeline Transport**		**6030**	
	a.	Transportation of fuels	60300	Clubbed with 11Gb.
	b.	Transportation of other goods	60300	Clubbed with 11Ga.
H.	**Services Auxiliary to all Modes of Transport**		**63**	Division 63 of NIC-98 is more elaborate.
	a.	Cargo-handling services	6301	
	b.	Storage and warehouse services	6302	
	c.	Freight transport agency services	63090	
	d.	Others		
12.	**OTHER SERVICES NOT INCLUDED ELSEWHERE**			

Annexe 7.3

Follow-up Enterprise Surveys of Economic Census Conducted so far on Services Sector

Sl. No.	Survey coverage	Survey year
1	**2**	**3**
1.	Trade; Hotels and Restaurants; Transport; Storage and Warehousing; Other Services	1979-80
2.	Hotels and Restaurants; Transport; Storage and Warehousing; Other Services	1983-84
3.	Trade	1985-86
4.	Hotels and Restaurants; Transport	1988-89
5.	Trade	1990-91
6.	Other Services	1991-92
7.	Storage and Warehousing	1992-93*
8.	Hotels and Restaurants; Transport	1993-94
9.	Trade (*Directory Establishments*)	1996-97
10.	Trade (*Non-Directory Establishments* and *Own Account Enterprises*)	1997
11.	Trade; Hotels and Restaurants; Transport; Storage and Warehousing; Other Services	1998-99*
12.	Trade; Hotels and Restaurants; Transport; Storage and Warehousing; Construction; Other Services (Proprietary and partnership enterprises only)	1999-2000*

* These surveys also covered certain activities in the sectors other than services

Notes: 1. Directory Establishments mean units employing at least one hired worker on a fairly regular basis and having at least 6 workers (including household workers).

2. Non-Directory Establishments mean units employing at least one hired worker on a fairly regular basis and having less than 6 workers (including household workers).

3. Own Account Enterprises mean units working without employing any hired worker on a fairly regular basis.

Annexe 7.4

Number of Enterprises Engaged in Unorganised Trading Activities According to Economic Census (EC) 1990 and Follow-up Enterprise Survey (FuS) 1990-91 in the Major States

Sl. No.	State / UT	All unorganised trading enterprises (in '000)						Unorganised trading establishments (in '000) *					
		Rural		Urban		Combined		Rural		Urban		Combined	
		EC `90	FuS (`90-91)	EC `90	FuS (`90-91)	EC `90	FuS (`90-91)	EC `90	FuS (`90-91)	EC `90	FuS (`90-91)	EC `90	FuS (`90-91)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Andhra Pradesh	398	538	304	351	702	889	35	17	86	66	121	83
2.	Assam	132	139	73	50	205	189	21	10	26	11	47	21
3.	Bihar	338	1,164	243	248	581	1,412	34	27	72	30	106	57
4.	Gujarat	169	232	278	268	447	500	23	27	70	61	93	88
5.	Haryana	74	231	114	107	188	338	4	5	23	16	27	21
6.	Karnataka	265	322	278	284	543	606	36	14	85	48	111	62
7.	Kerala	306	292	151	115	457	407	58	28	50	32	108	60
8.	Madhya Pr.	288	630	300	279	588	918	19	9	58	46	77	55
9.	Maharashtra	321	491	565	545	886	1,036	42	45	197	145	239	190
10.	Orissa	263	535	110	114	373	649	19	12	23	16	42	28
11.	Punjab	92	110	163	165	255	275	9	8	43	44	52	52
12.	Rajasthan	184	178	207	150	391	328	15	7	52	25	67	32
13.	Tamil Nadu	312	361	341	472	653	833	51	36	122	98	173	134
14.	Uttar Pradesh	474	1,168	644	739	1,118	1,907	31	20	142	72	173	92
15.	West Bengal	639	801	413	400	1,052	1,201	55	62	127	63	182	125
16.	Delhi	9	9	188	149	197	158	1	2	69	69	70	71
All-India **		**4,375**	**7,320**	**4,476**	**4,500**	**8,851**	**11,820**	**471**	**340**	**1,271**	**850**	**1,742**	**1,190**

Notes: * Establishments mean units or enterprises employing at least one hired worker on a fairly regular basis.

** FuS estimates exclude *Own Account Enterprises* and *Non-directory Establishments* for the State of Jammu and Kashmir.

Source: Report of the Expert Committee to Examine Wide Variations in Data Sets on the Same Subjects (February 2000)

Annexe 7.5

Number of Enterprises (Hotels and Restaurants) as per Alternative Sources

Sl. No.	State/UT	Number of enterprises ('000)					
		Rural		Urban		Combined	
		EC `90	FuS ('88-89)	EC `90	FuS (`88-89)	EC `90	FuS ('88-89)
1	2	3	4	5	6	7	8
1.	Andhra Pradessh	62	83	34	46	96	129
2.	Bihar	34	22	27	36	61	83
3.	Gujarat	9	17	19	25	28	45
4.	Karnataka	59	42	36	44	95	137
5.	Kerala	74	86	25	17	99	185
6.	Madhya Pradesh	23	22	34	31	63	85
7.	Maharashtra	42	49	58	59	100	149
8.	Orissa	34	31	19	18	53	84
9.	Rajasthan	23	20	21	28	44	64
10.	Tamil Nadu	71	87	51	60	122	209
11.	Uttar Pradesh	48	36	55	85	103	139
12.	West Bengal	54	65	40	65	94	159
All-India (excl. J & K)		**592**	**606**	**486**	**602**	**1,078**	**1,684**

Source: Report of the Expert Committee to Examine Wide Variations in Data Sets on the Same Subjects (February 2000)

Annexe 7.6

Number of Transport Enterprises as per Alternative Sources

Sl. No.	State/UT	Number of enterprises ('000)					
		Rural		Urban		Combined	
		EC `90	FuS ('88-89)	EC `90	FuS (`88-89)	EC `90	FuS ('88- 89)
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1.	Andhra Pradesh	18	51	34	67	52	118
2.	Assam	3	64	3	8	6	72
3.	Bihar	4	30	6	27	10	57
4.	Gujarat	15	37	26	29	41	66
5.	Haryana	7	4	6	18	13	22
6.	Karnataka	6	11	15	25	21	36
7.	Kerala	8	14	7	12	15	26
8.	Madhya Pradesh	6	9	19	38	25	47
9.	Maharashtra	16	24	34	59	50	83
10.	Orissa	8	16	7	18	15	34
11.	Punjab	3	11	7	18	10	29
12.	Rajasthan	8	16	9	23	17	39
13.	Tamil Nadu	8	22	18	30	26	52
14.	Uttar Pradesh	9	117	19	52	28	169
15.	West Bengal	92	73	48	59	140	132
16.	Delhi	0.4	6	11	22	11	28
All-India (excl. J&K)		**224**	**521**	**279**	**513**	**503**	**1,034**

Source: Report of the Expert Committee to Examine Wide Variations in Data Sets on the Same Subjects (February 2000)

Annexe 7.7

Number of Workers Engaged in Trading Activities as per Alternative Sources

Sl. No.	State/UT	Number of workers ('000)											
		Rural				Urban				Combined			
		EC `90	'91 Census *	FuS ('90-91) **	NSS 50th Rd. (`93-94)	EC `90	'91 Census*	FuS ('90-91) **	NSS 50th Rd. (`93-94)	EC `90	'91 Census*	FuS ('90-91) **	NSS 50th Rd. (`93-94)
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.	Andhra Pradesh	610	795	865	1,089	626	1,147	754	1,118	1,236	1,942	1,619	2,207
2.	Assam	178	266	244	462	135	217	92	216	313	483	336	678
3.	Bihar	490	493	1,464	1,105	461	540	413	644	951	1,034	1,877	1,749
4.	Gujarat	274	327	389	356	595	941	576	772	869	1,268	969	1,128
5.	Haryana	97	128	319	228	194	280	183	231	291	408	502	459
6.	Karnataka	398	449	491	464	577	954	544	735	975	1,403	1,035	1,199
7.	Kerala	407	641	420	586	267	441	232	393	674	1,082	652	979
8.	Madhya Pradesh	395	348	592	351	527	863	551	759	922	1,211	1,143	1,110
9.	Maharashtra	464	606	770	719	1,338	2,100	1,270	1,824	1,802	2,706	2,040	2,543
10.	Orissa	335	328	920	483	177	248	288	189	512	575	1,208	672
11.	Punjab	118	177	154	256	306	467	327	466	424	644	481	722
12.	Rajasthan	235	308	268	372	366	593	278	559	601	901	546	931
13.	Tamil Nadu	490	613	589	789	774	1,383	989	1,209	1,264	1,996	1,578	1,998
14.	Uttar Pradesh	641	871	1,574	1,684	1,092	1,696	1,251	1,670	1,733	2,567	2,825	3,354
15.	West Bengal	844	1,291	1,130	1,318	819	723	707	1,105	1,663	2,013	1,837	2,423
16.	Delhi	15	37	13	34	430	674	342	574	445	711	355	608
All-India (excl. J & K)		**6,153**	**7,490**	**10,351**	**10,415**	**8,877**	**14,100**	**8,860**	**12,576**	**15,030**	**21,590**	**19,211**	**22,991**

Notes: * Data relate to trade and commerce
** Excludes workers in the public sector

Source: Report of the Expert Committee to Examine Wide Variations in Data Sets on the Same Subjects (February 2000)

Annexe 7.8

Number of Workers Engaged in Hotels and Restaurants as per Alternative Sources

Sl. No.	State/UT	Number of workers ('000)								
		Rural			Urban			Combined		
		EC `90	FuS ('88-89)	NSS 50th Rd. (`93-94)	EC `90	FuS ('88-89)	NSS 50th Rd. (`93-94)	EC `90	FuS ('88-89)	NSS 50th Rd. (`93-94)
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1.	Andhra Pradesh	136	235	167	129	194	208	265	429	375
2.	Bihar	66	58	79	78	94	65	144	152	144
3.	Gujarat	22	28	26	66	104	113	88	132	139
4.	Karnataka	121	96	128	144	171	127	265	267	255
5.	Kerala	131	199	146	74	83	90	205	252	236
6.	Madhya Pradesh	55	60	50	99	98	131	154	158	181
7.	Maharashtra	92	129	99	295	319	304	387	448	403
8.	Orissa	74	74	48	55	136	46	129	212	94
9.	Rajasthan	36	27	34	53	68	40	89	95	74
10.	Tamil Nadu	140	201	156	168	228	214	308	429	370
11.	Uttar Pradesh	76	66	126	130	212	160	206	278	286
12.	West Bengal	91	138	74	117	176	88	208	314	162
All-India (excl. J & K)		**1,148**	**1,421**	**1,379**	**1,621**	**2,134**	**1,793**	**2,769**	**3,555**	**3,172**

Source: Report of the Expert Committee to Examine Wide Variations in Data Sets on the Same Subjects (February 2000)

Annexe 7.9

Number of Workers Engaged in Transport Activities as per Alternative Sources

Sl. No.	State/UT	Number of workers ('000)								
		Rural			Urban			Combined		
		EC `90	FuS ('88-89)	NSS 50th Rd. (`93-94)	EC `90	FuS ('88-89)	NSS 50th Rd. (`93-94)	EC `90	FuS ('88-89)	NSS 50th Rd. (`93-94)
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1.	Andhra Pradesh	32	66	251	90	99	543	122	165	794
2.	Assam	6	72	91	11	12	53	17	84	144
3.	Bihar	7	40	237	24	42	240	31	82	477
4.	Gujarat	25	49	171	65	43	354	90	92	525
5.	Haryana	9	7	142	15	24	100	24	31	242
6.	Karnataka	13	18	96	49	40	284	62	58	380
7.	Kerala	18	24	301	43	18	197	61	42	498
8.	Madhya Pradesh	14	13	100	68	82	365	82	95	465
9.	Maharashtra	41	36	223	165	120	901	206	156	1,124
10.	Orissa	12	23	72	15	26	130	27	49	202
11.	Punjab	6	25	139	21	27	107	27	52	246
12.	Rajasthan	18	21	169	36	37	266	54	58	435
13.	Tamil Nadu	16	52	316	73	75	551	89	127	867
14.	Uttar Pradesh	15	149	589	76	80	557	91	229	1,146
15.	West Bengal	110	86	483	141	81	533	251	167	1,016
16.	Delhi	0.5	6	27	61	44	175	61	50	202
All-India (excl. J & K)		**363**	**716**	**3,586**	**973**	**863**	**5,455**	**1,336**	**1,579**	**9,041**

Source: Report of the Expert Committee to Examine Wide Variations in Data Sets on the Same Subjects (February 2000)

Annexe 7.10

Distribution of Non-agricultural Enterprises (Other than Manufacturing and Repairing) by Activity and Number of Workers as per the Economic Census, 1998

India

Activity	Number of non-agricultural enterprises (other than those engaged in manufacture and repair) with number of workers in the enterprise (W) as					
	W > = 1		W > = 10		W > = 20	
	Non-Govt.	Govt.	Non-Govt.	Govt.	Non-Govt.	Govt.
1	2	3	4	5	6	7
1. MQ	34,865	1,244	6,001	598	2,757	456
2. EGW	13,635	24,528	919	4,161	354	2,188
3. Cons.	2,84,856	1,724	10,421	581	3,418	324
4. Trade	113,51,220	62,817	75,013	2,596	18,875	1,121
5. HR	11,74,941	13,902	26,448	1,326	5,255	539
6. Trans.	8,87,752	9,240	9,660	2,625	2,701	1,602
7. SW	72,538	7,127	3,457	887	1,121	439
8. Com.	1,70,562	77,992	1,949	5,791	717	2,917
9. FRB	6,30,999	59,001	30,401	24,506	10,789	10,706
10. CSP	51,26,641	13,25,801	1,23,705	2,00,607	39,290	88,521
All	**197,47,999**	**15,83,376**	**2,87,974**	**2,43,678**	**85,277**	**1,08,813**

Activity	Number of non-agricultural enterprises (other than those engaged in manufacture and repair) with number of workers in the enterprise (W) as					
	W > = 50		W > = 100		W > = 200	
	Non-Govt.	Govt.	Non-Govt.	Govt.	Non-Govt.	Govt.
1	8	9	10	11	12	13
1. MQ	731	403	256	366	68	328
2. EGW	131	707	43	328	19	181
3. Cons.	965	120	360	58	60	15
4. Trade	4,821	321	1,023	111	371	48
5. HR	1,029	147	272	38	91	19
6. Trans.	651	870	207	583	90	368
7. SW	2,207	143	102	63	21	30
8. Com.	218	1,221	80	620	28	388
9. FRB	2,343	2,467	684	834	252	337
10. CSP	8,945	25,958	2,383	10,248	763	4,408
All	**20,111**	**32,357**	**5,410**	**13,249**	**1,763**	**6,122**

Notes: MQ: Mining and Quarrying; EGW: Electricity, Gas and Water Supply; Cons: Construction; HR: Hotels and Restaurants; Trans: Transport; SW: Storage and Warehousing; Com: Communications; FRB: Financial, Real Estate and Business Services; CSP: Community, Social and Personal Services.

8 INFRASTRUCTURE STATISTICS

8.1 INTRODUCTION

8.1.1 Statistics related to infrastructure (see Box 8.1 for its composition) are important in determining the availability of inputs that are crucial to a wide variety of productive activities. There may be divergence of opinion whether infrastructure should be created in response to demand or in anticipation of demand. There is no denying, however, that its non-availability will act as a severe constraint on the productive capacities of the economy. Statistics relating to various types of infrastructure as well as its geographic distribution will be important for policy and planning purposes, as well as in guiding investment decisions. Data relating to infrastructure should be complete, accurate and up to date.

Box 8.1: Composition of Infrastructure Sector

(a) Construction
(b) Electricity generation, transmission and distribution
(c) Gas generation and distribution through pipes
(d) Water works and supply
(e) Non-conventional energy generation and distribution
(f) Railway tracks, signalling system and stations
(g) Roads and bridges, runaways and other airport facilities
(h) Telephone lines and telecommunications network
(i) Pipelines for water, crude oil, slurry, etc.
(j) Waterways
(k) Port facilities
(l) Canal networks for irrigation
(m) Sanitation and sewerage

8.1.2 This chapter will examine the following issues:

(a) Notion of Infrastructure – as well as its characteristics and contrast this with the prevailing notion of infrastructure as accepted in the statistics and official documents.

(b) Strengthening Infrastructure Statistics – in specific infrastructure sectors.

(c) Infrastructure-related Indices – proposed construction.

8.2 NOTION OF INFRASTRUCTURE

8.2.1 Infrastructure is understood as an important input for industrial and overall economic development. While this is certainly true, there is no clear definition of infrastructure according to the current usage of the term in India. The Economic Survey does not define the term, but still devotes an entire chapter to this. While the Report of the Committee on Infrastructure made a significant contribution towards examining this sector, it did not offer a clear-cut definition of infrastructure nor did indicate crucial characteristics that serve to differentiate an Infrastructure Sector from other Sectors.

Current Status

8.2.2 As stated above, there exists neither a clear-cut definition nor a listing of the crucial characteristics of infrastructure in the Indian data sources. The Economic Survey, while it includes an entire chapter on Infrastructure (see Chapter 9, Economic Survey 2000-2001) does not indicate why the industries listed therein are to be treated differently from other industries. In fact, there is sufficient reason to believe that some of the sectors listed in the relevant chapter of the Economic Survey do not have the crucial characteristics as per the current theoretical understanding of the concept.

8.2.3 As per the Economic Survey, the following sectors constitute infrastructure (Economic Survey 2000-2001, p. 171):

(a) Power: Electricity generation;
(b) Coal production;
(c) Petroleum production: crude oil and refinery throughput;
(d) Cement production;
(e) Railways: Revenue-earning goods traffic and passenger kilometres;
(f) Ports: Cargo handled at major ports;
(g) Civil Aviation: Cargo and passengers handled at Airports Authority of India (AAI) airports;
(h) Roads: Length of roads and length of National Highways; and
(i) Telecommunications: New telephone connections approved (direct exchange lines).

8.2.4 Besides the Economic Survey, the Index of Industrial Production (IIP) also includes some of the above-mentioned infrastructure sub-sectors. Statistical information on these is available and frequently a subset of the IIP is labeled as the index of infrastructure activity. However, even in this case there is no clear-cut rationale for treating these sectors as infrastructure. Hence, the current status in India regarding this sector consists of an inadequate conceptualisation of the characteristics of the Infrastructure Sector.

Proposed Change in the Notion of Infrastructure

8.2.5 The standpoint taken by the Commission is that the notion of infrastructure that is used in the reporting of data in India is not theoretically sound. The proposed methodology will mark a clean break with past practice with respect to reporting of infrastructure data. The reporting of data in India, so far, seems to equate basic industry with infrastructure; besides what is basic and non-basic industry seems like a relic from the planning era. The approach proposed here, in the first instance, seeks to theoretically set out what constitutes infrastructure and then identifies specific facilities, which provide infrastructure services.

What is Infrastructure?

8.2.6 Infrastructure activities, such as power, transport, telecommunications, provision of water, and sanitation and safe disposal of waste, are central to the activities of the household and to economic production. Without any of these either economic production will suffer or the quality of life will deteriorate. One could thus view these activities as essential inputs to the economic system.

8.2.7 Many infrastructure activities have the characteristics that they are not use-specific or user-specific: the same telephone system may be used in numerous productive activities, either (a) simultaneously if sufficient capacity is available, or (b) sequentially if there is crowding or congestion.

8.2.8 Infrastructure generally consists of long-lived engineered structures and may be one of the following:

(a) Public utility: power, piped gas, telecommunications, water supply, etc.;

(b) Public works: major dam and canal works for irrigation, roads;

(c) Other transport sectors such as railways, ports, waterways.

Natural Monopoly Character of Infrastructure

8.2.9 The most general economic characteristic of modern infrastructure is the supply of services through a networked delivery system designed to serve a multitude of users. This is especially true for piped water, electric power, telecommunications, sewerage, and rail services. As these examples show, the delivery system in each case is dedicated: water pipes cannot be used for any other purpose except to carry water. Investment in such delivery systems is said to be *sunk*, i.e. the investment may not be converted to other uses.

8.2.10 The scope for competitive supply of infrastructure also varies greatly across sectors, within sectors and between technologies. Many infrastructure facilities are characterised by declining costs, leading to what is known as a *natural monopoly* situation. It is important to remember that natural monopoly arises out of technological factors and not due to policy.

8.2.11 It may also be pointed out that the services of infrastructure will be non-tradable. To give an example: should there be insufficient demand for electricity in place A, its supply may be diverted to place B; however, one will not be able to do that for the transmission system that brings electricity to place A. Hence the transmission system is non-tradable even though electric power itself may be tradable.

Public Goods Character of Infrastructure

8.2.12 The demand for infrastructure services arises from both industry and individuals. However, since it is not possible to create infrastructure facilities in an incremental fashion – investments are lumpy – such facilities have to be built complete for a particular size. Hence, in the initial stage supply will be greater than the demand for such facilities while the reverse may occur over a period of time.

8.2.13 This characteristic of infrastructure services that is generally, supply greater than demand, indicates that consumption of its services is non-rival. Such non-rivalness is a characteristic of "public goods". The characteristic of non-rivalness implies *zero marginal cost* of providing benefits of a public good (infrastructure in this case) to an additional consumer. In this sense infrastructure creates external benefits or positive *externalities*. However, infrastructure services have one characteristic that is absent in the case of pure public goods namely, price exclusion, whereby enjoyment of benefits is contingent on payment of charges. Price exclusion is a characteristic of "private goods". Thus infrastructure services share characteristics of both public and private goods. In the case of pure public goods there is complete failure of the market: since use cannot be monitored, no price can be charged for the good and no private individual will be willing to provide such goods. Since this characteristic of a public good is not to be found in infrastructure, it need not necessarily be provided by the Government. However, given its technological characteristic, i.e. being a natural monopoly, its provision will have to be regulated.

Representation of Infrastructure in National Accounts

8.2.14 From the national accounts point of view, infrastructure would form part of the capital stock of the nation. However, in the year it is created the infrastructure facility would be part of production for that accounting period. Where the production spills over numerous periods it may be necessary to recognise that output is being produced continuously and record it as

"work-in-progress". This would be in keeping with the recommendations of SNA 1993 (see United Nations: *System of National Accounts 1993*, p. 127).

8.2.15 Once the infrastructure is completed, its contribution is in terms of the services it provides by its usage. Thus the output of transportation would be measured by the value of the amount receivable for transporting goods and persons. The volume of transport services would be measured by indicators such as tonne-kilometres or passenger-kilometres (see United Nations: *System of National Accounts 1993*, p.136).

8.2.16 Essentially, what this approach to infrastructure does is to separate the infrastructure facility from the service provided by the facility. For some areas of infrastructure this is not a problem since the owner of the facility and provider of services flowing from the facility is one and the same entity. For example, railways own the infrastructure facility – tracks, signaling system, etc. – and operate services on it for passengers and freight. However, in the case of roads the situation will be different. For a long time the facility was provided by the Government, though now there is private provision as well. However, services on roads are provided by different entities, both public and private.

Distinction between Physical and Social Infrastructure

8.2.17 Even though Social Infrastructure is not considered here, it will be appropriate to extend the notion of infrastructure proposed here to the Social Sector as well. Thus, a hospital or a school would constitute the infrastructure facility, which will provide services in the form of health care and education over a period of time. However, one will have to be careful not to attribute all the characteristics of infrastructure listed above to the Social Sector. For instance, it cannot be argued that a hospital facility is a natural monopoly even though a substantial amount of sunk costs may be involved. Further, as far as bestowing externalities is concerned, this is more likely to be true for basic health care, possibly preventive health care, while externalities may diminish in the case of higher-end health and possibly curative health care.

Conclusions and Recommendations

8.2.18 The discussion regarding the exact characteristics leads to the conclusion that the existing notion of infrastructure that is followed in statistical reporting in the country is not in keeping with the theoretical notion of infrastructure. Based on the characteristics of infrastructure discussed above a list of infrastructure activities is being proposed for implementation.

A Proposed List of Infrastructure Services

8.2.19 For the identification of an infrastructure service the following characteristics are pertinent:

(a) Natural monopoly;
(b) High-sunk costs or asset specificity;
(c) Non-tradability of output;
(d) Non-rivalness (up to congestion limits) in consumption;
(e) Possibility of price exclusion; and
(f) Bestowing externalities on society.

8.2.20 If *all* six characteristics are considered simultaneously, then the following areas will constitute infrastructure:

- Railway tracks, signaling system, stations
- Roads, bridges
- Runaways and other airport facilities

- Transmission and distribution of electricity
- Telephone lines, telecommunications network
- Pipelines for water, crude oil, slurry, etc.
- Waterways, port facilities
- Canal networks for irrigation
- Sanitation or sewerage.

8.2.21 Initially, the above-listed infrastructure facilities may be taken up for data collection. Thereafter, considering characteristics (b) (High-sunk costs or asset specificity), (d) (Non-rivalness in consumption), and (e) (Possibility of price exclusion) only, the above list of infrastructure facilities may be extended to include the following in an extended list closely corresponding with existing notions of infrastructure:

- Rolling stock on railways
- Vehicles
- Aircrafts
- Power generating plants
- Production of crude oil, purification of water
- Ships and other vessels.

8.2.22 Data collection on the above activities should be commenced immediately. It may be pointed out that data on many of the activities listed above will not have to be collected *de novo*. Such data are already being collected by statistical agencies. However, data are available only in a dispersed fashion. Data on all infrastructure activities should be compiled together and be published in one document. Thus even though railway data or power sector data are published by the respective sectors, these must be published in a document, which may be called, *Annual Infrastructure Statistics*, even if it involves duplication. This will improve the accessibility of such data to policy makers and other data users.

8.2.23 The Commission recommends the following:

(i) The list of infrastructure activities should be finalised by the Ministry of Statistics and Programme Implementation (MoS&PI) on the basis of the characteristics recommended for identification of infrastructure.

(ii) Data gaps have been identified for many infrastructure sub-sectors. Steps to bridge this gap should be taken by the respective authorities namely, Railway Board (Railways); Ministry of Road Transport and Highways (Roads); Director General, Civil Aviation (Airways); Ministry of Shipping (Waterways); Department of Telecommunications (Telecommunications); Central Electricity Authority (Electricity); National Sample Survey Organisation, National Buildings Organisation, and Office of the Registrar General and Census Commissioner (Housing Services); Department of Post (Postal Services); Ministry of Urban Development and Poverty Alleviation (Urban Infrastructure); Ministry of Rural Development (Rural Infrastructure); Planning Commission (Energy Sector excluding Electricity); and MoS&PI (Infrastructure Indices).

(iii) A mechanism to collect reliable data on the infrastructure activities should be evolved immediately by the respective authorities in consultation with the MoS&PI.

(iv) Considering that Infrastructure Statistics are generated in different sub-sectors, for the benefit of the users, data on all infrastructure activities should be published in one document by the MoS&PI so as to improve the accessibility of such data to policy-makers and other data users.

8.3 STRENGTHENING INFRASTRUCTURE STATISTICS

8.3.1 To ensure that reliable data should be collected for the Infrastructure Sector as recommended it is necessary that the various components of infrastructure should be adequately covered in the data-collection activity. The information requirements of the various components of infrastructure are now considered as these will also be an important input in the creation of infrastructure indices. The following sectors merit consideration:

- Railways
- Roads
- Airways
- Waterways
- Telecommunications
- Electricity
- Housing Services
- Posts
- Urban Infrastructure
- Rural Infrastructure
- Energy excluding Electricity.

Railways

Current Status

8.3.2 In the Transport Sector, the railways possibly have the most comprehensive database currently available. A substantial amount of information is available on the following:

(a) Length of rail network: route and track kilometres (kms), wagon or vehicle or train kms, etc.;

(b) Passenger transport: passenger kms, number of passengers, average lead, etc.;

(c) Freight transport: tonne kms, tonnage, average lead, etc.;

(d) Utilisation of rolling stock: number and types of rolling stock in service, cost of repairs, etc.;

(e) Energy consumption;

(f) Economic and financial statistics (earnings, expenditure, etc.); and

(g) Administrative statistics (number of staff by groups, departments, pay scales, services, cost of staff, etc.).

8.3.3 The data to a large extent is published in the Annual Statistical Statement, and Annual Report and Accounts.

Data Gaps

8.3.4 The following data gaps may be mentioned [Note: The list given below is indicative; In some cases the data gap relates to ease of availability of data]:

(a) Value of infrastructure assets, that is, rail network;

(b) Non-availability of data separately for each traction and for each zone of the railways;

(c) Data on the movements of various goods by traction and by zone, inter and intra-State movement of traffic by rail (Data on inter-State movement of goods by different modes including rail are published by the Directorate General of Commercial Intelligence and Statistics);

(d) Revenue earnings by type of freight carried, by traction and by zone;

(e) Efficiency indicators such as average lead, turnaround time of rolling stock, number of employees per freight-tonne km. and passenger km., on-time arrivals, extent of delays, etc. by traction and by zone; and

(f) Financial efficiency indicators.

Conclusions and Recommendations

8.3.5 The database of the Indian Railways is comprehensive and well- organised. However, it is apparent from the responses of Ministry of Railways that all data are not easily accessible. For instance, data at the level of the States are not maintained and are available only at the zonal level. Even though the Ministry of Railways indicated that information on "value of infrastructure" is available, it is not well known where such data are to be located. Also much of the desired information is available only from "basic data" which may not be easily accessible. The Commission, therefore, recommends that:

(i) The Railway Board should make the Annual Statistical Statement, which at present gives zone-wise data in the form of an unpublished and internal document, widely available.

Roads

Current Status

8.3.6 The Roads Sector exhibits a mix of public sector and private sector users. Even as far as actual roads are concerned there has been some entry of private operators in the field. As far as the public sector is concerned there is a reasonable amount of quality data available. This is especially true of public sector passenger transport.

8.3.7 The major sources of data on Road Statistics are: PWD (Roads) of State Governments and Union Territory Administrations, PWD (National Highways) of State Governments and Union Territory Administrations, Rural Development and Panchayat Raj Departments of State Governments, Department of Local Bodies, State Government and Union Territory Administrations, Transport Division of the Planning Commission, Budget section of the Ministry of Road Transport and Highways.

8.3.8 In the field of Road Transport Statistics, the major sources of such data are: Transport Commissioners of States and Union Territories, State Road Transport Undertakings, All-India Automobile Manufacturers Association, Road Safety Cell of the Ministry of Road Transport and Highways, Transport Division of Planning Commission, periodic Follow-up Enterprise Surveys on the subject by the MoS&PI and World Road Statistics of International Road Federation.

8.3.9 The following data are available:

(a) Road length, separately for urban and rural roads, for municipal roads, railways roads, major port roads, etc. by type of surface;

(b) National Highways (State-wise) - Road length: total and surfaced, width, major and minor bridges, culverts on National Highways (NH), growth of NH since 1951 and expenditure on NH by Central Government (total: all-India), Central Government expenditure on NH for development and maintenance (State-wise);

(c) State Highways (State-wise) - Road length: total and surfaced, type of surface, width of road length, number of culverts and bridges on State Highways;

(d) Number of registered motor vehicles, by categories – State-wise and in metropolitan cities of India; Newly-registered motor vehicles – State-wise;

(e) State-wise revenue realised from motor vehicle taxes and fees, estimated tax revenue on motor spirit and high-speed diesel;

(f) Plan-wise outlay and expenditure on road transport in Centre and States;

(g) Passenger transport by State Road Transport Undertakings;

(h) Fuel consumption in road transport; and

(i) Number of enterprises in the transport sector activity, workers engaged, value of per enterprise receipts and expenditure, gross value added per enterprise or per worker, etc. for enterprises other than those in the public sector, as estimated through the Follow-up Enterprise Surveys.

Data Gaps

8.3.10 The Basic Road Statistics of India brought out annually by the Transport Research Wing of the Ministry of Road Transport and Highways covers the maximum road length in the country. One of the limitations is that of inadequacy present in the data on Rural Roads. There are also major data gaps on passenger and freight carried through roadways. The problem arises because the road freight traffic movement is primarily in the hands of private operators for which the database is too weak. There is not even a proper mechanism to maintain a minimum essential database at least in respect of such operators that have a significant contribution in terms of turnover, employment, etc.

8.3.11 Due to the involvement of multiple agencies in the construction of Rural Roads, it is difficult to obtain up-to-date data on Rural Roads or on their connectivity. Further, various categories of roads like PWD Roads, Urban Roads, Project Roads, Panchayati Raj Roads, etc. are being constructed by different agencies in the States. It is therefore very difficult to obtain data from all these agencies. As a result, the Transport Research Wing of the Ministry of Road Transport and Highways has been unable to update the publication on "Basic Statistics on Roads" for the last 2-3 years.

8.3.12 The Follow-up Enterprise Surveys of the MoS&PI, through periodic and national-level surveys, aim to fill up some of the gaps by including all road transport units other than those in the public sector under the survey coverage. But normally such surveys focus to collect only limited information like details of employment, receipts, expenditure, fixed assets and outstanding loans, apart from certain classificatory information relating to the units. Many important data like the number of passengers, volume of traffic carried, age profile of vehicles, average age of vehicle, occupancy ratio, manpower employed per vehicle, etc. are normally not collected in these surveys. Further, the survey estimates of number of workers are sometimes found to diverge significantly from the corresponding estimates as per the alternative sources.

8.3.13 An indicative list of crucial data that are still lacking for the Sector is as follows:

(a) Inadequacy of data on Rural Roads;

(b) Quality of roads at various levels such as National Highways, State Highways, Rural Roads;

(c) Paucity of information on passenger transportation in the private sector. (A similar situation prevails for freight transport by the private sector, which accounts for almost 98 per cent of all freight carried on roads. It is true that origin-destination surveys are conducted by RITES every five years and these offer some information on freight transport by roads. However, since such surveys can only be conducted at infrequent intervals data are not available consistently on a regular basis.);

(d) Financial data on State Road Transport Undertakings at the level of divisions, fuel efficiency on roads;

(e) Physical and financial productivity indicators for the freight and passenger transport such as age profile of vehicles including average age of vehicle, occupancy ratio, manpower employed per bus, fuel efficiency or average kilometre run per litre of diesel, revenue, cost incurred, net profit and loss (total as well as per kilometre) per vehicle, expenditure incurred on fuel, lubricants, etc.;

(f) Ownership pattern of transport operators, their level of operations, motor vehicles on road; and

(g) Speed of traffic movement, especially in cities; accident rates, casualty figures, etc.

Conclusions and Recommendations

8.3.14 There remain major gaps in the availability of data on road and road transport especially passenger and freight transport in the private sector. There is an urgent need to bridge these gaps. The inadequacy of data on Rural Roads is due to the multiplicity of agencies involved in the rural road construction programme. Collection of data on Rural Roads from the multiple agencies is not an easy task. Thus, there is a need to streamline the collection of data. In this context, it may be stated that the PWDs of the States and Union Territories should be responsible for collection of data on Rural as well as Other Roads. There should be proper statistical cells within the PWDs, which should coordinate with various agencies and collect, compile and disseminate the required statistics. All data so collected should be made available to the Transport Research Wing of the Ministry of Road Transport and Highways that may then take steps to publish these. Further, the overall responsibility for collection, compilation, and dissemination of data on the construction of Rural as well as Other Roads should rest with the State PWD Secretaries.

8.3.15 In the Road Transport Sector, there is an empirical need for evolving a proper data collection system to strengthen the database. A mechanism to improve the database, by way of compulsory furnishing of essential statistics at the check posts and their processing on an appropriate sampling basis, should be evolved. Collection of data relating to the bigger units in the Road Transport Sector, other than those belonging to the public sector, through the Survey of Non-Manufacturing Industries (SNMI) recommended by the Commission would also be a significant step in the improvement of the database. While designing the schedules for the SNMI, steps should be taken to include the items for which there exist data gaps at present.

8.3.16 Once the scheme of the SNMI is launched, the Follow-up Enterprise Surveys of the MoS&PI should be re-designed to collect data from the residual category of Road Transport Sector units (i.e. other than public sector units and units covered through the SNMI). While doing so, efforts should be made to fill up the existing data gaps by including the items for which data gaps have been identified.

8.3.17 To further improve the database, regular maintenance by enforcement and submission of truck operations logbook by the truck operators to their respective Regional Transport Offices (RTOs) could be a feasible solution. In other words, imposing the condition of compulsory furnishing of certain statistics by the transport operators at the time of renewal of licensing should be seriously tried. For this purpose, maintenance of a logbook with data on important items such as receipts and expenditure, passengers and goods carried, average time spent per day and per month, etc. by the transport operators is necessary. Statistical cells in the RTOs with proper infrastructural facilities should be set up to compile such data furnished by the transport operators at the time of renewal of licensing and disseminate the same according to a prescribed format, to be finalised by keeping in view the data requirements for national accounting.

8.3.18 The Commission recommends that:

(i) Statistical cells within the PWDs should be set up, which should coordinate with various agencies in the matter of collection, compilation and dissemination of Road Statistics. Such data collected by the PWDs should be made available to the Transport Research Wing of the Ministry of Road Transport and Highways that should then take steps to publish these.

(ii) Detailed data with respect to the bigger and/or significant Road Transport Sector units should be collected through the proposed Survey of Non-Manufacturing Industries (SNMI).

(iii) Improved method of data collection should be tried by the MoS&PI to generate the Road Transport Statistics through both the SNMI and the Follow-up Enterprise Surveys that should exclude enterprises covered under the SNMI.

(iv) A mechanism should be evolved to improve the Road Transport Statistics by way of compulsory furnishing of essential information at the check posts and their processing on an appropriate sampling basis.

(v) Compulsory furnishing of certain minimum statistics by the transport operators at the time of renewal of licensing should be enforced. Statistical cells in the RTOs, with proper infrastructural facilities, should be set up to compile the data furnished by the transport operators at the time of renewal of licensing and disseminate the same in a prescribed format.

Airways

Current Status

8.3.19 Air transport has come a long way from being a state monopoly to a field operated by numerous players. As far as Indian Airlines and Air India are concerned, a substantial amount of data is available. Coverage of data includes aircraft hours flown, available seat kilometres, revenue, passenger kilometres performed, number of passengers carried, freight carried, mail carried as well as volume of cargo embarked and disembarked. However, there is paucity of data as far as other airlines are concerned.

Data Requirements

8.3.20 The following are the data requirements of this sector of transport:

(a) Quantity of infrastructure facilities, such as length of runaways and air traffic controlling systems. Such information needs to be available on a zonal or State-level basis;

(b) Level of passenger transport by airlines; origin-destination of passenger traffic, which will reveal the density of passenger traffic on various routes;

(c) Fuel and other efficiency indicators by airlines;

(d) Financial indicators;

(e) Share of international and domestic passenger traffic by zone, by State and by airlines;

(f) Operating details of aircrafts including utilisation, age, number of employees per aircraft, etc.;

(g) Age composition of fleet by airlines;

(h) Passenger-handling capacity and actual performance at each airport; and

(i) Details of freight transported by air.

Recommendations

8.3.21 The Commission recommends that:

(i) The data-collection system for the private sector should be strengthened and identified data gaps be addressed.

(ii) The Director General, Civil Aviation should publish the data on airways for both the nationalised and private airlines.

Waterways

Current status

8.3.22 Water transport can be divided into two categories: international water transport and domestic water transport, including inland water transport. As far as the infrastructure is concerned, that is ports and port facilities, these are owned by the Government with increasing participation of private sector as a part of the ongoing process of liberalisation. However, transport operations exhibit a mix of private and public operators. There is a reasonably good database of port statistics and shipping statistics. In the case of Inland Water Transport (IWT) Statistics, the database is not sound. The data availability along with the sources for provision of such data are mentioned in Annexe 8.1. The following data are important for this Sector:

(a) Port facilities such as capacity, number of berths, cargo-moving equipment, etc. available at each port;

(b) Efficiency indicators for use of berths and equipment in terms of cargo and ships handled;

(c) Turn around time of ships at each port;

(d) Quantum of cargo handled at the level of disaggregation by commodity, by ownership, etc.; inter-port cargo movement; extent of containerisation; etc.;

(e) Movement of container cargo by vessel type, by trans-shipment port, by origin and final destination;

(f) Efficiency indicators for port labour;

(g) Division between international and coastal shipping;

(h) Performance of shipping companies operating international and coastal routes;

(i) Passenger and freight movement on inland water transport, number of vessels operated by type, income and expenditure from IWT operations;

(j) Unit cost of movement of goods and passenger traffic by various modes of transport;

(k) Safety statistics; and

(l) Environmental pollution caused by the industry.

Data gaps

8.3.23 The follow data gaps exist in this Sector:

Box 8.2: Data Gaps in Water Transport

(A)Port Statistics	Cost of handling containers from the user point of view and for port use; Single productivity indicator to assess the overall performance of each port; Coastal movement of cargo from port to port (origin and destination); Movement of container cargo by vessel type, by trans-shipment port, by origin and final destination; Safety statistics.
(B)Indian Shipping Statistics	Financial performance indicators of the private shipping companies; Operational indicators (voyages, cargo, capacity or space utilisation); Freight rates for selected Indian import and export commodities for all the shipping companies; Safety statistics; Environmental pollution caused by the industry; Incomplete coverage of the private sector ship building and repair activities.
(C)Inland Water Transport	Non-availability of timely data and lack of complete coverage on the IWT operations by the State Governments; Lack of coverage of private sector operations; Safety statistics.

Recommendations

8.3.24 For improvement of the database, the Commission recommends the following:

(i) The prevalent statistical system for the sector should be modernised through application of advanced Information Technology.

(ii) A mechanism should be evolved by the Ministry of Shipping to collect data from individual shipping companies, which own one or two vessels in most of the cases.

(iii) Full-fledged statistical cells should be created in the Inland Water Transport (IWT) Directorates of the State Governments to strengthen the database for IWT Statistics.

(iv) Such statistical cells should be charged with the responsibilities of collection, processing, compilation and dissemination of IWT data not only for the IWT vessels operated by the IWT Directorate but also for the vessels as well as country crafts owned and operated by private companies and individuals.

(v) The Ministry of Shipping should be made responsible for publishing data related to this IWT Sector.

Telecommunications

Current Status

8.3.25 Telecommunications has emerged as a very rapidly-growing segment of infrastructure. Most modern communication systems are telecom-based and the strength of this Sector is vital for the growth of the economy. This segment has also witnessed the presence of numerous private players along with the public sector and this will pose problems of data compilation. Since much of telecom is interfaced with computers, data on computer and computer-related activities would also be relevant here.

8.3.26 Even though the Department of Telecommunications (DOT) has been restructured and the functions of the Department of Telecom Services (DTS) and the Department of Telecom

Operations (DTO) have been transferred with effect from 1 October, 2000 to a newly-created corporate entity called Bharat Sanchar Nigam Limited, there is still a decentralised system of collection of data for both the Department of Telecommunications and Department of Telecom Services. Different divisions or cells in these departments and the statistical cell under the Economic Research Unit (ERU) in the DOT are the main sources of data pertaining to the Sector. Collection of data for the compilation and publication of statistics in the statistical cell is undertaken through the sets of returns received monthly and annually from the various telecom circles, telecom districts and other units of the departments. The database of these departments includes equipped capacity, working connections, rural telephony, revenue statistics, telephone traffic, telegraph traffic, staff statistics, etc.

Data Requirements

8.3.27 This sub-sector is faced with the non-availability of reliable data regarding household subscribers of telephone, their economic status or activity, expenditure on telecom services by them, PC or Internet users, cellular mobile phone subscribers and other users of value-added services. Also there is lack of a well-established system for collection of data relating to the private sector entering into telecom sector such as: their activities, performance – both physical and financial; areas, villages, and subscribers covered by them; investment made; tariff structure; manpower employed; etc.

8.3.28 Given the rapid changes that are taking place in telecom, it is to be expected that the data requirements will continue to evolve over time. The following data requirement list is proposed with the usual caveat that it is merely indicative:

(a) Length of telephone lines, number of telephone connections, e-mail connections;

(b) Density of telephone and e-mail;

(c) Indicators of physical and financial efficiency of all telecom providers across zones and States;

(d) Penetration of computers including number of personal computers, number of cyber cafes, number of users of computers at cyber cafes;

(e) Information on Internet Service Providers, such as number of subscribers, subscription rates;

(f) Information on Mobile Telephone Service providers, such as total number of subscribers, rates for calls; and

(g) Details of local and long distance (including international) calls, and revenue generation from each category.

Recommendations

8.3.29 The Commission recommends that:

(i) With the opening up of telecom services to the private service providers, they should be mandated to furnish the required information to the Department of Telecommunications on a regular basis.

(ii) The overall responsibility of publishing telecom data for both the public and private sectors should rest with the Department of Telecommunications.

Electricity

Current Status

8.3.30 The Central Electricity Authority (CEA) is the main source of information on Electricity Statistics. There is no statistical cell in the CEA that is responsible for dissemination of

the requisite statistics. The main publication of the CEA is the *Public Electricity Supply: All India Statistics*. This publication gives information on the following:

- Organisational structure of the Electricity Sector
- Generating capacity at the all-India level, State-wise, department-wise, etc.
- Actual generation of electricity
- Generating capacity, generation, installed capacity, etc. of captive plants
- Electric power supply and system losses
- Transmission and distribution of electricity
- Utilisation of electricity
- Consumers of electricity and connected load
- Urban and rural electrification.

8.3.31 The other important publication of the CEA is the *Electric Power Survey of India.* The latest available is the Fifteenth Survey for the period 1998-99 till 2001-02, which was published in 1995. This publication gives information on:

(a) Forecast of electricity requirement up to 2001-02: All-India (Public Utilities and Non-utility power stations);

(b) Forecast of electricity requirement of Public Utilities up to 2001-02;

(c) Forecast of electricity requirement of licensees and other utilities up to 2001-02; and

(d) Long-term forecast up to 2011-12.

Data Gaps

8.3.32 The following problems exist in this Sector:

(a) Major data gaps on captive power generation;

(b) Delay in publication of data. The latest year for which data are available is 1996-97;

(c) Hesitation of regional headquarters to send preliminary or tentative data. Data are not sent to the CEA till they have been verified and vetted by the regional headquarters;

(d) Lack of a proper mechanism to get information on the closed units immediately after they cease to operate;

(e) Non-response from factories. Factories fear that the data supplied by them may be used for tax purposes. In such case, either factories do not supply data at all or, if forced to do so, supply incorrect data;

(f) Data collection problems due to growing privatisation of the Sector;

(g) Problems in data collection from decentralised locations due to division of State Electricity Boards; and

(h) Delay at the level of sending data to the CEA.

Conclusions and Recommendations

8.3.33 Electricity is a crucial component of the infrastructure segment and it is important that data availability here be reliable and timely. The need for timely release of statistics has further become important in view of the fact that the Electricity Sector is now not being covered under the Annual Survey of Industries. The delays mentioned in the publication of *Public Electricity Supply: All India Statistics* are not justified. Efforts must also be made to increase the periodicity of this publication. As more and more data become available on a quarterly and monthly basis, the data of this Sector should keep pace. Further, as individual electricity producers come into the picture, data on their operations should also be available.

8.3.34 The financial position of the State Electricity Boards (SEBs) is crucial for electricity planning at the State level and also from the point of view of public finances of States. Detailed availability of the finances of SEBs should be available from one source rather than from diverse State-level sources. The Commission recommends that:

(i) The Central Electricity Authority (CEA) should remove the delays in release of Electricity Statistics.

(ii) The electricity authorities at the State and Union Territory level should publish the data for the electricity-generating units, including those in the private sector, under their respective jurisdictions.

(iii) State Governments under whose jurisdiction State Electricity Boards (SEBs) operate should be asked to collect data pertaining to the finances of the SEBs.

(iv) In order to improve the data coverage and timely dissemination of Electricity Statistics, the CEA should strengthen its existing cell with statistical expertise.

Housing Services

Current Status

8.3.35 An important component of Urban Infrastructure is housing. This is not to deny the importance of housing in rural areas, but generally urban areas in developing countries face severe housing shortages.

8.3.36 There are a number of agencies, which are directly or indirectly concerned with the collection of data on various aspects of housing in India. The principal agencies collecting data on housing and construction statistics are the National Buildings Organisation, Registrar General and Census Commissioner of India and NSSO.

8.3.37 The National Buildings Organisation (NBO) collects data on house building activities, both in the private and public sectors, in urban areas of the country and the prices of various building materials and wages of building labour from specified locations all over the country. In addition to these, the NBO collects data on building cost index, social housing, building permits and completion certificates issued, housing finance institutions, etc. The NBO also compiles data relating to shelter indicators, urban infrastructure, environment statistics, disaster management, etc. from various Central, State, local agencies and disseminates them to the planners and data users. The estimates of housing shortage, both at national and State levels are projected by the NBO. Further, the NBO is also engaged in data collection as required by the national and international agencies such as World Bank, United Nations Centre For Human Settlements (UNCHS), etc. Further, surveys and studies on the socio-economic aspects of housing are organised and conducted by the NBO.

8.3.38 The NSSO also conducts household surveys on socio-economic statistics covering housing conditions. The NSS 49th Round conducted during January to June 1993 is a comprehensive survey and it has covered several aspects of housing conditions.

8.3.39 Housing data are obtained from various sources. These are tabulated as follows:

Table 8.1: Key Sources of Housing Data

Data Type	*Source*	*Lowest Level of Aggregation*	*Periodicity*
No. of Census Houses	Census	Village and Urban Block	Decadal
Residential Fractions	Census	District	Decadal
Structure of Housing Stock by Material of Construction	Census, NSS	District (Census), State (NSS)	Decadal, Five yearly
Structure of Housing Stock	NBO	State	Yearly
Building Material Prices	NBO	Selected urban centres	Quarterly
Age of Housing Stock	NSS	State	Decadal
Labour Wages	NBO, Ministry of Labour	Selected urban centres	Quarterly
Material and Labour Constants	PWD, Field study	House: case study dependent	One time
Consumption Expenditure and Housing Investment	NSS, RBI, Field study	State	Decadal, NSS Round
Availability of Services	Census, NSS	District (Census), State (NSS)	Decadal, NSS round
Sectoral Employment	Census, NSS	District (Census), State (NSS)	Decadal, NSS round
Building Cost Index	NBO	City	Quarterly
Housing Investment	NBO	State	Yearly
Building Permits and Completion Certificates	NBO	State	Yearly
Social Housing	NBO	State	Yearly
Housing Shortage Estimates	NBO	State	Yearly
Urban Indicators	NBO	City or State	Ad hoc
Addition to Plinth and Floor Area	NBO	State or Agency	Yearly
Investment in Building Construction	NBO	State or Agency	Yearly
Addition to Housing Stock	NBO	State or Agency	Yearly

Data Gaps

8.3.40 One of the major limitations is the non-availability of housing data in terms of housing units. This apart, the following data gaps have been identified as far as housing is concerned:

(a) Access of housing units to facilities such as water supply, sanitation, etc.;

(b) Housing finance data from other than public sector finance companies;

(c) Data relating to additions made in housing stock by the industrial sector. (These used to be previously collected through Part III of the ASI schedule have now been discontinued.); and

(d) Information on housing stock in the sectors including slums, squatter settlements and unauthorised colonies.

8.3.41 The following data are also required by various agencies such as the Ministry of Urban Affairs and Employment:

- Number of single-woman or woman-headed household
- Shelterless population
- Age profile of housing stock
- Social group-wise classification of shelters
- Employment in construction section
- Wage structure in building industry
- Market rents data
- Share of housing in GDP.

Conclusions and Recommendations

8.3.42 The data requirements listed above should be collected on a regular basis through censuses and sample surveys. The local self-governments should also be involved in the compilation of Housing Statistics based on the house completion certificates. Where high frequency data cannot be collected, housing surveys should be carried out periodically preferably during the intervening period between two censuses. The frequency of such surveys should be at most 10 years, but more preferably every 5 years. Further, the collection mechanism of prices of building materials and wage rates should be examined by an expert group for suggesting improvements in the mechanism of data collection and dissemination. The Commission recommends that:

(i) The NSSO, NBO and Office of the Registrar General and Census Commissioner of India should take steps to bridge the data gaps on Housing Statistics through surveys and censuses.

(ii) The local self-governments should be involved in compilation of Housing Statistics based on the house completion certificates. The concerned Ministry in each of the State and Union Territory Governments should consolidate the information for the State or Union Territory and release the same.

(iii) An expert group should be set up by the NBO to examine the collection mechanism of prices of building materials and wage rates for suggesting improvements in the mechanism of data collection and dissemination.

Postal Services

Current Status

8.3.43 Government postal operations are under strain on account of competition from other delivery services. As in most situations, where the entry of private operators dilutes the quality of data available, so also in the case of postal services the process of data collection needs to recognise these changes. In this context, it is important that adequate information be collected regarding the level of operations of alternatives to postal services namely, courier services, which form a part of the Services Sector. The data availability on postal services should include:

(a) Registered and unregistered traffic;

(b) Revenue collected from different categories of postal services;

(c) The above data should be available zone-wise;

(d) Origin-destination of postal traffic; and

(e) Timeliness of delivery.

8.3.44 The main agency responsible for the compilation and release of Postal Statistics is the statistical section in the Department of Post. Primary data sources are the delivery post offices, major post offices of each of the 19 postal circles and all postal circles. The types of data compiled include traffic – registered and unregistered, average revenue of postal articles, foreign airmail and surface mail – traffic and category-wise staff statistics.

Deficiencies

8.3.45 A major problem faced by the Department of Post is in the estimation of unregistered traffic. At present, unregistered traffic estimates are based on the results of half-yearly enumeration of 28 days. They are found to be on the higher side keeping in view the revenue earned from these articles. Rationalisation of the procedure might yield more reliable results. The feasibility of estimating unregistered traffic by the residual method after deducting other revenues earned from the total revenue may also be explored and if necessary also by doing some type studies. It may be mentioned that the Department of Post is assisted by two institutions namely, (i) the Indian Institute of Applied Manpower Research (IAMR), and (ii) the Indian Statistical Institute (ISI) for developing a scientific method of statistical sampling for assessing the traffic of unregistered mail and co-relating the same with the revenue realised. A Committee has been constituted for examining the recommendations of the reports of these studies for necessary action.

8.3.46 There are very few statistical personnel in the Department of Post. In the absence of statistical units in the field, i.e. in the circle offices, there are not only delays in the release of statistics but also in the understanding of statistical terminologies. Thus there is a need to provide qualified statistical staff at least in the major postal circles apart from strengthening the training of field-level staff. Further, it is desirable to have an advanced dissemination system, which could probably be taken care of by introducing the latest Information Technologies. Increasingly letters, parcels, packets, etc. are being delivered by courier services. The number of such services is extremely large. There is a need to obtain information on the operations of at least the large courier companies to begin with.

Recommendations

8.3.47 The Commission recommends the following:

(i) The database on postal services should be strengthened by the Department of Post to have zone-wise data, including the data on revenue collected from different categories of postal services, origin-destination of postal traffic and timeliness of delivery.

(ii) In order to reduce delays in the release of statistics, qualified statistical staff should be provided at least in the major postal circles.

(iii) The system of dissemination of Postal Statistics should be improved by introducing the latest information technologies.

(iv) Information on the operations of courier services should also be collected through the proposed Survey of Non-Manufacturing Industries and Follow-up Enterprise Surveys.

Urban Infrastructure

8.3.48 The Commission made reference to one aspect of Urban Infrastructure above namely, housing. However, Urban Infrastructure has a wider connotation. The following aspects seem relevant, apart from housing and efforts be made to bridge any gaps.

- Urban transportation, including roads and railways
- Water supply

- Sanitation and sewerage
- Street lighting
- Electricity supply
- Communications including telecommunications, public phones, public fax services, public Internet, e-mail facilities, postal service, courier services, etc.
- Airports and air transportation
- Schooling facilities
- Public health facilities.

Current Status

8.3.49 The National Institute of Urban Affairs (NIUA), which has been periodically preparing the *Handbook* on *Urban Statistics,* gives the following information:

(a) Percentage of population covered with drinking water and sanitation facilities;

(b) Sources of finance for Urban Infrastructure;

(c) Urban Infrastructure finance, HUDCO release;

(d) HUDCO's commulative Urban Infrastructure sanctioned abstract (scheme-wise);

(e) HUDCO's integrated low-cost sanitation scheme sanctioned;

(f) Cost recovery of HUDCO's sanctioned water supply schemes;

(g) Urban water-supply programme: List of schemes approved under State Plan and LIC loan;

(h) World Bank, OECF and Japan aided water supply and sanitation projects;

(i) Estimates of per-capita investment norms at 1995 prices;

(j) Estimated infrastructure investment at 1990-91 prices;

(k) Revenue enhancements required for additional capital investments;

(l) Required aggregate incremental investment in infrastructure at 1995 prices;

(m) Required incremental investment for various Urban Infrastructure services;

(n) Investment requirement in Urban Infrastructure by size-class of towns;

(o) Pattern of investment on water supply and sanitation by public sector;

(p) Scheme-wise outlay and anticipated expenditure on water supply and sanitation;

(q) Outlay and expenditure on water supply and sanitation;

(r) Centrally-sponsored scheme for infrastructure development in mega cities; and

(s) Financial and physical progress of Centrally-sponsored schemes for infrastructure development in mega cities.

8.3.50 The *Handbook* has been published since 1993 and its periodicity is once in two years. There is an urgent need to access such information on an annual basis. In addition, the information on Urban Infrastructure is available in a dispersed form from the following sources:

- HUDCO (www.hudcoindia.com)
- Ministry of Urban Development and Poverty Alleviation (http://urbanindia.nic.in)
- Society for Development Studies (www.sdsindia.org)
- Planning Commission
- *Report of Zakaria Committee*
- Infrastructure Development and Finance Corporation
- Infrastructure Leasing And Financial Services (ILAFS)
- www.indiainfoline.com

Data gaps

8.3.51 The following data gaps exist:

(a) The existing database on Urban Infrastructure other than housing available in various agencies is generally based on schemes and projects. Such a database on the Urban Infrastructure cover information about only those towns, cities or specific project areas that are covered under a particular scheme or programme and do not cover the entire urban structure of all the towns or cities;

(b) The Town Directory brought out by the Census of India gives some information of facilities at the town level, but it is a decennial publication. By the time the data are made available they become obsolete;

(c) At the local level a lot of data on Urban Infrastructure is available with the line departments but efforts are not made by any agency to compile and publish the same at the town level at regular intervals;

(d) The overall picture regarding coverage under physical infrastructure like water supply, sewerage, drainage, etc. may be available at the national and State level either through estimation or extrapolation but the disaggregated picture at the town level particularly at the intra-city level is not available;

(e) While preparing the Master Plan or Development Plan, the State Town and Country Planning Departments and City Development authorities make efforts to collect data on various aspects including Urban Infrastructure. But this remains a one-time exercise to be undertaken once in 15-20 years, not to be updated with regular periodicity;

(f) Data on certain aspects such as urban land use patterns, urban environmental parameters, urban income and expenditure pattern at a disaggregated level are not readily available and neither are any efforts made to generate such data.

Conclusions and Recommendations

8.3.52 Data on Urban Infrastructure are not available from one comprehensive source. Further, most of the sources are private which makes the reliability and periodicity of the data inadequate. The Commission recommends that:

(i) An official publication on Urban Infrastructure Statistics should be brought out by the Ministry of Urban Development and Poverty Alleviation.

(ii) The publication should cover the identified data requirements, data gaps as well as other emerging requirements.

(iii) The States' Directorates of Economics and Statistics should vigorously pursue the programme of compiling and publishing Municipal Year Books.

Rural Infrastructure

8.3.53 Even though Urban Infrastructure is often the focus of attention, it is fair to see that the strain on such infrastructure could well be reduced by providing better Rural Infrastructure. This, it is apparent, will reduce the incentives for migration to urban areas. An inventory of data on the following aspects of Rural Infrastructure needs to be carried out so that gaps that are apparent must be removed as soon as possible:

- Rural transportation, for example, length of roads, distance from railway stations
- Supply of safe drinking water
- Sanitation and sewerage
- Canal networks for irrigation

- Electricity supply, for example, number of metered connections
- Communications facilities, for example, distance to nearest post office, availability of telephone connections
- Basic schooling facilities, for example, distance to nearest school, number of teachers, availability of permanent structure for classrooms
- Public health facilities, for example, distance to nearest hospital, community health-centre and sub-centre, number of beds, number of medical and para medical staff
- Watershed development, for example, expenditure by local Government on the activity
- Rural forestry, for example, expenditure by the local Government, area covered.

8.3.54 Much of the data listed above would be available in a dispersed form. This makes it difficult for researchers and policy makers to obtain a comprehensive picture of Rural Infrastructure.

Conclusions and Recommendations

8.3.55 Data on Rural Infrastructure are not available with one comprehensive source. The Commission recommends that:

(i) The possibility of bringing out a publication on Rural Infrastructure Statistics should be explored by the Ministry of Rural Development.

(ii) The publication should cover the identified data requirements, data gaps as well as other emerging requirements.

Energy Sector excluding Electricity

8.3.56 Even though the term infrastructure as defined here differs from the approach followed in the Economic Survey, it is important that attention is focused on the operation of at least some of the sectors considered by the Survey. These sectors are:

- Petroleum
- Coal
- Natural Gas
- Solar Energy
- Nuclear Energy.

Data Requirements

8.3.57 The following common list may be proposed for data requirements from each of the Sectors mentioned above. The data should be available, ideally, at frequencies greater than one year. Further, the data should be available on a zonal and State-wise basis.

(a) Production levels, both in public and private sectors (wherever relevant);

(b) Reserves available, appropriately divided into total availability and commercially recoverable;

(c) Indicators of physical and financial efficiency;

(d) Use pattern of energy produced by each Sector;

(e) Relative comparison of energy efficiency of usage and relative costs;

(f) Value of capital assets in each Sector.

Conclusions and Recommendations

8.3.58 Much of the data pertaining to diverse Energy Sectors (excluding electricity) would be available with the various agencies in charge of producing such energy. The Commission recommends that:

(i) Efforts should be made by the Ministry of Non-Conventional Energy (for Solar Energy); Ministry of Petroleum and Natural Gas (for Petroleum and Natural Gas); Department of Atomic Energy (for Nuclear Energy); and Ministry of Coal (for Coal) to provide data pertaining to Energy Sector (excluding electricity) to the Planning Commission which should then produce a comprehensive document covering the identified data requirements as well as other emerging requirements.

8.4 CONSTRUCTION OF INFRASTRUCTURE INDICES

8.4.1 There does not exist any official infrastructure index at the moment. However, there is a felt need for such an index and the creation of such an index may be an important input to policy-making as well as research. Thus apart from detailed data collection from a research and planning perspective, it may be useful to devise a summary measure of the state of infrastructure in the country. It is in this context that two types of indices are being proposed. The first index will provide a summary measure of the growth of infrastructure in the country. A comparison of the behaviour of this index with other aspects of the economy will yield insights into the gaps and lacunae that have emerged or are likely to emerge in the Infrastructure Sector. The second index being proposed is an utilisation index.

Infrastructure Index

8.4.2 The following items, only illustrative in nature, are being proposed for inclusion in the infrastructure index, the details of which are given in Annexe 8.2. The choice of items is governed by their correlation with productive activity. It is recognised that not all the items will have a strong correlation with productive activity. Thus it may be argued that the length of railway tracks will be more highly correlated with production than would be the signaling system or number of stations. This is not to deny that these items are important components of the railway facility. The point being made is that the categories to be included in the proposed index should exhibit co-movements with productive activity. These are:

- Length of railway tracks
- Length of roads (of appropriate quality)
- Length of runaways
- Number of berths at ports
- Number of telephone connections
- Transmission of electricity: length of cables
- Generation of electricity.

8.4.3 The creation of an index of the illustrative items listed above will require weights to be attached to each of the components. Once these weights have been determined the index may be computed by aggregating over the components. Annexe 8.2 gives details of the proposed approach to deriving weights.

8.4.4 As is usual, in the creation of an index, the Infrastructure Index will be normalised to equal 100 in the base year.

8.4.5 Depending on the components of the infrastructure, it will be possible to use the index number in a variety of ways. For instance, focusing on the transport sector will lead to an

index number only in terms of the following illustrative components: Length of railway tracks; Length of roads (of appropriate quality); Length of runaways; Number of berths at ports.

Infrastructure Utilisation Index

8.4.6 Depending on the theoretical position taken, one could argue that the creation of infrastructure capacity should take place in response to pressures coming from productive activities or, alternatively, creation of infrastructure capacity should precede any demands that may be placed on it. Whatever be the position taken, it is necessary from an empirical point of view to determine whether there is (a) slack in the utilisation of infrastructure facilities, or (b) congestion or shortages in the utilisation of infrastructure, or (c) optimal utilisation of infrastructure. The Infrastructure Utilisation Index is being proposed to precisely help in answering such questions.

8.4.7 It is obvious that any utilisation index will have to set up norms for the maximum permissible utilisation of an infrastructure facility. For instance, in the case of railway tracks there is, allowing for abundant safety, a maximum number of trains that can run per time period (say, a day). Any increase above this maximum will indicate critical shortages and a severe compromise on safety standards; a substantial gap between the maximum and actual utilisation will be indicative of a slack.

8.4.8 It will be necessary to determine the maximum permissible utilisation rate for each and every infrastructure facility that enters into the index. Expert engineering advice on this aspect will be necessary. Once the maximum rate has been determined the task of creating an index may be undertaken. The details for this index are given in Annexe 8.2. The maximum value of this index will be normalised to equal 100. The actual value of the index for any year will indicate the level of utilisation of the selected infrastructure facilities.

8.4.9 The coverage of this index will have to be determined very carefully. For instance, on some routes of the railways, such as Mumbai–Pune, the density of traffic may be so high as to yield a high utilisation rate. However, on certain other segments where density is not high the rate of utilisation may be much lower. A view will have to be taken by an expert committee regarding the exact scope and coverage of this index.

Conclusions and Recommendations

8.4.10 There is no doubt that the infrastructure indices will play a useful role in determining the availability of infrastructure in India as well as its utilisation. It is, therefore, suggested that two infrastructure indices be created, one a general index and the other a utilisation index. In order to determine the weighting pattern as well as the coverage and scope of the indices, a Special Committee should be set up by the Ministry of Statistics and Programme Implementation (MoS&PI) to look into the matter. Before the Committee can start its deliberations, a complete valuation of the capital stock in infrastructure activities may be undertaken. Other suggestions that may be implemented over a longer period are:

(a) *Increasing the scope of the infrastructure index:* It is likely that, initially, the coverage of infrastructure facilities to be included in the Index may have to be modest. There may be arguments for initially including only those facilities in the Index as are closely correlated with productive activities. However, as experience with respect to computation of the Index is accumulated it would be possible to expand its scope.

(b) *Updating the base year of the indices, possible every 5 years:* One of the major lacunae present for indices in India has been the lack of frequent revision of the base year. This tardiness is also likely to affect the indices proposed here unless special efforts are made to overcome this gap. The weighting pattern suggested for the

Infrastructure Index depends on the share of each facility in the infrastructure capital stock in the country. This is likely to undergo substantial change as investment in infrastructure picks up in the country. Hence it is important that the weighting pattern be revised every five years so that the index is representative of the actual state of affairs in this Sector.

8.4.11 The above activities have been placed under long-term recommendations in view of the fact that a learning process may be involved in the process of data collection as well in the construction of the index. Thus the Commission recommends that:

(i) For devising a summary measure of the state of infrastructure in the country, two suggested infrastructure indices – one being a general index and the other an utilisation index – should be constructed by the MoS&PI. A Special Committee should be set up by the MoS&PI to look into the details of construction of these indices.

(ii) Although coverage of infrastructure facilities to be included in the indices may be modest in the initial stage, its scope should be widened in a gradual manner.

(iii) The weighting pattern of the indices should be revised every five years so that the indices are representative of the actual state of affairs in the Sector.

Annexe 8.1

Data Availability and Sources of Port Statistics, Shipping Statistics and Inland Water Transport Statistics

A. Port Statistics

Data availability

- Port wise, commodity-wise capacity availability at major ports
- Performance of cargo handling equipments at major ports
- Time series data on port wise cargo traffic handled by major ports
- Port wise overseas and coastal traffic; import and export by country of origin and by country of destination for major ports
- Port wise time series data on passenger traffic at major ports
- Port wise container traffic - commodity wise and handling facilities for major ports
- Port wise data on performance for selected indicators such as average pre-berthing delay, average turn round time by type, percentage of idle time at berth by port, average berth occupancy, utilisation of cargo handling equipments at major ports
- Time series data - port wise on employment, revenue and expenditure, net and operating surplus, operating ratio, income, cost, surplus or deficit per tonne of cargo handled for major ports
- State-wise, commodity wise cargo and passenger traffic handled at minor and intermediate ports; overseas cargo handled by vessel ownership type
- Physical performance indicators for minor ports
- State wise data on employment at minor ports
- Minor port-wise equipments available

Sources

- Annual Administrative Report of Major Ports and Minor Ports
- Maritime states for Minor Ports Data
- Container Corporation of India
- India Ports Association
- Monthly Bulletin of Statistics

B. Shipping Statistics

Data availability

- Indian fleet of coastal and overseas ships by age, type
- Indian Shipping Tonnage – Age Profile – Shipping Corporation of India (SCI) and others
- Fleet owned by SCI – by type
- Share of fleet owned by SCI
- Growth of Indian shipping since independence
- Share of Indian Tonnage – Time series
- Growth of Indian Tonnage – Time series
- Growth of Indian Fleet - by type, size, age
- Growth of Indian Fleet - by company

(Annexe 8.1 Contd.)

- Net addition to Indian Shipping Fleet - overseas and coastal
- Financial Statistics of SCI
- Vessels, fixtures arranged and cargo handled by Trans chart
- Number of ships and quantity of cargo lifted by Indian Shipping Lines fixed by Trans chart
- Profitability of Indian Shipping Companies - by company and ship owner
- Book value of fleet – by company and ship owner
- Foreign exchange earnings and savings of Indian Shipping Companies
- Tanker freight rates - single voyage rates
- Dry bulk cargo freight rates
- World Sea borne trade etc.
- Ship building capacity of the company - by type and size, by company
- Ship order position - by type of vessels
- Ships under different stages of construction - company wise

Sources

- Major Ports (for overseas trade)
- Directorate General of Shipping
- Shipping Companies
- Lloyd's Register -World Fleet Statistics
- Lloyd's Register Shipping - Statistical Tables
- Indian Oil Corporation

C. Inland Water Transport (IWT) Statistics

Data availability

- State wise total length of important rivers and navigable length
- Water resources potential in the river basins of India and utilization
- State wise details of inland water resources of various types
- Time series data on income and expenditure of Central Inland Water Transport Corporation (CIWTC)
- Cargo carried and freight earned tonne-km performed by CIWTC at disaggregated level of commodity
- Source wise earnings of CIWTC
- Financial position of CIWTC – liabilities, assets, working capital
- Volume of cargo and number of passengers carried and freight/fare collected by companies
- Plan wise outlay and expenditure etc.

Sources

- State IWT Directorates
- Shipping Companies
- IWT Companies
- Central Water Commission
- Central Inland Water Transport Corporation
- Inland Waterways Authority of India
- Annual Bulletin of Transport Statistics for Europe and North America

Annexe 8.2

Construction of Infrastructure Indices

Infrastructure Index

1. The proposed Infrastructure Index will be based on items, which will be expected to have strong correlation with productive activity. Bearing this in mind the following illustrative activities are proposed for inclusion in the Index:

(i) Length of railway tracks (X_1)
(ii) Length of roads of appropriate quality (X_2)
(iii) Length of runaways (X_3)
(iv) Number of berths at ports (X_4)
(v) Number of telephone connections (X_5)
(vi) Transmission of electricity: length of cables (X_6)
(vii) Generation of electricity (X_7).

2. The ratio of the numerical value of an infrastructure facility (say in terms of kilometres of railway tracks) in year t to its numerical value in the base year (i.e. year 0) will be denoted by I_k (k=1….7). Thus,

$$I_k = X_k^t / X_k^0$$

(where X_k^t and X_k^0 denote values of X_k at time points 't' and '0' respectively).

3. The creation of an index based on the seven illustrative items listed above will require weights to be attached to each of the components. Once these weights have been determined the index may be computed by a simple weighted aggregation. A possible way of determining weights is to base them on the value of capital stock of each of the components. It may be noted that valuation of capital stock is an important data collection activity, which will have to be undertaken. Denoting the value of capital stock of each facility as $'k_i'$, i =1….7, the weight, w_i, for each will be given by:

$$w_i = k_i / \sum_{i=1}^{7} k_i \quad i = 1.....7 .$$

4. The value of capital stock and the associated weight will have to be computed for a base year, which would need to be periodically revised, so as to reflect the changing pattern of infrastructure investment in the country. Once the weights have been computed, the aggregation will proceed as:

$$\text{Infrastructure Index} = w_1I_1 + w_2I_2 + w_3I_3 + w_4I_4 + w_5I_5 + w_6I_6 + w_7I_7.$$

5. As is usual in the creation of an index, the Infrastructure Index will be normalised to equal 100 in the base year. For subsequent years, a change in any one or more of the ratios I_k will be reflected in a change in Infrastructure Index.

6. Depending on the components of the infrastructure, it will be possible to define the index in a variety of ways. For instance, focusing on the transport sector will lead to an index only in terms of the following components: Length of railway tracks (X_1); Length of roads of appropriate quality (X_2); Length of runaways (X_3); Number of berths at ports (X_4).

(Annexe 8.2 contd.)

Infrastructure Utilisation Index

7. The Infrastructure Utilisation Index will have to set up norms for the maximum permissible utilisation of an infrastructure facility. For instance, in the case of railway tracks there is, allowing for abundant safety, a maximum number of trains that can run per time period (say, a day). Any increase above this maximum will indicate critical shortages and severe compromise on safety; a substantial gap between the maximum and actual utilisation will be indicative of a slack.

8. The ratio of actual utilisation (A_k) of a facility to the maximum permissible utilisation (M_k) will be given by:

$$U_k = A_k/M_k, \quad k=1\ldots.7.$$

9. Using the weights proposed above will lead to the following Infrastructure Utilisation Index:

$$\text{Utilisation Index} = w_1U_1 + w_2U_2 + w_3U_3 + w_4U_4 + w_5U_5 + w_6U_6 + w_7U_7.$$

10. The maximum value of this index will be normalised to equal 100. The actual value of an index for any year will indicate the level of utilisation of the selected infrastructure facilities.

9 SOCIO-ECONOMIC STATISTICS

9.1 INTRODUCTION

9.1.1 A sound system of Social Sector Statistics is vital to the effective development of social policy, to informed decision-making on policy issues and for evaluation of the impact of social and economic polices. Inadequacy in the system of collection and compilation of Social Statistics generated to aid the planners and policy makers can therefore constitute a major impediment to effective social development of the country. The importance of the linkages between policy development and Social Statistics points to the need for greater national priority to be given to Social Statistics. This calls for better partnership between the statisticians, the National Statistical Office and the policy makers to ensure that statistical objectives and priorities are focused on providing the data foundations necessary for effective social policy development.

9.1.2 Socio-economic Statistics thus form an important component in the development of the country and include a vast array of information on health and disease; literacy and education; standard of living and poverty; labour force and employment; status of women and gender empowerment; population parameters relevant to fertility, mortality and migration; ecology and environmental protection. Timely collection of appropriate, adequate and reliable data on the above dimensions and proper use of this in planning, implementation, monitoring, evaluation and redesign of various developmental programmes is absolutely essential if the country has to progress more rapidly and join the ranks of the developed countries in the near future.

9.1.3 It is a matter of great concern that India is ranked as 115 in the index of Human Development among the 162 countries studied by the United Nations Development Programme (UNDP) in their Report published in 2001, while Sri Lanka and China rank as 81 and 87 respectively. The Commission felt that if proper redesigning of the various education, public health, population stabilisation, rural development and poverty alleviation programmes are made on the basis of actually prevailing conditions in different areas and monitored properly the country can leap frog and substantially improve its ranking in the HDI. The recent improvements in the literacy levels of the population reported in the Census 2001 wherein the literacy rates of the population aged 7 and above increased from 52.2 per cent in 1991 to 65.4 per cent in 2001 augur well for development in the Social Sector.

9.1.4 The National Statistical Commission identified certain broad areas of Socio-economic Statistics namely, Population and Basic Statistics at the local levels, Health and Family Welfare Statistics, Labour and Employment Statistics, Education Statistics, Gender Statistics and Environment Statistics. Aspects related to Consumption Surveys and Levels of Living were examined and the issues that needed future consideration have also been presented. In India, the concerned ministries and departments of the Union Government are engaged in the collection, compilation and dissemination of Socio-economic Statistics through the corresponding departments in the State Governments in prescribed formats. Many of the data series are a by-product of the general administration of the States based on the records of the concerned offices, as also a product of the administration of particular Acts of the Government and Rules framed under them. This system generates data on a wide range of subjects in the Social Sector.

9.1.5 The Commission found that the major deficiencies in these areas are attributable largely to the collapse of the Administrative Statistical System. Routine data collection on schools, students enrolled, hospitals, medical and paramedical personnel, births and deaths

occurring in the population, labour and employment, etc. have been neglected as the value of timely and reliable data for effective policy formulation and programme implementation has not been appreciated. The Commission has noted with concern the delay in bringing out periodical statistical reports and publications by various ministries and departments in the Social Sector. From the Population Census, Education, Health or Labour Statistics, delays predominate with a time lag ranging from 5 to 10 years in some cases, defeating the very purpose of the exercise. As a result, the data has no more than a historical value. This situation needs immediate correction and accordingly, the Commission recommends that all the concerned ministries and departments at the Centre and in the States should take firm steps to clear the backlog of publications in a time bound manner so that in the matter of data collection, compilation and publication the most recent information is available.

9.1.6 Increasing requirement and demand is surfacing for decentralised databases on population size along with its characteristics for purposes of micro level planning in various development programmes initiated following the democratic decentralisation process set in motion by the 73rd and 74th Constitutional amendments that gave greater responsibilities and powers to the *panchayats* and nagar palikas. Therefore, the thrust of the recommendations is on improving the existing mechanism of administrative data collection with the trust and responsibility largely placed in the concerned agencies to compile needed data at as disaggregated a level as possible.

9.1.7 The Commission was of the view that the recent advances in communication technology in the compilation, storage, retrieval, transmission and analysis of statistical data should be fully exploited for the proper understanding of conditions in the above mentioned areas at the local level and the programmes of social, health, education and development should be appropriately designed, implemented and monitored. The National Statistical System should assist the various developmental agencies in this challenging Task. The Commission recommended the necessity for a Statistical Assistant provided with a networked personal computer (PC) in each block headquarter (*tehsil* or *thana*). This Statistical Assistant should be trained in data entry, simple database systems, tabulation and data transmission to higher authorities in appropriately summarised pre-designed format.

9.1.8 While reviewing the functions of the Central Statistical Organisation (CSO) with reference to different sectors of the economy, the High Level Evaluation Committee (1983) under the Chairmanship of Professor A.M. Khusro, brought to light important data gaps in Social Sector Statistics and made recommendations to improve the database required for Social Sector planning and for assessing the impact of social and welfare measures launched by the Government. The recent Workshop on Modernisation of the Statistical System in India (1998) considered various issues in the development of Social Sector databases and identified measures required to improve the system. The Commission also benefited from the interactions with the representatives of the Central ministries and departments and of the State Governments in the Conference of the Central and State Statistical Organisations (October, 2000) and from the views expressed in the meeting of the Commission with the Chief Secretaries of the States on 20 June 2001.

9.1.9 The National Statistical Commission feels that a vigilant data collection, compilation and dissemination mechanism would ensure timely interventions and introducing corrective measures to tackle social problems requiring the immediate attention of policy makers. In this connection it is pertinent to mention that the recently, released provisional results of Census 2001 have revealed that the population has grown at a faster rate than estimated and the sex ratio in the age group 0-6 years has declined alarmingly during the last decade from 945 to 927. Had the Civil Registration System in the country been efficient in covering all births and deaths and bringing out data in time, it would have been possible to introduce necessary preventive measures in time. The Commission in the course of its working has duly considered the findings and

recommendations of the various Committees constituted and studies conducted in the past as also the views and suggestions of ministries at the Centre and of the States. The Commission has, in the light of prevailing status of Social Sector Statistics, attempted a fresh analysis of the system focusing its attention on identification of deficiencies and the remedial measures needed to overcome them.

9.1.10 Under Socio-economic Statistics various subject areas as indicated above have been examined in detail. As elsewhere, the approach generally followed is to first review the current status in respect of each of these areas, then to highlight the major deficiencies and finally, to make recommendations for improvement. As much of the responsibility for producing timely, credible and adequate statistics lies with the administrative system both at the Centre and in the States, the powers and responsibilities vested in it for their timely collection, analysis and dissemination should be used towards achievement of this end.

9.2 POPULATION AND BASIC STATISTICS AT THE LOCAL LEVEL

A. POPULATION CENSUS

9.2.1 The Population Census of India, conducted every ten years, is the most comprehensive source of information on the size, distribution, living conditions and demographic characteristics of the population. It is also an important source of the religious, linguistic and cultural profiles of the people. It serves therefore, both as a tool of the State polices and as a means for understanding the socio-economic transformation of the society, economy and polity of the nation. The census of a country is a valued symbol of the Nation State as a concept.

9.2.2 In India, a census over different parts at different time points was first conducted during the period 1867-72, being known as the Census of 1872. However, since 1881 a Population Census has been conducted in the country regularly every ten years and the Census 2001 is the 14th and the latest in the series. With each census the scope and the coverage has been enlarged, particularly since the Census 1961, in order to provide meaningful information for developmental planning as also to make it more responsive to the present day requirements. The provisional totals of the Census 2001 conducted during February-March 2001 have been released on 26 March 2001 and have placed India's population at 1027 million on 1 March 2001. Provisional totals of the population at the district level, by sex, in broad age categories 0 to 6 and 7+, literate and illiterates among men and women aged 7 and above are already available for all the States and UTs.

Current Status of Census System

9.2.3 The Population Census is a Union subject and the Ministry of Home Affairs is in charge of this subject. It is listed at serial No. 69 in the seventh schedule of Article 256 of the Constitution of India. The Population Census is taken as per the provisions of the Census Act, 1948, which empowers the Central Government to conduct a Census of the population of the country after duly notifying it. The Act places a legal obligation upon the public to cooperate and give truthful answers and also places a legal obligation upon the enumerator to record the responses faithfully. The Act guarantees confidentiality of information to the individuals. The responsibility to conduct the decennial Population Census under the Census Act lies with the Office of the Registrar General and Census Commissioner, India. Though the Census is a Union subject, the actual conduct of the Indian census has always been the joint endeavour of both Central and State Governments. The entire field operation, which includes house listing and population enumeration are organised through the general administrative machinery of the States at various levels. At the State and UT level, the Director of Census Operations appointed under

the Census Act is responsible for organising and supervising the census operation within his State and UT.

9.2.4 The census is the only comprehensive source of demographic information right up to the lowest levels. The information collected includes details of the census house, its status residential or non-residential, amenities, information on households and the occupants such as sex, age, marital status, religion, mother tongue and language, scheduled caste, scheduled tribe, literacy, educational level attained, place of birth and past residence, economic activity, migration, fertility and information collected occasionally through questions included to understand specific problems such as disability, ex-servicemen and pensioners. The Population Census thus gives a detailed picture of the national economy and of society; it's various administrative units like States or UTs, districts, *tehsils* or *talukas* or *anchals*, etc. and for each city, town and village with changes over time. It generates a wealth of information, which is utilised by the country for planning purposes, determining the seats in the Lok Sabha and the State Legislatures, delimitation of electoral boundaries and for various types of developmental programmes. In the era of decentralised planning, the census has the potential to provide a much-needed database to formulate programme and polices at the local level.

9.2.5 The results of the Population Census data are published in various tables categorised into six broad categories indicating the nature of topics covered in each series. These are:

A Series:	General Population Tables
B Series:	General Economic Tables
C Series:	Social and Cultural Tables
D Series:	Migration Tables
F Series:	Fertility Tables
H Series:	Tables on Houses and Household Amenities.

9.2.6 In addition, the census has been generating a number of special tables relating to the scheduled castes and the schedules tribes. These form the SC-Series and the ST-Series of the tabulation plan. In the Census1991, at the request of the Ministry of Defence, two questions were canvassed for the ex-servicemen. Consequently, special tables for ex-servicemen have also been generated in this census.

Deficiencies

9.2.7 The Population Census of a country of the size of India is a gigantic exercise and requires enormous efforts from the Central and State Governments, the field enumerators, supervisors and the public at large. Since its inception in 1872, the conduct of census has greatly improved in terms of content, coverage, quality and speedy release of results. However, this large-scale decadal data gathering exercise in the country, undertaken at a huge cost and effort should deliver results more efficiently and speedily. Some of the deficiencies in conducting the Population Census in India are discussed below:

Delays in Processing

9.2.8 Even though the first results in the form of provisional population totals on limited data such as population size by sex in the broad age categories 0 to 6 and 7+, density, and literacy among those aged 7+ are generally released soon after the completion of fieldwork, (for Census 2001, this has been done within a month), undue delay in the release of all final tables undermines the immense utility of this gigantic exercise. To illustrate, the data on literacy for the age 15 years and above, which is the internationally accepted minimum age for data on literacy were available only after a gap of 4 to 5 years after the conduct of census in the past. It may be mentioned that the world's largest population count conducted recently in November 2000 by China, released final population totals in four months. The US Population Census conducted in

April 2000 has been releasing data, which are all final, starting from December 2000. The delay in release of census data, which can be considered as final, has been one of the most serious drawbacks in the past. Even for the Indian Census 2001, the data release-schedule of final totals has not been announced.

Concepts and Definitions

9.2.9 The concepts and definitions used in the Population Census have often changed in the past to enhance the coverage and sometimes because of the need to adopt standardised concepts and definitions. For example, the definitions of economic activity, of workers and non-workers have been improved. The definition of economic activity was expanded in Census 1991 and has been further expanded in Census 2001 to include certain non-market activities, thus bringing it closer to the ILO definition. This however, poses problems in comparability of data from one census to another, as comparable data are not published to study the effect of the improved definition.

Quality Aspects and Post Enumeration Check Methodology

9.2.10 Though the data collected over successive censuses has become more accurate and reliable in quality, still discrepancies do creep in due to a lack of technically qualified persons, poor response from the respondents, illiteracy of the masses, a widely scattered population, lack of adequate financial resources, etc. The quality of the census data therefore, needs to be ensured through better training of the enumerators in the concepts and definitions used, making more aids available to the enumerators to facilitate probing and a vigilant supervisory mechanism to reduce the content and coverage errors as far as possible. The Post Enumeration Check (PEC) is carried out with the objective of estimating the coverage errors in the census of houses and population and to get an estimate of the extent of content error. The sampling design used for PEC is however, quite old and needs a fresh look. Further, the conduct of PEC by the State Government staff raises some doubt on the integrity of the PEC, which should better, be entrusted to an independent agency.

Non-Tabulation of certain collected information

9.2.11 In every Population Census, valuable data are collected during the house listing operation through the household schedule. However, some of the information, which would otherwise throw light on important socio-economic and cultural aspects, even though collected, is not released to the public. Certain data, if released, at further disaggregated levels would be very useful for meeting district and local planning needs.

9.2.12 To illustrate, the data on religion, caste and language, cross-classified by literacy, work and workers categories and migration is not published. These data would throw considerable light on the backwardness or otherwise of people belonging to different religious groups and beliefs, though one realises that these questions are quite sensitive. It is better to face the facts courageously rather than shying away from them. Again information on migration of persons belonging to the SC/ST categories from rural and urban areas would enrich the stock of socially relevant information. It could be analysed, for example, as to whether distress migration is due to natural calamities and/or social discrimination, which is still prevalent especially in rural areas. Similarly, the information on persons unemployed, cross-tabulated with educational level both for rural and urban areas are given for age 15 years and above only. The same information for children between 5-14 years would reveal the extent of child labour, which could be useful information for policy makers.

9.2.13 Most of the tables that relate to fertility are presented at the State level only, though these data have immense value at the district level. Similarly, data on scientific and technical personnel cross-classified across various parameters such as sector of work, age, sex, etc. is also

available at the State level only. The presentation of these data not only at the district level but also at blocks, towns and cities is highly desirable as the increase of unemployment, mismatch between specialisation and job and also influx of migrants to urban centres and metropolis are quite evident but have to be studied and quantified. The data on beggars, prostitutes, and others who are engaged in "non-economic activities" are clubbed together and it is not possible to assess the dimensions of these social problems.

Census Organisation

9.2.14 For a country of the size of India, with a decentralised set up the conduct of census is a mammoth task and requires mobilisation of huge administrative machinery. Over the years, the population of the country has been growing at an alarming rate and poses a challenge to the Office of the Registrar General and Census Commissioner, India, in taking this decadal exercise. Therefore, to confine the burden of this responsibility to a single Joint Secretary sets limitations for the conduct of this statutory exercise that requires considerable advance planning, coordination with States and release and analysis of census results. There is a need to strengthen the organisational set up for conduct of Population Census.

Conclusions and Recommendations

9.2.15 The census of India is a massive exercise involving both the Central and the State Governments and is conducted through a vast army of enumerators, supervisors, technical personnel and other officials with the cooperation of the Indian population. More than 2 million persons are known to have been involved in the latest census operations. The exercise involves expenditure running into crores of rupees incurred by the Central and the State Governments by way of staff, office resources and infrastructure. It is the most elaborate data-gathering exercise in the country that can be undertaken only once in a decade and has to serve as a reliable data source providing vital benchmark data for a long time to come. Population Statistics as collected through the census would be a component of the set of 'Core Statistics' and the proposed high-level statistical policy-making body once established would formulate necessary guidelines as envisaged in its functions with regard to 'Core Statistics' including Population Census. It is therefore, essential that such a unique national operation should deliver results effectively, in time as well as meet the increasingly high expectations, being placed on it based on the high standards achieved in the past.

9.2.16 After the 73rd and 74th constitutional amendments passed by the Parliament in 1992, the Population Census data has immense potential to serve the planning and development data needs of the *panchayati raj* institutions at the grass roots level. The process of democratic decentralisation set in motion by the above Acts of Parliament have transferred responsibility for 29 items including primary health care, primary education, family planning and minor developmental works to the elected local bodies. State Governments have begun the process of transferring funds to the *panchayati raj* Institutions and nagar palikas to enable them implement these activities. In this changed context, the census must respond with urgency to the data needs at the district, block, *panchayat* and village levels starting with the recently collected Census 2001 data. The Commission therefore recommends:

(i) A timetable for the conduct of various activities of the Population Census right from preparatory work, enumeration work, data processing and tabulation should be finalised sufficiently well in advance and adhered to strictly. To begin with, the plan of release of tables of the Census 2001 must be drastically changed and the census organisation must give the highest priority to speedy data entry and processing of the Census 2001 to bring out all the final tables within a period of three years. Similar timetable should be prepared for all future decennial population censuses. For

achieving this task, necessary help from the Public Sector Undertakings and the Private Sector should be taken.

(ii) The census organisation must accord utmost priority for modernising the entire census operations by acquiring modern processing equipments and utilising the latest technological advancements in the field of information technology and printing for speedier processing and dissemination of census results. The highest priority should be given to tabulate as much data as possible at the district and block levels. These data should be made available to the rural and urban local authorities and district planning authorities without much delay so that programmes for local development are based on latest official data. Tabulation plans and data presentations should be from bottom up levels rather than attempting to provide an aggregated national picture. The usual sequence of data release is to produce key tables for all India and States first, followed by State tables and only at the end; the Primary Census Abstract (PCA) becomes available in published form. It is not necessary to stick to this pattern in the interest of providing early data at the local levels.

(iii) There is a need to think afresh about the Post Enumeration Check (PEC) design by modifying the old sampling design in consultation with sampling experts. Further, to enhance the credibility and faith in census operations, the PEC should be entrusted to an independent agency or a group of agencies.

(iv) There is a need to re-examine the issue of non-publication of information, such as cross-classification of data on religion, caste and language by literacy, work, migration, etc. in the census. Further, data on most of the social and cultural aspects should be provided at least at the district level.

(v) The literacy data for age 15 years and above, which is the internationally accepted minimum age for which literacy data are published, should be released on priority basis.

(vi) In the Census 2001 and Census 1991, the definition of economic activity has been expanded by including cultivation of certain crops for self-consumption. The Census 2001 tabulation plan must provide the details so that the contribution of additional economic activities included in the year 2001 is available separately to enable comparability with the results of the Census 1991. The Census should strive to adopt standardised concepts and definitions for comparability of data from other sources and to meet international standards. However, as far as possible, data according to the previously used concepts and definitions should also be made available separately, for comparison across the censuses.

(vii) Considering the increasing functional requirements and growing expectations from census, the status of the Census Commissioner and of the statistical officers providing statistical support to the Census Commissioner should be upgraded. The Fifth Central Pay Commission has also recommended upgradation of post of Census Commissioner to the Additional Secretary level and one post of Joint Registrar General of India (RGI), to the level of Joint Secretary. It is, therefore, recommended that the Census Commissioner should be upgraded to the Chief Census Commissioner in the rank of Additional Secretary and supported by one Census Commissioner from Indian Statistical Service in the rank of Joint Secretary to provide the requisite technical support to the Chief Census Commissioner.

(viii) The work of Registrar General of India and Census Commissioner should be separated. The work of the Registrar General of India should be to implement the provisions of Civil Registration Act and conduct of related surveys, while that of

Census Commissioner should be to manage the census operations. Since the job of the RGI involves a lot of statistical expertise as surveys such as Sample Registration System, Causes of Death, etc. have to be conducted, the post of RGI should be manned by an officer at the Joint Secretary level from Indian Statistical Service. The RGI should function under the overall guidance of the Chief Census Commissioner.

B. BASIC STATISTICS FOR LOCAL LEVEL DEVELOPMENT

9.2.17 In the context of an increasing emphasis on decentralised planning in India, the need for collection of data at the district and lower levels has been emphasised in the past. Keeping in mind that some of the Indian States are larger than many of the countries of the world and the social and cultural heterogeneity of the Indian population, decentralised planning needs no emphasis. Till recently, there was very little democratic decentralisation and planning for development below the State level. However, with the passing of the 73rd & 74th Constitutional Amendments in 1992, the local bodies have been empowered to prepare and implement plans for economic development and social justice at the local levels. The centralised plans adopted so far have not been able to meet the basic needs and aspirations of the people. Hitherto, as there was little or no local level planning for provision of public goods and facilities, there seemed to be little or no need or demand for local level databases. Conditions have changed now and as the constitution has given powers to the local bodies for preparation of local level plans and implementation, it is becoming increasingly necessary to have decentralised databases on population size and its characteristics for micro level planning of various development programmes. This has necessitated development of databases systematically from below.

9.2.18 The idea of developing databases required for planning and decision-making at below the State level is not a new one. The Planning Commission had set up a "Working Group on Districts planning" under the Chairmanship of Professor C.H. Hanumantha Rao, the then Member, Planning Commission in September, 1982. The Working Group in its report highlighted the need to identify the minimum information and data required for planning and decision-making at the district level and also provided an illustrative list of data/information useful for district planning. The Planning Commission issued a format "Database on Village Level Indicators" in February 1987. In September 1989, Planning Commission requested the State Governments to collect data at the village, block and district levels in prescribed, pre-coded schedule covering a very wide range of items. These data were to be fed into the District Information System of National Informatics Centre (DISNIC) for storage and retrieval on a regular basis. Unfortunately, the Planning Commission did not provide necessary explanatory notes regarding the concepts, definitions and sources of information for the DISNIC schedule and there were problems in collecting information on certain items of information provided in the schedule also. The whole exercise also did not consider in detail the organisational framework and training facilities for local level statistical functionaries, who would coordinate and maintain this data system.

9.2.19 The issue of development of local level databases was discussed in the 9th Conference of Central and State Statistical Organisations (COCSSO) and the States pointed out the difficulties in the collection of the information in these prescribed proformae due to lack of proper guidelines and explanatory notes regarding concepts and definitions. Based on discussions in the COCSSO, Central Statistical Organisation (CSO) took up the matter with the Planning Commission and a small group headed by Secretary, Department of Statistics was asked to go into the details of the contents, coverage, definitions and concepts of various items in the DISNIC proformae. This Group made recommendations on the conceptual and organisational tasks involved in the construction of small area statistics as well as the currently feasible scope of information coverage under this system. The Department of Statistics constituted again an Expert Committee on Small Area Statistics in 1996 to analyse the data implications of 73rd and 74th Amendments and capability of the existing system to cope with the emerging requirements. The Committee submitted

its report in April 1997 and made useful suggestions on the collection and compilation of village and urban municipality's level information, which could be computerised by National Informatics Centre and transmitted from districts to State and National levels.

9.2.20 Realising the importance of Small Area Statistics, the National Statistical Commission sponsored a study to examine the feasibility of using small area estimation techniques for estimating socio-economic variables at the district levels conducted by Indian Statistical Institute, Kolkata, in collaboration with National Sample Survey Organisation (NSSO). The study used the data collected through the Population Census and that of 51^{st}-54^{th} Rounds of NSSO's large-scale sample surveys. The study conducted in a limited period has suggested the usefulness of such methods in developing small area estimates of socio-economic variables. The study has also suggested establishment of a permanent research cell within the MoS&PI to carry out research in exploration of appropriate procedures for 'small area' estimation.

Conclusions and Recommendations

9.2.21 The Commission has taken cognisance of the fact that quite a large amount of work has already been done in the past two decades by various Working Groups, Study Groups and Committees constituted on the subject. However, implementation of these recommendations has not been taken seriously as a result of which even today no standardised system exists for collection of local level databases in the country and their aggregation at the block, district, State and National levels. These studies have in the past gone into the details of data items to be collected at the local levels. The Commission is of the view that there should be a set of core variables/indicators on which statistical data should be compiled and aggregated at appropriate levels, analysed and published at regular intervals of time. The sources of this data could be both the decadal population census and administrative records of the Government Departments. Further, additional data requirements for local level planning specific to local area also should be looked into and the local bodies should be given a free hand in deciding their data requirements, which otherwise could not be met through the standardised system. A suggestive list of core indicators is given below:

(a) Population by age and sex at the lowest level of aggregation; village in rural areas, urban blocks;

(b) Total number of households;

(c) Availability of basic amenities: housing, potable drinking water, sanitary toilet facility, electricity, roads, transport facilities, educational institutions, medical facilities, telephone, post office, etc.;

(d) Number of marriages: total, girls below age 18, boys below age 21;

(e) Children in the school-going age 6-14: total, male, female;

(f) Children attending school: total, male, female;

(g) Live births: total, boys, girls and of order 3 and over;

(h) Deaths: total, men women, infants (below one year of age) and maternal deaths/Crude Rate.

9.2.22 In order to develop a system of collection and compilation of data on core variables and indicators and their aggregation at appropriate levels, combined efforts of the agencies in the Central Government (such as Planning Commission, Home Affairs, Health & Family Welfare, Education, Rural Development, Urban Development and Statistics), State Governments (such as Administrative Wings, Planning Departments and Directorates of Economics and Statistics, Local Affairs Departments) and local bodies are needed. The Commission therefore recommends:

(i) The Population Census provides valuable information on a number of items/variables of the population from village level upward that is published in the District Census Handbooks. The primary census abstract for Census 2001 at each village and community development block level should be compiled at the earliest and made available to the *panchayats* and local bodies for planning and development.

(ii) A minimum list of variables/indicators that should be collected at village level should be identified and a system of their compilation and aggregation should be established. Similarly, the variables and indicators required for aggregation at the district, State and National levels should also be identified. The community block should be the first level of aggregation for village level information.

(iii) Blocks should have qualified statistical personnel (Block Statistical Assistant) with facility of a personal computer (PC), networked to district where data required at the district level would be aggregated. Such a statistical functionary already exists in many States. This statistical functionary should be trained in data entry, simple database systems, tabulations and data transmission to higher authorities and to *panchayats* below in appropriately summarised pre-designed format.

(iv) The data compiled by all Government departments at the village and block level in respect of the identified variables/indicators should be supplied to the Block Statistical Assistant periodically, who will maintain the block level data and also disseminate the same to the *panchayats*/local bodies on one hand and to the district on the other hand. A system for ensuring a regular flow of information from all the Government departments to the block level statistical personnel should be established.

(v) The additional data required to meet the specific requirements of local level planning may be decided and collected at the local level itself without any prescription from the district and State levels.

(vi) A Committee of Experts comprising representatives from the concerned agencies should be constituted to review the efforts already made in the past by various Groups and Committees and suggest a minimum list of variables on which data need to be collected at the local level for rural and urban areas. The Committee should suggest a comprehensive scheme for collection of this dataset in pre-designed formats, data sources, periodicity of updating, aggregation level (block, district, State and National) for each variable, agencies responsible for collection, compilation and aggregation, and transmission of information from blocks downwards to *panchayats*/local bodies and upwards to district, State and National levels. The Committee should complete its work in a time bound manner and its recommendations after due examination should be implemented by the Government within the suggested time frame.

(vii) For the variables, on which the data are not compiled and updated periodically based on regular administrative records or frequent sample surveys, but data on which are necessary for planning at district and lower levels, attempt should be made to estimate them through the use of small area estimation techniques, since the present

large scale sample surveys usually provide estimates of various parameters only at State and National levels. Studies for developing appropriate small area estimation techniques for estimating socio-economic parameters at the disaggregated level should be taken up by the National Statistical Office.

C. UNIFORM AREA CODES FOR DISTRICTS, VILLAGES AND URBAN BLOCKS

9.2.23 For the Census 2001, a system of Permanent Location Numbers has been adopted by assigning a Permanent Location Code to each village within State or UT. Codes for States, districts and urban blocks were also provided. Though the Permanent Location Numbers developed for Census 2001 take care of a permanent coding structure for rural areas, sufficient care is to be taken for developing a similar coding structure for urban areas due to frequent changes in the boundaries of the urban blocks. It is suggested that for urban areas, permanent wards consisting of permanent blocks should be formed through notification. Any change in the jurisdiction of the ward should not cut across blocks. These codes should include, as a part, eventually geo-codes, which should be sufficient to locate them in a map. The Commission therefore recommends:

(i) Attempt should be made to develop uniform area codes for districts, blocks and villages at the National level, which would facilitate permanent and unique identification of every village and urban block in the country. These codes should include, as a part, necessary geo-codes, which should be sufficient to locate them in a map.

(ii) Village level digitised maps showing data on minimum variables and indicators can be produced with the presently available satellite image based mapping procedures. Geo-codes should be developed on the basis of these base maps. The geo-coding of the primary unit areas such as villages and urban blocks within such a map can be taken up in consultation with agencies such as Indian Space Research Organisation, Census Commissioner, Surveyor General of India and Anthropological Survey of India.

D. CENTRALISED DATABASE OF CITIZENS (POPULATION REGISTER)

9.2.24 The idea for a centralised database of the citizens of the country dates back to 1950s when the Government of India realised the need for maintaining a National Population Register (NPR) that would have a record and reference of its citizens. The idea emanated from the requirement to control the influx of illegal migrants that threatened to alter the demographic structure in several parts of the country. A centralised database of the citizens has several uses, which are both administrative and statistical. With regard to the administrative uses a centralised database of the citizens would be useful for programme planning, budgeting and taxation, developing personal identification, voting, education and undertaking social and welfare measures. It would also be utilised for issuing documents needed for admission to schools, issue of driving license, passports, providing telephone connection, opening bank account, getting insurance policy and managing food rationing, etc. As far as statistical uses are concerned, the database would be useful for developing population statistics, especially for studies of internal and external migration, population estimation, census planning, census evaluation, sampling frame and as an effective aid to the Civil Registration System and even for undertaking health and genetic studies. A centralised database of the citizens has the potential to supply various types of population data and changes therein to other administrative systems of the country. Under such a system all Governmental agencies can receive uniform data from a single source making the flow of information simpler and more reliable.

9.2.25 Recently, the Ministry of Home Affairs sponsored a study through the Tata Consultancy Services (TCS) to look into the feasibility of creating a citizen's database and issue

of national identity cards. The study also considered the cost of undertaking such a project as well as the technological issues. The TCS has submitted a feasibility report to the Ministry of Home Affairs and has proposed a market driven franchisee model for implementing a scheme of centralised database of citizens and issue of NISHAN (National Identity System Home Affairs Network). It has also suggested a pilot study on a sample basis to test the feasibility aspect.

9.2.26 Many developed countries and an increasing number of developing countries, including China, have databases of their citizens while also providing for each adult individual citizen of the country a unique identification number. Such a unique identification number assigned to a citizen would be a proof of his/her identity for a variety of purposes. The major advantage is that all this can be taken care of by simply producing citizen identity card as a proof of individual identity. Presently, there are different kinds of cards and means of establishing identity in India, such as electoral identity card, income-tax PAN card, passport, ration card, driving license, birth, and education certificates, etc. However, none of the systems are equipped to handle a population figure that exceeds more than one billion in India. So far there has not been any attempt whatsoever to standardise a format of citizen's database, which can link the information available for each citizen from different sources and analyse this according to the needs and project a comprehensive picture of the human resources in the country.

Conclusions and Recommendations

9.2.27 Taking note of the initiative taken by the Ministry of Home Affairs for issuing national identification cards to the citizens, the Commission concludes that:

(i) A centralised database of the citizens of the country with a system of issuing a unique identification number/card has several potential benefits to its citizens and will improve the efficiency of administration. The project, if implemented, will have obvious benefits to the statistical system.

9.3 HEALTH AND FAMILY WELFARE STATISTICS

INTRODUCTION

9.3.1 The health of the population is a matter of serious national concern. It is highly correlated with the overall development of the country. A healthy population is a developmental goal by itself though it is also a necessary ingredient for the other wider goals of social and economic development. India's health system seems to be currently at cross roads with major changes occurring in the morbidity and mortality patterns. Some of these changes are consequent to the demographic transition, which is accompanied by changes in the age structure of the population but most of the changes are due to the control of major communicable diseases. Since independence, there have been significant changes in health conditions and the composition of the health sector and simultaneously major transformations have occurred in knowledge and technology, as well as in the political and economic environment. Life expectancy at birth has risen from 32 years at the time of independence to 61 years in 1996. The infant mortality rate (IMR), a sensitive indicator of both socio-economic development and use of health services, has been reduced from 146 deaths per 1000 births in the 1950s to 72 in 1998. Yet, reductions in the IMR have stagnated in the 1990s, and the nutritional status of children under five years has improved very slowly over the last 20 years. Nearly half of all children under five are malnourished, and anaemia remains a problem for about three-quarter of the children under three, and half of all women in the reproductive ages. New health threats are stretching the capacity of the health system to respond: it is estimated that 3.7 million people are living with HIV and the virus has now spread beyond highly susceptible groups to the general population in some States. Although, overall health conditions have improved in India, the current challenges are enormous. India was one of the first countries in the world to intervene in population control as a national

programme in 1951. Although the total fertility rate fell from 6.0 in the 1960s to 3.3 in 1999, it remains higher than in most other Asian countries. In the context of growing uncertainties in the outcomes of various current healthcare programmes and newer diseases of epidemic proportions emerging in the population, there is an imminent need to closely monitor and direct health programmes in the country to meet the health needs of the population.

9.3.2 An efficient Health Information System is a prerequisite for effective administration of health services and achieving the stated goal of "Health for All". Not only health information relating to aspects of health, such as, the existing health condition of the population, morbidity, availability of health facilities, availability of specialists, doctors and other paramedical personnel is essential for this, but demographic data, data on environment and socio-economic variables of the population are also very important for preparing a good health plan and implementing the same. These data are required for assessing the existing conditions and the resources for specification of goals and targets in terms of measurable output and for a continuous evaluation of achievements, when the plans are implemented. In brief, a good system of collecting health and other related statistics is absolutely necessary for: (a) preparing effective short and long term health plans, (b) effective administration and coordination of curative, preventive and other community health programmes, (c) studying the problems of health and disease which have implications for the administration of health services, and (d) evaluation, that is, an assessment of the effectiveness and efficiency of various health programmes.

9.3.3 In the context of data requirements for health planning, health-related data for any population should provide insights into following areas:

(a) *Demographic data*: population by age and sex, rural/urban classification, geographical distribution, occupational classification, literacy, religion, marital status, migration, etc.;

(b) Vital statistics: birth and death rates, infant mortality rates, life tables, general fertility rates, etc.;

(c) Diseases: mortality rates by age and cause of death, morbidity data by age, sex, prevalence of communicable diseases, deliveries and statistics of anti-natal and post-natal care;

(d) Facilities: hospitals, dispensaries, clinics, nursing homes, diagnostic centres, laboratories, equipments – X-ray and other diagnostic equipments, ambulances, beds, etc.;

(e) Manpower: doctors, specialists and practitioners in allopathic, homeopathy and other Indian systems of medicine, nurses, pharmacists, lab technicians other supporting staff (their number, qualification, geographical distribution, availability per unit of population);

(f) Finance: GNP, Government Revenue and Expenditure, allocation for health, budget estimates, sources of health finance, expenditure on health by voluntary agencies and other NGOs, private expenditure on health, etc.

9.3.4 During colonial rule, the development and growth of health care was based on the demands made by defence and civil administration, and consequently some data pertaining to public health and communicable diseases emerged. The Bhore Committee realised the deficiencies of databases on health and created a benchmark for a variety of health related information in its Report submitted in 1946. This Committee provided the first organised set of health care data for the country as a whole, prior to which records and reports of the public health department and the census were the only source of any health related information. The recommendations of this Committee for setting up sub-centres (SCs), primary health centres

(PHCs), secondary and tertiary health centres on the basis of population size are still the pervasive pattern of health service delivery in the country.

CURRENT STATUS

9.3.5 Health is a State subject and vital and public Health Statistics are traditionally the responsibility of State Health Directorates. However, in a few States vital statistics have been the responsibility of State Directorates of Economics and Statistics. Presently, the Central Ministry of Health & Family Welfare (H&FW) consists of three Departments namely, Department of Health, Department of Family Welfare and Department of Indian System of Medicines & Homeopathy (ISM&H). The Directorate General of Health Services (DGHS) is the technical advisory wing of Ministry of Health & Family Welfare and is responsible for running the various national disease control/eradication programmes. At the national level, a small Bureau existed since 1937, which was organised in 1961 into the Central Bureau of Health Intelligence (CBHI) in the DGHS, Ministry of Health & Family Welfare, to coordinate and advise on the development of health information in the country. At the national level, it is the sole organisation dealing with collection, compilation, analysis and dissemination of health data for the country as a whole.

9.3.6 All national programmes are run by different sections of the DGHS, except the National AIDS Control Programme, which is directly run by the Central Health Department. As an offshoot of administrative procedures and implementation of various national health programmes, many data series flow into the various organisations/divisions of Directorate General of Health Services, Department of Health and these form the basis of the annual central health statistical publication *Health Information of India* brought out by CBHI. The central Programme Officers consolidate the programme-specific information flowing from States and UTs and furnish these to CBHI for publication. Data are also collected by CBHI directly from the Directorate of Health Services of all States and UTs, statutory councils such as, Medical, Dental, Nursing and Pharmacy Council, Office of Registrar General of India (RGI), and from other Central Departments and international organisations for publication. Data are presented at the State and UT level along with all-India figures. The combined issue for the years 1995 and 1996 is the latest issue. The combined issue for the years 1997 and 1998 is under print. These publications do not provide data below the State and UT level. Also the data published are not gender and age specific. Apart from the regular annual publication, *Health Information of India*, CBHI also brings out *ad hoc* publications. *Health Map of India, 1998* is the latest among such publications of the CBHI and this depicts in maps, the district wise number of hospitals with bed strength and dispensaries, as also the number of specialised hospitals in various districts. The data are also presented in tabular formats side by side with the maps. The CBHI is also the nodal agency to implement the Health Management information System (HMIS) that was started to rectify the information deficiencies in the area of implementation of various health and family welfare programmes and by routine health service activities, as well as to provide linkages among them on a monthly basis. The HMIS however, did not function satisfactorily due to various reasons.

9.3.7 Apart from CBHI, the Rural Health Division of DGHS compiles and publishes *Rural Health Statistics*. This is a six-monthly bulletin, containing information on Government health infrastructure and manpower deployment in the rural areas. This publication also presents data at State and UT level. The National AIDS Control Organisation (NACO) under Department of Health collects data on cases and deaths due to AIDS/STD and publishes these in its *Annual Update*. This is not a statistical publication in the strict sense. CBHI also takes the data on important items from the Rural Health Division and NACO as well as from Department of Family Welfare and Department of ISM&H and publishes the same in *Health Information of India*.

9.3.8 The Department of Family Welfare is responsible for implementing programmes for population control and maternal and child health now renamed as Reproductive and Child Health. The Family Welfare programme is a Centrally- sponsored programme implemented by the respective States and UTs. The information flow starts from the peripheral level where the service delivery takes place. In the sub-centres, ANMs are responsible for the maintenance of records in respect of acceptance of family planning methods, services to pregnant women and immunisation for vaccine preventable diseases in respect of infants. The information flows to PHCs, and from PHCs to districts where it is consolidated for the district. From the district, the information in the prescribed form is expected to flow to the State and Centre through NICNET. Department of Family Welfare publishes *Family Welfare Programme in India Year Book,* annually. The latest issue relates to the year 1997-98.

9.3.9 The Department of ISM&H was set up in March 1995 with the primary task of developing and propagating Ayurveda, Unani, Sidha, Homeopathy, Yoga and Naturopathy. It collects information related to these areas and publishes these in: (a) *Indian Systems of Medicine & Homeopathy in India* (Annual), (b) *Ayurvedic & Siddha Medical Colleges in India* (Quinquennial), (c) *Homeopathic Medical Colleges in India* (Quinquennial) and *Unani Medical Colleges in India* (Quinquennial). In addition, Department of ISM&H also obtains information through surveys on "Usage and acceptability of ISM&H," and "Demand assessment of Medicinal Plants".

9.3.10 While in general, data on medical and health infrastructure (education and treatment) and manpower information are generated as a by-product of administrative and regulatory procedures, a source for morbidity data is the notification of Communicable Diseases, which is primarily meant for preventive control. Presently, data are also collected from selected surveillance centres in the country on the prevalence of HIV positive rate from random blood samples in the adult population. The hospital returns are analysed according to the list of diseases provided in the International Classification of Diseases (ICD) and a number of case-finding programmes for detection of cases on specified diseases like malaria, filaria, trachoma, goitre and leprosy are also available. The National Sample Survey also conducts demographic surveys, which have been providing information on some aspects of mortality and morbidity and household expenditure on health services and facilities. The licence registers for various categories of doctors, dentists, pharmacists, nurses, health visitors, etc. provide data about manpower and are consolidated by statutory councils such as the Medical Council of India, Dental Council of India, Nursing Council, etc. In the following paragraphs the deficiencies of various aspects of Health Statistics are discussed along with the recommendations on each of them.

DEFICIENCIES

I. Health Management Information System

9.3.11 The Health Management Information System (HMIS) was introduced in the country on a trial basis in 1982, as an integrated management information and evaluation system for health and family welfare programmes in four States namely, Gujarat, Haryana, Maharashtra and Rajasthan. The system was modified in 1990-91 on the basis of past experience, wherein; additional requirements of various programmes started by the Ministry of Health & Family Welfare were also taken into account. As extensive data are being collected by various agencies and compiled, there exist various problems, deficiencies and gaps. The system was not successful on account of non-reporting, under-reporting, variable coverage, delays in receipt of reports, data not being gender-specific and age specific, data not catering to the needs of the general public, etc. The major problems faced in the implementation of HMIS in the past were lack of hardware, software and trained personnel at the district and lower levels. The National Informatics Centre

facilities were inadequate to meet the computing requirements of HMIS. Further, while the information for various programmes is collected separately by the peripheral worker and sent upwards from sub-centre, primary health centre and community health centre to the district and State levels, there is no coordination between the various health programmes implemented by the three Departments of Ministry of H&FW. Maintenance of patient care records is also very poor in most of the Government hospitals. The information from the private sector is not properly collected and included in the data generated by the official sources. Most of the States have not paid attention to implement the programme due to various reasons including lack of funds and trained manpower resources. As a result the HMIS has failed to achieve the objectives for which it was set up and has not functioned satisfactorily.

9.3.12 Due to poor implementation of HMIS by the States, the earlier system of collection of information by various programme authorities has continued to be in existence along with HMIS, which has created an undue burden on the peripheral workers as they have to fill up a number of proformae and maintain a number of records related to various programmes namely, malaria eradication, goitre, immunisation, MCH, family planning, blindness control, tuberculosis, AIDS and leprosy. A list of records and reports that are required to be maintained by the sub-centre functionaries (ANMs) is at Annexe 9.1.

CONCLUSIONS AND RECOMMENDATIONS

9.3.13 The Commission observed that a computerised health information system at all treatment facilities is an essential prerequisite for establishing an effective Health Management Information System. The HMIS has a good potential to provide a comprehensive database on working of health programmes at the decentralised level upto the district. The HMIS if properly implemented would reduce delays in the information flow, provide qualitative information in a standardised form, avoid duplication and facilitate quick retrieval of information by all agencies concerned. In the Conference of Centre and State Statistical Organisations held in October 2000, most of the States agreed with the proposal for strengthening of the HMIS and suggested that the existing statistical cells in the Health Departments should be strengthened. However, while extending HMIS to private sector, the public sector record system also needs to be improved. The Commission therefore recommends that:

(i) A comprehensive assessment of the Health Management Information System (HMIS) should be made by a small Committee quickly and HMIS be reintroduced in the country in a phased manner with necessary modifications. The combined HMIS format should be separated into programme-wise modules. While revising the programme modules, care should be taken to meet the data requirements of both the Central and State Governments. Flexibility should be given to the States and UTs to include additional items to meet their State specific data requirements.

(ii) Steps should be taken to rationalise and minimise the number of records and registers maintained by the peripheral health workers such as ANMs and public health inspectors to reduce their burden and to improve the quality of data. The minimum data set on which data from the grass root levels should be regularly collected along with their periodicity should be clearly identified.

(iii) There is a need for computerisation of the administrative records of all specialised hospitals and general-purpose hospitals and other treatment facilities both in the public and the private sectors. The International Classification of Diseases (ICD-10) Coding System for Medical Records should be adopted for generating morbidity and mortality data. There should be systematic training given to all medical personnel on the use of ICD.

(iv) The system needs to be revamped and expanded to include information on private sector health facilities by adopting an integrated approach for capturing data on both allopathic and Indian System of Medicine and Homeopathy.

(v) Data relating to non-communicable diseases such as cancer, diabetes, mental disorders should also be collected through the HMIS.

(vi) A suitable mechanism to collect the data at the grass roots level and its upward transmission to the district, State and the National level should be evolved and for that methods of data collection, transmission, and processing must be modernised. As National Informatics Centre facilities are inadequate to meet the requirements of HMIS, adequate funds need to be provided for necessary hardware, software and connectivity and training of personnel.

(vii) The Central Bureau of Health Intelligence (CBHI), which is at present a part of Directorate General of Health Services (DGHS) should be separated and upgraded to a full-fledged Directorate of Health Statistics (DHS) directly under the Department of Health. An officer from the Indian Statistical Service at the Additional Secretary level should head this Directorate and act as the Statistical Adviser to the Department of Health. Also required posts of supporting officers should be created. The DHS should be the nodal agency in matters of health statistics and should advise the Department in all matters related to the collection of Health Statistics; coordinate with the National Statistical Office and agencies in the Central and State Governments, as well as international agencies in matters related to medical and health statistics.

(viii) The CBHI upgraded as DHS should be strengthened with adequate Electronic Data Processing (EDP) personnel and existing personnel should be trained in EDP operations, to enable the processing, tabulation and presentation of the large volume of data on health. Adequate funds out of the national health programmes should be earmarked for development and maintenance of information system as well as for verification of field level performance data through independent agencies.

(ix) In order to facilitate effective implementation of the HMIS in the States and UTs, the State Department of Health and Family Welfare in every State should have a Statistical Division headed by a senior level statistical officer. In the districts, a health statistics cell should be set up in the Office of Chief Medical Officer (CMO) to implement HMIS and to take care of all health and family welfare statistical activities of the district.

(x) All States should bring out District Health Profile for each district containing information on medical and health facilities, personnel employed in health facilities, public health information, epidemic situation of the district, etc.

II. Data on Morbidity and Mortality at Disaggregated Levels

9.3.14 Data on morbidity and mortality form the core of any health planning strategy. The size and geographical distribution of occurrence of diseases and deaths by their causes for different age groups, sex, occupations and various other characteristics are of immense value to the public health planners, medical scientists, epidemiologists and researchers. Unfortunately, morbidity data or an epidemiological profile on which all health care planning should be based is primarily lacking. Morbidity and epidemiological studies on a nation-wide scale have never been done. The statistical data available through the statistical system of CBHI is deficient in respect of coverage, timeliness and adequacy. With regard to the data on mortality, the Registration of Births and Deaths Act, 1969, empowers the State Governments to introduce the system of Medical Certification of Cause of Death (MCCD) in specified areas in a phased manner,

ultimately to cover the whole State. The scheme, which is functional in only 28 States and UTs is grossly deficient with regard to coverage, which is far from complete in almost all States. The latest available report pertains to the year 1995 and it indicates that only about 17 percent of the total registered deaths and 46 percent of the total registered urban deaths are medically certified. The Office of the Registrar General of India also conducts a survey on causes of deaths in the rural areas and provides some data on causes of deaths. However, the survey suffers from deficiencies such as, small sample size and reliance on laymen who report the cause of death. The system for building up a statistical database on morbidity and mortality along with causes of deaths further classified as per the International Classification of Diseases (ICD) is, therefore, in a poor shape. In the context of HIV/AIDS threat to the country, it is evident that mortality and morbidity patterns may show a rapid increase in the incidence of tuberculosis and other communicable diseases as a consequence of breakdown of the immune system because of HIV/AIDS. Indicators of infant, child and maternal morbidity and mortality computed from such data are, therefore, unreliable and do not reflect the true status of the child and maternal health. The National Family Health Survey (NFHS) conducted during 1992-93 and 1998-99 provided estimates of Maternal Mortality Rate (MMR) but only at the National level. With an increasing emphasis on decentralised planning the demand for data to derive mortality indicators at the State, district and lowest levels is increasing. However, the existing system does not have the capacity to meet these data requirements.

CONCLUSIONS AND RECOMMENDATIONS

9.3.15 The present system of data collection through the Ministry of Health and Family Welfare, through MCCD or surveys conducted by RGI and NFHS on morbidity and mortality are unable to meet the data requirements of public health planners, medical scientists, epidemiologists and researchers. Further, there are hardly any estimates available at the district and below level, which is a serious handicap in planning the preventive action at these levels. The Commission strongly feels that the situation needs to be corrected by taking necessary interventions and recommends:

(i) There should be periodic sample surveys of households on morbidity in the country, by trained investigators taking in to account the seasonal variations in diseases. These data should be analysed as quickly as possible and the morbidity patterns in the country should be published regularly. The National Statistical System should bring out regularly the morbidity and mortality patterns in the different age groups at least at the district/regional levels including for the diseases like T.B. and AIDS.

(ii) The morbidity and mortality surveys should be conducted in two stages. While at the first stage, the data could be collected on a fairly large sample; at the second stage, data from a sub-sample may be collected and verified by trained medical functionaries on certain specific aspects like causes of death, maternal mortality audit, etc.

(iii) As recommended by the Khusro Committee, the quality of data on infant, child mortality and maternal mortality can be greatly improved by conducting comprehensive sample surveys of pregnant women and by a follow up of these over one or more years after childbirth. Such surveys can be conducted on a small scale at local levels.

(iv) There should be a procedure for medical certification of the cause of death to be implemented at least on a sample basis throughout the country regularly, in order to have a better understanding of the causes or factors underlying deaths in the country. The death records should include symptom-based information on the possible cause of death.

(v) The scheme of Medical Certification of Cause of Death (MCCD) envisaged under the Registration of Births and Deaths Act, 1969 should be strengthened. The State Governments should attach a high priority to the implementation of this scheme both in the rural and urban areas. There should be a system for prompt reporting of deaths due to certain diseases, like cholera, polio, malaria, diphtheria, etc. so that immediate preventive and curative measures can be taken.

(vi) The statistical system in all hospitals, nursing homes and other treatment facilities and dispensaries including those in the private sector should necessarily include certain basic information on each patient and this information in prescribed formats should flow to Health Statistical System within a fixed time frame. Computerisation of birth, morbidity and mortality records should be done in phases and should be coded with ICD-10 codes to facilitate processing.

III. Data on Expenditure and Social Consumption on Health

9.3.16 Another area of concern is the lack of readily available data on expenditure on health. Infrastructure and manpower form the bulk of non-plan expenditure of the State Governments in the Health Sector, though some inputs do come from the plan budget from the States and the Centre. There is at the moment no single source from where for any given year, all the information on non-plan and plan expenditure on health and family welfare incurred by the State Government; investment in different States made by the Ministry of Health and Family Welfare at the Centre; externally assisted projects in the Health Sector and investment by voluntary, private organisations in health sector can be compiled. The NSSO through its social consumption surveys provides information on consumption expenditure of households on health care but there is very little data on cost of care for different types of ailments and supporting medical services.

CONCLUSIONS AND RECOMMENDATIONS

9.3.17 The Commission recognises the need for organising and streamlining the data gaps on expenditure on health and cost of medical treatment. These data are vital for planning cost effective provision of health care services. The Commission therefore recommends:

(i) The Ministry of Health and Family Welfare in consultation with the concerned Central Ministries, Planning Commission, State Governments and other concerned agencies should develop a suitable mechanism for collection and dissemination of plan and non-plan expenditure on health services, infrastructure and manpower, investment and expenditure from private organisations, NGOs and externally assisted projects.

(ii) The data on availing health facilities and expenditure by households should continue to be captured more comprehensively from the NSSO's surveys, which should be conducted on a quinquennial basis.

(iii) The cost of specialised treatment in respect of certain diseases such as kidney transplant, cardio-vascular surgery, etc. should be compiled institution-wise and published at least on an annual basis for the benefit of public. The NGOs and Medical Associations should be encouraged to publish and disseminate this information.

IV. Information from the Private Health Sector

9.3.18 Presently, Health Statistics are compiled in the Government Health Sector only as an offshoot of the administrative data collection. In the last few years, the private sector in a big way has been providing health facilities, not only in the urban areas but also in the rural areas. It is contributing significantly towards meeting the basic health care needs and in providing other

specialised medication and diagnostic services. However, there is no systematic collection of information regarding these private health establishments, as these are not required to be registered. Therefore, there is complete lack of information on even the number of these health facilities in a given area. Some information may be available on the financial aspects of bigger establishments, which are registered as companies under the Companies Act in the form of their Annual Accounts. These data are important from the National Accounts point of view, but does not serve any purpose of health administrators who are interested in several other factors related to health. Although there are a few regulatory Acts covering registration of medical personnel (e.g. Indian Medical Council Act, 1956; Indian Dental Council Act, 1948; Pharmacy Act, 1948; Indian Nursing Council Act, 1947), no law or regulation exists for registration of medical and health facilities such as nursing homes, diagnostic centres, laboratories, and hence no information exists for such health facilities. Some States such as Maharashtra, Sikkim, Manipur, Tamil Nadu, Delhi, etc. already have such an Act in force.

CONCLUSIONS AND RECOMMENDATION

9.3.19 With the increasing participation of the private sector in providing health care facilities, it is not only important to regulate in some way the activities of these health facilities for ensuring quality of services provided to the public, as also for other purposes such as, controlling the waste disposal and to deal with pollution related aspects. For health policy-makers, such regulation is important to capture data to meet their requirements. The data on the income and expenditure is important for the national accountants to estimate the contribution of this sector to the national income. The Commission therefore recommends:

(i) The Centre should formulate a model Act for registering and regulating health facilities in the private sector. All the States should bring out State level Acts for this purpose on the lines of the model Act. A system of periodical filing of statistical returns with the statutory body should be established. The law should have provision for penalty and even deregistration for failing to file such information with the statutory authority.

(ii) The statistical system in all hospitals and dispensaries should necessarily include certain basic information on ailments of inpatients and outpatients, health personnel, health infrastructure such as number of beds, income and expenditure, etc. and such information on a regular basis should be furnished to the National Statistical System, so as to become a part of an improved database on health.

V. Information for Manpower Planning in the Health Sector

9.3.20 The statistical information required for health planning includes data on number of medical, paramedical and other health personnel in the public sector as well as private and voluntary sector institutions that are providing health care to the population; individual medical practitioners and paramedical staff to work out the doctor-population ratio, doctor-nurse ratio, bed-population ratio, etc., and to assess their availability by geographic distribution and by size of population. Data is also required on changing requirements for the health manpower based on the changing health care needs of the population at the district, State and National levels. Even though Medical Council of India, Dental Council of India, Nursing Council are required to supply information to CBHI on registration of allopathic doctors, dentists and nurses, the information is not updated regularly for those who have retired or died or left the country. The quality of data is in general, unsatisfactory.

CONCLUSIONS AND RECOMMENDATIONS

9.3.21 The information on manpower in the Health Sector is vital for planning and working out important indicators such as ratio of doctors, nurses, etc to the size of population in a given geographical area. The Commission recommends that:

(i) The statistical system in the Medical Councils concerned with Allopathic, Homeopathic, Dentistry, Indian System of Medicine and paramedical personnel should be strengthened to provide updated data on number of medical and paramedical personnel in both the rural and urban areas at least upto the district level.

(ii) The information on all medical practitioners, dentists, paramedical personnel, pharmacists and nurses of various systems should be compiled by the Councils and be made available at the district level and should be updated every two years. They should also be made available on Internet.

VI. Methodology for Couple Protection Rate (CPR)

9.3.22 Couples currently protected under various methods of Family Welfare Programme, include those who accepted the programme, leaving out those who have dropped out because of mortality or widowhood and attrition due to ageing or discontinuation of method in case of IUD and conventional contraceptives. The estimation of CPR is based on the methodology suggested in 1970s and there have been suggestions to revise the methodology taking into account the contemporary requirements. The Department of Family Welfare constituted a Committee in 1994 to look into this aspect and it is understood that the Committee has submitted its Report to the Government. The Commission therefore recommends:

(i) The data on Couple Protection Rate (CPR) provided by the Department of Family Welfare should be critically looked into for the relation it bears to actual contraceptive prevalence rate. Suitable modifications should be made to re-define the data needs on contraceptive acceptance, use of family planning methods and computation of the couple protection rate from official statistics.

(ii) The methodology for estimating the Couple Protection Rate (CPR) should be revised, if necessary in view of the recommendations made by the Committee set up by the Department of Family Welfare for this purpose.

VII. National Family Health Surveys

9.3.23 The two National Family Health Surveys (NFHS) conducted in 1992-93 and 1998-99 have collected important information on the health, status of the population, family planning, fertility and mortality as well as growth and development of children, levels of anaemia of women and children and related parameters at the State and National levels which were not available earlier. In the second round, it has also collected data on the prevalence and perception of domestic violence. These surveys have been conducted by the International Institute for Population Sciences, Mumbai with almost total assistance from the international donor agencies. The cost of these surveys is quite high compared to national surveys conducted by NSSO. However, given the importance of this survey, it is recommended that

(i) National Family Health Surveys similar to those conducted in 1992-93 and 1998-99 should be conducted periodically using national resources, if funds are not available from any other agency.

VIII. Use of Information Technology in Improving Health Statistics

9.3.24 There is a considerable time lag in the availability of different types of Health Statistics. Primary health care being a State subject, the Directorates of Health Services of States and UTs are the nodal points for collection and publication of primary health data, collected from the grass roots level through multi-purpose workers. As extensive data are being collected from various agencies and compiled, delays are inherent, compounded by lack of priority and interest given to statistical work. Other related aspects are lack of statistically trained manpower for effective supervision and scrutiny of data collected by the primary worker. In many States as well as at the Central level, the Health Statistics Systems are not developed and computerised. Data flows from district to State and finally to Centre are not transmitted through a fast communication network and are dependent on traditional postal methods resulting in delays and also problems of quality. The Commission recommends that:

(i) Steps should be taken for the adoption of Information Technology and introduction of a unified system of computerisation and networking for data transmission from one level to another, to reduce delays in transmission and compilation of Health Statistics, and to improve the data quality, to derive various indicators and to retrieve information promptly on health related issues as and when needed.

CIVIL REGISTRATION SYSTEM (CRS)

Current Status

9.3.25 The Civil Registration System of a country envisages recording each and every incidence of vital event for legal purposes and in the process captures a lot of information on various characteristics of these events, which help in the compilation of a continuous series of vital events. Complete, timely and accurate registration of births and deaths is very crucial for the understanding of population dynamics at the local level and planning of effective health and development programmes. The extent of completeness and accuracy of birth and death registration is by itself an indicator of the modernisation of society as vital statistics belong to the Core Statistics of any National Statistical System. In India, civil registration was first introduced in the last century mainly as an aid to public health administration for locating and identifying diseases of public health importance and to undertake remedial measures to control mortality. However, registration was kept voluntary and different provinces had different legislations and there was no standardisation of concepts, definitions and classifications. Various Commissions and Committees have reviewed the civil registration based vital statistics system in the past. The enactment of the 'Registration of Births and Deaths (RBD) Act, 1969' replacing all diverse laws that existed on the subject, and the Model Rules framed under the Act introduced a uniform piece of legislation to overcome the problems of multiplicity of Acts and Rules that existed in the country. Thus, the Act aimed to have a uniform system of registration and data collection on vital statistics. The Act provides for compulsory registration of births and deaths in the country. However, registration of marriages and divorces is not compulsory in India.

9.3.26 The RBD Act has provided for a hierarchical set-up for the registration machinery in the country, headed by the Registrar General of India at the Centre, The Chief Registrar of Births and Deaths is the chief executive authority in the State for implementing the provisions of the Act. There are District Registrars in the districts and Registrars and Sub-registrars for registering births and deaths occurring in the area allotted to them within a district. The States with the approval of the Central Government have made Rules in accordance with the Model Rules to implement various provisions of the Registration of Births and Deaths Act.

Deficiencies

9.3.27 It is estimated that 26 million births and 9 million deaths occur in India every year and based upon the reports received, only 53 percent of births and 48 percent of deaths are registered. About 10 million births, which are about 25 percent of the unregistered births in the world and about 4 million deaths, are not registered. The poor registration in the rural areas of the country is the main reason for incomplete registration. On the basis of births registered in rural and urban areas, assuming that these births have taken place to the population living in these areas, the estimated birth rate works out to 12 and 24 per thousand respectively against 28 and 20 per thousand estimated from Sample Registration System during 1995. Even if it is taken that a sizable proportion, say 35-40 per cent of the births registered in the urban areas come from the population living in the rural areas, the birth rate of the rural areas could be estimated at around 14 to 15 per thousand, which shows that the level of registration in the rural areas may be around only 50 per cent. Further, the levels of registration of births and deaths vary widely across the States, as shown in Annexe 9.2. Thus, the Civil Registration System suffers from incomplete coverage and the problem is more acute in a few States, which account for a big chunk of this incomplete coverage. Given the complete coverage, the CRS has the potential to provide estimates of vital rates such as birth rate, death rate, infant mortality rate and other related fertility and mortality indicators even at the district and below levels and will be of immense importance for micro level planning for development. However, due to incomplete coverage of the system, these estimates are made available at the State level only through the Sample Registration Scheme (SRS). However, even the estimates of infant mortality rate for small States and UTs are not reliable due to the small sample size.

9.3.28 There are more than 200,000 reporting units in the country and more than 100,000 local registrars doing the actual work of registration. Monitoring the receipt of statistical returns from each and every registration unit on a monthly basis is a challenging task. Other requirements are of training, supervision and maintenance of a timely supply of forms and registers in the registration units.

9.3.29 A combination of administrative factors is responsible for the poor registration levels of vital events. Except for a few States and UTs, generally multiple agencies are involved in the registration work (see Annexe 9.3) at the sub-national level. This poses immense problems of coordination, monitoring and supervision, which directly affect the quality and timeliness of data. Though high -level inter-departmental committees exist, they have remained ineffective in improving the situation in most of the States. Further, the registration functionaries at all levels do the work of registration in addition to their other normal duties in an honorary capacity generally, without any incentive. This is why the work of registration, preparation and submission of statistical returns do not get due attention and priority. The quality of data becomes a major casualty. The number of Registration centres has also been a contentious issue. If this number is too small there are problems of accessibility. On the other hand, a large number of registration centres pose huge problems of control, management and supervision. Lack of adequate budget for supplying material resources such as forms and registers, for meeting training and supervisory requirements and publicity efforts put a constraint on the system to perform better. With regard to the registration of marriages, though legislations exist in some States, however, there is no uniform legislative enactment in the country. Some of the existing enactments are applicable to specific religious groups. There is also no provision for registration of divorces.

9.3.30 Even in States that have achieved high levels of registration, there is a considerable delay in reporting of statistics from the local registrars, eventually delaying the compilation of vital statistics at the State and National levels. A lot of paper work required and pending at the level of Registrar is one of the major reasons for the delay in submission of returns. Different States have different arrangements for processing the data on civil registration, depending on the

number of registration centres, availability of manpower in offices where tabulation is done and the level of computerisation at the State headquarters. Varying lengths of time taken for intermediate tabulation at the district and town/municipality levels seriously affect the tabulation work at the State level resulting in the failure of States to meet the time limit prescribed under the law for publication of statistical reports.

9.3.31 The other factors that lead to incomplete registrations are a general lack of awareness in the public about the statutory requirements and procedures of registration, lack of demand of birth and death certificates in rural areas, acceptance of alternate documents as proof of death, and lack of perception of any benefits of registration by the people. Further, the registration centres are not always easily visible. Around 75 percent of births and 80 percent of deaths are domiciliary in nature and the statutory reporting of the events lies with the household.

Conclusions and Recommendations

9.3.32 The Civil Registration System (CRS), which is capable of providing vital rates not only at the district but also lower level, is deficient in most of the States and UTs. The justification for improvement in the system of civil registration and vital statistics would usually be based on a demonstration of the potential of such a system to create individual records that are useful for legal and administrative purposes and also to aggregate them into usable statistics. The CRS in the country has so far not served the needs for which it was set up and therefore; it attracts low priority and attention not only by the Government but also by also potential users. The Commission observes that incomplete registrations and delays in the upward movement of the registration data have been major problems for timely processing and publication of the results of the Civil Registration System and this has undermined the its utility. At present it is a passive system, in which most people do not realise the importance of reporting births and deaths. Where ANMs and other village level workers have been given the responsibility of reporting births and deaths to the Registrar there has been a positive impact. Inspite of demands for publication of the absolute number of births, deaths, infant deaths, etc., such figures are not available. There is growing need for district level vital statistics, which is a major lacuna in the way of decentralised planning. Recently, released provisional results of the Census 2001 have revealed that the population has grown at a faster rate than estimated and the sex ratio in the age group 0-6 years has declined considerably during the last decade form 945 to 927. Had the Civil Registration System in the country been efficient in covering all births and deaths and bringing out data in time, it would have been possible to introduce necessary preventive measures in time. The results of Census 2001, once again stress the need for an efficient Civil Registration System. The Commission also recognises the goal of attaining of complete registration of vital events namely, births, deaths, marriages and pregnancy as one of the 14 socio-demographic goals to be attained by the year 2010 in the recently announced National Population Policy, 2000, and therefore recommends:

(i) There should be a more pro-active Civil Registration System in place of the existing passive system. In rural areas, *panchayats*, local bodies and other basic and primary workers apart from Auxiliary Nurses, Midwives, Village Watchmen should play an active role in informing the Registrar about the occurrence of vital events. They should collect birth and death information from households and deliver the same to the Registrar. All States should implement this as a part of strategy to improve the registration. This can be achieved by giving the local level workers the responsibility for informing and collection of reports of events and getting them registered.

(ii) Within a State, as far as possible, only one department of the Government should be responsible upto the district level for implementing the provisions of the RBD Act. Where multiple departments are involved, inter-departmental coordination committees should ensure effective and periodic reviews to propose measures for

improving registration levels and provision of registration services by drawing up a plan of action. This requires tight monitoring and supervision of the registration work at the field level.

(iii) Recognising the increasing role of local self-governance in the light of the 73rd and 74th Constitutional Amendments and considering the fact that quite a few States in the country have already taken initiative in this direction, the *panchayats* in the rural areas and Municipalities in the urban areas should gradually be given the responsibility for registration of births, deaths and marriages.

(iv) Sufficient resources should be provided to the agencies implementing the Registration of Births and Deaths (RBD) Act. The Planning Commission should provide funding to the States for this purpose. Further, to improve the availability of required forms and registers used for registration of vital events, the Central Government should bear the expenditure on this account.

(v) Regular training programmes should be organised by the States for Registration officials at all levels. The 'Registrar's Manual for Registration of Births and Deaths' being prepared by RGI should be made available to all concerned, and training programmes should be conducted to impart training to all Registrars in the use of the manual.

(vi) The revamped system of registration of births and deaths in the country introduced by Registrar General of India, mainly with a view to strengthen the statistical functions of the CRS and to reduce paper work at the level of the local Registrar, by facilitating computerised data entry, easy retrieval of records and reducing storage requirements of records, should be vigorously implemented in all the States. There should be special emphasis on the monitoring and supervision of the system particularly for poorly performing States in order to enhance their performance.

(vii) Production of birth and death certificates should be encouraged for various purposes, as it will help in improving the overall registration of vital events. For example, the production of birth certificates should be made mandatory for entering the name of new-born child in the ration card, school admission, etc., and death certificates for settling insurance claims and for inheritance of property by legal heirs, in case it is not so already in any State and UT.

(viii) Considering the stated goal in the National Population Policy of 100 per cent registration of marriages by 2010, sustained efforts should be made to achieve this goal through the Civil Registration System by suitably amending the RBD Act for registration of all marriages and divorces.

(ix) Public campaigns should be launched to create awareness among the general public about the need and importance of registration of births and deaths. Also steps should be taken to improve customer services by making registration centres more visible, prompt issue of birth and death certificates, simplifying the procedure, making registration in big hospitals more efficient and proper preservation and maintenance of records of vital events.

(x) Acknowledging the fact that an efficient Civil Registration System is the lasting solution to produce a regular series of vital rates e.g., fertility, mortality, etc. specific for age, sex, and educational level upto the district and even lower levels, the ultimate goal should be to put in place the Civil Registration System in the next 10 years and to use the Sample Registration System (SRS) as a source of data for longitudinal study of the social dynamics of the country and as a means of validating the CRS data.

(xi) Recourse to Information Technology (IT) should be taken for establishment of an effective system of civil registration that would provide prompt service to the public and help in quick retrieval of information for both administrative requirements and statistical purposes. As the costs of hardware and network communications will come down in the coming years, decentralised data entry and data transmission at the Registration level should be the goal to be achieved within a few years. Sustained efforts should be made for adoption of IT in modernising the CRS. The computers provided by the Department of Family Welfare, Government of India may be utilised for this purpose as well.

9.4 LABOUR AND EMPLOYMENT STATISTICS

INTRODUCTION

9.4.1 As Labour is a subject in the Concurrent List of the Constitution, both the Union and State Governments have powers to legislate on issues concerning Labour; their conditions of work, welfare, safety, health, etc. The responsibility for implementation of the legislation largely rests with the State Governments except in certain industries in the Central sector where it rests with the Union Government. Information on a variety of aspects of labour and employment are necessary for: making appropriate labour policies; understanding the aspects of labour safety, health, welfare, social security of labour; policy relating to special target groups such as women and child labour; industrial relations and disputes; enforcement of labour laws; workers' education and emigration of labour for employment abroad. Data are also required for assessing the levels of employment in various sectors of the economy, employment potential, incidence of unemployment, etc. and formulating programmes for generation of employment and for poverty alleviation to provide self-employment and wage employment. The liberalised economy combined with acceleration in economic growth has caused structural changes in the nature of job market. It, therefore, calls for capturing the data on Labour and Employment more comprehensively in the post reform period.

9.4.2 The system of collection of Labour Statistics in India is quite old. The Labour Bureau in the Union Ministry of Labour has been the Central agency collecting and disseminating data on various aspects of labour ever since it was established in 1946. Realising the importance of Labour Statistics in the discharge of its responsibilities, the Ministry has made attempts in the past to review the system of Labour Statistics in the country. In 1975, the Ministry constituted a small Working Group under the Chairmanship of Shri T.S. Sankaran, Joint Secretary, for studying the possibility of simplifying and rationalising the various registers, returns and reports prescribed under various Labour Laws. Another Committee was constituted in 1981 under the Chairmanship of Dr. K.C. Seal, Director General, CSO to look into the procedures followed in compiling the primary statistics in States and UTs and make recommendations for speedy data collection as well as simplification and rationalisation of returns. These Committees have made major recommendations for improving the statistical system and rationalisation and simplification of forms and returns; however, the implementation of these recommendations have been partial and most of these remain unimplemented, as the action that was required at the State level was not taken adequately. In Labour Statistics the involvement of the State Governments is crucial for the improvement of the system.

9.4.3 Recently, in January 1999, a Study Group on Labour Statistics was set up by the Ministry of Labour under the Chairmanship of Professor L.K. Deshpande to review the whole gamut of collection of Labour Statistics by different ministries and departments and certain other related aspects. These included the identification of data gaps, *vis-à-vis* various ILO conventions, review of the existing data collecting machinery and need for labour networking and creation of data bank on Labour Statistics. The Report of the Study Group is not only a comprehensive

review of the problems and existing data gaps in Labour Statistics collected by different agencies but also provides a set of recommendations for improvement. The Commission has gone into the contents of the Report and shares the views and recommendations of the Study Group and has in fact benefited considerably in its work from the findings of this study. The Commission is of the view that if the recommendations of this Group are speedily and effectively implemented, the existing deficiencies will get addressed to a large extent. Apart from this, the Commission interacted with officials from the Ministry of Labour and its various attached and subordinate offices, officials from NSSO, Planning Commission and the Registrar General of India. The current problems and issues on Labour Statistics were also discussed with the representatives from the States in the Conference of Central and State Statistical Organisations. The Commission took note of these suggestions and views, while framing its recommendations to improve the timeliness, credibility and adequacy of Labour and Employment Statistics.

CURRENT STATUS

9.4.4 The major agencies involved in the collection of Labour and Employment Statistics are the Ministry of Labour and its affiliates such as Labour Bureau and the Director General of Employment and Training (DGE&T); the National Sample Survey Organisation (NSSO); and the Registrar General and Census Commissioner of India. The Central Statistical Organisation (CSO) also collects data on employment through the Economic Census. The current status of data collection prevailing in these agencies is discussed below.

Ministry of Labour

9.4.5 The main agency involved in the collection and compilation of Labour Statistics mainly in the organised sector is the Labour Bureau in the Ministry of Labour. The Labour Bureau collects statistics through statutory and voluntary returns under different Labour Acts (see Annexe 9.4). The State Governments compile such statistics at the State level; the Bureau in turn consolidates them for the country as a whole covering all States and sectors of the economy and brings out periodical reports. It also conducts occasional surveys concerning labour in specific geographic areas or for some specific section of labour. Essentially, these are either to study the socio-economic conditions of labour with a view to formulating policy measures or to assess the impact of labour enactments. The Labour Bureau also undertakes compilation and maintenance of CPI numbers for industrial, agricultural and rural workers.

9.4.6 The data collection mechanism of the Labour Bureau has four components namely,

(a) Data received from the State Labour Departments as by-product of the administration of various Labour Laws;

(b) Data on Labour Statistics collected through the Annual Survey of Industries (ASI), Rural Labour Inquiry, Working Class Family Income and Expenditure Survey, and Rural Retail Prices for Consumer Price Index (CPI) for Rural Labour/Agriculture Labour;

(c) Data received on a voluntary basis from various Government and non-Government agencies, such as data on industrial disputes, retrenchment layoff and closures and price returns for CPI numbers for industrial workers;

(d) Data collected through other field surveys and studies.

9.4.7 The data collected through different means is published in various publications as indicated below:

I. Publications based on the data collected and compiled through regular and *ad hoc* surveys:

(a) Annual Survey of Industries;

(b) Rural Labour Enquiry once every five years;

(c) Occupational Wage Surveys (OWS);

(d) Reports on the working and living conditions of various target groups such as socio-economic conditions of women workers and workers belonging to SC/STs, unorganised sector, survey on Labour Conditions and Contract Labour;

(e) Monthly compilation of Index Numbers for Industrial, Agricultural and Rural Workers;

(f) Evaluation study on implementation of the Minimum Wages Act.

II. Publications based on data collected and compiled through statutory returns

(a) Review of different Acts;

- Minimum Wages Act, 1948;
- Maternity Benefit Act 1961;
- Plantation Labour Act, 1951;
- Motor Transport Workers Act, 1961;
- Industrial Employment (Standing Orders) Act, 1946;
- Workmen's Compensation Act, 1928

(b) Pocket Book of Labour Statistics;

(c) Indian Labour Statistics;

(d) Indian Labour Year Book;

(e) Indian Labour Journal.

III. Publications based on data collected and compiled through Voluntary returns:

(a) Industrial disputes;

(b) Closure/retrenchment;

(c) Trade Union Act, 1926

9.4.8 Most of these publications are however, being brought out after a considerable time lag.

Directorate General of Employment and Training

9.4.9 The Directorate General of Employment and Training (DGE&T) in the Ministry of Labour, in its administration of various provisions of the Employment Exchanges (such as Compulsory Notification of Vacancies) Act, 1959 has been collecting statistics on employment and the likely vacancies to occur for the organised sector of economy under the Employment Market Information Programme (EMIP) which covers: (a) all establishments in the public sector (except defence establishments and armed forces, however, the programme covers civilian employees in defence establishments), (b) non-agricultural establishments in the private sector, employing 25 or more persons on a compulsory basis, and establishments having 10-24 workers on a voluntary basis.

9.4.10 The programme was instituted with the objective to provide information at short intervals about the structure of employment in the public and private sectors as also to monitor changes in the levels of employment, disseminating information on types of jobs, extent of demand and qualifications that employers have set so that job seekers are informed of various job requirements. It also serves to provide estimates of the utilisation of labour force in different sectors, industries, occupations, etc. The information is collected through two forms called Employment Return – I (ER-I) and Employment Return – II (ER-II). The form ER- I is a quarterly

return containing items on total employment by sex on the last day of the quarter, number of vacancies that occurred and were filled during the quarter with details of occupations for which manpower shortages have been experienced by the establishments. Form ER-II is a biennial return and is used for collection of information on the educational and occupational pattern of employees. The EMIP is the only source of data on the organised sector employment and other details on a regular basis with potential for use in career counselling and vocational guidance, etc.

9.4.11 National Employment Service programme of the DGE&T forms another source of information on unemployment, under which the DGE&T compiles statistics about the number of persons on the Live Register of 954 Employment Exchanges located throughout the country. This data provides an idea of the incidence of unemployment in the country.

9.4.12 The DGE&T brings out a number of publications based on the data collected through the Employment Market Information Programme (EMIP) and the National Employment Service (NES). The data collected through EMIP is disseminated through various publications, which provide estimates of the utilisation of labour force in different sectors, industries, occupations, etc. the excess and shortage of manpower and the present level of employment generation in various industries. The publications of DGE&T include *Quarterly Employment Review, Quick Estimates of Employment in the Organised Sector* (Quarterly), *Employment Review* (Annual), *Occupational-Educational Pattern of Employees in India* (for public sector and private sector in alternate years), *Employment Exchange Statistics* (Annual), *Apprenticeship Training in India* (Annual), *Census of Central Government Employees* (Annual[1]) and *Bulletin of Job Opportunities in India* (Annual). Most of these publications are however, being brought out with a considerable time lag.

Office of Registrar General and Census Commissioner of India

9.4.13 The Decennial Census conducted by the Office of the Registrar General of India provides data on various characteristics of the labour force once in every 10 years for the entire country. The data so collected on workers are tabulated for main worker and marginal worker under various demographic, social and economic characteristics, which include classification by industrial activity and occupation. The tabulation also gives the spatial distribution of workers by rural/urban residence at National, State and district levels.

National Sample Survey Organisation

9.4.14 The NSSO collects information on certain key parameters of employment and unemployment in its surveys annually and through a comprehensive survey on employment and unemployment quinquennially. The first comprehensive survey on employment and unemployment was carried out during 1972-73 (27^{th} Round). Since then the survey on employment and unemployment has become part of the quinquennial programme of NSSO and so far six such comprehensive surveys have been conducted, the latest being the 55^{th} Round. The NSSO classifies workers by three approaches namely, usual status, current weekly status, and current daily status and further by demographic, social, economic and spatial characteristics. It helps in capturing the prevalence of intermittent work and characteristics of workers in more detail than the Census. Estimates of number employed according to activity status and their social, demographic and economic characteristics are available at the National and State level. Similarly, data for the unemployed is also available by the three approaches and characteristics. The NSSO brings out a number of reports based on these surveys. In the recent past the time lag in the NSSO's publications has been considerably reduced. The key results of the survey on

[1] Though the periodicity of the Census is supposed to be Annual, but since 1991only three censuses have been conducted in the years 1991, 1995 and 1996.

employment and unemployment for the 55th Round conducted during July 1999 to June 2000 were brought out in December 2000.

Central Statistical Organisation

9.4.15 The Central Statistical Organisation of the Ministry of Statistics & PI conducts Economics Census, which is another source of data on employment. So far four Economics Censuses have been conducted in the years 1977, 1980, 1990 and 1998. The Economics Census covers both agricultural (other than crop production and plantation) and non-agricultural activities and is intended to gather basic information on the number of enterprises and their employment by location, type of activity and nature of operation. It provides information on the number of persons working and the number of hired employees in these enterprises. The all-India provisional results for the Economics Census, 1998 have already been brought out and the final results are expected by June 2001. Most of the States have also brought out State-level reports.

9.4.16 A list of latest publications on Labour and Employment Statistics brought out by various organisations is enclosed as Annexe 9.5.

DEFICIENCIES

9.4.17 Although Labour Statistics are available from different sources, these suffer from several deficiencies that undermine their utility. There is a considerable time lag in the publication of statistics by various organisations. The deficiencies in the data collected by major agencies are discussed below:

Ministry of Labour

9.4.18 The Labour Statistics compiled by the Labour Bureau are of poor quality on account of low response from the primary units and time lag in submission of returns, leading to delay in submission of State level information to the Labour Bureau by the States. Consequently, the publication of consolidated information at the National level by the Labour Bureau gets delayed. The deficiencies are examined below:

Time lag, Poor Quality and Poor Response in Submission of Returns

9.4.19 The data from the primary units are received after a considerable time lag from the due dates, which affects the compilation of data at the State level and consequently at the Central level by the Labour Bureau. The statutory returns submitted by the units under different labour laws are the major source of information. The adequacy and quality of data aggregated at State and all-India level, therefore, are determined by the extent of response by the employers of the various industrial establishments. The response has generally been very low rendering the macro data practically useless for statistical analysis and inference and framing of policies. From the details given in Annexe 9.6, it can be seen that for the year 1998, the response rate under most of the Acts was less than 50 per cent with the exception of Factories Act, 1948 and the Plantation Labour Act, 1951. Even though the submission of returns by the factories or establishments/units to the State Government is obligatory and non-submission may lead to prosecution, very few units are actually prosecuted. Moreover, many primary units have no knowledge even of their statutory obligations to submit returns. Further, the penalties prescribed under the Act are low and do not serve as a deterrent to the defaulters. There is a lack of awareness among the units on the purpose and significance of the data required from them. The data received from the units also suffers from poor quality. Concepts and definitions used, though defined are not understood by poorly trained or untrained staff at the primary units level. The manual data processing and outdated modes of data transmission still continue and most of the State Labour Departments are lagging behind in the use of the Information Technology tools, which can serve to reduce the time lag and improve the quality of data.

9.4.20 Further, the States and UTs also do not submit returns to the Centre required under different Acts every year as per the prescribed time schedule. Annexe 9.7 provides details of response of the States for certain statutory returns for the years 1998 and 1999. It can be seen that the statutory returns under the Trade Union Act, 1926 for the year 1998 (due in September 1999) has not been received from 13 States and UTs. In the case of Minimum Wages Act, 1948 (due in May 1999), it has not been received from 14 States. A similar situation prevails in respect of other Acts as well.

Large Number of Returns Prescribed under Laws

9.4.21 One of the major irritants in data collection and compilation is the requirement on the part of an industrial enterprise to submit a large number of returns under different Labour enactments. This requires huge resources on the part of the unit. Many of them, unless coerced, find it more convenient to default rather than to submit these returns. Most of the returns are complicated and thus, there is a need to simplify and consolidate various returns into a few forms. The complexity of forms and the duplication of same information on a number of forms are the major reasons for both poor response and quality of data being collected as a by-product of Labour Laws.

Limitations of EMIP Data

9.4.22 The data collected through EMIP suffers from following shortcomings:

(a) The EMIP data does not cover employment in the unorganised sector, self-employment, part-time employment, establishments in agriculture and allied occupations in the private sector (which furnish employment returns only on voluntary basis), household establishments and non-agricultural establishment employing less than 10 workers in the private sector, defence forces and Indian embassies and missions abroad;

(b) Incomplete frame of establishments due to lack of periodic updation of employer registers at the local Employment Exchanges;

(c) Poor response from establishments in the frame;

(d) Manual working of most of Employment Exchanges for collection, compilation, consolidation and transmission of data.

9.4.23 Due to these limitations the EMIP figures are gross under-estimates of the employment in the country and it is very difficult to estimate the extent of the under-estimation.

Limitations of Data from National Employment Service

9.4.24 The role of Employment Exchanges in placement services has reduced in recent years due to shrinkage of public sector jobs. Further, the private placement agencies are now performing the role, which was traditionally the monopoly of Employment Exchanges. Data collected through the National Employment Service (NES) programme suffers from following limitations:

(a) Limited role of Employment Exchanges in the placement service;

(b) Incomplete registration of the unemployed;

(c) Continued registration in the unemployment registers of those already employed;

(d) Urban bias as the Employment Exchanges as mostly located in urban areas; and

(e) Non-integration of information with private placement agencies in the National Employment Service.

9.4.25 Due to these limitations the Employment Exchange data on live registers, as an indicator of unemployment in the country, has serious shortcomings.

Census Data

9.4.26 Census is the only source that gives the distribution of labour force by various categories at the National, State and district levels. The census also provides data on the unemployed defined as; persons who had not worked at all in the reference year and were seeking work throughout the year. The distribution of the unemployed is given by age, sex, education, and rural and urban residence at National, State and district levels. However, the census data have the following limitations, which relate to definition, quality, and conduct of the census as a whole:

(a) The definition of economic activity used in the census included all market and non-market activities except those engaged in: (i) growing of plantation crops, vegetables, flowers and other crops, if done exclusively for home consumption; and (ii) own account production of fixed assets. This was expected to under enumerate workers, particularly the women workers. However, in the Census 2001, the definition of economic activity has been expanded to include most of the items mentioned in (i) above.

(b) The census data are not able to capture the seasonal and intermittent nature of work characteristics of India.

(c) The census defines 'worker' somewhat liberally as a person who has worked 'any time at all' in the 365 days in market and non-market economic activities.

(d) A major dissatisfaction among the data users is the delayed publication of census results. At the State and UT level, the regional offices tabulate the census data, but they cannot release the results to the public before the all-India tables are released.

National Sample Survey Organisation

9.4.27 Compared to census data, the labour force data from NSSO surveys are available once every five years. Limited data are also available from the annual surveys of NSSO. The NSSO's definition of work differs from the ILO's definition in that the NSSO does not recognise processing of primary commodities for home consumption as economic activity. However, the definition is broader than that of the census and more internationally comparable. It gives better estimates of the participation of women in economic activities and also identifies the reasons why women out of the labour force are not able to take up economic work. However, the data suffers from following deficiencies:

(a) The estimates of unemployment reported by NSSO are low because of the definitions and concepts followed in the framework of employment and unemployment;

(b) The NSSO's tabulation does not provide information on whether the workers in the subsidiary status are so willingly or due to their inability to find work;

(c) The NSSO's annual thin sample is about 40 per cent of the sample of households in the quinquennial survey. Though the annual and quinquennial surveys follow identical concepts, schedules of quinquennial surveys provide for detailed probing, which is not available in annual rounds. There have been some differences in the estimates thrown by the annual and quinquennial data. NSSO does not give any indication of the reliability of its estimates, some of which may be very unreliable due to poor representation in the sample;

(d) The NSSO surveys have not been able to capture information on the prevalence of child labour adequately.

Variety of Definitions

9.4.28 In the field of labour, a number of laws have been enacted to safeguard the interest of the workers and old laws have either been repealed or have been amended to meet the changing needs of time. In the process of formulation of labour laws, the scope and meaning of important items have been redefined to meet the requirements of the law in question. To quote a few examples terms like 'child', 'family', 'wages' are defined differently in different Acts. (Annexe 9.8) The prevalence of some terms with varying scope pose a problem especially to those filling and submitting the return prescribed under the law. It also leads to confusion among the data users while comparing data from different sources.

Data on Overseas Employment

9.4.29 In recent years, there has been an increasing trend of emigration by skilled manpower to foreign countries. Information on such migrant workers is wholly or partially deficient. Only the migrant workers holding passports marked "Emigration Check Required" are required to obtain a clearance from the Protectorate General of Emigrants (PGOE) and only the information thus collected is compiled by occupation, destination-wise by PGOE. The persons who hold passport but are not required to obtain such a clearance from PGOE, are not covered in the data set. This number is a sizeable proportion of the total migrant workers. A number of registered private placement agencies also provide services for overseas employment. There is need to establish a system of collecting annual information from these placement agencies.

Data Management System on Social Security

9.4.30 The data management system on social security in respect of implementation of the Employees' State Insurance Act, 1948 and Employees' State Insurance and Miscellaneous Provisions Act, 1952 in organisations like ESI, EPF, etc. is grossly outdated. There is an urgent need to introduce a computerised data management system in these organisations.

Data Gaps in Relation to ILO Requirements

9.4.31 India is an active and a founder member of the International Labour Organisation. The ILO has laid down certain standards concerning content and coverage of statistics relating to different subjects through various conventions. The Convention Number 160 lays standards of various kinds of Labour Statistics, which a member country is required to compile and report to the ILO. Data gaps relating to various ILO conventions including Convention Number 160 have been analysed in the *Report of the Study Group on Labour Statistics*, chaired by Professor L.K. Deshpande and valuable suggestions have been given for bridging the data gaps. The Labour Bureau in consultation with the Ministry of Labour should formulate a plan to meet the requirements of different conventions with priority to the Convention Number 160 for ratifying the same.

Data on Child Labour and Bonded Labour

9.4.32 There are serious data gaps with regard to the prevalence of child labour in the country. The Labour Ministry has been utilising the information on child labour as enumerated by Census and the estimates projected by various NSSO surveys. Both the data have their limitations and are found to be at variance with each other. There is no estimate whatsoever on occupation-wise (primarily hazardous and non-hazardous) and age-wise distribution of child labour. This is a major lacuna in formulating appropriate policies to eradicate this social evil and in providing the child with basic rights. It is very difficult to collect information on bonded labour because it is a punishable offence to keep anybody in bondage. Therefore, there are inherent difficulties in data collection in this area.

Use of Information Technology and Labour Networking

9.4.33 Keeping in view the vastness of the country and the varied sources from which data are to be compiled, transmitted, tabulated and analysed, the manual system of handling data compilation and transmission hitherto in operation has practically broken down and is unable to cope with the size and complexity of data. There is, therefore, a need for massive computerisation of the labour statistics with computer networking so that online data are available at specified points. The computer network should connect various Divisions of Ministry of Labour, Labour and Employment Division of the Planning Commission, the Labour Departments of the State Governments and different Wings of Labour Bureau. This is easily possible given the current state of Information Technology in the country. The Ministry of Labour should take appropriate steps to bring into effect the networking of States and other organisations engaged in labour research and compilation of statistics. Labour networking shall ensure speedier dissemination of data. Whereas, the Labour Bureau has already computerised the processing of data in respect of a number of schemes, the delay in the transmission of data from the field is still a major bottleneck to bring out timely results. It is also essential that the new entrants should be trained in computer usage and those already in service should be trained adequately.

CONCLUSIONS AND RECOMMENDATIONS

9.4.34 The Labour Statistics in India are largely collected under various labour laws and regulations through the administrative system, even though a large portion of the workforce in India is engaged in agriculture and informal sector. Collection of timely, reliable and adequate data on labour sector and its timely dissemination to users requires immediate attention, to bring desirable improvement in the system and to meet the data requirements of the planners. The Commission therefore recommends:

(i) The inspectors of the Labour Department and Factory Inspectorate, during their routine inspections of the units, should also check the status of submission of returns. The provisions of various Labour Acts should be vigorously implemented and enforced for defaulting units. Further, if required, legal provisions should be strengthened and penalties made more stringent to act as a deterrent. The renewal of licence of the units should be subject to satisfactory submission of returns in the past.

(ii) A system of regular meeting of the officials from Government Labour Departments with representatives from business and manufacturers associations should be established. The associations would be instrumental in persuading their member units to submit the returns prescribed under various statutory and other provisions in time. The units submitting the returns should be duly acknowledged.

(iii) To make the units aware of their obligation to furnish the returns correctly and in time, periodical notices should be issued in the leading newspapers by the concerned authorities.

(iv) The Ministry of Labour should undertake immediate measures to rationalise and simplify returns prescribed under various Acts. Combined returns that cater to the requirements of more than one Act should be designed, to the extent possible, in order to reduce the burden of units/establishments. In a liberalised economic environment, this will be a step forward and will find great favour in the industry. To achieve this, if required, necessary amendments should be brought out in the various Labour Acts. Government of India has set up a Labour Commission and the Ministry of Labour should take up this issue with the Commission.

(v) The Labour Bureau should strengthen its on-going programme for training of staff in collection, compilation and analysis of data received from the State Governments, as

well as from the agencies preparing and submitting the returns. The States should also start such training programmes for the staff of units/establishments supplying information/returns to them.

(vi) To overcome the problem of non-response from the primary units, a tightening of the administrative machinery is the only solution. However, in respect of those Acts where the degree of non-response is not very high, the Labour Bureau should conduct sample surveys regularly to work out estimates for non-responding units. In cases of very high non-response such as Payment of Wages Act, Minimum Wages Act, Trade Union Act, Motor Transport Workers Act, etc. certain studies on the degree of non-response should be conducted to understand the magnitude of the problem.

(vii) For the sake of uniformity in the collection and dissemination of Labour Statistics, it is necessary that the variety of definitions for a single concept be avoided. This issue should also be taken up with the Labour Commission so that the inconsistencies of various definitions used in different Acts could be removed. The Ministry of Labour should take up necessary steps in this direction.

(viii) In order to meet the requirements of various International Labour Organisation (ILO) Conventions, the Labour Bureau should formulate an action plan especially for ILO Convention Number 160, covering Labour Statistics.

(ix) There is a need to computerise the working of all organisations engaged in the generation of Labour and Employment Statistics at the Central and State levels. A Labour Information Network integrating all such organisations should be established within the Ministry of Labour for maintenance, coordination and data dissemination.

(x) The statistical system in the Labour Departments in the States should be strengthened from the district level onwards. At the Centre, there is a need for strengthening or establishing statistical units in various divisions/directorates like Child Labour, Directorate General of Factory Advice Services & Labour Institute (DGFASLI), Directorate General of Employment and Training (DGE&T), etc. of the Ministry of Labour. Further, in the Labour Bureau, there is a need for re-structuring of posts between economic and statistical professionals keeping in view the job functions and to meet the growing demand for Labour Statistics. As most of the functions of the Labour Bureau are statistical in nature, the organisation should be headed by a qualified statistician, as was in the past.

(xi) The role of Employment Exchange as a placement agency and as a source of labour market information has diluted over the years and needs to be re-established by integrating the labour market information available with private placement agencies along with the Employment Exchanges and making them furnish information on placements, type of jobs, extent of demand, qualifications, industry, etc. A Committee should examine the role of the Employment Exchanges as the source of labour market information and career counselling and how it can work in partnership with private placement agencies.

(xii) There are serious shortcomings in the Live Register data of the Employment Exchanges as an indicator of unemployment in the country due to inadequate coverage problems. Therefore, for the purpose of drawing valid conclusions on levels of unemployment, etc., the data on the Live Register of Employment Exchanges should be adjusted and updated annually with the help of ratios/multipliers made available by the labour force survey of the NSSO.

(xiii) Though the DGE&T makes attempts at collection and analyses of data on the state of the labour market from the information supplied by the Employment Exchanges,

the infrastructure available with the Employment Exchanges is inadequate to compile and forward the necessary data to the DGE&T in time. Therefore, it is recommended that, a comprehensive programme of computerisation and networking of all Employment Exchanges in the country, development of required software and appropriate training programmes should be taken up.

(xiv) The exclusion of certain non-market economic activities, from the definition of work adopted in Population Census could be the reason for the low female participation rates derived from the Census 1991 compared to the rates obtained from National Sample Survey Orgnisation's (NSSO's) 50th Round. In order to cross check the data from the two sources, it is recommended that the census should adopt the same definition as that of NSSO. This is important to overcome the criticism of under-count in the census data of women workers, which becomes a serious limitation of its utility as a source of economic data. In the Census, 2001, however, the definition of economic activity adopted has been expanded and modified to reconcile this position.

(xv) The current practice of tabulation of Census data by the regional offices should continue. However, in order to make available the State level data to the users early, the practice of withholding the release of tabulated data of the region till the all-India tables are released should be done away with. Further, the latest advances in the technology for data processing, analyses and printing should be utilised so that the delays can be brought down and dissemination of data is improved.

(xvi) More probing questions from the informants on subsidiary work in NSSO's quinquennial survey would enable the capturing of information on part-time and intermittent work, which is likely to become very common in the near future.

(xvii) The NSSO should provide standard error of estimates of employment related variables so that the differences in the estimates projected by annual and quinquennial rounds are explained.

(xviii) The NSSO classifies an individual who worked for an hour on any day of the reference week as worker by weekly status. To study the intensity of unemployment (or employment) during the reference week, NSSO should publish data on distribution of persons by, number of days at work and total intensity of work during the reference week**.**

(xix) Efforts should be made to compile data on migration of skilled manpower to foreign countries, to capture information on the skills of the emigrant and on the nature of work to which the emigrant is moving out at the place of destination. A system of collecting annual information from the placement agencies for overseas employment should be established to capture this information.

(xx) The data management system on social security should be computerised so as to ensure better management of Employees State Insurance (ESI), Employees Provident Fund (EPF) and other social security Acts.

(xxi) Child labour poses a complicated and a multi-dimensional problem. The time disposition study of young people along with a classification of their activities into economic and non-economic types can give an insight into the dimension of this problem. For this purpose, a methodological study or survey should be conducted to evolve methods for capturing the problems of child labour.

(xxii) Considering the inherent problems in data collection for bonded labour, as suggested by the L.K. Deshpande Study Group, household surveys should be conducted to ascertain socio-economic circumstances like debt, caste, etc. which lead to the practice of bondage in the areas and activities where there is a tendency to employ

bonded labour. The Ministry of Labour should commission such studies in areas and activities prone to bondage.

(xxiii) There is a considerable time lag in the publications on Labour Statistics brought out by various agencies. Efforts should be made by all the concerned agencies to take steps that are necessary to reduce the time lag at all stages of work so that published data are available to the users with a minimum time lag.

9.5 EDUCATIONAL STATISTICS

INTRODUCTION

9.5.1 Education is the key to all processes of human development. As such, educational planning needs to be done meticulously and executed with great sensitivity. Education improves the quality of life and develops manpower for different sections of the economy. It empowers the poor masses to become self-reliant and enables them to participate in the process of national development. Education is a concurrent subject, which implies a meaningful partnership between the Union Government and the States. As per the National Policy on Education, (NPE, 1986), the Union Government has the responsibility to reinforce the national and integrative character of education, maintain its quality and standards, to study and monitor the educational requirements of the country with regard to manpower development, to cater to the needs of research and advanced study, to look after the international aspects of education and human resource development and in general to promote excellence at all levels of the educational system. To fulfil its role, the two departments concerned with education in the Ministry of Human Resource Development, one for Elementary Education and Literacy and the other for Secondary and Higher Education, closely interact with the States and UTs. This task requires the support of a robust mechanism for collection, compilation, processing and dissemination of Educational Statistics. Efficient decision-making has to be based upon a large amount of information and quantitative data. While the policy makers and administrators experience the need for comprehensive database for policy formulation and monitoring of programmes, the researchers and other data users also feel the need for updated, reliable and inter-temporally comparable data and information.

9.5.2 The Educational Statistics System in India dates back to the pre-independence period. Annual Educational Statistics began to be collected from 1913-14 followed by elaborate quinquennial reviews. Prior to 1947, the Directorate of Commercial Intelligence collected Educational Statistics. The activity was taken over by the Ministry of Education (MOE) after independence when the Government was required to plan for Universalisation of Elementary Education (UEE). To assess the status and to prepare a plan to this effect, the MOE conducted the first All-India Educational Survey (AIES) in 1957. Since then, five more AIESs have been conducted by NCERT from time to time, the last one in 1993. These surveys have become an integral part of the system of Educational Statistics in India.

9.5.3 Various reviews of the Educational Statistics system in the past have led to the existing system of collection of data from the States in prescribed formats. A high level Committee to review the Educational Statistics system appointed by the Ministry of Education in 1981 had made a number of recommendations to improve the system, but many of them remained unimplemented. The High Level Evaluation Committee (Khusro Committee, 1983) also brought to light some important data gaps in the Educational Statistical system of the country. Recently, in June 1999 the Ministry of Human Resource Development constituted an Advisory Committee on Educational Statistics under the Chairmanship of Secretary (Education) to suggest measures for improvement on all matters concerning Educational Statistics to the Ministry. The current problems and issues were also discussed in the Conference of Central and State Statistical Organisations held in September 2000. The Commission also interacted with the representatives from the Department of Education. In view of the complexity of data collection and multiplicity

of agencies collecting data on technical and higher education, the National Statistical Commission sponsored a study to examine the availability of data on higher and technical education, as compiled by various agencies in the country. The Commission took note of the findings, recommendations and suggestions of the above-mentioned study, Committees and outcomes of the interaction with the States and Ministry of Human Resource Development (MHRD), while attempting an analysis with a view to improve the timeliness, reliability and adequacy of Educational Statistics.

CURRENT STATUS

9.5.4 The two main sources of educational data are the educational institutions and households. The educational institutions provide the data on enrolment and number of teachers, which is collected annually from all recognised institutions being compiled at the national level by the Planning, Monitoring and Statistics Division (PMSD) in the Department of Secondary and Higher Education (DS&HE) of the Ministry of Human Resource Development (MHRD). More detailed statistics on students, teachers and physical facilities in schools up to higher secondary level are collected in 5 to 7 years through All India Educational Surveys (AIES) conducted by the NCERT. Important educational data that can be collected only from the households relate to such items as literacy and the educational level of the population, whether the person or child is attending school or not, and private expenditure on education. Important sources of household data on education are the decennial Population Census and the sample surveys conducted by the National Sample Survey Organisation. Data on literacy, level of education and schooling status are collected in the decennial Population Census. The data on these and some other items such as expenditure on education and school dropouts are also collected in certain rounds of National Sample Surveys.

9.5.5 The PMSD in MHRD collects compiled data from the States. In the States, there are divisions or units in the Department of Education, which collect data from schools, through their district and block offices and compile the same in the ES proformae[1] prescribed by the PMSD for onward transmission to MHRD. In general, the data collected from schools are first compiled manually at the block level, then the block level figures are aggregated to prepare district tables and finally, State level tables are prepared by aggregating the district level tables. Most of the compilation up to the State level is done manually. The DS&HE brings out a publication, *Selected Educational Statistics* annually based on the data received from the states. The data are supposed to be collected from the educational institutions, but in many cases the data supplied for the publication are provisional figures, which in the case of some States are simply repetitions of the previous year's figures. Being provisional, they are of limited value but are the most widely used since the detailed statistics are published after a time lag of 6-7 years.

9.5.6 Given below is a brief description of the other major sources of Educational Statistics:

(a) **All India Educational Surveys Conducted by NCERT:** All India Educational (AIE) Surveys conducted by NCERT are a very important source of Educational Statistics for school education in India. So far, six surveys have been conducted and the latest Survey, the sixth in the series was conducted in 1993 and its report was published in 7 volumes over the period 1997-98. Apart from the detailed data on enrolment, teachers and physical facilities in schools, these surveys provide information on habitations in different population slabs not served by a primary

[1] Form ES-I: numerical data, ES-II: financial data, ES-III: examination results and ES-IV: numerical data on SC/ST. One set of forms is for school education and another set for college (higher) education

school, middle school or a secondary school within the habitation or within a certain distance range such as 3 kms or 5 kms. Such information is not available from any other source for all rural habitations of India. The data provided by this survey is very significant in the context of Universalisation of Elementary Education, which has received a high priority in the educational planning of the country. So far, the AIE Surveys have not been conducted with any definite periodicity. The six surveys were conducted in the following years: 1957, 1965, 1973, 1978, 1986 and 1993. Of these, the first survey was conducted by the Ministry of Education and the rest by NCERT. In these surveys, NCERT prepares the survey schedules, does all the planning and carries out the national level data analysis and prepares the national survey reports. For the survey period, State Survey Units are set up in each State and officers are also appointed at the State and district levels to conduct the survey. They are generally officers of the State Education Department. In the sixth AIES, these officers handled the survey work in addition to their normal duties, but in the earlier surveys, they used to be full time survey officers. The two main schedules used in these surveys are Village (or Urban) Information Form and School Information Form. The forms are filled up by school head teachers with the help of *patwaris* who provide information on habitations and population. All the forms are checked by the block level Education officer and some sample checking is also done by the district and State level officers as well as by investigators appointed by NCERT at the National level. While in the earlier surveys, all the tabulation was done manually at block, district, State and National levels, in the sixth AIE Survey, the NIC was entrusted with the job of computerised data processing. As each school was given a unique code it is possible to retrieve even school level information from the computerised records. As the school code includes the village code too, one can relate the school data with village characteristics also.

(b) **Population Census:** The decennial census is an important source of data on literacy, persons attending/not attending school and level of education of the population of the country. In the 1991 and 2001 Census, the literacy data has been collected and compiled for the population in the age group 7+. While the literacy rate for the age group 7+ is made available just after the census, the tables on literacy for different age groups become available after 5 to 6 years of the census. Internationally, the age group for which literacy data is reported is 15+; it took nearly six years after 1991 to make the literacy data available for this age group.

(c) **Surveys Conducted by NSSO:** The NSSO collects data on social consumption, including social consumption on educational services. The last survey in which the NSSO collected data on social consumption was the 52nd Round (1995-96). In this survey, data on literacy, school attendance, dropouts and educational expenditure from the Sample Households was collected and the findings brought out in a report published in October 1998. The earlier surveys in which literacy and other educational items were covered in detail were the 35th Round (1980-81) and 42nd Round (1986-87). The attendance ratio from the survey being based on household data usually differs significantly from the enrolment ratio obtained from school data. For other years, NSSO provides estimates of literacy rates derived from much smaller samples.

(d) **Data on Technical and Higher Education:** There are various agencies involved in the collection of data on technical and higher education in the country. This area comprises higher (general education), technical education, medical education, agricultural education and teacher education. The UGC is responsible for collection and reporting of data on higher education obtained directly from colleges and

universities. Prior to 1982, the Department of Education in MHRD as well as UGC collected data on higher education but in order to avoid duplication, it was decided that UGC alone should collect data on higher education. However, the UGC faces problems of time lag and non-response from the reporting institutions, but some basic statistics are published every year in UGC's Annual Report. The MHRD has again started collecting data on higher education from the States for the year 1994-95 onwards. The Central Bureau of Health Intelligence (CBHI) in the Department of Health collects data on education in allopathic and dental systems of medicine from the Medical Council of India (MCI) and the Dental Council of India (DCI). The Department of Indian System of Medicine & Homeopathy (ISM&H) collects and publishes data on ayurveda, unani, siddha and homeopathy education. The All-India Council of Technical Education (AICTE) – the apex body to regulate technical education in the country – does not collect any data at present, but intends to collect the same in the near future. With regard to agricultural education, the Department of Agricultural Research & Education (DARE) is the apex body, but it does not collect data on agricultural education on a regular basis. In the area of teacher education, the National Council of Teacher Education (NCTE) collects limited data annually and has developed a computerised Management Information System (MIS), but the data are collected only to monitor the teacher education programmes of various institutions and to ensure that the prescribed norms are adhered to. At present these data are not tabulated or compiled for any statistical purpose.

9.5.7 Mention may be made of the statistics collected annually from schools for the primary level of education in the districts covered under the District Primary Education Programme (DPEP). The DPEP is a Centrally sponsored scheme providing a special thrust to achieve universalisation of primary education through decentralised management, participatory processes, empowerment and capacity building at all levels. The programme launched in 1994 in 42 districts of seven States has now been extended to cover 271 districts of 18 States including the 3 new States created in the year 2000. The DPEP-EMIS is an important source of data on enrolment, teachers, physical facilities, etc. for the primary level of education, but since it is confined to the DPEP districts and the statistics at present remain unpublished, it cannot be regarded a part of the country's statistical system as yet. However, the data is compiled annually and is made available generally within a year. Checking of the data and data entry takes place at the district level and tabulation is done both at the State and National levels. The system has the potential of becoming a full-fledged statistical system for at least up to secondary level of education.

9.5.8 In addition to the above, there are other organisations that provide data on Education Statistics. These are given below:

(a) Directorate of Employment & Training for data on the educational level of the job seekers through Employment Exchanges;

(b) National Family & Health Welfare Survey, 1992-93 & 1998-99; for data on literacy and children attending school, based on a sample survey of households;

(c) Database Report on Vocationalisation of School Education-1991 survey;

(d) Database created by the State Governments; and

(e) IAMR Project on National Technical Manpower Information System;

9.5.9 Some basic Educational Statistics are given in Annexe 9.9 Major educational data coverage, mode of collection, the periodicity, and the availability from various organisations is detailed in Annexe 9.10 and important publications on Educational Statistics by different organisations are listed in Annexe 9.11.

DEFICIENCIES

9.5.10 Although educational data are available from different sources, there are several deficiencies in the data. The reliability of data on certain items is questionable and there is a considerable time lag in the publication of statistics. Also data on many important aspects of education are not available. The status with regard to computerisation of data is highly unsatisfactory. Data on education are also compiled by individual State governments and published in their official publications such as annual statistical reports. The data published in these reports and those available in the Government of India publications often do not tally although it is the States, which supply the data to the Central Government. The State Government memoranda submitted to the Finance Commission for the purpose of getting Central assistance contain yet another set of data relating to education. Thus the situation relating to the Educational Statistics in the country is highly confusing. The deficiencies in the Educational Statistics system of the country can be broadly grouped as follows:

Quality, Reliability and Time lag in Educational Statistics

9.5.11 The most serious problem with the Educational Statistics that are collected annually from educational institutions and are published at the national level by the Ministry of HRD, is that of data reliability and time lag. The data are provided by schools on the proforma supplied by the State Education Departments, but there is no proper system of data validation and checking. Since tabulation work is done manually at the block, district, State and National levels, delays occur in compiling the statistics at every level (see Annexe 9.11 for latest publications on educational statistics and Annexe 9.12 for State-wise position in respect of collection of Educational Statistics in ES Forms). If some institutions fail to provide the statistics in time, preparation of block level tables get delayed. Similarly, delay in compiling the data at any level leads to further delay in the preparation of tables at the next level. Thus the delay at every level accumulates and results in a time lag of 6 to 7 years in the publication of all-India statistical reports. The statistics which are published within two years of the date of reference in *Selected Educational Statistics* are just provisional Statistics, which sometimes include the figures of the previous year for some of the States, which do not supply data in time.

9.5.12 The reasons for poor reliability of data are manifold. Apart from the absence of a suitable data checking and validation mechanism, errors creep in during manual tabulation. Also the institutional records (such as admission registers, attendance registers and stock registers) are not properly maintained at the institutions, as a result of which correct information based on records cannot always be given. Another worrisome cause for inaccuracy in data is the tendency to give distorted information when it suits the school heads and the administrators. There have been cases of schools providing inflated enrolment data as the number of teaching posts in a school depends on the enrolment. In the fields of higher and technical education, different agencies are involved in collection and publication of data such as the University Grants Commission (UGC), Association of Indian Universities (AIU), National Council of Teacher Education (NCTE), Institute of Applied Manpower Research (IAMR), and All-India Council for Technical Education (AICTE). These organisations collect data only for specific purposes without any coordination with the Department of Education in MHRD, which collects all the data from the States independently. As a result, there are often differences in the data reported by the different agencies on the same items.

9.5.13 The UNESCO has developed an International Standard Classification of Education (ISCED) to serve as an instrument for assembling, compiling and presenting comparable Educational Statistics and indicators, both within a country and internationally. Originally developed during the late seventies, it was revised recently in 1997. In India, so far not much use has been made of ISCED for reporting Educational Statistics. Such a classification, if adopted

would be quite useful in providing comparable statistics and indicators across the States and internationally.

CONCLUSIONS AND RECOMMENDATIONS

9.5.14 Collection of reliable data from schools and other institutions and their timely processing and dissemination to the users requires immediate attention in the light of the problems discussed above. The Commission recommends:

(i) The institutional records such as registers of admission, attendance, stock, and teacher's registers, etc. should be maintained properly by all institutions. State Departments of Education should facilitate maintenance of records by supplying suitable registers and guidelines to schools. During school inspection, inspectors and officers of the State Education Department should check the records to ensure that these are up-to-date and are maintained as per guidelines. Suitable manuals should be provided to the concerned teachers and staff for this purpose while some training programmes should also be organised for them at the State and district levels.

(ii) Scrutiny and verification of all filled-in-forms should be done meticulously at the block level. Errors and omissions should be checked at the block level itself for primary/elementary schools and at the district level for secondary and post-secondary institutions. In order to ensure accuracy of data, verification should be undertaken by the concerned authorities while undertaking inspections. This should not only include scrutiny and verification of records but an on-the-spot assessment of actual situation that exists in respect of enrolment, attendance, teachers in position and facilities that exist in schools.

(iii) Computerisation of education data at all levels is needed to tackle the problems of quality, consistency, reliability and time lag in data transfer and data retrieval. Use of Information Technology and Internet facilities should be made for data transmission from district to the State and from State to National level. Computerisation will not only reduce the time lag, but in due course of time, it should also do away with the system of supplying State level compiled statistics on cumbersome forms such as Educational Statistics – I (ES-I), Educational Statistics – II (ES-II), etc. A computerised Educational Management Information System should be developed right from the district level to the State and National levels. The Educational Management Information System (EMIS) that has been developed for District Primary Education Project (DPEP) districts should be expanded and implemented in all the districts of the country for collection, processing and dissemination of all educational statistics upto the higher secondary stage.

(iv) Efforts should be made to provide accurate data on the number of institutions, teachers and students (by sex, grade, SC/ST, rural/urban, etc.) for each level and type of education within a year in the publication *Selected Educational Statistics*, which is a very widely used source of Educational Statistics. Other detailed statistics should be included in subsequent publications, which should be produced within 2 years, and not with a time lag of 5 to 6 years as at present. The main results of large-scale surveys that provide educational data, such as those conducted by National Council of Educational Research and Training (NCERT) and NSSO should be available in published form within a year of the date of reference with the detailed results being made available within 2 years. A detailed timetable should be prepared and all data collection and compilation activities at every level should be monitored to ensure strict adherence to the timetable.

(v) The administrators in charge of education and human resource development should pay sufficient attention and give priority to the tasks of data collection and compilation. Some incentives and recognition should be given for supplying accurate information on time. Also punitive measures may be taken in the case of inordinate delays and carelessness in filling forms, for example, release of funds to schools could be made dependent on the receipt of statistical returns on time.

(vi) The present sets of Educational Statistics (ES) forms in which data are being supplied by the States to the Ministry of Human Resource Development are unwieldy and need to be rationalised. These forms would, however, no longer be needed when the computerised system become operational.

(vii) For collecting and compiling all Educational Statistics, the International Standard Classification of Education (ISCED 1997) developed by United Nations Educational and Scientific Organisation (UNESCO) should be used to ensure standardisation and comparability of data across the States and internationally.

Non-availability of Data on Some Important Items

9.5.15 The following are some of the items on which reliable data are not available at present, and whatever data are available, are only from *ad hoc* surveys and not on a regular basis for all the institutions.

(a) Data on Age of Students**:** At present single age-wise enrolment statistics are not collected by the Ministry, NCERT or any other agency. Such data are presently being collected in District Primary Education Project (DPEP) districts only, using District Information System for Education (DISE) forms from schools having primary classes. Similarly, single age-wise break up of total population according to highest qualification achieved separately for workers and non-workers is not being collected presently. Only limited data are available from the decennial census. Data on age distribution of new entrants in primary education, which are not available from any source, are very much needed for making dependable educational projections.

(b) Data on Educational Expenditure and Finance: At present, hardly any data are available on educational expenditure for the different levels and types of education except from the budget and expenditure statements of the Government. Data on income and expenditure of the private institutions are particularly lacking. The data on expenditure incurred by parents and guardians on education are presently collected through socio-economic and social consumption surveys conducted by NSSO.

(c) Data on Teachers: At present, only meagre data are collected on teachers, which gives information on the number of teachers by sex and SC/ST, for different types of institutions. With a new category of para teachers coming up for primary education in most of the States, it is necessary to collect and process the data on such teachers separately. Also the data on age, experience, qualifications of teachers are either not available or are quite scanty.

(d) Socio-economic Background of the Students: Under the existing system, the only item on which data under this category are being collected relates to educational status of SC/ST and in some States, OBC also. However, statistics are required to measure the benefit from different types of educational programmes to the students coming from different socio-economic backgrounds. Such data are being collected by NSSO on a periodic basis in their occasional rounds once in five years. Also there are a few ad hoc studies on education of the SC and ST children.

(e) Attainment levels of students: No data are collected on the achievement levels of students on a regular basis. However, statistics of examination results at the end of classes X and XII are available from the Boards of School Education, which conduct these examinations. Recently, achievement surveys conducted in DPEP districts, and a few other large-scale achievement surveys have also provided data on achievement levels of pupils at the primary stage. In higher education, UGC provides statistics of graduates passing out from various universities.

(f) Incentives: The All-India Educational Survey provides data on State-wise and scheme-wise number of beneficiaries and schools covered. A large number of incentive schemes have been started by the State Governments such as free text-books/reading material, free hostels, free uniforms for girls, and scholarship for certain categories of students, mid-day-meal scheme, etc. The Central Government has also initiated a national programme of nutritional support to primary education for which the data on quantity of food grains distributed are available with Ministry of Human Resource Development (MHRD). But disaggregated data on beneficiaries and amount spent on various incentive schemes are not available on a regular basis.

(g) Data on Attendance: At present only the data on enrolment in various institutions are collected but no data are collected on the attendance of children at various stages of education. There are attendance registers in schools, but these are not properly maintained and the information is often not reliable.

(h) Educational Facilities: Ever since the beginning of development planning a number of facilities in terms of school buildings, teaching staff, additional equipment, teaching-learning material, laboratory equipment, etc. have been provided under such schemes as Operation Blackboard, District Institutes of Education Training (DIETs), Improvement of Science Education, etc. Though the data on facilities becomes available from All India Educational Surveys, there are hardly any data on the utilisation and the existing condition of these facilities.

(i) Household data on Children Attending or not Attending School: Such data should be collected annually from village education registers to be maintained in each village, as a part of the micro-planning exercise. A system could be evolved which requires simple procedures of updating the data every year after an initial comprehensive door-to-door survey. The school enrolment data should be compared with the data on school attendance supplied by households at the village level itself to remove discrepancies. A few States, such as Andhra Pradesh and Karnataka, have already undertaken such surveys and are even computerising all the data, but most other States have not yet initiated such a programme of collecting and analysing household data on an ongoing basis.

(j) Enrolment and Other Data for Unrecognised Institutions: There has been a significant increase in the private sector educational programmes in recent years, most of which are outside the control of the Education Departments. If the private institutions, whether Government aided or not, fulfil certain conditions of the State Education Department, they get recognised and are covered in data collection for official Educational Statistics. But some schools and institutions remain unrecognised because they either do not fulfil the requirements for recognition or they do not want to be controlled in any way by the Education Department. At the secondary and post-secondary levels, because of the market demand, private institutions running on commercial lines that offer a variety of new courses have multiplied. These centres do not care for recognition by universities or such bodies that give recognition, as long as there are employment opportunities for their graduates. The courses that are offered by a growing number of such private

institutions and that are at present are not covered in any official Educational Statistics, include courses in computer applications, software development, tourism, hotel management, medical transcription, business management, e-commerce, music, dance, etc. Even large institutions such as NIIT, APTECH that have some major educational programmes are not covered. Also there are coaching schools in every town, which prepare students for various examinations, though their students may also be regular students of some recognised institutions. Even at the primary stage of education, many unrecognised schools have come up in a number of States. Even in rural areas, they are proliferating since some parents who feel that they provide better education are ready to and pay the high fees charged by them. In a recent study sponsored by EDCIL's Technical Support Group for DPEP, in two districts of U.P., 6 to 8 per cent children were found to be enrolled in unrecognised private schools. The 52nd Round of NSS has also shown that 4.8 per cent students of primary classes were in such unrecognised schools. At the pre-primary level, it is well known that most of the schools are actually unrecognised schools.

CONCLUSIONS AND RECOMMENDATIONS

9.5.16 Due to the absence of age data there are difficulties in precisely calculating the intake rate, net enrolment ratio and related indicators. Hardly any data are available in a compiled form on children of 6-13 age group attending or not attending school, except for the data provided by certain rounds of NSS and more recently by the National Family Health Surveys 1 and 2. Data on income and expenditure of educational institutions, on profiles of teachers and other gaps identified above need to be collected on a periodic basis for efficient functioning of the Educational Statistical System. Some data can be collected on a sample basis too. The data on other items like economic and financial aspects required from the national accounts point of view, that are presently not covered in the annual data collection programme also require attention. The Commission therefore recommends:

(i) The forms for collecting data annually from schools should be reviewed and new items on which data are needed annually, but not collected at present, should be included. Data on a minimum set of items should be collected by all the States, while the States should be free to add items that they consider important specifically for the State.

(ii) Data on the age of students, teachers' qualifications and experience, income and expenditure of private schools, incentive schemes, educational facilities and equipment, children with disabilities, etc. should be collected in the All India Educational (AIE) Surveys on school education conducted by NCERT. The data on age and some other items should be collected on a sample basis in these surveys.

(iii) All India Educational Surveys on school education should be conducted regularly at intervals of five years and the results of the survey should be published within two years of the date of reference. Data on some of the items should be collected only on a sample basis, as was done in the Sixth All India Educational Survey of 1993.

(iv) All schools should be given a permanent code number, which should be used both in AIE surveys of NCERT and in the annual data collection programme of the Ministry of Human Resource Development (MHRD) from schools.

(v) Data on new categories of schools and teachers such as different type of alternative schools or schools under the Education Guarantee Scheme (EGS) and teachers categorised as *para-teachers* (known as s*hikshakarmi, guruji*, *shikshamitra*, etc.) should be collected annually and information on them should be provided separately in statistical reports.

(vi) The data on income and expenditure of institutions managed by the Government or local bodies should be collected annually from the offices that maintain the record of disbursement of grants and payment of teacher salaries.

(vii) Certain periodical studies should be conducted by institutions such as NCERT, National Institute for Educational Planning & Administration (NIEPA), Institute of Applied Manpower Research (IAMR) and University Grants Commission (UGC) on the expenditure incurred by educational institutions by level and type of educational programme to estimate the unit cost for each level and type of education.

(viii) Collection of data on beneficiaries, cost and effectiveness of various incentive schemes should be collected in All-India Educational Surveys (AIES) and through special studies.

(ix) While data on educational facilities becomes available through All-India Educational Surveys, data on the present condition and extent of such facilities should also be collected periodically at least on a sample basis.

(x) The data on economic aspects such as finances of educational institutions and some other aspects such as average attendance of enrolled students, should be collected on a regular basis in one or more of the following ways, through:

(a) All India Educational Surveys conducted by NCERT once in five years;

(b) Sample surveys of institutions to be conducted by NCERT or the proposed Educational Statistics Bureau of MHRD on a regular basis once in 3 years or through *ad hoc* sample surveys, if necessary, at the National or State level.

(xi) Data on literacy, educational level of population, expenditure on education incurred by parents, socio-economic background of students, children attending or not attending school, dropouts, etc. should be collected, apart from the Population Census, through household surveys conducted by NSSO. As these items are normally covered under 'social consumption' it is suggested that the rounds of NSS that cover social consumption should be conducted regularly every five years.

(xii) The unrecognised schools and institutions should be covered in sample surveys to be conducted by MHRD and in AIE surveys of NCERT. Effort should be made to provide data at least on the number of such institutions, enrolment and number of teachers. To begin with, the local authorities (e.g. Block Education Officers at the block level) should enumerate all private unrecognised schools and keep a record of the same and update them every year.

(xiii) The secondary and post-secondary level unrecognised institutions (such as those offering courses in computer applications, management, etc) should be covered through periodical sample surveys. To begin with, a comprehensive survey should be undertaken to enumerate them and a system of updating their statistics annually should be evolved. Eventually, All India Council for Technical Education (AICTE) should be entrusted with the task of collecting and maintaining their statistics.

Data Collection in Higher and Technical Education

9.5.17 It was observed that no reliable data on Higher (General) Education are available and the last statistical publication, *Higher Education in India* of MHRD relates to 1986-87. Data collection by the UGC is in bad shape, as their latest annual publication, *University Development in India- Facts and Figures* is for the year1984-85. UGC, however, publishes some contemporary data in its Annual Report every year. But much of the information is extrapolated on the bases of statistical returns received from hardly 50 per cent of the total educational institutions. The unsatisfactory functioning of the UGC's statistical system is due to a number of cumbersome proformae (presently 15 in number) prescribed by the UGC. The universities and colleges do not

have the staff to compile the data and as they do not use modern data processing devices and computers, this results in a considerable time lag. As a result, the MHRD, again started collecting data on higher education directly from the States from 1994-95 for the purpose of reporting the same in its annual statistical publications.

9.5.18 The AICTE – the apex body for regulating technical education in the country – has so far not started collection of data on technical education. AICTE is however, funding a scheme of National Technical Manpower Information System (NTMIS), which is being implemented by the Institute of Applied Manpower Research (IAMR). Further, due to non-availability of data from the State Governments no data on technical education has been published by the MHRD. It is understood that AICTE proposes to establish a statistical section to collect data on technical education in the country in the near future. With regard to medical and dental education, the available data are not sufficient, as these are meant for the specific purpose of regulating admissions to the MBBS and PG courses for Allopathic and Dental systems of medicine. The available data suffer from poor response and a time lag to the tune of five years.

9.5.19 There is no system of regular data collection on agricultural education in the Department of Agricultural Research and Education (DARE). Presently, DARE is collecting data pertaining to the years 1991-92 to 1996-97 through various schedules. There is no statistical unit in the Department to collect data on a regular basis.

9.5.20 The NCTE has a computerised Management Information System (MIS) to maintain limited data on teacher education collected through the Performance Appraisal Report. The data are again limited to the specific purpose of regulating the teacher training programmes and do not include data on enrolment, teachers, finance, etc. It is thus obvious that in the field of technical and higher education no satisfactory system of data collection, compilation and dissemination exists at present and a lot of improvement is needed.

CONCLUSIONS AND RECOMMENDATIONS

9.5.21 The above analysis of the system of data collection and compilation in the field of Higher and Technical Education reveals that there are serious problems in the regular and timely collection and dissemination of data in an area, which is vital for an assessment of the supply of educated (higher) and technical manpower in the country. No proper system exists to collate the data available from various sources and the existing system has failed to meet the current data requirements. The Commission is of the view that in the area of higher and technical education, the respective controlling agencies like UGC, AICTE, DARE, MCI, DCI and NCTE should be mainly responsible for collecting data directly from the institutions under their control. The Commission therefore recommends that:

(i) University Grants Commission (UGC) should shoulder the main responsibility of collecting and publishing data pertaining all types of institutions of higher education. It should use its regional centres and universities for collection and transmission of data of colleges and other institutions under their jurisdiction instead of collecting data from colleges directly. Universities should collect and compile data from their affiliated colleges and should use computers and Internet/e-mail for processing and transmission of data to UGC for which they should have adequate statistical and computer personnel. UGC should reduce the number of data collection forms and simplify the existing forms. UGC should also organise quinquennial surveys of Higher Education Institutions on the pattern of All India Educational Surveys of school education conducted by NCERT.

(ii) Since MHRD requires some basic statistics on technical and higher education for dissemination through its annual statistical publications, it should continue to collect

the same from the States to avoid delay. However, a common institutional form should be devised for collection of basic data (on enrolment, graduates, facilities, teachers, etc.) and the data on this form with the same date of reference should be sent to the concerned Government Department in the State and also to the affiliating university or UGC's regional centre for compilation and transmission to UGC. This should help in eliminating the difference if any, between the two sets of statistics, one produced by MHRD and the other by UGC at the national level. UGC may use other forms for collecting data on additional items that should be needed for other purposes.

(iii) AICTE should have a full-fledged Statistical Unit to collect and compile data on enrolment, intake, teaching staff, graduates, educational facilities, finances, etc. from all types of technical and vocational education institutions, through its regional offices. So far as the minimum data needs of the State Governments and MHRD are concerned, a procedure similar to that suggested above for institutions of higher education should be adopted to reduce the time lag in compilation of Educational Statistics at the National level by MHRD.

(iv) The above arrangement of data collection should also apply in respect of institutions offering courses in Ayurvedic, Siddha, Unani, and Homeopathic systems of medicine, for which the Department of ISM &H is responsible.

(v) The limited data on education in Medical and Dental colleges, presently collected by Medical Council of India (MCI) and Dental Council of India (DCI) is not sufficient and additional items of information on enrolment, teaching staff, etc. should also be collected by the Central Bureau of Health Intelligence (CBHI) through MCI and DCI or directly from the institutions.

(vi) The Department of Agricultural Research and Education (DARE) should collect and publish the data on Agricultural Education on an annual basis and develop the necessary infrastructure for the purpose.

(vii) The NCTE should expand its data collection programme to include data on enrolment, teachers, finance, etc. Suitable formats should be developed by it in consultation with MHRD and UGC. Also National Council of Teacher Education (NCTE) should bring out a statistical publication on teacher education institutions annually.

(viii) All the above agencies should strengthen or establish Statistical Units to take up the responsibilities of collection and compilation of data on various programmes of technical and higher education. They should also supply data to the MHRD regularly as required by it and bring out their own statistical publications annually without much time lag.

(ix) A Coordination Committee on Technical and Higher Education comprising representatives of MHRD, UGC, AICTE, CBHI, DARE, NCTE, etc. should be set up under the aegis of MHRD to devise measures for avoiding duplication of data collection on similar items by different agencies and devising measures to improve the quality and coverage of statistics on all types of technical and higher education.

Weak Infrastructure at Centre, State and District levels

9.5.22 Since 1950-51, the number of primary, upper primary and secondary educational institutions has increased manifold. Similarly, the enrolment of students in these schools has increased to many times that of 1950-51. For example, in 1950-51 there were about 210 thousand primary schools, which have almost tripled to 627 thousand primary schools in 1998-99. The enrolment in primary classes increased to 111 million that is about six times during the same

period. In higher and technical education also, there has been a tremendous increase in the number of institutions as well as in the enrolment of students. In India, more than one sixth of the population is engaged in the pursuit and promotion of education when we take into account 186 million students, 4.5 million teachers and one million educational institutions. It involves huge amounts of financial inputs as currently more than Rs. 40,000 crores is spent on education annually.

9.5.23 Further, education in independent India has witnessed a sea change in terms of content, curriculum, quality and modes of teaching. New fields like hotel management and catering technology, fashion technology, interior decoration, computer education, tourism, management education, medical transcription and a variety of para-medical courses and many others have been introduced in recent years. The concept of multiple entry points has also come into existence. Apart from formal education, correspondence courses, distance education, open education, home study, etc., have found wider acceptance in the society.

9.5.24 The educational administrative set up at every level has also undergone changes in recent years. The Directorates of Education have been bifurcated/ trifurcated into a number of Directorates to look after different levels and types of education. Most States have separate Education Officers at the district level for primary/upper primary and secondary schools. The infrastructure and manpower requirements of the statistical units have not kept pace with the tremendous growth in educational facilities and programmes. Despite the existence of posts specifically for the purpose of collection and compilation of educational statistics, the staff is diverted to other areas of work in some States. Further, the vacant posts are not filled up and ultimately some of these posts are abolished. The multiplicity of the Directorates has also created problems of coordination amongst them. Even at the Centre, after the creation of two Departments (one for Elementary Education and Literacy and the other for Secondary and Higher Education), the Statistical Unit of the Programme Monitoring and Statistics Division placed in the latter Department, has to cater to the requirements of both the Departments and faces some problems of coordination.

9.5.25 In addition to the above, there are several other Departments of the State Governments, which perform educational functions. These include the departments dealing with Technical Education and education in the fields of Medicine, Agriculture and Animal Husbandry, etc. From these academic and financial statistics are also collected and coordinated by the State Education Departments. There are difficulties in inter-departmental coordination for collection of Educational Statistics in respect of these areas.

CONCLUSIONS AND RECOMMENDATIONS

9.5.26 The infrastructure for collection of Educational Statistics, from the national level down to the State, district and block levels over the years has not kept pace with the increasing demands on the system. The framework is quite weak and needs substantial physical and financial inputs and statistically trained and computer literate manpower for improving the overall system of Educational Statistics in the country.

9.5.27 Considering the problems of coordination, poor response, increased workload over the years, growing data requirements for framing suitable policies and implementing such programmes as *Sarva Shiksha Abhiyan*, and also taking into account several emerging new types of educational programmes particularly in the private sector, the need to build appropriate educational indicators and time series on important parameters and undertaking sample surveys for meeting a variety of data requirements, the Statistical Unit in the Ministry of Human Resource Development must be strengthened and suitably upgraded at the earliest. Similarly, strengthening and upgrading of Educational Statistics Units in the States and districts, also needs utmost

attention and priority for which adequate financial and other resources are needed. The Commission therefore recommends that:

(i) In order to ensure that statistical activities get due attention, there should be a full-fledged Educational Statistics Bureau in the Ministry of Human Resource Development. It should be headed by a Statistical Adviser from Indian Statistical Service, in the rank of Joint Secretary to take care of all statistical activities of the two Departments namely, Department of Secondary and Higher Education and Department of Elementary Education and Literacy. The Educational Statistics Bureau should have two Units, each headed by a Statistical officer in the rank of Director/Joint Director to handle the work of these two Departments. The Statistical Adviser will advise the two Departments in all matters related to the collection of Educational Statistics, will coordinate with the National Statistical Office, organise sample surveys on education and liase and coordinate with international agencies and agencies of the Central and State Governments responsible for generating and supplying educational statistics.

(ii) Apart from providing basic statistics on enrolment, number of teachers, etc., through periodical publications, the Bureau should bring out various indicators derived from the data and make them available to users. It should also undertake special studies based on time series data from time to time and also make educational projections on a regular basis.

(iii) It should be possible to bring about the above changes without creating new posts (except that of Statistical Adviser) by suitably upgrading the existing posts and by reallocation of work among the existing staff and with provision of suitable training for handling the new type of work.

(iv) At the State level, the Educational Statistics Unit should be preferably located in one of the Directorates instead of there being several small units for statistical work in every Directorate. A statistician in the rank of Joint Director should head this Unit. The unit should be provided adequate manpower and computer resources to handle data collection and processing of State level data.

(v) The concerned Directorate should be the nodal agency in the State to coordinate all the work related to Educational Statistics with other Departments, which perform educational functions such as Technical Education and Education in Medicine, Agriculture, Animal Husbandry, etc.

(vi) The State Educational Statistics Unit should also undertake sample surveys and *ad hoc* studies in the field of education on topics of interest to them. It should also be responsible for conducting training programmes for the staff engaged in statistical work at various levels.

(vii) The district level establishment should be well equipped to cater to data collection and processing needs for education upto the higher secondary level in the district and to undertake scrutiny and verification of forms received from the block level. It should, however, be ensured that the main statistical work does not suffer because of the staff meant for Educational Statistics being used for other activities.

(viii) The Educational Statistical Bureau at the Centre and the Educational Statistics Units in the States and districts should be equipped with adequate computer hardware and software for data entry, scrutiny, verification and data analysis. Sufficient resources should be provided by both the Central and State Governments to implement computerisation uniformly for the educational statistical system. Some facilities and staff already provided in DPEP States and districts for EMIS should be upgraded for

handling the statistics of all institutions up to secondary level and the same should be extended to non-DPEP States and districts also.

(ix) The Statistical Bureau at the Centre should network with the States and the districts for receiving data directly from the districts, as well as consolidated State level data from the State Education Departments.

(x) The staff handling statistical work at the Centre and States should be provided with adequate training in statistics and use of computers for statistical work. Their skills should also be upgraded through proper training. The proposed Bureau in the Ministry of Human Resource Development should organise refresher and other training programmes periodically for the staff to upgrade their knowledge and skills.

9.6 GENDER STATISTICS

INTRODUCTION

9.6.1 Women, who constitute half of the population, are generally not treated as equal with men in the matter of self-development although their betterment and well being are crucial to the progress, prosperity and peaceful existence of mankind. It is, indeed a matter of gratification that the Constitution of India grants equality to women. In order to ameliorate the material conditions of living for women, the Government of India enacted legislations for rapid economic development and ultimately, restructuring the socio-economic order in the country. A realistic appraisal of the success or otherwise of various Governmental measures, policies and programmes devised for the improvement of the status of women is not possible without the timely availability of reliable statistics and relevant indicators. The efficiency and effectiveness of a statistical system is judged by its capability to produce reliable data covering the entire spectrum of subject, bearing policy relevance and in its capacity to disseminate these data with a minimum possible time lag.

CURRENT STATUS

9.6.2 Gender Statistics as a separate subject area is of recent origin. These statistics are not collected separately but are arrived at by studying the male-female break up given by different data sources such as Population Census, large-scale sample surveys and Administrative Statistics. Of course, there are certain areas, which are exclusively related to women such as crime against women, domestic violence, maternal health, etc. Therefore, the current status accorded to Gender Statistics may be the same as given to other socio-economic statistics such as Population, Labour, Health, Education Statistics, etc. Like most of the Socio-economic Statistics in the country, Gender Statistics also suffer from problems of coverage, time lag and reliability.

9.6.3 Although the Department of Women and Child Development is the nodal agency for policy formulation with regard to the development of women, Gender Statistics are produced by a large number of Ministries such as, Ministry of Health & Family Welfare, Ministry of Human Resource Development, Central Statistical Organisation, National Sample Survey Organisation, Registrar General of India, etc. Being a newly emerging area, the CSO has attempted to undertake a number of methodological studies in the field of Gender Statistics.

9.6.4 Keeping in view the importance of the Gender Statistics in the country, a number of steps have already been taken for improvement in its collection and compilation. The Central Statistical Organisation implemented a project, 'Improvement of Statistics on Gender Issues' during 1993-97, as a part of which, National Workshops were organised to facilitate the interaction of users and producers of Gender Statistics. In these workshops, a set of indicators for gender planning were identified and the status of databases on those indicators were reviewed. The indicators, on which data were already available, were included in a publication, *Women &*

Men in India. For the indicators on which data were not available, a National Plan of Action (NPA) was prepared in which the organisations to bring out the specific gender-related data were identified. The follow-up of the NPA has already resulted in the better availability of sex-disaggregated data on some indicators such as land ownership by sex, availability of credit facilities from bank by sex, maternal mortality rate, etc.

9.6.5 *Women and Men in India* has now become a regular publication of CSO. Department of Women & Child Development also brings out, though not regularly, a publication entitled, *Women in India*. The Department of Family Welfare is also trying to give a sex-wise break-up of the children immunised. The National Crime Record Bureau is also attempting to improve its statistics on crime against women. Though, some attempts are being made for the coordinated development of the Gender Statistics in the country, much more remains to be done.

DEFICIENCIES

Non-availability of Data on Important Indicators

9.6.6 There are some data, which are very essential for appropriate planning at various geographical levels for the development of women. Even after serious efforts made by CSO and Department of Women and Child Development to emphasise the provision of male-female break-up by all the agencies, the representative data on a number of indicators are yet not available. Some of these indicators are given below:

(a) Number of doctors, nurses and other paramedical staff in private sectors;

(b) Distribution of persons affected by sexually transmitted diseases and AIDS by various socio-economic characteristics such as age, sex and social groups;

(c) Number of sex workers and related statistics such as: (i) age, level of education and causes of initiation, and (ii) problems faced by them;

(d) Data on crime against women such as: (i) age and sex of victims and offenders, (ii) social and economic backgrounds of victims and offenders, and (iii) level of education and employment status of victims and offenders;

(e) Data on domestic violence;

(f) Data on separate facilities for women such as hostel facilities for women, creches, etc.

9.6.7 Though, data on some of the above indicators are available through small research studies, they may not be useful for large scale planning. Data on many of these indicators will be difficult to collect by the official agencies. A mechanism has to be evolved to involve Non-Governmental organisations/research institutions to collect representative data on these indicators.

Female-Headed Households

9.6.8 Female-headed households have different socio-economic characteristics as compared to other households. Though, some tables are generated for female-headed households from the employment and unemployment survey conducted by NSSO, these tables are available only at National and State level. Such tables could not be generated from Population Census 1991 because household schedules were not computerised. As the Population Census, 2001 schedules will be computerised, there is an urgent need to produce a few socio-economic and demographic tables pertaining to female-headed households.

Causes of Deaths and Maternal Mortality

9.6.9 At present, the Survey on Causes of Deaths conducted by the Office of the Registrar General of India provides some data on Causes of Deaths. However, due to layman reporting of causes of deaths and small sample size, the quality of data from this Survey is very poor. The Sample Registration System has attempted to work out the estimate of maternal mortality rate. However, these rates are presently available only for 10 large States and that too with a high standard error. As the maternal mortality rate is an important indicator for the study of status of women in the country, an effort has to be made to collect reliable data on this indicator either by improving the survey on Causes of Death or undertaking a large-scale sample survey.

Gender Development Index

9.6.10 The UNDP's Human Development Report has been giving the Human Development Index since 1990 and Gender Development Index since 1995 for about 174 countries of the world including India. Many countries have brought out their own National Human Development Report. Unfortunately, in India no national report has been brought out by the Government. Of course, a few States have brought out such reports for their own States. For working out the life expectancy at birth and the per capita income at the district level, different States are adopting a different methodology. Due to this, inter-State comparability is a serious problem. Though some individual scholars have computed the value of HDI and GDI for India and the States, there are no official estimates of these indicators.

9.6.11 The HDI and GDI are very important indicators for planning purposes. For appropriate comparison of different States, there is a need to develop a standard methodology. Of course, such work can be attempted by NGOs and Research Institutions but there is a strong need for a set of official estimates of these indicators at regular intervals. For constructing such indices for India, there is a need to modify the UNDP methodology for calculation of HDI and GDI by incorporating some more appropriate indicators like poverty to make the indices representative of Indian situation. As the database at district level is still not very strong, such an exercise should be attempted first at the National and State levels and than at the district level also.

9.6.12 To bring out these indices at regular intervals, the statistical systems in the fields of health and education should be strengthened, so that the requisite data for constructing these indices become available at regular intervals with minimum time lag.

CONCLUSIONS AND RECOMMENDATIONS

9.6.13 Even though some efforts have been made in the past for improvement of Gender Statistics in the country, a lot more remains to be done. The Commission recommends the following measures to be taken in Technical and Administrative areas:

(i) The Department of Women and Child Development and CSO have already issued guidelines for collecting all data with a male-female break-up, wherever applicable. In order to ensure that relevant Gender Statistics are collected as per the guidelines, necessary instructions for compliance should be issued again at the highest level. All the censuses, large-scale sample surveys and Administrative Statistics should have a provision for collecting data with sex break-up, where applicable.

(ii) As several ministries and organisations are involved in the development of Gender Statistics, a high-level Standing Advisory Committee under the Chairmanship of Secretary, Department of Women and Child Development, with representation from all the concerned ministries including Central Statistical Organisation should be constituted for ensuring proper reporting of Gender Statistics.

(iii) The Department of Women and Child Development, which is the nodal Department for various developmental planning for women, does not have a Statistics Division. Therefore, a Statistics Division headed by a senior statistical officer at the level of Joint Secretary, should be created. For better coordination with other ministries and departments including the National Statistical Office, the post should be manned by an Indian Statistical Service officer.

(iv) Indicators of gender disparity such as equity index should be computed at State level for every State taking into account the data available on socio-economic variables. CSO should develop appropriate methodology for computing Human Development Index (HDI) and Gender Development Index (GDI) at State level. Studies should be conducted using gender related data to highlight existing gender disparities.

9.7 ENVIRONMENT STATISTICS

INTRODUCTION

9.7.1 The concept of sustainable development has captured the world's attention and is becoming the guiding principle of developmental planning. Environmental protection has been recognised today as the crucial factor in any sustainable development. Prior to the United Nations Conference on Human Environment, 1972, the main emphasis was laid on development issues without taking into consideration the consequent environmental degradation. The importance of sustainability got highlighted in the "Earth Summit" in Rio in 1992 and it was realised that the current development path is both inadequate for meeting present needs and seriously undermines opportunities for future generation. It was also recognised that sustainable development on all fronts required the preservation of environment, especially irreplaceable natural resources and bio-diversity. Therefore, a challenge was thrown before the world to restructure the development path in harmony with nature and environment. One of the important challenges for developing economies like India, is to achieve closer integration between economic policies and policies for management of natural resources and environment. For closer integration, decision-makers need more information about the environmental impacts of developmental policies and identification of pressure points such as population, industrialisation, large power generation and irrigation projects, etc. This calls for collection, compilation and dissemination of a wide variety of statistical data on biodiversity, atmosphere, land and soil, water, human settlements, etc. Environmental Statistics, which has become an important area requiring special attention, has three major sub-areas, namely, basic Environmental Statistics, environmental indicators and environmental accounting.

9.7.2 Environmental issues are enshrined in the Indian Constitution as Directive Principles of State Policy and reflect the commitment of the country to protect the environment with regard to forests and wildlife. In India, a separate Ministry of Environment and Forests was created in 1985, and is engaged in the task of managing the country's environment by focusing on the development of important tools and techniques, impact assessment, research and collection and dissemination of environmental information. An Environmental Statistics Cell has also been established in the CSO, to coordinate with various agencies involved in collecting information relating to Environment Statistics. The State Governments have also set up departments dealing with Environment to address the rapidly increasing policy initiatives and programmes in the environment and forest sectors.

A. DEVELOPMENT OF ENVIRONMENT STATISTICS AND INDICATORS

Current Status

9.7.3 The United Nations Statistics Division (UNSD) provided a broad Framework for Development of Environment Statistics (FDES) in 1982. The FDES provides a useful approach

for the development and organisation of Environment Statistics. It comprises five broad components namely, biodiversity, atmosphere, land/soil, water and human settlements. In India, a multidisciplinary Working Group was constituted in July 1986 under the Director General, CSO with members from Central and State Governments and research institutions, for suggesting a list of variables to be included in FDES. The FDES for the country was prepared based upon the broad framework provided by UNSD and was officially adopted in 1997. Based on this framework, the CSO brought out a *Compendium of Environment Statistics* in 1997 and this has now become an annual publication of CSO. The Compendium provides valuable information on the present status of the five broad components of environment identified by UNSD. Apart from the CSO, various ministries and departments of Central and State Governments collect information related to Environment Statistics and the same are published in various publications namely, *Forestry Statistics, The State of Forest Report, Inventory of Forest Resources of India, State of Environment,* etc. by organisations within the Ministry of Environment and Forests; *Agriculture Statistics at a Glance* and *Fisheries Statistics* by the Ministry of Agriculture; *Water Statistics* by Ministry of Water Resources, etc. Most of these publications are annual, but the time lag in bringing out the publications in respect of the Ministry of Environment and Forests is about 3 to 5 years. Information on some indicators is also being collected by other agencies like the Central Pollution Control Board, Registrar General, Ministry of Urban Development, Tata Energy Research Institute, etc. The Ministry of Environment and Forests has established in 1982 an Environmental Information System (ENVIS) (see Annexe 9.13) for maintaining information on various aspects related to environment. As environment is a multi-disciplinary subject involving complex subjects like bio-diversity, atmosphere, water, land and soil and human settlement, it is very difficult to collect and analyse data and study inter-relationships. As there are several agencies for collection of information, it becomes necessary to develop an efficient statistical system on environment that could meet the growing demand of various stakeholders, both Government and non-Government as well as outside agencies for environmental data.

9.7.4 The United Nations in 1997 has suggested a list of indicators on environment for which a regular set of information needs to be maintained. The selection of environmental indicators relevant to environmental phenomenon of each country is a crucial activity in any environment statistics programme. The selection of such indicators should be made in close collaboration between data users and producers. As a part of the Asian Development Bank's Project in 1996, a suggestive list of environment indicators (see Annexe 9.14) required to be maintained by India, was recommended.

Deficiencies

9.7.5 At the Centre, the Central Statistical Organisation co-ordinates with various central agencies to publish in its annual *Compendium of Environment Statistics*. However, since there is no suitable co-ordinating mechanism at the State level, the availability of State-level data on environment is quite poor. Data on a number of indicators listed by Asian Development Bank (ADB) are either presently not being compiled or are only partially available. The database on a variety of environmental parameters and indicators as available presently through different sources is quite weak and needs to be substantially augmented. Although the Ministry of Environment and Forests is the nodal agency for maintenance of proper statistical system related to environment, the availability of statistical infrastructure in the Ministry is totally inadequate to meet the growing data requirements. The situation is more or less similar in organisations such as Forest Survey of India, Indian Council for Forestry Education & Research, Central Pollution Control Board, etc. functioning under the administrative control of the Ministry of Environment and Forests.

Conclusions and Recommendations

9.7.6 The Commission recognises that an integrated approach to economic, environment and social policies requires comprehensive databases through appropriate statistical frameworks and systems. The availability of a wide range of timely and reliable information on environment and related indicators is of utmost importance. The Commission therefore recommends:

(i) Central Statistical Organisation (CSO) should continue to co-ordinate and collate the relevant information on environment as is being done at present and bring out the Compendium on Environment Statistics on an annual basis. CSO should also provide necessary guidance to the States for development of Environment Statistics and indicators.

(ii) The database on Environment Statistics should be strengthened and it should be linked with the Environmental Information System (ENVIS) already functioning in the Ministry of Environment and Forests.

(iii) CSO in collaboration with the Ministry of Environment and Forests and other agencies should finalise the list of Environmental indicators needed for the country and should take the steps for regular collection of relevant information.

(iv) Considering the emerging need for Environment Statistics, a Statistical Division in the Ministry of Environment and Forests, should be established to cater to the requirements of environment and forest related data and analysis of the same. A Statistical Adviser at an appropriate level from Indian Statistical Service should head the Division.

(v) Environment Statistics Cells should be created in the Directorate of Economics and Statistics in all the States and the same should be responsible for coordination and collation of information from other related agencies in the State.

B. NATURAL RESOURCE ACCOUNTING

Current Status

9.7.7 Natural Resource Accounting deals with stocks and stock changes in natural assets, which comprise biological assets (produced or wild), subsoil assets (proved reserves), water, air and land areas (including water areas) with their terrestrial and aquatic ecosystems (eco-zones). In the environmental-economic accounting system, an increasing emphasis needs to be placed on the natural environment that has or could be affected by human activities. The United Nations Statistical Division has issued an interim version of the framework on integrated environmental and economic accounting in 1993. This gives a conceptual basis for implementing the required satellite systems for integrated environmental and economic accounting that describes the inter relationship between the natural environment and economy. United Nations is currently revising this version and a *Handbook of System of Integrated Environmental and Economic Accounting* (SEEA), 2000 is being finalised.

9.7.8 In India, the Ministry of Environment and Forests had sponsored a study on Natural Resource Accounting in the Yamuna river sub-basin, conducted by 8 institutions under the overall coordination of the National Environmental Engineering Research Institute, Nagpur. In this study, the development of the conceptual framework for natural resource accounting has been attempted and it was tried to integrate it with National Income Accounts to estimate the measures of sustainable development. The various valuation methods such as feasibility assessment of treatment technology options in estimation of avoidable costs, assessment of exposure damages, estimation of lost opportunities, preventive and curative expenditure, hedonic pricing for dealing with uncertainties and willingness to pay surveys, etc. have been used.

9.7.9 MoS&PI has initiated a pilot project on Natural Resource Accounting in Goa, which is being implemented by Tata Energy Research Institute (TERI). After the development of a suitable methodology, it may be extended to other States as well so as to arrive at an overall estimate of resource and resource utilisation for the country. A Technical Working Group on Natural Resource Accounting constituted for the purpose, recommended that the scope of study would be to cover all sectors of the economy; however, the major emphasis will be given to Forests and Biodiversity, Mineral and Marine Resources, Tourism and Energy. TERI has since submitted its draft Report to the Ministry in January 2001, and it is being finalised on the basis of observations of the technical working group.

Conclusions and Recommendations

9.7.10 Natural Resource Accounting (NRA) is a useful tool for the measurement of genuine economic performance and growth, taking environmental factors into consideration. Proper valuation of environmental resources is also necessary for making investment decisions pertaining to environmental management, for designing environmental policy, and for measuring environmentally corrected national income. The Commission realises that the estimation of Green GDP, a term coming to be used in recent times, is quite difficult in the absence of a strong database on natural resources as well as a suitable methodology for valuation of stocks and flows of natural assets. The Commission therefore recommends:

(i) The development and implementation of satellite accounts on environment accounting, as suggested by the System of National Accounts, 1993, should be pursued systematically. To begin with, a framework for environmental accounting needs to be developed in India. The framework should be based on System of Integrated Environmental and Economic Accounting (SEEA) as this would avoid the drawback of non-compatibility with national accounts concepts and procedures.

(ii) Once the framework for environmental accounting is established, the aim should be to improve the data contents and analysis of particular sectors of the framework and develop suitable methodologies for systematic valuation of environmental resources in the country and for estimating the cost of pollution abatement and environmental degradation caused by various economic activities.

(iii) As Natural Resource Accounting requires the integration of data from different subject areas, efforts should be made to involve experts from all relevant disciplines along with the experts from CSO. This office should play a more active and dominant role in the entire exercise.

(iv) The pilot project on Natural Resource Accounting in Goa initiated by the Ministry of Statistics & Programme Implementation (MoS&PI) should be replicated in 2 or 3 major States for developing a suitable methodology before extending it at the all-India level for developing integrated environment and economic accounts.

9.8 CONSUMPTION SURVEYS AND LEVELS OF LIVING

INTRODUCTION

9.8.1 For a comprehensive study on levels of living, one needs to examine different facets of levels of living separately before attempting to construct any overall index like the Human Development Index. Consumption, especially in the household sector, is one of the most important facets of levels of living. Household consumption data collected from nationwide samples of households in several rounds of NSS since 1950-51 have been extensively used for studies on levels of living in India and for the measurement of absolute poverty, including studies on disparities across States and regions, sectors, socio-economic classes etc. Size distributions of consumption may also be used for measurement of inequality.

Consumption Surveys carried out for Selected Classes of Population

9.8.2 Enquiries on family/household income and expenditure were sometimes conducted in pre-independence India in connection with the construction of cost of living index numbers. After independence, the first landmark was the series of Family Living Surveys (FLS) conducted by the Labour Bureau, during 1958-59 for industrial workers in mining and plantation centres. The weighting diagrams obtained from these surveys, were used for the centre-wise CPI numbers for industrial workers on base 1960 compiled by the Labour Bureau. Payroll sampling was adopted in a majority of the centres, while tenement sampling was followed in the remaining centres. Sample sizes varied across the centres, being larger for centres with larger or more heterogeneous population. Data on family income and expenditure were collected for all sample households, and imputed rental of owner-occupied or rent-free dwellings were included.

9.8.3 The next series of family living surveys for working class households was conducted in 1971 in 60 centres. Increased use was made of payroll sampling as against tenement sampling. However, only family income and expenditure data were collected. The third series of surveys, called family income and expenditure surveys, for working class population was conducted in 1981-82 in 70 centres in connection with CPI numbers on base 1982 = 100 compiled by the Labour Bureau. The scope was widened to include workers in railways, ports and docks, electricity undertaking and distributing establishments, etc. The 1982 series of CPI numbers of industrial workers is under revision on the basis of family income and expenditure survey conducted in 78 selected centres during 1999-2000.

9.8.4 As regards the middle class (or urban non-manual employees), the first comprehensive family living survey was conducted in 1958-59 by CSO in 45 selected centres. The latest series of such enquiries was conducted in 59 urban centres in 1982-83. Weighting diagrams based on these surveys were used by the CSO to compile centre-wise CPI numbers on base 1960, later 1984-85. Fieldwork for all the enquiries mentioned above was done by the NSS.

9.8.5 The first all-India Agricultural Labour Enquiry (ALE) was conducted by the Government of India in 1950-51. Data on income, consumption and other aspects were collected for each sample household through 12 monthly visits. The Second ALE was conducted by the Labour Bureau using NSS as its field agency during 11th and 12th NSS Rounds (August 1956-August 1957). The weighting diagrams were used to compile State-wise CPI numbers for agricultural labour with 1960-61 as base. Rural labour enquiries were conducted in a similar manner during NSS 18th (February 1963-January 1964) and 25th (1970-71) Rounds. Standard NSS methodology was followed in these enquiries. For the current series of CPI (AL) on base July 1986 - June 1987, the weights were derived from NSS 38th Round consumer expenditure data relating to January-December 1983.

Household Consumption Expenditure Surveys

9.8.6 The NSS is a multi-purpose socio-economic enquiry of all-India coverage, carried out in the form of successive "rounds", the duration of a round being typically one year. Data on household consumer expenditure was collected in almost all the rounds, since 1950-51, from nationwide probability samples of households, except for a decade or so beginning with 1974-75. However, starting from 1972-73, quinquennial surveys have been conducted on a large sample of households, in 1977-78, 1983, 1987-88, 1993-94 and 1999-2000. Annual surveys on a smaller sample have been conducted in the intervening years since 1986-87. One thus gets time series data on different facets of household consumption in rural and urban sectors by States and UTs.

9.8.7 The sampling design has provision for two or more independent sub-samples. The divergence of sub-sample estimates indicates the margin of uncertainty associated with the

combined sample estimate. In recent rounds, attempt has been made to over-sample relatively prosperous areas and also relatively affluent households in different areas.

9.8.8 Consumer expenditure comprises all expenditure incurred by the household on domestic account including consumption out of home-grown produce (which is imputed at producer prices) and out of wages in kind, gifts, loans, free collections, etc. (which are imputed at prevailing local retail prices). For item-groups like durables and miscellaneous goods and services, there is no concept of consumption and actual expenditure incurred is recorded. Expenditure on repair and maintenance of residential house is also included. However, imputed rental of owner-occupied and other rent-free dwellings is excluded. Transfer payment in kind like loans, advance and gifts are excluded. Second hand purchases were also left out, until very recently.

9.8.9 The reference period varied to some extent in the early rounds. Both 'last week' and 'last month' were tried for food and some other item-groups in the 4th and 5th Rounds (April 1952-March 1953) of NSS. The results of these rounds and some special field experiments led to the choice of 'last month' or 'last 30 days' for all items of consumption from the 7th Round (November 1953-March 1954). However, 'last 365 days' was also used in addition to 'last 30 days' for clothing, footwear and durable goods from 32nd Round (1977-78) onwards, to eliminate the effects of seasonality and other transitory factors; and education and medical expenses were added to this list in 50th Round (1993-94). But only data relating to the reference period of 'last 30 days' was used for obtaining the main estimates and accepted as the sole basis for measuring the incidence of absolute poverty in India.

9.8.10 Both 'last week' and 'last month' were used in different half- samples of households in the annual enquiries of NSS Rounds 51 through 54 (July 1994-June 1998) for items of food, pan, tobacco and intoxicants, and the results showed that the week estimates were about 30 per cent higher than the month estimates for these items. Further, for some non-food items, 'last month' and 'last year' were used in the two half-samples of households in these NSS rounds, and for a few of these items - education, medical care (institutional) and durables - the last month estimates were much higher than the last year estimates.

9.8.11 In NSS 55th Round (1999-2000), two different reference periods - 'last 7 days' and 'last 30 days' - were employed to collect data on consumption of items of food, pan, tobacco and intoxicants, for every sample household. The use of two reference periods for collecting information from the same household was found to have narrowed down the differences between week-based and month-based estimates for food, pan, tobacco and intoxicants, and this raised serious questions about the inter-temporal comparability of both sets of estimates and the derived estimates of absolute poverty in the country.

9.8.12 Consumption of home-grown produce was imputed at local retail prices up to the 8th Round (July 1954-March 1955) but at ex-farm/ex-factory prices from the 9th Round (May-November 1955) onward.

9.8.13 The data were generally collected through a "Consumer Expenditure Enquiry" schedule in most of the rounds, but a major change was made during the 19th (July 1964 - June 1965) through the 25th Round (July 1970 - June 1971), when an "Integrated Household Survey" schedule was canvassed for collecting comprehensive data on various productive activities of the household along with data on consumer expenditure, employment and unemployment and other aspects. The blocks for recording consumer expenditure data in this schedule were also somewhat different from the corresponding blocks in the "Consumer Expenditure Enquiry" schedule of the earlier rounds. The latter schedule was brought back from 26th Round onwards. Further, during Rounds 10 (December 1955-May 1956) to 14 (July 1958-June 1959), the "Consumer Expenditure

Enquiry" schedule had been expanded to an "Income and Expenditure" schedule by adding a few blocks for recording the receipts and disbursements of the household during the reference month.

9.8.14 A Pilot Survey was conducted in five States of India, including the four big cities, during January-June 2000, to compare the data collected for last week and last month reference periods with the data collected through daily visits and measurements using containers to the same household for 3 or 4 consecutive days, with a view to determining the appropriate reference period for collecting data on items of food, pan, tobacco and intoxicants. The preliminary results of this survey seem to indicate that 'last month' estimates are, on the whole, better than 'last week' estimates.

9.8.15 Concepts, definitions and procedures have remained more or less uniform over the rounds. Indeed, comparability over time and across regions seems to be a great merit of NSS household consumption expenditure data.

9.8.16 Doubts have sometimes been raised about the reliability and validity of NSS consumer expenditure data, which, were collected by the interview method from respondents, many of whom were illiterate and/or did not keep any accounts. Apart from conscious distortions of data made by the respondents, recall biases could play a significant part. Much empirical work based on NSS consumer expenditure data needs to assume that the biases in the data are constant over time or across regions, socio-economic classes, etc.

9.8.17 Another consideration is the lack of strict inter-temporal comparability of NSS consumption expenditure data collected in recent decades. Indian respondents seem to have become less and less cooperative every year, either because they are busier than before, or because they have become cynical about or resistant to all enquiries into their private affairs. This seemed to be more true of urban respondents than for their rural counterparts. A questionnaire that should take 2½ to 3 hours of interviewing may have to be filled up in a very hurried manner. This may have vitiated long-range comparisons of levels of living and poverty based on NSS consumer expenditure data.

9.8.18 Abridged versions of the detailed consumer expenditure schedule have been used quite successfully in many countries under a Programme launched by World Bank in 1979. The NSSO also has acquired encouraging experience by canvassing the abridged consumer expenditure schedule as part of the Employment-Unemployment enquiry in NSS 55th Round. A similar finding was obtained in the NSS 52nd Round.

9.8.19 The statistical agencies of different State Governments have been participating in the NSS programme and canvassing the same questionnaires in matched samples of households in their respective States, following identical concepts, definitions and procedures. Results from the Central Samples and the State Sample(s) have occasionally been compared. The main purpose of the programme is to pool the two Samples and obtain dependable estimates for regions within the States. It may be noted that the sample size for all-India gradually increased from a few thousand households in the early rounds to 20 or 30 thousand households or even more (Central Sample only) in the later rounds. In the recent quinquennial surveys, the sample size was well above 100,000 households for the Central Sample alone.

9.8.20 The NSS household consumption expenditure data have been extensively used in studies on levels of living and disparities in levels of living, in cross-sectional and time series analysis of consumer behaviour, in studies on incidence of taxation, etc. In recent periods, these data have become extremely important as the basis of measurement of absolute poverty in the country.

ISSUES OF CONCERN

9.8.21 The results of the on-going Pilot Survey on Reference Periods launched by NSSO need be utilised to choose the appropriate reference period for collecting data on food, pan, tobacco and intoxicants in future NSS enquiries on consumer expenditure. Further work need to be done to choose the appropriate reference period for non-food items like durables, education, medical care, etc. Pilot studies may be made to collect panel data for understanding changes over time. Revisit to the same sample of households for data collection after the lapse of few years could also be explored.

9.8.22 Any change in the methodology of NSS household expenditure enquiries runs the risk of loss of comparability with the past, but the present situation may require changes. Keeping this in view, the NSS questionnaires for consumer expenditure should be shortened in such a way that it should not take more than 1-1½ hours of interview time, especially in urban areas.

9.8.23 In order to reduce the non-sampling errors in canvassing a lengthy schedule, the NSS should make efforts to reduce the length of the of consumer expenditure schedule by analysing the past data. Further, in doing so, the possibility of dividing the full sample of households into two matched half-samples and the use of one schedule with detailed food items but abridged non-food items in one half-sample, and of another schedule with abridged food item but detailed non-food items in the other half-sample should also be explored.

9.8.24 The State sample data should be processed regularly within a reasonable time after completion of fieldwork and attempts should be made to obtain and utilise pooled estimates by combining Central and State samples. Efforts need also be made to generate separate estimates for the different NSS regions for all the rounds, especially the quinquennial rounds.

9.8.25 Techniques of small area estimation may be adopted to extract maximum amount of information from the collected data, keeping the goal of district level estimates in view.

9.8.26 For monitoring of changes in the levels of living, dissemination of consumption data through regular NSS Reports may be done as expeditiously as possible. These Reports may include estimates of per capita physical consumption of a few items besides cereals, like pulses and products, liquid milk, sugar and gur, etc.

9.8.27 Poverty measurement and poverty analysis has come to occupy a central place in policy-making in the country. NSSO should provide relevant information expeditiously to Government agencies like the Planning Commission and also to interested researchers for undertaking poverty-related studies. Further, the NSSO may take up special tabulations/exercises periodically to facilitate studies like calculations of calorie intake by households in different segments of the population, especially by those below the poverty line.

9.8.28 To facilitate the building of models explaining the poverty status of individual households, the NSS questionnaire should also record relevant characteristics of sample villages and blocks. In the past, such characteristics were not always recorded or made available.

Annexe 9.1

Records and Reports Maintained at Sub Health Centre Level

Records

1. Sub-centre register
   - (i) Summary of villages/hamlets
   - (ii) Eligible couples
   - (iii) Eligible couples – number of children wise
   - (iv) Male sterilisation cases
   - (v) Female sterilisation cases
   - (vi) IUD cases
   - (vii) ANC
   - (viii) Condom distribution
   - (ix) Oral pills
   - (x) PNC – children upto 1 year
   - (xi) PNC – children more than 1 year
   - (xii) MTP cases
   - (xiii) Distribution of disposable delivery kits
   - (xiv) Births
   - (xv) Deaths
   - (xvi) Dai follow up
   - (xvii) Malaria slides taken and radical treatment cases
   - (xviii) Other diseases cases
   - (xix) Disease morbidity and mortality
   - (xx) Water source purification
   - (xxi) IEC activities
   - (xxii) Stocks
   - (xxiii) Mahila Swashthya Sangh
2. Daily diary
3. Mahila Mandal Minutes book
4. OPD register

Reports

1. Monthly sub-centre report
2. Weekly sub-centre report
3. Annual list of eligible and target couples
4. EC break down by age group and contraception method
5. EC break down by number of children and contraception method
6. EC break down by caste and contraception method
7. List of births to the Panchayat
8. UNFPA report on the utilisation of disposable delivery kits
9. List of Malaria slides

In addition, ANM is required to maintain such other registers and send monthly reports for any programme implemented in her Sub-centre, in the area of health & family welfare like AIDS, Leprosy, Blindness control, TB, etc.

Annexe 9.2

States Classified By Levels of Registration

Level of Registration (Per cent)	EVENT	
	Birth	**Death**
Above 80	Arunachal Pradesh, Goa, Gujarat, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Mizoram, Nagaland, Punjab, Tamil Nadu, A&N Islands, Chandigarh, Daman & Diu, Delhi, Lakshadweep and Pondicherry. (11 States and 6 UTs)	Goa, Karnataka, Kerala, Punjab, Chandigarh, Daman & Diu, Delhi, Lakshadweep and Pondicherry. (4 States and 5 UTs)
80-60	Haryana, Himachal Pradesh, Orissa, Sikkim, West Bengal, Tripura and Dadra & Nagar Haveli. (6 States & 1UT)	Haryana, Himachal Pradesh, Jammu & Kashmir, Maharashtra, Mizoram, Tamil Nadu, A&N Islands and Dadra & Nagar Haveli. (6 States and 2 UTs)
60-40	Andhra Pradesh, Madhya Pradesh, Meghalaya and Uttar Pradesh. (4 States)	Andhra Pradesh, Gujarat, Madhya Pradesh, Meghalaya, Nagaland, Orissa and Rajasthan. (7 States)
Below 40	Assam, Bihar, Manipur, Rajasthan. (4 States)	Arunanchal Pradesh, Assam, Bihar, Manipur, Sikkim, Tripura, Uttar Pradesh, West Bengal. (8 States)

Source: Office of Registrar General and Census Commissioner, India

Annexe 9.3

Agencies for Registration of Births and Deaths in States*/UTs

Chief Registrars		
Health	**Economics & Statistics**	**Others**
Andhra Pradesh, Assam, J&K, Gujarat, Haryana, Himachal Pradesh, Maharashtra, Manipur, Meghalaya, Orissa, Punjab, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal, A&N Islands, Chandigarh and Lakshadweep.	Arunachal Pradesh, Bihar, Goa, Karnataka, Madhya Pradesh, Rajasthan, Nagaland and Delhi.	Kerala (Panchayats), Mizoram (Chief Secretary), Dadra & Nagar Haveli (Administrator), Daman & Diu (Finance Secretary) and Pondicherry (Local Administration Deptt.)

Additional/ Deputy Chief Registrars		
Health	**Economics & Statistics**	**Others**
Andhra Pradesh, Haryana, Himachal Pradesh, Orissa, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.	Bihar, J&K, Goa, Gujarat, Kerala, Karnataka, Madhya Pradesh, Manipur, Mizoram, Punjab, Sikkim Rajasthan, and Daman & Diu.	Kerala (Deputy Chief Registrar Panchayats), Delhi (Municipal H.O.)

District Registrar			
Health	**Economics & Statistics**	**Dy. Commissioner/ Collector**	**Others**
Andhra Pradesh, Assam, Gujarat, Haryana, Himachal Pradesh, J&K, Maharashtra, Manipur, Meghalaya, Orissa, Punjab, Sikkim, Uttar Pradesh, A&N Islands, Chandigarh.	Madhya Pradesh, Nagaland, Delhi (Asst. Director)	Arunachal Pradesh, Bihar, Goa, Karnataka, Mizoram, Tamil Nadu, Tripura, West Bengal and Daman & Diu	Kerala (Panchayats), Dadra & Nagar Haveli (Mamlatdar-cum-Survey & Settlement Officer) and Pondicherry (Municipal Aministrator)

(Contd.)

Rural Registrars	
Panchayat Secretary (Local Self Government)	Andhra Pradesh, Bihar, Goa, Gujarat (Talati-cum-Mantri), Rajasthan (Partly), Tripura, Uttar Pradesh, Daman & Diu, Delhi and Pondicherry.
Police Officer	Haryana, Jammu & Kashmir, Madhya Pradesh, Punjab and Chandigarh.
Village/Revenue Officer	Karnataka, Tamil Nadu and Dadra & Nagar Haveli
Tehsildar-Sub-divisional Officer/ Extra Assistant Commissioner	Arunachal Pradesh, Tripura (Partly)
Primary Health Center Incharge/ Health Inspector/Block Sanitary Inspector	Assam, Meghalaya, Orissa, Sikkim, West Bengal, A&N Islands and Lakshadweep
Block Development officer	Manipur
Teacher of Government School	Mizoram, Nagaland, Rajasthan, (Partly)

Note: * Three newly formed States are considered as part of their parent State.
Source: Office of Registrar General and Census Commissioner, India

Annexe 9.4

List of Acts Governing Various Aspects of Labour and Employment

Sector

Factories

1. The Factories Act, 1948

Plantations

2. The Plantations Labour Act, 1951

Mines

3. The Mines Act, 1952

Transport

4. The Indian Railways Act 1890
5. The Dock Workers' (Regulation of Employment) Act, 1948
6. The Merchant Shipping Act, 1958
7. The Motor Transport Workers' Act, 1961

Shops and Commercial Establishments

8. The Shops & Commercial Establishments Act (Central & State Acts)

Safety and Welfare

9. The Limestone and Dolomite Mines Labour Welfare Fund Act, 1972
10. The Mica Mines Labour Welfare Fund Act, 1976
11. The Iron Ore Mines, manganese Ore Mines and Chrome Ore Mines Labour Welfare Fund Act, 1976
12. The Iron Ore Mines, Manganese Ore Mines and Chrome Ore Mines Labour Welfare Cess Act, 1976
13. The Bidi Workers Welfare Fund Act, 1976
14. The Bidi Workers Welfare Cess Act, 1976
15. The Dock Workers' (Safety, Health & Welfare) Act, 1986
16. The Labour Welfare Fund Laws (Amendment) Act, 1987

Wages and Bonus

17. The Payment of Wages Act, 1936
18. The Minimum Wages Act, 1948
19. The Payment of Bonus Act, 1965

(Contd.)

Social Security

20. The Workmen's Compensation Act, 1923
21. The Employees' State Insurance Act, 1948
22. The Employees' Provident Funds & Miscellaneous Provisions Act, 1952
23. The Maternity Benefit Act, 1961
24. The Employees' Family Pension Scheme, 1971

Industrial Relations

25. The Trade Unions Act, 1926
26. The Industrial Employment (Standing Orders) Act, 1946
27. The Industrial Disputes Act, 1947

Miscellaneous

28. The Children's (Pledging of Labour) Act, 1933
29. The Child Labour (Prohibition and Regulation) Act, 1986
30. The Collection of Statistics Act, 1953
31. The Employment Exchanges (Compulsory Notification of Vacancies) Act, 1959
32. The Apprentices Act, 1961
33. The Bidi and Cigar Workers (Conditions of Employment) Act, 1966
34. The Contract Labour (Regulation and Abolition) Act, 1970
35. The Equal Remuneration Act, 1976
36. The Bonded Labour System Abolition Act, 1976
37. The Sales Promotion Employees' (Conditions of Services) Act, 1976
38. The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979
39. The Emigration Act, 1983
40. The Building and Other Construction Workers (Regulation of Employment and Conditions of Services) Act, 1996 and The Building and Other Construction Workers Cess Act 1996.

Annexe 9.5

Publications on Labour and Employment Statistics

List of Latest Publications of Labour Bureau, Ministry of Labour

SI. NO.	Title of Publications	Periodicity	Period for which latest publication available
1	2	3	4
1	Indian Labour Journal	Monthly	April, 2001
2	Indian Labour Year book	Annual	1998
3	Pocket Book Labour Statistics	-do-	1999
4	Indian Labour statistics	-do-	1998
5	Report on the Working of the Minimum Wages Act, 1948	-do-	1996
6	Annual Report on Consumer Price Index Number For Industrial Workers (Base 1982=100)	-do-	1999
7	Annual Report on Consumer Price Index Numbers For Agricultural And Rural Labour (Base 1986-87 = 100)	-do-	1998-99
8	Annual Review on the Working of the ;		
	(i) Industrial Employment (Standing Orders) Act, 1946	-do-	1998
	(ii) Legislation Governing Conditions of Employment in Shops, Commercial Establishment, Cinemas, Theatres, Hotels and Restaurant	-do-	1998
	(iii) Maternity Benefit Act, 1961	-do-	1998
	(iv) Workman's Compensation Act, 1923	-do-	1998
	(v) Plantation Labour Act, 1951	-do-	1998
	(vi) Motor Transport Worker's Act, 1961	-do-	1998
	(vii) Statistics of Factory Act, 1948	-do-	1994
	(viii) Industrial Dispute in Indian	-do-	1998
	(ix) Closures, Retrenchment and Lay off	-do-	1998
9	Trade Union in India	Bi-Annual	1994
10	Annual Survey of Industries-Summary Report on Absenteeism Labour, Turnover, Employment and Labour Cost in Census Sector	-do-	1996-97

(Contd.)

1	2	3	4
11	Annual Survey of Industries-Summary Report on Absenteeism Labour turnover, Employment and Labour Cost in Sample Sector	Bi-Annual	1996-97
12	Rural Labour Enquiry - Report on Wages and Earnings of Rural Labour Households	Quienquennially	1993-94
13	Rural Labour Enquiry-Report on Indebtedness among Rural Labour Households. Publications on Labour and Employment Statistics	-do-	1993-94
14	Rural Labour Enquiry-Report on Consumption Expenditure of Rural Labour Households	-do-	1993-94
15	Rural Labour Enquiry - Report on Employment & Un-employment of Rural Labour Households	-do-	1993-94
16	Rural Labour Enquiry-Report on General Characteristics of Rural Labour Households	-do-	1993-94

List of Latest Publications of DGE&T, Ministry of Labour

1	2	3	4
1	Employment Review	Annual	1996
2	Quarterly Employment Review	Quarterly (As on 31st March, 30th June, 30th Sep. & 31st Dec.)	March,1998
3	Quick Estimates of Employment	Quarterly (As on 31st March, 30th June, 30th Sep. & 31st Dec.)	March, 2000
4	Occupational Educational Pattern of Employees in India	(Public & Private Sectors in Alternate Years)	1991 Private 1992 Public
5	Employment Exchange Statistics	Annual	1997-98
6	Bulletin on Job Opportunities in India	Annual	1997
7	Apprenticeship Training in India	Annual	1998
8	Census of Central Govt. Employees	Annual*	1991

Note: * From the year 1991 and onwards three censuses of Central Government Employees were launched for the years 1991, 1995 and 1996. The report for the year 1995 is being finalised.

(Contd.)

List of Publications of NSSO (50th Round quinquennial Survey on Employment and Unemployment)

1. Key Results on Employment & Unemployment
2. Employment & Unemployment in India, 1993-94
3. Employment & Unemployment Situation in Cities and Towns in India, 1993-94
4. Economic Activities and School Attendance by Children in India, 1993-94
5. Participation of Indian Women in Household Work and other
6. Specified Activities, 1993-94
7. Unemployed in India, 1993-94: Salient Features
8. Employment & Unemployment Situation Among Social Groups in India, 1993-94
9. Employment & Unemployment Situation Among Religious Groups in India, 1992-94

Annexe 9.6

Labour Acts: Response Rate (%) for the Years 1994-99 (As on 4-6-2001)

Year	Payment of Wages Act, 1936	Minimum Wages Act, 1948	Factories Act, 1948	Motor Transport Workers Act, 1961	Maternity Benefit Act, 1961	Plantations Labour Act, 1951	Trade Unions Act, 1926
1994	34.73	9.33	52.92	16.6	46.2	51	25.0
1995	28.99	5.53	46.79	15.2	41.7	56	25.0
1996	37.6	6.62	49.33	16.3	36	55	23.1
1997	50.03	11.95	52.93	13.3	49.2	51	22.1
1998	31.47	7.56	53.05	13.3	47	57	11.9
1999	8.64*	15.02*	41.01*	14.9	50.6	55	2.8*

Note: * Provisional
Source: Labour Bureau, Ministry of Labour, Cnandigarh

Annexe 9.7

Pendency Statement of Returns from the States for the Years 1998-1999 in Respect of Certain Labour Acts (as on 04-06-2001)

Sl. No.	State/U.T.	Factories Act, 1948		Trade Union Act, 1926		Minimum Wages Act, 1948		Payment of Wages Act, 1936	
		1998	1999	1998	1999	1998	1999	1998	1999
	Due Date	25.8.1999	25.8.2000	30.9.1999	30.9.2000	31.5.1999	31.5.2000	25.8.1999	25.8.2000
1	Andhra Pradesh	R(9)	R	NR	NR	NR	NR	R(5)	NR
2	Arunanchal Pradesh	R(1)	R(4)	NR	NR	NR	NR	NR	NR
3	Assam	R(4)	R(7)Part	R(3)	R(7)	NR	NR	R(5)	NR
4	Bihar	R(11)	NR	NR	NR	NR	NR	NR	NR
5	Goa	R(2)	R(6)	R(10)	R(5)	R(2)	R(1)	R(10)	R
6	Gujarat	R(4)	R(5)	R(18)	NR	R(9)	NR	@	NR
7	Haryana	NR	NR	R(4)	R(6)	R(3)	R(3)	@	NR
8	Himachal Pradesh	R(4)	R(6)	R(4)	R(8)	R(3)	R(4)	R(2)	R(6)
9	Jammu & Kashmir	NR	NR	NR	NR	R(13)	R(4)	NR	NR
10	Karnataka	R(3)	R(7)	R(19)	NR	R(9)	NR	R(4)	R(5)
11	Kerala	R(8)	NR	R(7)	NR	R(13)	NR	R(11)	NR
12	Madhya Pradesh	R	R(5)	NR	NR	R(12)	NR	R	R(1)
13	Maharashtra	R(9)	R(2)Part	NR	NR	R(10)	NR	R(9)	NR
14	Manipur	NR	NR	NR	NR	NR	NR	NR	NR
15	Meghalaya	NR	NR	R(7)	R(8)	NR	NR	NR	NR
16	Mizoram	R(6)	R(2)	R(5)	R(4)	NR	NR	NR	NR
17	Nagaland	R(7)	NR	R(11)	NR	NR	NR	R(9)	NR
18	Orissa	R	NR	R(8)	NR	R(5)	R(5)	R(5)	R(5)
19	Punjab	R(4)	R	R	R	R(6)	R	@	NR
20	Rajasthan	R(9)	R(8)	R(9)	NR	R(9)	R(11)	R(11)	NR
21	Sikkim	R(3)	R(3)	NR	NR	NR	NR	NR	NR
22	Tamil Nadu	R(20)	NR	R(8)	NR	R(5)	R(4)	NR	NR
23	Tripura	R(5)	NR	NR	NR	R(12)	R(10)	R(6)	NR
24	Uttar Pradesh	NR	NR	R(20)	NR	R(2)	NR	NR	NR
25	West Bengal	NR	NR	R(8)	R(5)	R(11)	R(7)	NR	NR
26	A&N Islands	R(8)	NR	NR	NR	NR	R(7)	R(5)	R(5)
27	Chandigarh	R(4)	R(5)	R(3)	NR	R(1)	R(4)	NR	NR
28	Lakshadweep	R(2)	R(2)	NR	NR	NR	NR	NR	NR
29	D&N Haveli	R(6)	R(6)	NR	NR	NR	NR	NR	NR
30	Daman & Diu	NR	NR	R(5)	R(2)	NR	NR	NR	NR
31	Delhi	R(5)	R(7)	R(18)	NR	R(5)	R(7)	@	NR
32	Pondicherry	R(9)	R(8)	NR	NR	NR	R(2)	R(11)	NR
33	C.L.C. (Central)	-	-	-	-	R(10)	R(11)	NA	NA

(Contd.)

Note: Figures in bracket indicate time-lag (in months) in receipt of returns
NA: Not Applicable, R: Received, NR: Not Received, *: Act Not Enforced, ND: Not Due
Source: Labour Bureau, Ministry of Labour, Chandigarh

Sl. No.	State/UT	Industrial Employment (standing orders) Act, 1946	Shops Act	Maternity Benefit Act, 1961	Workmen's Compensation Act, 1923	Plantations Labour Act, 1961	Motor Transport Workers Act, 1961
	Due Date	15-02-2000	31-03-2000	30-04-2000	30-04-2000	31-08-2000	1-10-2000
1	Andhra Pradesh	R(16)	R(13)	R(11)	NR	NA	R(3)
2	Assam	NR	R(8)	NR	NR	R(2)	NR
3	Bihar	NR	R(9)	R(11)	NR	NA	R(7)
4	Goa	R(6)	R(3)	NR	R	NA	R(4)
5	Gujarat	R(7)	R(12)	R(3)	R(12)	NA	R(3)
6	Haryana	R(1)	R(3)	R(5)	R(8)	NA	R(7)
7	Himachal Pradesh	R(16)	R(2)	R(3)	R(3)	R(3)	R(2)
8	Jammu & Kashmir	R(11)	R(4)	R(4)	R(3)	NA	R
9	Karnataka	R(11)	R(11)	R(4)	R(12)	R(7)	R(3)
10	Kerala	NR	R(11)	R(5)	R(7)	R(6)	R(7)
11	Madhya Pradesh	NR	R(4)	R	NR	NA	NR
12	Maharashtra	NR	R(3)	R(7)	R(9)	NA	NR
13	Manipur	NR	R(5)	*	NR	NA	NR
14	Meghalaya	R(6)	R(6)	R(3)	NR	NA	R
15	Nagaland	*	*	*	*	NA	*
16	Orissa	R(10)	R(13)	R(3)	R(6)	NA	R(4)
17	Punjab	R(1)	R	R(1)	R	NA	R(2)
18	Rajasthan	R(8)	R(1)	R(9)	R(5)	NA	NR
19	Sikkim	*	*	*	*	NA	*
20	Tamil Nadu	R(2)	R(5)	R(10)	R(7)	R(3)	R(2)
21	Tripura	R(5)	R(5)	R(8)	R(9)	R(5)	R(7)
22	Uttar Pradesh	NR	NR	R(5)	NR	R(2)	R(5)
23	West Bengal	R	R(8)	NR	R(9)	R(6)	NR
24	A&N Islands	R(9)	*	R(8)	NR	R(3)	R(5)
25	Arunanchal Pradesh	R(7)	*	R(4)	*	NA	*
26	D&N Haveli	*	*	R(2)	R(6)	NA	*
27	Chandigarh	R(7)	R(1)	R(2)	R(2)	NA	R(9)
28	Delhi	NR	*	R(3)	R(8)	NA	NA
29	Pondicherry	NR	R(3)	R(10)	R(12)	NA	R
30	Lakshdweep	*	*	*	*	NA	*
31	Mizoram	*	*	*	*	NA	NA
32	Daman & Diu	*	*	*	*	NA	NA
33	Railways	NA	NA	NA	R(4)	NA	NR
34	Post & Telegraph	NA	NA	NA	NR	NA	NR
35	Mines	NA	NA	*	NR	NA	NR
Percentage Response		65%	96%	88%	66%	100%	67%

Note: Figures in bracket indicate time-lag (in months) in receipt of returns
NA: Not Applicable, R: Received, NR: Not Received, *: Act Not Enforced, ND: Not Due
Source: Labour Bureau, Ministry of Labour, Chandigarh

Annexe 9.8

Variety of Definitions for the Same Concept under Different Labour Acts

Child:

A person who has not completed his fourteenth year.

(The Plantation Labour Act, 1951)

A person who has not completed his fifteenth year of age.

(The Factories Act, 1948)

Child includes a stillborn child.

(The Maternity Benefit Act, 1961)

Family:

"Family" means all or any of the following relatives of an insured person namely:

a) a spouse;

b) a minor legitimate or adopted child dependent upon the insured person;

c) a child who is wholly dependent on the earnings of the insured person and who is (i) Receiving education, till he or she attains the age of twenty-one years. (ii) An unmarried daughter.

d) a child who is infirm by reason of any physical or mental abnormality or injury and is wholly dependent on the earnings of the insured person, so long as the infirmity continues;

e) dependent parents.

(The Employees State Insurance Act, 1948)

"Family", when used in relation to a worker, means –

a) his or her spouse, and

b) the legitimate and adopted children of the worker dependent upon him or her, who have not completed their eighteenth year, and includes, where the worker is a male, his parents, dependent upon him.

(The Plantations Labour Act, 1951)

Wages:

"Wages" means all remuneration paid or payable, in cash to an employee, if the terms of the contract of employment express or implied, were fulfilled and includes (any payment to an employee in respect of any period of authorised leave, lockout, strike which is not illegal or lay-off and) other additional remuneration, if any, (paid at intervals not exceeding two months), but does not include-

a) any contribution paid by the employer to any pension fund or provident fund, or under this Act;

b) any travelling allowance or the value of any travelling concession;

(Contd.)

c) any sum paid to the person employed to defray special expenses entailed on him by the nature of his employment; or

d) any gratuity payable on discharge.

(The Employees State Insurance Act, 1948)

"Wages" includes any privilege or benefit which is capable of being estimated in money, other than a travelling allowance or the value of any travelling concession or a contribution paid by the employer to a workman towards any pension or provident fund or a sum paid to a workman to cover any special expenses entailed on him by the nature of his employment.

(The Workmen's Compensation Act, 1923)

"Wages" means all remuneration paid or payable in cash to a woman, if the terms of the contract of employment, express or implied, were fulfilled and includes –

a) such cash allowances (including dearness allowance and house rent allowance) as a woman is for the time being entitled to;

b) incentive bonus; and

c) the money value of the concessional supply of food grains and other articles,

d) but does not include –

(i) any bonus other than incentive bonus;

(ii) over-time earnings and any deduction or payment made on account of fines;

(iii) any contribution paid or payable by the employer to any pension fund or provident fund or for the benefit of the workman under any law for the time being in force; and

(iv) any gratuity payable on the termination of service.

(The Maternity Benefit Act, 1961)

Worker:

Dock Worker means person employed or to be employed in or in the civility of any port or work in connection with the loading, unloading movement or storage or cargoes, or work in connection with the preparation of ships of other vessels for the receipt or discharge of cargoes or leaving port.

(Dock Workers Regulation of Employment Act, 1948)

Worker means an person employed in the process which includes all work which is required for or is incidental to the loading or unloading of cargo or fuel into or from a ship and is done on board the ship or alongside it.

(Indian Dock Labourers Act, 1934)

Motor Transport Worker means a person who is employed in a motor transport undertaking directly or through an agency, whether for wages or not, to work in a professional capacity on a transport vehicle or to attend to duties in connection with the arrival, departure, loading or unloading of such transport vehicle and includes a driver, conductor, cleaner, station-staff, line checking staff, booking clerk, cash clerk, depot clerk, time keeper, watchman or attendant, but except in Section 8 does not include:

(Contd.)

(a) Any such person who is employed in a factory as defined in the Factories Act, 1948

(b) Any such person to whom the provision of any law for the time being in force regulating the conditions of service of persons employed in shops or commercial establishments apply.

(Motor Transport Workers Act, 1961)

Worker means any person employed in the Works which includes electric supply line and any building, plant, machinery, apparatus and any other thing of whatever description required to supply energy to the public and to carry into effect the objects of the license or sanction granted under this Act or any other law for the time being in force.

(Indian Electricity Act, 1910)

Railway servant means any person employed by a Railway Administration in connection with the service of a Railway. The scope of this definition is restricted to such Railway servants who are not covered by the Factories Act, 1948, the Mines Act, 1952 and the Merchant Shipping Act, 1958.

(Indian Railways Act, 1890)

Annexe 9.9

Some Basic Educational Statistics

Table 1: Number of Educational Institutions*

1	Primary/ Jr. Basic Schools	626737
2	Middle/ Sr. Basic Schools	190166
3	High/Post Basic	79648
5	Hr. Secondary (10+2 New pattern)	28487
6	Pre Degree/Jr. College	4303
7	Tech. Indus. Arts and Crafts Schools	4171
8	Polytechnic Institutes	1066
9	Teacher Training Schools	1319
10	Teachers Training Colleges	818
11	Medical Colleges (Allo/Homeo/Unani etc)	755
12	Engineering, Technology and Architecture	540
13	Arts, Science, Commerce Colleges	7494
14	Research Institutions	34
15	Institutes of National Importance	11
16	Institutes Deemed as Universities	39
17	Universities	187

Table 2: Enrolment by Stages/Classes*

1	Primary/ Jr. Basic Schools	110985877
2	Middle/ Sr. Basic Schools	40353358
3	High/Post Basic	18451855
5	Hr. Secondary (10+2 New pattern)	6975901
6	Pre Degree/Jr. College	2339693
7	Tech. Indus. Arts and Crafts Schools	440843
8	Polytechnic Institutes	357174
9	Teacher Training Schools	297070
10	Teachers Training Colleges	114199
11	Medical Colleges (Allo/Homeo/Unani etc)	143404
12	Engineering, Technology and Architecture	312741
13	Arts, Science, Commerce Colleges (B.Com/B.A./B.Sc./M.Com./M.A./M.Sc.)	6254,56
14	Ph.D./D.Sc./D.Phil.	45820

Table 3: No. of Teachers, Enrolment and Teacher Pupil Ratio by Type of Institutions*

Sr. No.		Teachers	Enrolment	Pupil-Teacher-Ratio
1	Primary/ Jr. Basic Schools	1903539	80255700	42
2	Middle/Sr. Basic	1277904	47233268	37
3	High/Post Basic	1016914	28784251	28
4	Higher Secondary Schools/Jr. Colleges	730964	24744248	34

Note:***** Provisional

Tables 1,2,3: Source: Selected Educational Statistics (as on 30th September 1998) for the Year 1998-99, GOI, Ministry of Human Resource Development.

(Contd.)

Table 4: Estimated Percentage of Persons (age 5-24) in Unrecognised Educational Institutes

	Level of Education	Rural			Urban			R+U
		Male	Female	Persons	Male	Female	Persons	Persons
1	Primary	4.50	4.14	4.27	6.47	6.42	6.45	4.80
2	Middle	3.18	1.92	2.62	2.74	2.29	2.53	2.59
3	Secondary and Higher Secondary	1.70	2.75	2.00	2.41	2.20	2.32	2.12
4	Above Higher Secondary	3.37	8.82	4.68	1.73	1.25	1.52	2.71
5	All Levels	3.80	3.52	3.69	4.40	3.96	4.05	3.67

Source: NSS 52nd Round, Report No. 439, October, 1998 (Results derived from Tables 8)

Table 5: Facilities in Primary/Middle Schools as per Sixth All-India Educational Survey-1993

Per cent of rural habitations and population served by a school having	Habitations	Rural Population
(i) Primary Classes		
Within habitation	49.8	77.8
Within 1 Km	83.4	93.8
(ii) Upper Primary within 3 Km.	76.1	85.0

Per cent of Schools	Primary	Upper primary
(i) Without building	7.2	3.5
(ii) With drinking water	44.2	63.5
(iii) With toilets	18.9	48.4
(iv) With separate toilets for girls	8.7	31.5

(i) Gross Enrolment Ratio for Primary (Classes I-V) Primary	81.6
(ii) Gross Enrolment Ratio for Upper Primary (Classes VI-VIII)	54.2
(iii) Age-Specific Enrolment Ratio (Age 6-10 years)	66.4
(iv) Age-Specific Enrolment Ratio (Age 11-13 years)	57.1
(v) No.of classrooms per Primary school	2.85
(vi) No. of classrooms per Middle school	6.48
(vii) Per cent of single teacher Primary Schools	20.1

Source: Sixth All-India Educational Survey (Main Report), NCERT

Annexe 9.10

Major Educational Data Coverage by Various Organisations

Sl. No	Agency	Major Coverage	Primary Source	Periodicity	Data Collection Mode	Latest Available Data
1	PMSD in MHRD	i) Institutions, enrolment, teachers (Rural/Urban), examination results including SC/ST data for formal education covering all stages, forms, types and modes of education,	Institutions	Annual	Census	Provisional Statistics for 1999-00 and detailed final statistics for 1992-93
		ii) Distance Education		Annual		1997-98
		iii) Source-wise income, budget and item-wise expenditure of States/UTs		Annual		1994-95
		iv) Indian students/trainees going abroad and foreign students in Indian Universities	RBI	Annual	Census	1996-97
2	NCERT	**School Education**	Schools, villages/ towns	7-8 yrs.	Census and Sample	1993-94
		i) Schooling facility in rural areas				
		ii) Schools, enrolment, teachers, educational inputs, physical facilities basic amenities, incentive schemes				
		iii) Courses of Study, institutions, enrolment at +2 stage; enrolment and teachers for non-formal education, special education and pre-primary education				
		Teacher Education - Course-wise enrolment, Teachers' qualification, etc.				
		i) Elementary Teacher Education	Institu-tions	*Ad hoc*	Census	1977
		ii) Secondary Teacher Education	Institutions	*Ad hoc*	Census	1983
		iii) DIETs	Institutions	*Ad hoc*	Census	1997
3	UGC	i) Institutions	Institutions	*Ad hoc*	Census	1996-97
		ii) Enrolment, course-wise teachers for higher education				1982-83

(Contd.)

Sl. No	Agency	Major Coverage	Primary Source	Periodicity	Data Collection Mode	Latest Available Data
4	AIU	i) Institutions, subject, courses, finance, etc	Institution	Annual	Census	1997
		ii) Admission procedures number of seats, etc. about courses on higher education	Institution	Annual	Census	
5	AICTE/ IAMR	Intake capacity of technical education institutions	Institution	Annual	Census	
6	IAMR	i) Manpower profile discipline-wise	Institution		Yearly	1997
		ii) Institutions, intake and output data through NTMIS for engineering				
7	Dte. of Adult Edu.	Adult literacy, enrolment, targets expenditure	Project	Annual	Project profile	1996-97
8	Planning Comm.	Data on MNP	States/ UTs	Annual/Five Year Plan		1998-99
9	RGI	Educational level of population and literacy	Households	Decennial	Census/ Sample	1991
10	NSSO	Enrolment, dropout and private expenditure.	Households	Quinquennial	Sample	1995
11	NIEPA	Educational Administration	State Govt.	*Ad hoc*	Census	Varying between 1992 and 1998
12	DPEP in MHRD	Schools at primary level	Schools of DPEP districts	Annual	Census	1998-99

Source: Paper to Commission from PMSD, MHRD

Annexe 9.11

Important Publications on Educational Statistics (Organisation-Wise)

1. PMSD located in Department of Secondary & Higher Education

1.1 Selected Education Statistics

- Annual
- latest 1999-2000
- provisional information on number of schools, class-wise enrolment, state-wise teachers; district-wise number of schools, population projections, literacy rate etc.

1.2 Education in India, Volume I

- annual
- latest 1994-95 for school education and 1992-93 for college education
- number of institutions by management and type, estimated population of children, students receiving post school certificate education for professional, vocational categories, etc.
- statistics of universities and colleges
- only for 1991-92
- institutions by type. Enrolment by type, stage faculty wise and teachers by type of institutions

1.3 Education in India Volume II

- annual
- income and expenditure according to types of institutions both for schools colleges and and higher education
- publication for 1992-93 was brought out for school education and 1989-90 for college education

1.4 Analysis of Budget Expenditure on Education

- annual
- budget and actual expenditure by Central/State governments available for sub-sectors of education
- latest 1996-97

1.5 Educational Statistics, District-wise

- brought out only once for the year 1981-82
- highlighted regional imbalances
- district-wise data on population in the age group of school going children, enrolment, number of teachers covering primary, upper primary, secondary, higher secondary, etc.

1.6 Budgetary Resources for Education 1951-52 to 1993-94

- one-time publication

1.7 Selected Information of school education

- annual
- 1995-96

(Contd.)

1.8 Growth of Schools in India

- occasional
- latest for 1950-93

1.9 Education in India (non-affiliated courses)

- annual
- latest for 1991-92

1.10 Handbook of Education and Allied Statistics

- Occasional
- Latest for 1996

1.11 Distance Education in India (Schools and Higher Education)

- annual
- latest for 1996-97

1.12 Indian Students/Trainees Going Abroad

- brought out in 1998
- information giving details like courses pursued State wise and country wise, migration, students getting financial assistance, etc.

2. NCERT

- All India Educational Survey
- latest conducted in 1993 (sixth survey)
- information on school education to fill gaps that exist in regular collection and to build up a periodic profile
- report of 6th AIE Survey published in 7 volumes between 1997 and 1998

3. University Grants Commission (UGC)

3.1 University Development in India-Basic Facts and Figures

- institution-wise detailed data on students enrolment and teaching staff
- latest publication available for the period 1984-85
- data now published in the Annual Report of the UGC

3.2 Examination Results

- latest available for 1984

3.3 Directory of Professors and Readers

- latest available for the year 1996

3.4 Directory of Colleges

- latest for the year 1997-98
- addresses of colleges under each university, type of management, location (rural/urban), colleges for women only, whether a PG college etc.

3.5 Representation of SC and STs in Enrolment and Teaching and Non-teaching Staff in Universities and Colleges.

- latest available for the year 1992-93 (approximately for 80 universities)

(Contd.)

3.6 Enrolment Statistics in Courses Provided Through Correspondence and Open Education.

- latest for 1994-95

3.7 Directory of University Teaching Departments

- courses conducted in each department etc.
- latest for the year 1996

3.8 New Courses in Universities

- latest for 1995-96

3.9 Doctoral Degrees Awarded by the Universities Faculty-wise and Subject-wise break up in Faculties of Arts and Science

- data for three years that is 1994-95, 1995-96 and 1996-97 is at stage of finalisation

4. Association of Indian Universities

4.1 Handbook of Indian Universities

- published once in two years
- latest 1997
- gives general profile of each university, subjects, courses offered, total finance etc.
- does not give any statistical information

5. All India Council of Technical Education

- Information relating to engineering and technical courses conducted in various institutions including Poly-techniques

6. Institute of Applied Manpower

- National surveys on area of manpower profiles, vocational and technical education through National Technical Manpower Information System (NTMIS)
- NTMIS database from1992-97 and analysis of labour market situation for engineers and technicians in individual states.
- Conducted graduate follow-up surveys, engineering educational institution survey
- Reports brought out regularly: NTMIS Bulletin, Annual Technical Manpower Reviews State Wise, Projection Demand, Technical Manpower Profile, Facilities for Education and Employment Market, Career Options in Engineering Education and Issue Based Studies

7. Directorate of Adult Education

7.1 Report on Adult Education

- state-wise data on project profiles expenditure, number of campaigns, enrolments, targets and achievements, etc.
- latest 1997-98

(Contd.)

8. Planning Commission

- Implementation of the Minimum Needs Programme (MNP) as universal elementary education is one of the action points under MNP

9. Registrar General of India

- Information on level of educational attainment of entire population; and employment by level of educational attainment; whether attending school (based on population census data, once in 10 years)

10. NSSO

- Collects household data on education in different rounds
- latest 52nd round (1998)

11. NIEPA

- two surveys on educational administration conducted by NIEPA
- second survey was conducted in 1992.
- Reports for certain states were published.

12. Database on District Primary Education Programme (DPEP)

- Data on facilities enrolment, teachers, etc. for primary education collected for DPEP districts

13. Vocationalisation of school education (1990-91 survey)

- Survey conducted by Department of Education in 1990-91
- Information on number of institutions, enrolment by area, sex, category, diversion to vocational streams, number of vocational sections, teachers, etc.
- Report published in 1995

14. Databases Created by State Governments

- Some States have created databases on school and college education with NIC Centres
- Generally reports brought out are utilised for State specific requirements

Source: Paper to Commission from PMSD, MHRD

Annexe 9.12

State-wise Position of Collection of Educational Data in ES Forms

(as on 18.06.01)

STATE/UT	1994-95								1995-96							
	I(S)	IV(S)	I(C)	IV(C)	II(S)	II(C)	III(S)	III(C)	I(S)*	IV(S)*	I(C)	IV(C)	II(S)	II(C)	III(S)	III(C)
Andhra Pradesh	Publication brought out Education in India vol. I (S)		A	A	F	A	R	A	F	F	A	A	PR	A	A	A
Arunachal Pradesh			F	F	F	PR	A	A	F	F	PR	PR	F	PR	R	R
Assam			PR	PR	F	A	R	R	PR	PR	A	A	A	A	A	A
Bihar			A	A	PR	A	#	A	PR	PR	A	A	PR	A	R	A
Goa			PR	PR	F	PR	R	R	F	F	PR	PR	PR	PR	R	R
Gujarat			F	F	F	F	R	R	F	F	R	R	PR	R	R	R
Haryana			F	F	PR	F	R	A	PR	PR	R	R	PR	R	A	A
Himachal Pradesh			F	F	PR	F	R	R	PR	PR	R	R	PR	R	R	R
J&K			A	A	F	R	A	A	PR	PR	A	A	PR	A	A	A
Karanatka			A	A	PR	A	R	R	PR	PR	A	A	A	A	A	R
Kerala			A	A	PR	A	R	A	F	F	R	R	PR	R	R	A
Madhya Pradesh			A	A	PR	A	R	A	F	F	A	A	PR	A	R	A
Maharashtra			PR	PR	PR	PR	R	A	PR	PR	R	R	A	R	A	A
Manipur			PR	PR	F	PR	R	R	F	F	R	R	F	R	R	R
Meghalaya			PR	PR	PR	PR	R	R	F	F	R	R	PR	R	R	R
Mizoram			R	R	PR	R	R	A	PR	PR	R	R	R	R	#	A
Nagaland			PR	PR	F	PR	R	A	F	F	R	R	PR	R	R	A
Orissa			PR	PR	F	PR	A	A	PR	PR	R	R	PR	R	A	A
Punjab			F	F	PR	A	A	A	F	F	PR	PR	PR	A	A	A
Rajasthan			R	A	F	A	R	R	F	F	R	A	F	A	R	R
Sikkim			PR	PR	PR	PR	R	A	PR	PR	R	R	R	R	R	A
Tamil Nadu			R	R	PR	A	R	A	PR	PR	R	R	PR	A	R	A
Tripura			F	F	F	F	R	A	PR	PR	R	R	R	R	R	R
Uttar Pradesh			A	A	PR	A	#	#	PR	PR	A	A	R	A	#	#
West Bengal			PR	PR	F	A	#	A	R	R	PR	A	F	A	#	A
A&N Islands			F	F	F	F	R	A	PR	PR	R	R	PR	R	R	R
Chandigarh			PR	PR	PR	PR	R	R	PR	PR	R	R	PR	R	R	R
D&N Haveli			**	**	F	**	R	A	F	F	**	**	R	**	R	**
Daman & Diu			PR	F	PR	PR	R	R	R	F	R	R	PR	R	A	A
Delhi			PR	PR	PR	PR	A	A	PR	A	A	A	R	R	A	A
Lakshadweep			**	**	PR	**	R	R	A	A	**	**	PR	**	A	A
Pondicherry			PR	PR	PR	PR	A	R	R	F	R	R	PR	R	R	R

Notes: A Awaited; S School Education; PR Pending Reconciliation ; C College Education; # Part Information received; * Publication in final stage; F Final ; ** No education at degree level & above; R Received;
Form ES-I: numerical data, ES-II: financial data, ES-III: examination results and ES-IV: numerical data on SC/ST. One set of ES forms is for school (S) education and another set for college (C) education

Source: PMSD, MHRD

(Contd.)

STATE/UT	1996-97								1997-98							
	I(S)	IV(S)	I(C)	IV(C)	II(S)	II(C)	III(S)	III(C)	I(S)	IV(S)	I(C)	IV(C)	II(S)	II(C)	III(S)	III(C)
Andhra Pradesh	PR	PR	A	A	PR	A	R	#	PR	PR	A	A	R	A	R	#
Arunachal Pradesh	PR	PR	R	R	PR	A	A	A	PR	PR	A	A	R	A	R	R
Assam	PR	PR	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Bihar	PR	PR	A	A	R	A	#	A	A	A	A	A	A	A	#	#
Goa	F	F	A	A	PR	R	#	R	F	F	R	A	PR	R	R	R
Gujarat	PR	PR	R	R	R	R	R	R	PR	PR	R	R	R	R	R	R
Haryana	PR	PR	PR	PR	PR	A	R	R	PR	PR	R	R	R	A	R	#
Himachal Pradesh	PR	PR	R	R	A	A	#	#	A	A	R	R	A	A	R	R
J&K	A	A	A	A	A	A	A	A	PR	A	A	A	A	A	#	#
Karanatka	PR	PR	A	A	A	A	#	#	PR	PR	A	A	A	A	R	#
Kerala	F	F	R	R	PR	R	#	A	PR	PR	R	R	R	R	R	#
Madhya Pradesh	PR	PR	A	A	PR	A	R	A	PR	PR	A	A	R	A	R	#
Maharashtra	PR	PR	R	R	PR	R	R	R	PR	PR	R	R	R	R	R	#
Manipur	F	F	R	R	PR	R	R	R	PR	PR	R	R	R	R	R	R
Meghalaya	PR	PR	R	R	R	A	#	#	PR	PR	R	R	A	R	R	R
Mizoram	PR	PR	R	R	R	A	#	A	PR	PR	R	R	A	R	R	R
Nagaland	F	F	A	A	PR	R	A	A	PR	PR	R	R	PR	R	R	R
Orissa	PR	PR	R	R	R	A	A	A	PR	PR	R	R	R	R	R	#
Punjab	PR	PR	R	R	A	A	#	#	PR	PR	R	R	A	A	R	#
Rajasthan	F	F	R	A	F	A	R	#	F	F	R	R	R	R	R	#
Sikkim	PR	PR	R	R	PR	R	R	R	PR	PR	R	R	R	R	R	#
Tamil Nadu	PR	PR	A	A	R	A	R	R	PR	PR	A	A	R	A	R	#
Tripura	PR	PR	R	R	R	R	R	R	PR	PR	R	R	R	R	R	#
Uttar Pradesh	PR	PR	A	A	PR	A	#	#	A	A	A	A	A	A	R	#
West Bengal	PR	PR	A	A	F	A	#	#	PR	PR	A	A	R	A	R	#
A&N Islands	PR	PR	R	R	PR	R	R	R	PR	PR	R	R	R	R	R	R
Chandigarh	PR	PR	R	R	PR	R	R	R	PR	PR	A	A	R	R	R	#
D&N Haveli	PR	PR	**	**	R	**	#	**	A	A	**	**	A	**	R	R
Daman & Diu	PR	PR	R	R	R	R	A	R	F	F	R	R	A	R	R	R
Delhi	PR	PR	R	R	PR	R	#	#	PR	PR	A	A	PR	A	R	#
Lakshadweep	A	A	**	**	A	**	R	**	A	A	**	**	A	**	R	R
Pondicherry	F	F	R	R	R	R	R	R	PR	PR	R	R	R	R	R	R

Notes: A Awaited; S School Education; PR Pending Reconciliation ; C College Education; # Part Information received;
* Publication in final stage; F Final ; ** No education at degree level & above; R Received;
Form ES-I: numerical data, ES-II: financial data, ES-III: examination results and ES-IV: numerical data on SC/ST. One set of ES forms is for school (S) education and another set for college (C) education

Source: PMSD, MHRD

Annexe 9.13

Environmental Information System (ENVIS)

Realising the importance of Environmental Information, the Government of India, in December 1982 established an Environmental Information System (ENVIS) as a plan programme. It is a decentralised system with a network of subject oriented Centres ensuring integration of national efforts in environmental information collection, collation, storage, retrieval and dissemination to all concerned. The focus of ENVIS since inception has been on providing environmental information to decision-makers, policy planners, scientists and engineers, research workers, etc. all over the country. ENVIS due to its comprehensive network has been designed as the National Focal Point (NFP) for INFOTERRA, a global environmental information network of the United Nations. Presently, the ENVIS network consists of a Focal Point at the Ministry of Environment and Forest and the 25 ENVIS Centres set up in different organisations/ establishments in the country in selected areas of environment. These centres have been set up in the areas of pollution control, toxic chemicals, central and offshore ecology, environmentally sound and appropriate technology, bio-degradation of wastes and environment management, etc.

2. The long-term and short-term objectives of the ENVIS are as follows:

Long-term Objectives:

- To build up a repository and dissemination centre in Environmental Science and Engineering;
- To gear up the modern technologies of acquisition, processing, storage, retrieval and dissemination of information of environmental nature; and
- To support and promote research, development and innovation in environment information technology

Short-term Objectives:

- To provide national environmental information service relevant to present needs capable of development to meet the future needs of the users, originators, processors and disseminators of information;
- To build up storage, retrieval and dissemination capabilities with the ultimate objectives of disseminating information speedily to the users;
- To promote, national and international cooperation and liaison for interchange of environment-related information;
- To promote, support and assist education and personnel training programmes designed to enhance environment information processing and utilisation capabilities;
- To promote exchange of information amongst developing countries.

Annexe 9.14

Suggestive List of Environmental Indicators as recommended by Asian Development Bank in its Project on Institutional Strengthening and Collection of Environment Statistics

I. FLORA

A. Threatened species as percentage of total native species

Flowering Plants

(a) Rare
(b) vulnerable
(c) endangered'endemic

Non-Flowering plants

(a) rare
(b) vulnerable
(c) endangered'endemic

B. Extinct species as percentage of total native species.

C. Possibly extinct species as percentage of total native species.

II. FAUNA

A. Threatened species as percentage of total native species

Vertebrates

(a) rare
(b) vulnerable
(c) endangered'endemic

Non- Vertebrates

(a) rare
(b) vulnerable
(c) endangered'endemic

B. Extinct species as percentage of total native species.

C. Possibly extinct species as percentage of total native species.

III. CONSERVATION MEASURES

A. Within habitats (*in situ*)

(a) Bio sphere reserves
(b) National Parks
(c) Sanctuaries
(d) Reserve forests
(e) Other protected measures

(Contd.)

B. Outside habitats (*ex situ*)

(a) Botanic gardens
(b) Gene banks
(c) Others

IV. AIR/ATMOSPHERE

A. Ambient air quality in major cities

	Annual Average Ug/m^3	24 hour average Ug/m^3
(a)	Concentration of SOx	
(b)	Concentration of NOx	
(c)	Concentration of SPM	

B. Emissions as per WHO National Standard (e.g. ppm. Ppv)

(a) CO
(b) HC
(c) Pb concentration
(d) CO2
(e) Others (e.g. CHs, CFCs, etc.)

C. Energy consumption

(a) Percentage of the households using different fuels for cooking

(i) Cow dung
(ii) Electricity
(iii) Coal Coke
(iv) LPG
(v) Fuelwood
(vi) Solar power
(vii) Biogas
(viii) Kerosene

(b) Electricity generation

(i) Renewable (mgw)
(ii) Non-renewable (mgw)

(c) Meteorological information

(i) Rainfall
(ii) Humidity
(iii) Wind speed
(iv) Others

(Contd.)

V. WATER

A. Fresh water

(a) Surface water

(i) Rainfall
(ii) River water quality standard
- DO level
- BOD level
- COD level
- Total solids
- Coliform concentration
- Heavy metal concentration

(b) Ground water

(i) pH
(ii) Turbidity
(iii) Metal concentration
(iv) Ar, F, Cl, NO3

B. Marine water

(a) Length of marine coastline (km)
(b) Area (sq. km)
(c) Population (m)
(d) Coastal vegetation

(i) Mangroves as percentage of total forest cover
(ii) Lagoons
(iii) Estuaries
(iv) Coral reefs

(e) Relative fragility, %
(f) Preservation area, %

VI. LAND/SOIL

A. Land use (million ha)

(a) Geographic area (sq. km.)
(b) Reporting area for land utilisation

B. Forest areas

(a) Forests
(b) Not available for cultivation

(i) Non-agricultural
(ii) Barren and uncultivated land

(c) Other cultivated land

(i) Permanent pastures and other grazing land
(ii) Miscellaneous tree crops and groves

(Contd.)

(iii) Cultivated wasteland

(d) Gross cropped area
(e) Cropping intensity.

C. Wetlands

D. Irrigated area

E. Soil erosion

(a) Percentage area
(b) Pesticide level
(c) Consumption of fertilisers (t)

F. Land area on waste disposal

(a) Industrial
(b) Municipal
(c) Hazardous
(d) Mining
(e) Others.

VII. HUMAN SETTLEMENTS

A. Total population

(a) Urban
(b) Rural

B. Population below poverty line

(a) Urban
(b) Rural

C. Slum population (class-wise)

D. Number and percentage of facilities

(a) Dwelling units
(b) Sanitation
(c) Drinking water
(d) Others

E. Urban agglomeration

F. Life expectancy and mortality rates and causes.

VIII. NATURAL DISASTERS

A. Flood periodicity affected population

B. Cyclones

C. Drought

D. Earthquake

E. Landslides

(Contd.)

F. Avalanche

G. Typhoon

H. Others

IX. OTHER ECONOMIC AND INSTITUTIONAL INDICATORS

A. Total expenditure

B. Expenditure for environmental protection

C. Percentage of national expenditure

10 FINANCIAL AND EXTERNAL SECTOR STATISTICS

10.1 INTRODUCTION

10.1.1 The chapter on Financial and External Sector Statistics discusses, statistical issues pertaining to the Monetary and Financial Sector, Insurance Sector, Capital Market, Government Securities Market, Money Market, Fiscal Statistics, Balance of Payments, External Debt and Foreign Exchange Reserves and E-commerce. The focus here has been to assess the current status, identify the deficiencies in the present system and recommend measures to improve the statistical system. To specially focus on newly-emerging or relatively uncovered areas, Committees were set up on statistical issues relating to: (a) International Trade in Services, (b) E-commerce and its regulatory mechanism, (c) Insurance Sector Statistics, (d) Informal Financial Sector Statistics, and (e) Fiscal Sector Statistics. The Reports submitted by the Committees have provided valuable material for the Commission.

10.1.2 The statistics relating to the Financial Sector provide information on monetary aggregates and data relating to the functioning of various financial markets and financial institutions. The Balance of Payments (BoP) statistics, an important and significant part of External Sector Statistics covering both current and capital account transactions, follow the requirements of the national accounts very closely, by separately identifying the goods, services, income, and current transfers as principal components of the current account. Besides, the data on External Sector Statistics include external debt and foreign exchange reserves.

10.1.3 The rapid spread of Information Technology in the Financial Sector has offered new avenues for improving the system of collection and dissemination of data. The initiatives taken by the concerned institutions to modernise the management of information systems is expected to facilitate the collection and dissemination of data on market operations almost on-line.

10.1.4 The Reserve Bank of India (RBI) is the main agency for collection and dissemination of statistics in respect of the Financial and External Sector. It has an elaborate mechanism to collect, compile and disseminate these data. Most of the data are released through its website. Current data dissemination of RBI encompasses not only traditional publications such as the *Annual Report, Report on Currency and Finance, Report on Trend and Progress of Banking in India, Handbook of Statistics on Indian Economy,* Monthly *Bulletin* and the *Weekly Statistical Supplement to the Bulletin,* but also high frequency data and information on financial markets on a daily basis through the website and Press Releases. In addition, there are a number of *ad hoc* surveys, the results of which are published in the RBI *Bulletin*. RBI also sets up committees from time to time to look into concepts and definitions and other aspects of collection and dissemination of data. The reports of these committees are a rich source of information for many of the important data series. The other institutions which collect, compile and disseminate data are the Securities and Exchange Board of India (primary market, secondary market, foreign institutional investors, mutual funds), National Bank for Agriculture and Rural Development (regional rural banks and co-operative banks), Industrial Development Bank of India (Financial Institutions, State Financial Corporations, State Industrial Development Corporations, etc.), stock exchanges (indices of trading stocks/equities/bonds), authorised dealers (international trade and investment) and Government (international trade, external debt, guarantees).

10.1.5 The approach adopted in this chapter is as follows. The current practices followed in the compilation of data are examined to identify their deficiencies in terms of timeliness, reliability and adequacy. Recommendations have been made to address these deficiencies and thereby improve the system. The discussion is organised in sections on the following:– Monetary and Financial Statistics, Insurance Sector Statistics, Statistics on Indian Capital Market, Statistics on Government Securities Market, Statistics on Money Market, Fiscal Statistics, Balance of Payments Statistics, External Debt Statistics, Statistics on Foreign Exchange Reserves and E-commerce and its regulatory mechanism.

10.2 MONETARY AND FINANCIAL STATISTICS

10.2.1 Monetary and Financial Statistics are generated on the basis of information provided by banks and other deposit-taking financial institutions. It is, therefore, essential that data relating to various sub-sectors of the Financial Sector must not only be complete, but also mutually consistent and comparable. This section examines the statistical system relating to compilation of monetary aggregates and other related financial statistics pertaining to commercial banks, regional rural banks, co-operative banks, financial institutions and non-bank finance companies. Monetary statistics comprise RBI's balance sheet and the balance sheet of the banking system. The main variables derived from the former are the reserve money and currency in circulation, and from the latter, the data on deposits. RBI has the primary responsibility for compilation and dissemination of monetary aggregates. However, monetary statistics have undergone refinements on the basis of recommendations of various groups set up for the purpose from time to time.

Monetary Statistics

Current Status

10.2.2 Following the recommendations of the Second Working Group on Money Supply (SWG) in 1977, RBI has been publishing four monetary aggregates – M_1, M_2, M_3 and M_4 - besides the reserve money. From among the aggregates, M_1 and M_3 are extensively used both for policy purposes and in academic exercises. While M_1 includes currency with the public, non-interest bearing deposits with the banking sector including that of RBI, M_3 captures the complete balance sheet of the banking sector. M_2 and M_4 that include post office savings banks deposits are not very widely used. The reserve money and M_3 aggregates are presented both for the components (liabilities) and sources (assets). The weekly balance sheet data of RBI are used for the compilation of reserve money. The balance sheet data for the entire banking sector which include apart from RBI, commercial and co-operative banks are used for compilation of M_3. The reserve money is compiled with a weekly periodicity, while M_3 is computed fortnightly. The monetary data for the current period are disseminated by RBI in its *Weekly Statistical Supplement* (WSS) to the *Bulletin*. Monetary data for longer periods are disseminated by RBI through the Monthly *Bulletin, Annual Report*, and *Handbook of Statistics on Indian Economy*.

10.2.3 The RBI has started publishing a set of new monetary aggregates following the recommendations of the Working Group on Money Supply: Analytics and Methodology of Compilation (Chairman: Dr. Y.V. Reddy) which submitted its report in June 1998. The Working Group recommended compilation of four monetary aggregates on the basis of the balance sheet of the banking sector in conformity with the norms of progressive liquidity: M_0 (monetary base), M_1 (narrow money), M_2 and M_3 (broad money) (see Box 10.1). In addition to the monetary aggregates, the Working Group had recommended compilation of three liquidity aggregates namely, L_1, L_2 and L_3, which include select items of financial liabilities of non-depository financial corporations such as development financial institutions and non-banking financial companies accepting deposits from the public, apart from post office savings banks.

Box 10.1: New Monetary Aggregates

Weekly Compilation

M_0 = Currency in Circulation + Bankers' Deposits with RBI + 'Other' Deposits with RBI*

Fortnightly Compilation

M_1 = Currency with the Public + Demand Deposits with the Banking System + 'Other' Deposits with RBI*

= Currency with the Public + Current Deposits with the Banking System + Demand Liabilities Portion of Savings Deposits with the Banking System + 'Other' Deposits with RBI*

M_2 = M_1 + Time Liabilities Portion of Savings Deposits with the Banking System + Certificates of Deposit issued by Banks + Term Deposits of residents with a contractual maturity of up to and including one year with the Banking System

= Currency with the Public + Current Deposits with the Banking System + Savings Deposits with the Banking System + Certificates of Deposits issued by Banks + Term Deposits of residents with a contractual maturity up to and including one year with the Banking System + 'Other' Deposits with RBI*.

M_3 = M_2 + Term Deposits of residents with a contractual maturity of over one year with the Banking System + Call/Term borrowings from 'Non-depository' financial corporations by the Banking System.

Note: * 'Other' deposits with RBI comprise mainly: (i) deposits of quasi-government and other financial institutions including primary dealers, (ii) balances in the accounts of foreign Central banks and Governments, (iii) accounts of international agencies such as the International Monetary Fund, etc.

10.2.4 While the Working Group did not recommend any change in the definition of reserve money and M_1, it proposed a new intermediate monetary aggregate to be referred to as NM_2 comprising currency and residents' short-term bank deposits with contractual maturity up to and including one year, which would stand in between narrow money (which includes only the non-interest-bearing monetary liabilities of the banking sector) and broad money (an all-encompassing measure that includes long-term time deposits). The new broad money aggregate (referred to as NM_3 for the purpose of clarity) in the Monetary Survey would comprise in addition to NM_2, long-term deposits of residents as well as call/term borrowings from non-bank sources, which have emerged as an important source of resource mobilisation for banks. The critical difference between M_3 and NM_3 is the treatment of non-resident repatriable fixed foreign currency liabilities of the banking system in the money supply compilation.

10.2.5 There are two basic changes in the new monetary aggregates. Since the post office bank is not a part of the banking sector, postal deposits are no longer treated as part of money supply, as was the case in the extant M_2 and M_4. Second, the residency criterion was adopted to a limited extent for compilation of monetary aggregates.

10.2.6 The Working Group made a recommendation in favour of compilation of monetary aggregates on residency basis. Residency essentially relates to the country in which the holder has a centre of economic interest. Holdings of currency and deposits by the non-residents in the rest of the world sector, would be determined by their portfolio choice. However, these transactions form part of balance of payments. Such holdings of currency and deposits are not strictly related to the domestic demand for monetary assets. It is therefore argued that these transactions should be regarded as external liabilities to be netted from foreign currency assets of the banking system. However, in the context of developing countries such as India, which have a large number of expatriate workers who remit their savings in the form of deposits, it could be argued that these non-residents have a centre of economic interest in their country of origin. Although in a macro-

economic accounting framework all non-resident deposits need to be separated from domestic deposits and treated as capital flows, the underlying economic reality may point otherwise. In the Indian context, it may not be appropriate to exclude all categories of non-resident deposits from domestic monetary aggregates as non-resident rupee deposits are essentially integrated into the domestic financial system. The new monetary aggregates, therefore, exclude only non-resident repatriable foreign currency fixed deposits from deposit liabilities and treat those as external liabilities. Accordingly, from among the various categories of non-resident deposits at present, only Foreign Currency Non-Resident Accounts (Banks) [FCNR(B)] deposits are classified as external liabilities and excluded from the domestic money stock. Since the bulk of the FCNR(B) deposits are held abroad by commercial banks, the monetary impact of changes in such deposits is captured through changes in net foreign exchange assets of the commercial banks.

10.2.7 The data on new monetary aggregates were published in the Report of the Working Group from April 1993 onwards, as Foreign Currency Non-Resident Account (Banks) was introduced in 1993. The backward construction of the series on the component side is possible but the data on sources are still unsteady. Comparative data on Monetary Aggregates as per the present and the new series for the period 1997 to 1999 are presented in Table 10.1.

Table 10.1: Present and New Monetary Aggregates

(Rupees *crore*)

March 31	*Present*			*New*			
	Reserve Money (RM)	**M_1**	**M_3***	**M_0=RM**	**$NM_1 = M_1$**	**NM_2@**	**NM_3**
1997	1,99,985	2,40,615	7,01,848	1,99,985	2,40,615	4,51,564	6,70,043
1998	2,26,402	2,67,844	8,28,257	2,26,402	2,67,844	4,77,993	7,89,166
1999	2,59,371	3,08,315	9,80,382	2,59,371	3,09,328#	5,50,807	9,25,530

Notes: Data are provisional.

* Includes banks' pension and provident funds.

@ NM_2 data have been estimated for end-March 1998 and 1999 by working out the share of short-term time deposits in total residents' time deposits for select nationalised banks, which stood at 45.0 per cent as at end March 1999. In case of March 1997, the estimate of the Working Group report has been retained.

\# The difference is due to different co-operative estimation methods as recommended by the Working Group.

10.2.8 Monetary data are published in the Weekly Statistical Supplement of RBI and in the National Summary Data Page (Special Data Dissemination System) of the International Monetary Fund on a weekly basis. The reserve money data is released with a weekly periodicity while data on money supply is released fortnightly. Monetary data is published in the RBI *Bulletin* on a monthly basis, and in the *Annual Report* and *Handbook of Statistics on the Indian Economy* on an annual basis. The time series data on new monetary and liquidity aggregates since April 1993 were published in a special article in the November 2000 issue of the RBI *Bulletin* and updates on the new monetary aggregates are being published in the subsequent issues of RBI *Bulletin*. As a part of the recommendations of the Working Group, the earlier money supply series is at present being continued alongside the new money supply series. The Working Group had proposed that both the existing and the new monetary aggregates may initially be published for at least a year in the relevant RBI publications in order to facilitate an understanding of the elements underlying the shift to the proposed aggregates.

10.2.9 In view of the difficulties experienced in obtaining data from major categories of co-operative banks and the time lags in their reporting, the Working Group recommended that data relating to items of liabilities and assets that have a direct bearing on the monetary survey could be collected through a representative sample of major co-operative banks at monthly intervals, followed by a population survey. Critical urban co-operative banks (with deposits of Rs.25 crore and above) and central co-operative banks (with deposits of Rs.50 crore and above) were instructed to file advance returns on selected assets and liabilities as proposed by the Working Group. Presently, because of data problems posed by co-operative banks, close to 7 per cent of the data on monetary aggregates are estimated/ extrapolated. Scheduled commercial banks also, under the RBI Act 1934, are allowed to send provisional returns followed by final returns. Consequently, the extent of revision of provisional and final data of the new monetary aggregates is often significant.

Interest Rates

10.2.10 The RBI announces changes in the Bank Rate, the Repurchase Agreement (repo) rate, the interest rate on saving deposits and interest rates on export credit from time to time through the issue of circulars. The data on short-term interest rates relating to the money market are published by RBI on a daily basis. No estimation/forecast of interest rates is undertaken. The data on deposit rates (major banks) and PLR (5 major banks) are published by RBI in the WSS and the Monthly *Bulletin*. The data on interest rates (other than those decided by RBI) are collected from banks through the Special Fortnightly Returns. Changes effected from time to time in their lending and deposit rates are disseminated by the respective banks to the public through advertisements in newspapers, etc.

Conclusions and Recommendations

10.2.11 The data released by RBI on monetary aggregates compare favourably with international standards. At a disaggregated level, the data in respect of commercial banks are reliable, adequate and timely. In respect of co-operative banks, there is a need for improving the quality and timeliness in availability of data. The Commission recommends that:

(i) Reserve Bank of India (RBI) should consider publication of an *average* holding of cash reserves by commercial banks during the reference period. Data on actual cash reserves and liquidity amounts, excess cash reserves and liquidity investments, corresponding net demand and time liabilities (DTL) amounts, and the ratios of required, actual and excess cash reserve ratio (CRR) and statutory liquidity ratio (SLR) should be published. This is because a major component of the reserve money is the bankers' deposits with RBI, essentially arising out of CRR prescribed for the banks. The banks are, however, allowed the flexibility to maintain CRR on an average basis during a fortnight with the restriction that the CRR on a particular day could be maintained at as low as 50 per cent of the required level for the first seven days of the reporting fortnight and 65 per cent for the rest of the fortnight. The reserve money data at a particular point of time, therefore, may not reflect the sharp changes in the component of bankers' deposits with RBI.

(ii) Since there are differing perceptions on the concepts of monetary aggregates, RBI should publish a time series on components of money at a disaggregated level so as to enable analysts to construct their own series.

(iii) The data on the new monetary aggregates are available on a monthly basis since April 1993. RBI should consider extending this series backwards with a view to providing a longer time series, which would facilitate empirical studies.

Banking Statistics

10.2.12 The data relating to major items of financial liabilities and assets form the core of banking statistics. Historically, RBI has been collecting detailed information from the commercial banks covering various aspects of their deposits, credit and investments. This includes data on priority sector advances, credit to exporters, asset quality, etc. The banking system includes: A. Reserve Bank of India, B. Commercial banks (including regional rural banks), and C. Co-operative banks.

Current Status

A. Reserve Bank of India

10.2.13 The reserve money aggregates are compiled exclusively on the basis of the weekly balance sheet of RBI. RBI compiles data on its assets and liabilities of Issue and Banking Departments and publishes the same in *Weekly Statistical Supplement* (WSS) as also in the Monthly RBI *Bulletin*; the audited balance sheet is published in its *Annual Report*. Data relating to RBI balance sheet and hence, the reserve money aggregate are adequate.

B. Commercial Banks

10.2.14 The major items of liabilities and assets pertaining to commercial banks are used in compilation of all monetary aggregates except reserve money aggregates. As per Section 42(2) of the RBI Act, commercial banks are statutorily required to provide major items of the liabilities and the assets on a fortnightly basis, which form the basis for compilation of monetary aggregates. Since the format of the Section 42(2) is governed by statutory provision, the coverage of Section 42(2) return was expanded by providing an additional annexe to the main format to capture, on the assets side, banks' investment in capital market instruments such as shares and debentures of corporates, commercial paper and foreign currency assets while on the liabilities side, items such as paid-up capital, reserves, certificates of deposits and maturity structure of time deposits were included. Thus, high frequency data on most items of the balance sheet are now available on a fortnightly basis with a lag of a fortnight. Apart from forming a part of the monetary aggregates, the banking aggregates as given in the Section 42(2) returns are disseminated as such, in RBI publications of *WSS*, Monthly *Bulletin*, *Annual Report* and *Handbook of Statistics on Indian Economy*. The data on cheque clearances, for centres managed by the RBI and those managed by agencies other than RBI, centre-wise – monthly and annual, are published in the Monthly *Bulletin* and the *Handbook of Statistics on Indian Economy*. The commercial banks also publish data on their balance sheet and profit and loss account on an annual basis. The financial ratios based on balance sheet data are analysed in detail in the *Report on Trend and Progress of Banking in India*.

10.2.15 In addition, disaggregated data on various aspects of deposits, credit and investments are published as a part of the Basic Statistical Returns (BSR) system. The BSR is a unique system with data collected from individual bank branches on a census or sample survey basis depending on the type of returns, which are non-statutory in nature. The data collected through the BSR system are treated as final. Presently, the data is collected through electronic media (floppy) from the public sector banks (PSB). An annual publication, *Banking Statistics*, disseminates comprehensive data on deposits and credit, aggregated at various levels such as region, state and district as also by population group, bank-group and occupation. Another publication, *Banking Statistics - Quarterly Handout*, provides state and population group-wise and district-wise distribution of deposits and credit of different bank groups. The time lag for the annual publication is one year and for the quarterly publication, one quarter.

10.2.16 The results of surveys on: (a) Composition of Ownership of Deposits, (b) Investments of Scheduled Commercial Banks by Type of Instruments, and (c) Debits to Deposits

are published in the form of an article in the monthly RBI *Bulletin* with a time lag of about one year.

10.2.17 Recently, under the International Banking Statistics (IBS), a system of Locational Banking Statistics (LBS) and Consolidated Banking Statistics (CBS) has been introduced for the commercial banks to collect data on international assets and international liabilities classified by country, sector, currency, maturity, branches or offices of banks, Indian and foreign, operating in India, and offices of Indian banks operating abroad. The data under CBS include international assets position in all currencies and comprises all balance sheet items consolidated worldwide, including the business of all the offices of reporting banks at home and abroad. An important feature of the CBS is the provision of data, on the basis of both country of immediate risk and country of ultimate risk.

10.2.18 The LBS statistics are proposed to be collected from selected bank branches. The first survey, launched on an experimental basis with 31 December 1999 as reference date, produced encouraging results. The CBS survey will be launched after the quality of reporting under LBS improves.

10.2.19 The publication *Statistical Tables relating to Banks in India* contains bank-wise annual balance sheet data on assets, liabilities, earnings and expenses of commercial banks, besides other information such as contingent liabilities, NPAs, etc. This publication also releases data on liabilities and assets of urban co-operative banks, cheque clearances, etc.

Deficiencies

10.2.20 Data on residual maturity of term deposits with the commercial banks are not available. The centre-wise cheque clearances published by the RBI combines inter-bank cheque clearances with customer clearances, thus reducing the analytical utility of the data. The absence of uniform industrial classification in the case of BSR and National Industrial Classification (NIC), 1998 also poses problem of comparability. LBS and CBS data are yet to be disseminated to the public.

Conclusions and Recommendations

10.2.21 The statistics on the finances of commercial banks released by RBI are reliable and numerous. There are, however, certain gaps in the data now compiled. The Commission recommends that:

(i) Data on residual maturity of term deposits with the commercial banks should be collected and published by RBI. This will help in understanding the maturity profile of liabilities of commercial banks, its transition over time and the causal factors determining such changes.

(ii) The data on inter-bank cheque clearances should be given separately by the RBI.

(iii) In view of the need for consistency in the National Statistical System, RBI should maintain uniformity in the classification of occupation in borrowal accounts in Basic Statistical Returns (BSR) in conformity with National Industrial Classification (NIC) 1998 of CSO.

(iv) The coverage of data under the BSR system presently collected on electronic media (floppy) from the public sector banks (PSBs) should be extended. The PSBs should be encouraged to report data to RBI on-line, which would further reduce the time lag in processing and disseminating statistics based on the BSR system. The estimates based on sample surveys under the BSR, should include information on their statistical credibility such as standard errors.

(v) Locational Banking Statistics (LBS) and Consolidated Banking Statistics (CBS) on international claims of banks should be compiled and published by RBI as early as possible.

Regional Rural Banks

10.2.22 The Regional Rural Banks (RRBs) were established in 1975 to supplement the efforts of co-operative and commercial banks in different States with equity participation from commercial banks, Central Government and State Governments. RRBs have been sponsored by public sector banks and are akin to commercial banks in their method of operations and set up, but the area of activity and loan operations are restricted to specified areas and target-groups.

Current Status

10.2.23 As the RRBs are scheduled commercial banks, they report their major items of liabilities and assets on a fortnightly basis as a part of the Section 42(2) return, which forms the base for compilation of monetary aggregates. From the standpoint of money supply compilation, therefore, the relevant data pertaining to RRBs are adequate and timely.

10.2.24 While the dissemination of high frequency statistics on RRBs by RBI is aggregated with that of scheduled commercial banks, separate details are made available by RBI in its annual publications namely, *Report on Trend and Progress of Banking in India*, *Statistical Tables relating to Banks in India* and *Handbook of Statistics on Indian Economy*. For the BSR system, all the RRB offices send their Returns to their Head Offices, which in turn forward these to RBI. In addition, RRBs submit audited balance sheets on an annual basis and quarterly progress reports to NABARD.

Deficiencies

10.2.25 Data on Regional Rural Banks (RRBs) are adequate and reliable but are available with a considerable time lag, as the submission of balance sheets by the RRBs to NABARD often gets delayed. The detailed data are published by NABARD with a lag of six months to two years.

Conclusions and Recommendations

10.2.26 Data on Regional Rural Banks (RRBs) are reliable and adequate from the standpoint of money supply compilation. However, for the purpose of Basic Statistical Returns (BSR), data are made available with a considerable time lag. Therefore, the Commission recommends that:

(i) The delay in collection of data from the Regional Rural Banks (RRBs) should be eliminated by concerted efforts made by RBI, NABARD and RRBs.

C. Co-operative Banks

10.2.27 Co-operative banking is an integral part of the banking system in India. The various segments of co-operative banks are Primary Co-operative Banks, State Co-operative Banks, District Central Co-operative Banks, Primary Agricultural Credit Societies, State Co-operative Agriculture and Rural Development Banks and Primary Co-operative Agriculture and Rural Development Banks. Co-operative banks include scheduled and non-scheduled co-operative banks.

Current Status

10.2.28 Data on scheduled co-operative banks are available in the fortnightly returns while data in respect of non-scheduled co-operative banks are available in the monthly returns filed by them with RBI. These data are used for the compilation of monetary aggregates. As discussed earlier in the sub-section pertaining to monetary aggregates, the data on the co-operative sector are being collected from large-sized banks. However, due to delay in submission of data by the

non-scheduled segment of the co-operative banks, data are extrapolated in compiling monetary aggregates.

10.2.29 Detailed data relating to the operation of the co-operative banking sector are compiled primarily by NABARD and RBI. Primary (Urban) Co-operative Banks send their returns to RBI while other co-operative banks submit their returns to NABARD. Firm data for the financial year are made available with a time lag of 18- 20 months.

10.2.30 The NABARD releases detailed information on co-operative banks through its publications. RBI publishes assets and liabilities, and financial performance of scheduled primary, State and Central co-operative banks in the *Report on Trend and Progress of Banking in India*.

Deficiencies

10.2.31 Due to a large number of co-operative banks and their geographical distribution, detailed data for the co-operative sector are available with a lag of 18 to 20 months on account of delay in the flow of information to NABARD from the non-scheduled segment based in the rural sector which accounts for a substantial share of deposits of co-operative banks. Even the data of primary urban co-operative banks (non-scheduled) are available to RBI after a time lag of more than a year. Lack of proper differentiation between higher tier as well as large sized co-operatives and smaller ones in devising systems also act as an obstacle in the consolidation of data. Besides, the balance sheets of the co-operative banks are also not standardised.

Conclusions and Recommendations

10.2.32 Data released by NABARD on co-operative banks are adequate and reliable. However, there is a considerable delay in the receipt of data pertaining to co-operatives. Therefore, the Commission recommends that:

(i) The NABARD should consider different methods of collecting data to reduce the time lag. The basic strategy should be to differentiate among higher tiers as well as to differentiate larger co-operatives from the large number of smaller ones. Data from the former should be prompt and regular while for the latter a suitable system should be designed. The differentiation between the scheduled and non-scheduled co-operatives can also be useful for quick data collection and dissemination.

(ii) The NABARD should adopt a suitable sample survey to collect data from primary rural co-operative societies, (which are large in number) as it becomes difficult to collect data from all such co-operatives at frequent intervals.

(iii) The balance sheet of the co-operative banks should be standardised to a form, similar to that of commercial banks by RBI and NABARD.

Financial Institutions

10.2.33 The structure of financial institutions (FIs) in India is widely diversified and includes National and State level development financial institutions, insurance corporations and investment institutions. For purposes of classification, the financial institutions can be classified into three broad heads: (a) All-India Financial Institutions, (b) State-level Institutions (SFCs and SIDCs), and (c) Other Institutions (ECGC and DICGC). All-India Financial Institutions can be further reclassified under four broad heads – All-India Development Banks (IDBI, ICICI, SIDBI, IIBI and IFCI); Specialised-Financial Institutions (EXIM Bank, RCTC, ICICI Venture, TFCI and IDFC); Investment Institutions (UTI, LIC and GIC and its subsidiaries); and Refinance Institutions (NABARD and NHB). In the case of investment institutions, UTI, being a mutual fund, is discussed under the section on capital markets while for the LIC and the GIC and its subsidiaries, the discussion is presented in a separate section on the Insurance sector.

Current Status

10.2.34 Select items of data from financial institutions are required with a monthly frequency for compilation of liquidity aggregates. For example, the second tier liquidity aggregate (L2), *inter alia*, includes Term Deposits with Term-lending Institutions and Refinancing Institutions (FIs), Term Borrowing by FIs and Certificates of Deposit issued by FIs. In addition, instrument-wise details of aggregate assets and liabilities of financial institutions are required with a quarterly frequency for compilation of comprehensive Financial Sector survey.

10.2.35 The primary agency involved in data collection as well as data dissemination in respect of financial institutions is IDBI. Data are furnished by the respective FIs/investment institutions/SFCs/SIDCs to IDBI. IDBI publishes data in its *Report on Development Banking in India*. Besides, the respective FIs publish detailed information on their performance every year in their annual accounts. RBI publishes limited data on the FIs in the *Annual Report* and *Report on Trend and Progress of Banking in India*, and detailed data in the *Handbook of Statistics on Indian Economy*. However, monthly/quarterly data are not disseminated. It is important to recognise here that the financial institutions differ substantially in the very nature of their activities. This is one of the reasons why data collected in respect of FIs are not uniform.

Deficiencies

10.2.36 There is a delay in the receipt of data by IDBI from financial institutions. In respect of term-lending or refinance institutions, data though complete, are unaudited for the monthly and quarterly series (audited data are available only in regard to half-yearly or annual data). A primary problem that arises with consolidating the data regarding this sector is that different institutions have different financial and accounting years.

10.2.37 The financial assets of the FIs form a very significant proportion of the total financial assets in the economy. Therefore, it is essential to put in place a comprehensive statistical information system, which can yield reliable, timely and adequate data regularly. This mechanism is absent currently.

Conclusions and Recommendations

10.2.38 In case of financial institutions, adequate and reliable data released by IDBI, are available with a considerable time lag. The financial institutions in the medium to long term may metamorphose into commercial banks or NBFCs considering the universalisation of banking operations in the liberalised environment. Therefore, the Commission recommends that:

(i) Term-lending (IDBI, SIDBI, IFCI, etc.) and refinance institutions (NABARD, NHB) should furnish data promptly on a monthly/quarterly basis. To facilitate prompt release of data, a revision of the existing returns should be undertaken and an increased frequency in reporting stipulated by RBI and IDBI concertedly on an urgent basis.

(ii) The accounting years should be synchronised for all financial institutions.

(iii) The RBI, in consultation with IDBI, should introduce necessary returns from Financial Institutions (FIs) for compilation of liquidity and other financial aggregates.

Non-Banking Financial Companies (NBFCs)

10.2.39 A characteristic feature of the non-banking financial companies (NBFCs) is their wide reach in deposit mobilisation. The main advantages of these companies lie in their lower transaction costs, quick decision-making ability, customer orientation and prompt provision of services.

10.2.40 NBFCs are classified into the following categories based on their principal business: Equipment Leasing Company (ELC), Hire Purchase Financing Company (HPFC), Loan Company (LC), Investment Company (IC), Mutual Benefit Financial Company (Nidhi), Mutual Benefit Company (Un-notified Nidhi) Miscellaneous Non-Banking Company (Chit Fund Company), Residuary Non-Banking Company (RNBC) and Housing Finance Company (HFC).

10.2.41 In the present regulatory framework, the entire gamut of regulation and supervision of the activities of NBFCs has been redefined, in terms of both the thrust as well as the focus. Consequently, NBFCs are classified into three categories for the purposes of regulation namely, (a) those accepting public deposits; (b) those which do not accept public deposits, and (c) core investment companies which hold at least 90 per cent of their assets as investments in the securities of their group, holding or subsidiary companies and are not trading in such securities. The companies which accept public deposits are required to comply with all the prudential norms of income recognition, asset classification, accounting standards, provisioning for bad and doubtful debts, capital adequacy and credit or investment concentration norms, etc. The NBFCs not accepting public deposits are regulated in a limited manner. Prudential norms like income recognition, asset classification, uniform accounting year and accounting standards that disclose the status of their financial health have been made applicable to them. The core investment companies have been exempted from all the provisions of directions. However, these companies are subject to the regulatory purview of RBI Act including provisions of compulsory registration and creation of reserve funds.

Current Status

10.2.42 Select items of data from financial institutions are required on a monthly frequency for compilation of liquidity aggregates. For example, the third tier liquidity aggregate (L3), *inter alia*, includes Public Deposits of NBFCs. In addition, instrument-wise details of aggregate assets and liabilities of NBFCs are required with a quarterly frequency for compilation of a comprehensive Financial Sector survey.

10.2.43 Studies on Financial and Investment Companies published annually by the RBI in its Monthly *Bulletin* form one source of data. This source provides statistics on the liabilities and assets, income, expenditure and appropriation accounts based on a sample of about 700 companies belonging to different categories of NBFCs stated above. The data relate to annual accounts and are available with a lag of one to one-half years. These data are used to derived the estimates of savings and investment of NBFCs and these are worked out for the entire segment of the NBFC sector, through the blowing-up procedure, based on a sample coverage in the population of companies, in terms of paid-up capital.

10.2.44 Another source of data is the survey on 'Growth of deposits with non-banking companies' conducted by the RBI. The survey results are also published annually. The survey collects data on public deposits accepted by them, exempted deposits, net owned funds and other borrowings, from the above category of NBFCs. The publication of the survey has since been discontinued and the figures relating to deposits of NBFCs are being compiled on the basis of returns submitted by them. With the shift of regulatory focus to deposit taking companies, the terms 'public deposits' has been redefined in January 1998, hence from 1998 onwards, the data, as much as, it relates to public deposits is not comparable to that of earlier years.

10.2.45 According to the Department of Company Affairs (DCA), there were 65,382 non-banking financial companies as on 31 March 1999. The Reserve Bank of India made the registration of all non-banking financial companies with RBI compulsory with effect from January 1997. RBI had set out certain norms for registration, such as net owned funds (NOF) of Rs.25 lakh as on 9 January, 1997, which had been revised upwards to Rs. 2 crore effective from 21 April, 1999 for new applicants. The companies, which comply with the norms prescribed in

RBI Act 1934, are registered with the RBI with the authorisation to accept public deposits or to function as NBFCs without accepting deposits. The companies, which do not comply with the prescription within a stipulated period, including the extended period as prescribed in the Act and permitted by the Bank, are denied registration and have to close down their business activity. This category of companies is referred to as "rejected" companies.

10.2.46 Further, many companies have been exempted from registration with the RBI such as those engaged in micro-financing activity while not accepting public deposits, and licensed under Section 25 of the Companies Act; mutual benefit companies, *nidhi* companies and Chit Fund companies. Thus, these companies can conduct the specific financial activity without a Certificate of Registration (CoR) of the RBI. Insurance companies and housing finance companies have been exempted from the requirements of registration, liquid asset maintenance and creation of reserves under RBI Act as they are regulated by other regulators.

10.2.47 The NBFCs can, therefore, be grouped into three categories namely, (a) companies registered with RBI, (b) companies applied for CoR but rejected, and (c) companies not registered with RBI. Although the RBI will have a list of NBFCs in respect of the first two categories, only companies accepting or holding public deposits submit an annual return in the form NBS-I/IA on different aspects of their operations such as growth of deposits, other borrowings, net owned funds, outstanding loans and advances, investments, other fixed assets, income and expenditure, and based on these details, some consolidated data are published in the Bank's publication. These companies also submit half yearly and quarterly returns for supervisory purposes. Further, companies having public deposits of Rs.20 crore and above also submit specific returns. The data collected through these returns are more important from the regulator's point of view being required for the purpose of regulating these companies. The rejected category of companies, which are holding public deposits, are also required to submit annual statements on assets and liabilities in Form NBS-4. Thus, for supervisory purposes, a comprehensive system of off-site reporting by NBFCs has been introduced since a little over the last two years. Under this system, all the deposit holding NBFCs are required to file returns at various intervals with the RBI. The following returns are prescribed regardless of whether they are registered or not: (a) Annual return on deposits; (b) Half-yearly statement on prudential norms; and (c) Quarterly statement on liquid assets maintained.

10.2.48 These returns aim at capturing information on the quantum and profile of public deposits solicited by each company and verifying the level of compliance with regulatory norms prescribed in this regard, the level of achievement of prudential standards pertaining to capital adequacy, provisioning against non-performing assets, the quantum of liquid assets maintained by the NBFCs in relation to their deposit liabilities, etc.

Deficiencies

10.2.49 Although all NBFCs incorporated with DCA are supposed to be registered with RBI, some of these companies, might not have yet registered themselves with RBI. The details collected through NBS-1 and 1A return do not cover all liabilities and assets and as such the format needs to be suitably modified. The response from the rejected category of companies to submit the NBS-4 return is very low, as only about 25 per cent of these companies comply with, and this cannot be considered as a source of regular data. The database in respect of the exempted category of companies needs improvement.

10.2.50 Data on NBFCs are available with a time lag and are also not adequate. While there has been some progress recently, quarterly data on outstanding public deposits are available only in respect of NBFCs accepting or holding public deposits. Data on assets and liabilities, excluding public deposits, though available on a quarterly basis since September 1998, are not disseminated

to the public. Companies not accepting or holding deposits are not required to submit any returns therefore no structured data is available with respect to such companies.

Conclusions and Recommendations

10.2.51 In view of the existing deficiencies in the present system and considering the size and spread of NBFCs, the Commission recommends that:

(i) The RBI should undertake the task of institutionalising the reporting system of all the NBFCs on an urgent basis. Accordingly, an appropriate reporting system should be devised for different categories of NBFCs. With regard to companies, which are, both registered and regulated by RBI namely, deposit-taking companies, periodical returns should be collected, consolidated and data disseminated on a systematic basis. The data coverage and timeliness for large companies should be on par with banking companies. There are NBFCs, which are registered with the RBI but are not regulated since they do not accept deposits. Information in respect of these companies should be consolidated and disseminated. There are several other companies which are registered under the Department of Company Affairs (DCA) and do not come under the jurisdiction of RBI and with respect to such companies, the information should be classified, consolidated and disseminated on the basis of their Annual Reports.

(ii) RBI has been collecting certain information through their surveys on growth of deposits with non-banking companies (now replaced with system of returns in case of deposit-accepting companies), which covers comprehensively different aspect of their operations. The RBI should analyse the complete set of data collected through these returns and publish comprehensive data on asset and liabilities, income and expenditure of all reporting companies, besides the analysis of public deposits as is being published at present. The details should also be presented by type of financial companies in collaboration with DCA.

(iii) A one-time census of NBFCs covering all companies incorporated with DCA should be conducted. The census should collect data on important activities, especially assets and liabilities and income and expenditure. A periodic sample survey should be conducted by the RBI for updating population estimates for NBFCs.

(iv) The RBI should continue the studies on financial and investment companies, till the system suggested above gets stabilised.

10.3 INFORMAL FINANCIAL SECTOR STATISTICS

10.3.1 Economies all over the world have an amply evident presence of 'informal sector activities', which provide employment, occupation and earnings to a sizable number of persons. In developing countries that are undergoing different stages of development, such activities are inevitable. Information on the extent and nature of informal sector provide valuable inputs in policy-making for improving the conditions and growth of these units. In this connection, on the advice of National Statistical Commission, the RBI set up a *Committee on Informal Financial Sector Statistics* under the Chairmanship of Prof. P. Venkataramaiah with the main objective to critically examine the current status of statistics on the Informal Financial Sector and recommending a statistical system for instituting/improving collection of statistics on the sector.

10.3.2 The Committee identified two purposes for which data are to be collected on various aspects of Informal Financial Sector Statistics namely, (a) to measure the extent of informal credit and to understand the dynamics of informal financial markets, and (b) to facilitate generation of inputs for the compilation of National Accounts.

10.3.3 The Committee deliberated on two interrelated issues: (a) the definition of Informal Financial Sector Statistics, and (b) the type of institutions to be covered in this sector. Although there is no accurate definition of 'informal sector', the UN System of National Accounts (SNA) had broadly characterised the informal sector as consisting of units engaged in the production of goods and services with the primary objective of generating employment and incomes to the persons concerned. The production of units of the informal sector has the characteristics of a household enterprise. According to the classification adopted by the UN SNA, the production units owned by a single household or a group of households form part of the household sector as household enterprises or unincorporated enterprises.

10.3.4 For the purpose of identifying the informal financial sector enterprise, the Committee adopted the criterion of 'incorporation' as a guiding factor. That is, those that are 'incorporated' constitute the formal sector and those that are not so incorporated constitute the informal financial sector. The status of availability of data in respect of the informal financial sector, consisting of 'unincorporated financial enterprises', was examined and recommendations made for instituting and improving collection of statistics on this sector.

10.3.5 The structure of the informal financial market is extremely heterogeneous. This sector comprises partnership firms, sole proprietary concerns, own account enterprises, financial auxiliaries such as share broking firms, loan brokers, Non-Governmental Organisations (NGOs) helping Self-Help Groups (SHGs), share brokers and traders, *multani shroffs*, pawnbrokers, *chettiars*, etc.

Current Status

10.3.6 Data on this segment are available neither regularly nor on an *ad hoc* basis except that certain pieces of information are collected and are available from various sources. Among different sources of statistical information on informal financial sector, the data from All-India Debt and Investment Survey (AIDIS) are available at decennial intervals and provide information on composition of assets, capital formation, and indebtedness of rural and urban households. A distinguishing feature of the AIDIS is the collection of loan-wise details such as credit agency (institutional and non-institutional), rate of interest, duration of loan, purpose, etc. The non-institutional agencies refer to the landlords, moneylenders, traders, relatives and friends, doctors, lawyers, etc. The data collected through AIDIS are used in the compilation of National Accounts.

10.3.7 The NSSO conducts quinquennial Enterprise Surveys in respect of the unorganised sector, covering directory and non-directory establishments and own account enterprises pertaining to the activities such as trade, transport, manufacturing, hotels and restaurants, storage and warehousing. The CSO conducts Enterprises Survey in respect of service enterprises in the unorganised sector. These surveys collect certain details on the number of enterprises, the value of output, the emoluments/wages and salaries paid, the value added, the place of location, and a few others.

10.3.8 Further, certain aspects of the informal financial sector are available from other sources, such as Basic Statistical Returns (BSR) on details of commercial banks credit (BSR-1) and ownership of deposits held with commercial banks (BSR-4). The financial auxiliaries covered under 'finance activity' relate to those of the informal financial sector namely, *shroffs*, moneylenders, stockbrokers, share brokers, dealers in bullion, etc. apart from those of formal sector.

10.3.9 The Non-Governmental Organisations (NGOs) and Self-Help Groups (SHGs) are another category of institutions working in the informal financial sector for implementing special programmes and formulating development policies. Most of these NGOs/ SHGs are credit-linked by banks. These organisations receive funds from Indian financial institutions as also from

abroad. There are 1,14,775 SHGs credit-linked by banks as on 31 March, 2000, bringing an estimated 19 lakh poor families within the fold of formal banking services. NABARD publishes certain data on total credit extended by NABARD to these organisations. NABARD also publishes the State-wise number of SHGs being financed by banks.

Deficiencies

10.3.10 Data collected in AIDIS, however, relate only to pure households and as such quasi-corporations of business households namely, partnerships, proprietary concerns, etc. in trade; transport and other activities are not covered. The survey collected details on the occupation of the head of the households and "finance, insurance, real estate and business" is one of the occupation groups. This information would provide the flow of funds within the informal sector from the financial to the real sector. But the data classified by this occupation group are not published by the NSSO. These surveys provide a truncated picture of the assets and liabilities and also exclude receipts and payments of the households.

10.3.11 Though the surveys of NSSO/CSO are supposed to have covered informal financial services but no data have been reported separately for this sector. The enterprise surveys do not collect loan-wise details such as interest rate and duration of the loan. As such, it is not feasible to measure the extent of financial accommodation and interest paid on these loans to the informal credit agencies.

10.3.12 The data collected and published by NABARD relate only to a particular aspect namely, the credit disbursed to NGOs and SHGs by banks and NABARD. As NGOs and SHGs intermediate a large amount of funds between banks and financial institutions and households, it is necessary to build a database of these organisations. Data on the operations of SHGs and NGOs are not available although banks submit a "Micro-credit progress Report" to RBI and NABARD providing certain particulars of credit extended by them to these NGOs under different schemes on a half-yearly basis.

Conclusions and Recommendations

10.3.13 The Commission recommends that:

(i) The National Sample Survey Organisation (NSSO) should continue to conduct the All-India Debt and Investment Surveys (AIDIS) at decennial intervals. The coverage of the AIDIS needs to be improved by pooling the estimates of Central and State samples on the one hand and by increasing the sample size on the other. It is necessary that the RBI and the NSSO should have a close collaboration in the conduct of AIDIS.

(ii) The Central Statistical Organisation (CSO) should conduct Enterprise Surveys separately for financial service enterprises and provide data needed to derive value-added details as also the details of credit. The RBI should closely liaise with CSO and NSSO on the technical aspects of these surveys and ensure the coverage of all known household financial enterprises like, share brokers, *multani shroffs, chettiars, marwari kayas* and pawnbrokers and various kinds of moneylenders.

(iii) The details collected under various returns of RBI, in particular BSR-1 and BSR-4, should be tabulated against the informal financial sector to understand the extent of linkages between the formal and informal segments.

(iv) Financial data in respect of all NGOs and SHGs involved in micro financing should be collected. It is suggested that a sample survey of NGOs and SHGs should be undertaken by NABARD at quinquennial intervals. NABARD should also prescribe a half-yearly return to be submitted by all NGOs and SHGs.

(v) Apart from nation-wide surveys, which provide macro-estimates, it is necessary to promote regional and micro-level studies on the informal financial sector activities considering the diversity across the regions.

10.4 INSURANCE STATISTICS

10.4.1 Insurance is a means by which the problem of risk in business or life of an individual person is covered. The two main classes of insurance are: (a) general insurance which covers all forms of insurance other than life and is usually written on an annual basis, and (b) life insurance which is generally on a long-term basis against risk of death. Insurance statistics can be grouped under the following categories:

- Life Insurance Statistics
- Non-life (General) Insurance Statistics
- Reinsurance Statistics
- Pension and Super-annuation Statistics
- Health Insurance Statistics
- Crop Insurance Statistics
- Other Insurance Statistics like ESI, Postal Insurance, Army Insurance, etc.

10.4.2 As a part of the Financial Sector Reforms, a *Committee on Reforms in Insurance Sector* (CRIS), headed by Shri R.N. Malhotra, former Governor of RBI, was constituted in 1993. The main thrust of the Committees' recommendations were: open up the insurance sector, improve the service standards of Indian insurance majors, and extend insurance coverage to a larger section of the Indian population to inject a greater degree of competition. The Insurance Regulatory Development Authority (IRDA) Bill was passed in both the Houses of Parliament in the year 1999 and IRDA came into existence as a Regulator for the Insurance business in India. The Act also provides protection to the interests of holder of insurance policy and aim to regulate, promote and ensure orderly growth of the insurance industry. It also seeks to amend the Life Insurance Act, 1956; General Insurance Business (Nationalisation) Act, 1972 and consequential provisions in the Insurance Act, 1938 with a view to open up the Indian Insurance industry to the private sector for further expansion of insurance business and to realise the untapped potential in the Indian insurance market. In order to provide better insurance coverage to citizens and also to augment the flow of long-term resources for financing infrastructure, the Insurance Regulatory and Development Authority (IRDA) was constituted with effect from 19 April, 2000. The Reserve Bank of India has also issued guidelines for the entry of NBFCs and Banks into the insurance business in May 2000 and August 2000, respectively.

10.4.3 Statistical information currently available on insurance is scattered and inadequate. With the entry of private insurance companies, the sources of information will be multiplied. It is, therefore, necessary that a single source of information, which can disseminate information to users is put in place. In this context, a *Committee on Insurance Statistics* was constituted by the National Statistical Commission with Shri H. Ansari, Member, IRDA as Chairman to examine the information required for the Insurance Sector. The Committee reviewed the current status of the statistical system in Insurance Sector, identified the data gaps and weaknesses in the existing data collection mechanism and recommended measures to correct deficiencies by revamping the system.

Current Status

10.4.4 The data presently collected by the Life Insurance Company (LIC) and the General Insurance Company (GIC) largely meet their own requirements to assist management decisions, design strategy, formulate business plans, examine the market sizes, and changes in market environment, etc. The annual reports of LIC and GIC provide statistical information on various

aspects of insurance statistics in their organisations. The General Insurance companies also supply statistical information to the Tariff Advisory Committee (TAC) in prescribed proforma to perform its function of scientific rating and pricing for general insurance products. The insurance companies also supply statistical information on assets and liabilities, sources of funds and deployment of funds and other aspects to RBI (quarterly/annual) as a part of the survey of the Financial Sector. The statistical system prevalent in these two agencies is given below:

10.4.5 The LIC collects information on various aspects of its operation such as:

- Individual insurance business information – new business and sum assured, premium income, number of policies, rural and urban business, social sector schemes, etc.
- Group and pension fund business – number of schemes, lives covered, premium income, etc.
- Product-related information – Sales under various policies, number of lives investment, State-wise investment, etc.
- Investment information – total investment, sectoral investment, instrument-wise investment, State-wise investment, etc.
- Claims-related information – total claims settled, claims ratios, etc.
- Cost and expenses information – total cost, management expenses, etc.
- International operation – business procurement, investment, etc.

10.4.6 The GIC collects information on:

- Balance sheet in respect of every class of business.
- Major claims, details of investments – category-wise and assets owned, claims settlement position with settlement ratio, premium details, class: business-wise and region-wise, documents issued with documentation percentage, investments and investment income.
- Investments, short-term loan placement, call money transactions, sanctions and disbursements.
- Rural traditional covers and rural non-traditional business, cattle, poultry, Janta Personal Accident and other covers.
- Data on foreign operations, Motor Accident Claims Tribunal (MACT) settlements, grievance redressal and details of commission and management expenses.

10.4.7 The IRDA on the advice of the Insurance Advisory Committee has framed fifteen regulations so far under the IRDA Act, which are to be followed by all insurers. It has also prescribed a number of returns to monitor various provisions of these regulations and the insurers in the life insurance business and general insurance business are required to statutorily submit these returns to the IRDA as per the periodicity and time frame specified. Most of the regulations, which require insurers to submit these returns to the IRDA, have been framed in the year 2000 only. The IRDA will be receiving these returns from the insurance companies as per the periodicity and time frame specified by it.

Reinsurance

10.4.8 Insurers who do direct business need a mechanism of risk transfer so that they do not suffer from unduly large exposure. This is achieved by their sharing the risk, premium and claims with other insurers. This transaction is known as reinsurance. There are two types of reinsurers. One is a direct insurer who also accepts reinsurance from other insurers. The second category is a professional reinsurer who transacts only reinsurance business. The reinsurance business is international in character and is done for both life and non-life business. In the past, General Insurance Corporation was acting as principal reinsurer for its four subsidiaries and managing the statutory cessions, which they had to make as per provisions of Insurance Act, 1938. In addition,

GIC managed the country's non-life reinsurance business so as to ensure a maximum retention of premium within the country. In the emerging scenario, GIC has been notified as 'Indian Reinsurer' both for life and non-life business. The statistical data on reinsurance business have become all the more important in the emerging scenario.

Health Insurance

10.4.9 In India, the total spending on health care in 1997 was a mere 5.6 per cent of GDP (4.4 per cent from private sources and 1.2 per cent from public sources). The few Indians who avail of some kind of health schemes are covered under: (a) CGHS (Central Government Health Scheme), (b) ESIS (Employees State Insurance Scheme), (c) Health schemes offered by the Railways to their employees, (d) Health schemes offered by Defence Services to their employees, (e) Health schemes offered by the State Government and allied administrative bodies, (f) Health schemes offered to employees by Multinational Companies and other employers, and (g) Health Insurance schemes. The statistical data currently available with the industry covers only (1) number of policies issued (combined for individual and group), (2) number of persons covered, (3) premium collected and (4) claims paid. As health insurance is likely to be a major business in the emerging scenario, the companies would need to collect and analyse the large amount of health insurance-related data.

Crop Insurance

10.4.10 Large-scale crop failures occur every year in one part of the country or the other due to natural calamities such as drought, flood, etc. The farmers in such areas not only lose their crop for the current year but are left with no money to invest in the future crop. In order to reduce the hardship of such farmers, the Government of India thought it fit to introduce Crop Insurance Schemes since 1973. The data on crop insurance have to be consolidated and published for analysis and policy formulation.

Deficiencies

10.4.11 Even though existing insurance companies publish a large amount of information through their annual reports and other publications, certain data deficiencies still exist in the Insurance Sector. These are:

(a) Life Insurance

10.4.12 Some information as published by LIC is not readily available such as:

- Ownership of Life Insurance namely, individual, Hindu undivided family, etc.
- Gender-wise break up of insurance business.
- Occupation-wise break up of policy holders, sum assured, etc.
- Detailed information about operational mechanism, agency organisation, premium income, etc. is not publicly available for Postal Life Insurance, State Insurance and Army Group Insurance funds.

(b) Non-Life Insurance

10.4.13 Presently, the data on general insurance are scattered. More reliable and timely data needs to be made available for smooth implementation of crop insurance scheme by means of linkages with State Governments and other organisations in the rural sector.

(c) Health Insurance

10.4.14 It is not only necessary to have a large amount of health-related data for actuarial rating and successful marketing/penetration of health insurance, but data is also needed on: (1) number of policies issued (2) number of persons covered, (3) premium collected, and (4) claims

and disbursements on the basis of age, disease, gender and geographical location. Consolidated data on this should be published.

(d) Reinsurance

10.4.15 Reinsurance contracts are on a long-term basis. The data gap is in relation to risk-wise catastrophic exposure, as detailed mapping of the country has yet to be done. This becomes vital as both direct insurers and reinsurers could be exposed to catastrophic risks. A detailed compilation of data in terms of properties covered location-wise under different risk factors for individual risks and data on human lives and other animate objects on geographical location-wise basis and exposures against accidents, riots, natural calamities would be required.

10.4.16 In the case of the Insurance Sector, the annual accounts of Life Insurance Corporation of India and General Insurance Corporation of India and the four companies were analysed and estimates of the Domestic Product prepared. Similar information would now be required from other insurance companies operating in the country. The 'commission to agents' appearing on the expenditure side of the revenue accounts of the annual accounts of LIC, GIC and the four companies in the public sector is treated as unorganised activity in the Insurance Sector and is taken to be the mixed income of self employed. There is a need to provide the details of this un-organised activity and its break up for procuration of insurance business pertaining to all companies.

Conclusions and Recommendations

10.4.17 As the current state of collection and dissemination of the statistical information in the Insurance sector is inadequate, a system needs to be developed under a structured format rationalising existing returns and introducing new returns to fill up data gaps. The supply of information should be made mandatory by utilising the statutory powers of the Insurance Regulatory and Development Authority (IRDA). The collection and dissemination of data should rest with IRDA. The requirements of CSO and RBI as regards income, expenditure, appropriation, assets, liabilities, investment, etc. should also be furnished through IRDA. The Commission recommends that:

(i) Information pertaining to the insurance sector should be collected and disseminated by Insurance Regulatory and Development Authority (IRDA). Income, expenditure, assets, liability, sources and uses of funds, investments, term structure, non-resident operations of insurance companies, etc. should be the major items of information. IRDA should establish a Research and Statistical Division for this purpose, rationalise existing returns and introduce new returns to collect necessary data.

(ii) The data should be consolidated by different categories of insurance, e.g. life, non-life, reinsurance, pension and super-annuation, health, crop, others.

(iii) In respect of Postal, Employees State Insurance, Army and other group insurance schemes, pension and super-annuation, essential information should be collected by IRDA and published.

(iv) Break-up of data by State, sector (rural-urban), ownership of insurance business, gender and occupation classification of policy-holders, etc. should be published.

10.5 CAPITAL MARKETS

10.5.1 Capital market statistics for convenience are divided into five broad areas namely, primary market, private placement market, secondary market, mutual funds, and operations of foreign institutional investors (FIIs).

Primary Market

10.5.2 Data on new capital issues include resources raised through equity, debentures and bonds by non-government public limited companies, banks and financial institutions, Public Sector Undertakings (PSUs), etc. Equity issues can be classified as public issues on a prospectus basis or rights issues. The issue of bonus shares and disinvestment of existing shares through offer for sale and private placement are excluded from new capital issues.

Current Status

10.5.3 Before the establishment of Securities and Exchange Board of India (SEBI), the RBI was the primary source of data dissemination. With the establishment of SEBI, the primary responsibility was shifted to SEBI. However, for purpose of continuity, RBI still collects information on resource mobilisation from the primary capital market. While, in general, the coverage by SEBI is more comprehensive, the break-up of prospectus and rights issues by instruments and category of issuer is not available, which are provided by RBI. SEBI also does not make available information on resource mobilisation by investor category and on cost of issues. All entities have to follow SEBI guidelines while making a new public issue of capital. These data, in general, are disseminated through its Monthly *Bulletin* and website with a time lag of about six weeks. The Annual Report of SEBI also publishes data on various aspects of resource mobilisation in the primary market. SEBI classifies all new issues by types of floatation (prospectus or rights), instrument (debt or equity), industry and geographical region. While SEBI compiles data on the basis of offer documents and statutory returns filed by issuing entities, RBI collects data on the basis of the prospectus and letter of offer by issuers. Data on new capital issues by the private sector in the primary market in terms of equity shares, preference shares and debentures classified in prospectus and rights are also compiled on a monthly basis and released through the Monthly RBI *Bulletin* with a time lag of 3-4 months. Besides, data on resource mobilisation (prospectus and rights) by all entities (private sector, PSU's, banks and FIs in the public sector) in the primary market are published in RBI *Annual Report*. The RBI also undertakes an annual survey on the public response to capital issues along with data on different costs of capital issues.

Deficiencies

10.5.4 In general, the coverage of data by SEBI is timely, reliable and adequate. However, information on certain aspects of public issues is not disseminated by SEBI, which classifies all issues into prospectus and rights. However, a break-up of prospectus and rights issues by instruments and category of issuer is not available. Also data on equity capital issues and equity capital raised, bonds issued and bonds raised, resource mobilisation by investor category, underwriting costs and by cost of issue are not available. Further, no study or survey is available on (a) capital raised from the market, and (b) details of public response to equity capital issues.

Conclusions and Recommendations

10.5.5 The primary source of data for capital market is the Securities and Exchange Board of India (SEBI). It compiles and disseminates data on a monthly basis on primary issues. The Commission therefore recommends that:

(i) The Securities and Exchange Board of India (SEBI) should disseminate statistics on: (a) Resource mobilisation in the primary market by various categories of entities (non-Government Public Limited Companies, Banks, Financial Institutions (FIs), Government Companies (PSUs) and various categories of investors (ownership pattern of capital raised), (b) Data on firm allotments to institutional and other investors, (c) public subscriptions, (d) bond issues divided as between public issues

and private placements, (e) actual mobilisation of funds through bonds, (f) Data on underwriting, and (g) Cost of issues.

(ii) The SEBI should undertake a comprehensive survey (as was done by the RBI in the past) on public response to equity capital issues – size-wise, occupation group-wise, region-wise.

Private Placements

10.5.6 When an issuer (a company) places its securities with a select group of investors without making it a public or a rights offer, it is called a private placement of securities. Through this method, equity, cumulative preference shares, preference shares, debentures and bonds are issued privately by both public and private limited companies. It is considered a low-cost and fast mode of raising resources, the issuance cost being low and largely unregulated. Section 67(3) of the Companies Act, 1956, provides for private placements under which the offers for private placements are to be made to investors on a one-to-one basis. In terms of the recently enacted Companies (Amendment) Bill, 2000, any offer of shares or debentures to more than 50 persons will be treated as public issue in the case of public financial institutions and NBFCs.

Current Status

10.5.7 The RBI publishes data on a yearly basis on resource mobilisation through private placement of securities in its Annual Report on the basis of information collected quarterly from a select set of twenty-one merchant bankers and six Financial Institutions. The coverage of data classified into private and public sector and financial intermediaries and non-financial corporate entities is about 90-95 per cent in terms of resource mobilisation from the private placement market.

10.5.8 There are no legal provisions for the companies, which raise resources on a private placement basis to submit the relevant information to any official agency. Debt instruments such as bonds and debentures issued by non-banking non-financial companies on an ‘unsecured’ basis come under the definition of ‘deposit’ and are subject to the limitations regarding ceiling on quantum and interest rates stipulated by the Department of Company Affairs (DCA) under Section 58A of the Companies Act. Interest rates are however, notified by DCA on the advice of RBI. Secured bonds and debentures are not subject to these regulations. Furthermore, the regulations of SEBI will apply only if bonds and debentures (whether secured or unsecured) are issued by way of ‘public issue’. Thus, privately-placed secured bonds and debentures are currently unregulated, although these come under the broad purview of DCA. However, the laws of the stock exchanges require a listed company to submit its periodical returns on public issue or private placement. SEBI should, therefore, be empowered for collection, compilation and dissemination of data on private placement.

Deficiencies

10.5.9 Coverage of data as collected by RBI on private placement reflects 90-95 per cent of the total resource mobilisation. However, detailed data, consisting of classification by instruments, issuer, investors, interest rate, etc. are currently not available.

Conclusions and Recommendations

10.5.10 The Securities and Exchange Board of India (SEBI) is the regulatory authority for the capital market, but private placements are currently not regulated by SEBI. It is understood that SEBI collects, through stock exchanges, full details of privately-placed issues in respect of companies, which are already listed, on the stock exchanges. However, SEBI does not disseminate such information. The Commission recommends that:

(i) The Securities and Exchange Board of India (SEBI), being a regulatory authority, should collect, compile and disseminate data on equity and debt on private placement, as a significant part of private placements are being listed on the stock exchange through subsequent processes. The system of data collection should be urgently formalised by SEBI along with disclosure norms for the private placement market. Pending such formal regulation through further amendments to the Companies Act, SEBI should stipulate certain listing requirements.

(ii) The banks, Financial Institutions (FIs) and NBFCs investing in privately-placed issues should periodically furnish details to RBI, such as amount invested, maturity period and credit rating of the instruments, rate of interest, etc. This would help in widening the coverage of data available with RBI for the purpose of processing and maintaining continuity in disseminating data on private placement.

Secondary Market

Current Status

10.5.11 The original sources of data on the secondary market are the stock exchanges themselves. The Stock Exchange, Mumbai (BSE) and National Stock Exchange (NSE) are the two largest stock exchanges in the country. The two widely-used stock market indices are 30-scrip BSE Sensex and 50-Scrip S&PCNX Nifty of NSE. The BSE Sensex (1978-79 = 100) includes scrips, which are a part of the specified group (consisting of 150 scrips), selected on the basis of liquidity, depth, floating-stock-adjusted depth and industry representation. The compilation of the index is based on the 'weighted aggregates' method. The price of a component share in the index is weighted by the number of equity shares outstanding so that each scrip influences the index in proportion to its own market importance. The current market value for any particular scrip is obtained by multiplying the price of the share by the number of equity shares outstanding. The index on a day is calculated as the percentage of the aggregate market value of the equity shares of all the companies in the sample on that day to the average market value of the same companies during the base period. This method of compilation has the advantage that it has the necessary flexibility to adjust for price changes caused by various corporate actions. It is a wealth-measuring index where the prices are weighted by market capitalisation. In such an index, the base period values are adjusted for subsequent rights and new issues of equity. The adjustment prevents a distorted picture and gives an idea of wealth creation. Index value in the case of Sensex is computed as follows:

(Current aggregate market value of Sensex scrips/Base year aggregate market value of the Sensex scrips) x 100.

10.5.12 S&P CNX Nifty (3.11.1995 = 1000) comprises 50 stocks and is a market capitalisation weighted index. It also takes into account substitution in the index set and importantly, corporate actions such as stock splits, rights, etc. without affecting the index value. Stocks have been selected based on their market capitalisation and liquidity. All stocks in the index should have market capitalisation greater than Rs.500 crore and should have traded for 85 per cent of the trading days at an impact cost (cost of executing the entire set of S&P CNX Nifty

securities) of less than 1.50 per cent. The Index value in the case of Nifty is computed as follows:

> (Current aggregate market capitalisation of Nifty scrips/Base year aggregate market capitalisation of the Nifty scrips) x 1000.

10.5.13 Besides, there are other broad-based indices, such as BSE National Index, BSE 200, BSE 500, S&P CNX 500, etc. Some other important stock exchanges such as those of Delhi, Calcutta and Chennai have their own indices. While the data on stock market indices of major stock exchanges are disseminated on-line on a real time basis along with other market-related data on BSE and NSE trading terminals and through various information vendors, data on such aspects as market capitalisation are available only after a time lag of 2-3 weeks. The two largest stock exchanges in the country (BSE and NSE) disseminate data on movements in indices, prices of individual scrips, turnover, market capitalisation, price-earning ratio, etc. through their daily, weekly, monthly and annual publications as well as those published by SEBI and RBI. Besides, data on the secondary market are also published in daily newspapers and other financial journals. Thus the coverage and timeliness of secondary market data are comparable with international best standards.

10.5.14 In recent years, intra-day data has come into prominence in the financial sector and the only consistent framework for information dissemination is by the NSE, which produces an intra-day time-series of prices. The data released by NSE shows a sequence of observations, one per trade, with, (a) time stamp, (b) price, and (c) quantity. The international standard for intra-day information disclosure is the TAQ (Trades and Quotes) data set, which contains the following elements – timestamp, best five prices and quantities available at these prices.

10.5.15 The data on bond market is inadequate as the only information on bond market on a day-to-day basis originates from NSE's wholesale debt market (WDM). NSE shows the price and quantity for all trades that are registered with NSE.

10.5.16 In India, equity derivatives were introduced recently, in June 2000. Thus, the Sensex Futures Contracts trading began in Bombay Stock Exchange on 9 June 2000 while trading on S & P Nifty Future Contracts began in the National Stock Exchange on 12 June 2000. There are three contracts each, operating on both Sensex Futures and Nifty Futures namely, one-month, two-month and three-month contracts.

10.5.17 Data on trading in Stock Index Futures are made available by the respective stock exchanges and are disseminated on a daily basis with a one-day time lag in financial dailies and with information vendors. Data in respect of the following aspects of derivative trading are presently being made available: Open Value, Close Value, High Value, Low Value, Number of contracts, Number of Trades, Value (in Rs *lakh*) and the Outstanding Position of the market.

10.5.18 The stock exchanges normally compile and disseminate information about various aspects of trading for the general public, though this is not obligatory. The Securities Contracts (Regulation) Act, 1956 governs the functioning of the stock exchanges in India. The Act empowers the Central Government to regulate the stock market, framing of their byelaws, listing requirements, trading practices, buying and selling contracts, etc. However, with the enactment of the SEBI Act, 1992, powers and authorities vested with the Securities Contract (Regulation) Act 1956 have been transferred to SEBI. It is mandatory for capital market intermediaries registered with SEBI to supply data on a regular basis. Non-compliance attracts penalties. It may be mentioned that according to recent notifications, regulation of the money markets and the Government securities market will continue to be with RBI.

Deficiencies

10.5.19 Data on the secondary market disseminated by the Stock Exchanges are timely, adequate and reliable. However, estimates for all-India market capitalisation are not available. Further, no estimates of scope for arbitrage between various stock exchange is available in the country. The Indian stock exchanges are not fully competitive and on occasions, equity price quotations differ as between the NSE and the BSE rather quite noticeably on a daily basis. Though the divergence in the prices of the individual scrips is known, there is no measure of such divergence in a group of scrips. This measure is analytically useful, as it would indicate the extent of arbitraging that is potentially possible as between the two markets.

10.5.20 The intra-day data is prominently absent in the Financial Sector, with the exception of what is released by the NSE.

10.5.21 The trade data on bonds market is not available in the economy and the data on bonds market released by NSE is at best only a sample, as all data are not reported to NSE. Further, the NSE data are also not time-stamped.

Conclusions and Recommendations

10.5.22 Data on the secondary market are reliable, adequate and released on-line by various agencies, implying that timeliness is maintained. However, there are certain data gaps in the availability of this data. The Commission therefore recommends that:

(i) The Securities and Exchange Board of India (SEBI) should provide estimate of an all-India market capitalisation at regular intervals.

(ii) SEBI should construct divergence indices for the two main stock exchanges in the country, Bombay Stock Exchange (BSE) and National Stock Exchange (NSE), to bring out the extent of arbitraging opportunities that exist after taking into account the cost differences in operating in the two exchanges.

(iii) Trades and Quotes (TAQ) data set should become available for all exchange-traded products, such as shares, bonds and derivatives. SEBI should ensure that a standardised data set is obtained and disseminated by each exchange every day.

(iv) The reporting of trade data on bonds should be made mandatory by the RBI for Government securities and by SEBI for corporate bonds and that such reporting should take place within the stipulated period. The NSE should ensure time-stamp of the data.

Mutual Funds

Current Status

10.5.23 A mutual fund is established in the form of a Trust by a sponsor to raise money by the Trustees through sale of units to the public under various schemes. Data on resource mobilisation by mutual funds are compiled and disseminated by SEBI and RBI. SEBI data as collected and compiled on the basis of returns filed by mutual funds, including UTI, are available with a time lag of six weeks in its Monthly *Bulletin*, website and Annual Report. SEBI, in its *Annual Report*, publishes consolidated annual data on mutual funds classified into private sector, public sector, UTI and open-ended or closed-ended schemes. In addition, the SEBI website also disseminates daily transactions of mutual funds (repurchases, sales and net investment) in debt and equity instruments. RBI collects information from individual mutual funds and publishes annual data on net resource mobilisation in the *Annual Report, Report on Trend and Progress of Banking in India* and *Handbook of Statistics on Indian Economy.*

Deficiencies

10.5.24 Data released by SEBI are reliable and timely and are comparable with the best international practices. However, SEBI data do not provide break-up of resource mobilisation by type or objective of scheme and deployment of resources.

Conclusions and Recommendations

10.5.25 Data released by SEBI on mutual funds are reliable and timely. The primary source of data on mutual funds being SEBI, the Commission recommends that:

(i) The Securities and Exchange Board of India (SEBI) should consider widening the coverage of mutual funds operations to include: (a) Resource mobilisation by individual mutual funds, (b) Deployment of funds by mutual funds, (c) Resource mobilisation by offshore mutual funds, (d) Resource mobilisation by type of schemes (i.e., open-ended or close-ended) and by objective of scheme (i.e., income, growth, balanced, tax-saving), (e) Net resource mobilisation by mutual funds during the month, (f) Ownership of the units of mutual funds, and (g) Liabilities and assets, and income and expenditure accounts of the mutual funds.

Foreign Institutional Investors

Current Status

10.5.26 Foreign Institutional Investors (FIIs) have been permitted since September 1992 to invest in India in both debt (including Government securities) and equity, subject to a prescribed limit. Data on FIIs are collected by SEBI, RBI and the concerned stock exchanges (BSE, NSE). However, stock exchanges have been prohibited by SEBI from disseminating information to the general public. The data are mainly compiled and disseminated by SEBI on FIIs, based on information furnished by FIIs' custodians. It is, in fact, obligatory on the part of the FIIs registered with SEBI, to provide information relating to their operations in the Indian capital markets to SEBI and RBI. The FIIs provide data on a daily basis to SEBI on investments in India in debt securities at acquisition price. Data on investments by FIIs, categorised as equity and debt, are made available by SEBI with a time lag of one day on its website and through daily newspapers and information vendors (Reuters). The *Annual Report* of SEBI also provides annual and month-wise trends in gross purchases, sales, net investment (Rupees and US $) and cumulative investment (US $). The information so released by SEBI is adequate and comparable with international standards.

Capital Market related Institutions

10.5.27 A large number of institutions operate in the capital market either as regulators or the exchanges themselves. A system for consolidation of information in respect of these units needs to be developed.

Current status

10.5.28 Some of the categories of funds and institutions for which regular flow of data are not disseminated are: venture capital funds, the Securities and Exchange Board of India (SEBI), the Stock Holding Corporation of India (SHCI), Depositories and Stock Exchanges. The Annual Reports of the SEBI, Stock Exchanges and their monthly and weekly Bulletins do not contain complete details of the working and operations of these funds and institutions.

Deficiencies

10.5.29 Information similar to that of mutual funds is also required for venture capital funds. However, no data on venture capital funds are available. The data on working of these funds and

institutions are required for items such as total volume of funds and their contribution to National Accounts. Institutions like SEBI, Stock exchanges and other, systematic data on their operations of working, value added, savings, capital formation and stock of capital assets, deposits are not available, at present. There is also a deficiency in information in terms of consolidated data on share brokers and share broking firms in respect of their income, expenditure, volume of transactions and sources and uses of funds. In view of the advancements in the field of information technology, new payment mechanisms like electronic funds transfer, payments through credit or debit cards would be in the market and the volume of such transactions would increase over the period. At present, the statistical system to capture data on such transactions has not been well formulated.

Conclusions and Recommendations

10.5.30 Institutions such as SEBI, stock exchanges and stock-broker firms provide services, but consolidated data on these institutions are not available from any source. The Commission therefore recommends that:

(i) SEBI should be the Central agency for collection and dissemination of data from all institutions that are under its control and jurisdiction.

(ii) SEBI should also bring out consolidated data of share-brokers and share-broking firms in the organised sector in respect of their income, expenditure, volume of transactions and sources and uses of funds.

(iii) RBI should evolve a statistical system for collection of statistics from institutions for electronic funds transfer, payments through credit or debit cards in the market and the total volume of such transactions.

10.6 GOVERNMENT SECURITIES MARKET

10.6.1 The Government securities market is the principal segment of the Indian debt market. Its importance lies in facilitating market borrowings by the Government, enabling the pricing of other debt instruments of varying risk perceptions, and bringing about an effective and reliable transmission channel for the use of indirect instruments of monetary policy. In fact, the interest rates on Government securities act as a benchmark for pricing securities in the rest of the financial markets. Thus, the information that is disseminated with respect to the Government securities market is critical and watched on a real time basis by the rest of the market participants.

10.6.2 The Government securities consist of both the Central and State Government securities. RBI acts as the debt manager for the Centre and the States. As a debt manager, RBI is not only the issuer but also procedurally maintains a record of ownership and the transactions that take place in Government securities. RBI is also the regulator of the market for Government securities.

Current Status

10.6.3 Data for the Government securities market are mainly generated, compiled and disseminated by RBI. RBI also publishes all relevant data pertaining to the Government securities market on a daily, weekly, monthly and annual basis.

10.6.4 The intended fresh borrowing programme of the Government is made public through the Union Budget. The fresh borrowings are operationalised by RBI in consultation with the Government. RBI releases data on market borrowings of the Central and State Governments, secondary market transactions, its open market operations and Repurchase Agreement (repo) transactions both through press releases and through its website on a daily basis. Data relating to auction results are released through press releases and the RBI website on the date of the auction itself. In addition, data relating to secondary market transactions, open market operations, yield

on Government securities, market borrowings of the Central and State Governments, ownership of Central and State Government securities, maturity pattern of Government of India Rupee loans, repo auctions by RBI, and interest rates on Central and State Government dated securities are published in various publications of RBI such as *Weekly Statistical Supplement*, Monthly *Bulletin, Annual Report* and the *Handbook of Statistics on Indian Economy*. The data on guarantees by the Central and State Governments are also collected individually from these Governments either through the budget or directly from the Ministry of Finance of the respective Governments and published annually by RBI.

10.6.5 The RBI has embarked upon the technological upgradation of the debt market. The operations of the Public Debt Office (PDO) are being automated to provide connectivity between different PDOs, and to facilitate on-line screen-based execution for trade and settlement in Government securities transactions. The computerisation of PDO (expected to be operationalised within a year), will facilitate screen-based negotiated dealings in Government securities, tendering of screen-based applications in auctions, full-fledged audit trail, debt servicing, information dissemination, price list for open market operations, central information system for access by monitoring and regulatory authorities, etc. The RBI is also separately putting in place a real time gross settlement system (RTGS), which is scheduled to be made operational within the same time frame. An offshoot of this would be that information would be available to all market participants on a real-time basis.

10.6.6 The RBI manages the Public Debt and issues new loans on behalf of the Central and State Governments under the powers derived from Sections 17, 20, 21, and 21A of the Reserve Bank of India Act, 1934. The Government securities and their management by RBI are governed by the Public Debt Act, 1944, the procedures prescribed for which are outdated and some of the provisions of which have ceased to be of relevance in the present context. A new legislation titled, the 'Government Securities Act' proposes to repeal and replace the Public Debt Act. The new Act, which seeks to recognise the electronic mode of transfer of title of Government securities, will facilitate pledging of securities without actual transfer and will recognise depositories other than RBI for paperless transfer. The new Act will also give flexibility to allow Government securities to be held in depositories while at the same time, specifically excluding Government securities from the purview of Depositories Act, 1996. Further, the RBI has been recently delegated the responsibility, by amending the Securities Contracts (Regulation) Act, 1956, to regulate any contracts in Government securities, and in securities derived from these securities and in relation to ready forward contracts in bonds, debentures, debenture stock, securitised and other debt securities.

Deficiencies

10.6.7 First, while the data on market borrowings by the Central Government are disseminated regularly on weekly basis through the *Weekly Statistical Supplement*, data on State Government securities are not available on a regular basis during the year. Secondly, the data on secondary market transactions, yield and turnover in Government securities are at present accounted through the Subsidiary General Ledger (SGL), covering about 98 per cent of the total transactions. However, detailed data on ownership pattern of Central and State Government securities are not available. Earlier, detailed data were available on the ownership pattern based on *ad hoc* surveys conducted by the RBI since 1958. The last such survey was conducted by RBI for the period ended March 1990, and the results were published in the RBI *Bulletin*, December 1994. Presently, data on the ownership pattern are disseminated annually in terms of broad categories consisting of scheduled commercial banks, LIC, Provident Funds, Central and State Governments. Thirdly, data on the maturity profile of State Government loans are not released, though such data for the Central Government loans are released annually. The maturity pattern of the Government of India Rupee loans outstanding over the years, classified into various periods,

is released annually. However, no such data are available for the State Governments. Fourthly, scrip-wise details for the Central and State Government loans are also not made available now. However, in the case of Central and some State Governments, scrip-wise details are available in their respective annual budgets. Finally, although not technically part of the Government securities market, the most important data gap pertains to the absence of detailed information in relation to instruments backed by guarantees of Central and State Governments.

Conclusions and Recommendations

10.6.8 It is observed that the data disseminated by RBI on the Government securities market compares well with international standards. Significant improvements have been undertaken in the recent past. Technological improvements underway provide further avenues for improving the system. However, the Commission recommends that to further improve the transparency in the operations of the Government securities markets, the following data should be compiled and disseminated:

(i) Data on ownership pattern of Central and State Government securities are released on an annual basis for a broad category of investors. However, no data on ownership pattern are disseminated on a monthly and quarterly basis. Therefore, monthly and quarterly data with wider coverage should be made available.

(ii) The maturity profile of outstanding State Government loans are not released, though such data, for the Central Government are released annually. Therefore, the outstanding market loans of the Central and State Governments separately, scrip-wise, as well as aggregate year-wise, should be released regularly on an annual basis.

(iii) There are areas where dissemination of market borrowings of State Governments is not at par with that for the Central Government. This gap needs to be bridged. First, data on Central Government market borrowings, budgeted and actuals and gross and net, are released regularly on a weekly, quarterly and annual basis. However, such data are not available for State Governments. Hence, details of market borrowing programmes of State Governments, allocations and actuals, auction and pre-announced coupons should be released regularly, preferably on a quarterly basis. Secondly, data on maturity pattern of the Government of India Rupee loans outstanding at the end of the year classified into different periods with a 5-yearly interval are released on an annual basis. Data on maturity pattern, on a similar basis, should be extended to include State Government loans. Further, residual maturity by original coupon rates should also be published.

(iv) The Government-guaranteed bonds are not treated as part of Government securities but as an integral part of the corporate debt. However, in view of the sovereign guarantee extended and the large magnitudes of such securities in the debt market, they deserve to be separately identified as a category, and data collected and disseminated. RBI should take up with the Central and State Governments and the regulator for other securities to mount an information system for this purpose.

10.7 MONEY MARKET

10.7.1 Money market is essentially a market for short-term (up to one-year) funds and financial assets that are close substitutes for money. Money market not only serves as an equilibrating mechanism to even out demand for and supply of short-term funds, but also provides an avenue for central bank intervention for influencing liquidity and the general level of interest rates in the economy. The market falls directly under the regulatory jurisdiction of RBI, which also performs the function of data collection, compilation and regular dissemination of

information relating to the money market. An important component of the money market relates to the transactions involving Government securities with either original or residual maturity of up to one year. These would include Treasury bills transactions and Repurchase Agreement (repo) transactions with RBI or between the participants. Thus, there is an overlap between the money market and the Government securities market, both of which are of direct concern to RBI.

Current Status

10.7.2 Data on call/notice money market are being released daily on RBI website. The daily call money rates as well as the fortnightly average daily turnover are published in the RBI Monthly *Bulletin*, while average daily turnover and high or low rates on a weekly basis are disseminated through the *Weekly Statistical Supplement* (WSS) to the *Bulletin*. Data on certificates of deposit issued by the scheduled commercial banks and commercial paper issued by the companies and financial institutions are released through the WSS and the RBI Monthly *Bulletin*. At present, data on Forward Rate Agreements and Interest Rate Swaps are not released to the public; though the coverage is complete, their volume is small as of now. The details of auction results as well as data on secondary market transactions of Treasury bills of different maturities are released immediately on the website and are also published in the WSS and in the Monthly *Bulletin*. Data on Repurchase Agreements as well as secondary market transaction in Treasury bills are also released daily on the website as well as published in the WSS and RBI *Bulletin*. Time series data on money market instruments are also published in RBI's annual publications like the *Handbook of Statistics on Indian Economy*, *Annual Report* and *Report on Trend and Progress of Banking in India*. Data on bills rediscounted with financial institutions are published in the *WSS* and the Monthly *Bulletin*.

10.7.3 In case of non-Government securities, data are furnished on a fortnightly or monthly basis to the RBI through the postal mode, which results in a considerable lag in data receipt, compilation and subsequently in dissemination to the market. Besides, call, notice and term money market, non-Government securities in the money market include Commercial Paper (CP), Certificates of Deposit (CD), Bills Rediscounting, Inter-bank Participation Certificates, Forward Rate Agreements and Interest Rate Swaps. RBI does not receive and compile any information on the secondary market operations relating to non-Government money market securities. However, National Stock Exchange (NSE) reports secondary market deals relating to CPs and CDs, which have been routed through it.

10.7.4 The RBI has initiated a project for complete automation of the operations of its Public Debt Office (PDO) where the settlement for all Government securities transactions (including money market instruments) takes place. It will provide for connectivity among different PDOs and facilitate on-line screen based execution for trade and settlement. This will also facilitate screen-based negotiated dealing in money market instruments, tendering of screen-based applications in auctions and information dissemination. RBI is separately putting in place real time gross settlement system, which is scheduled to be operational within a year. These initiatives will facilitate on-line dissemination of data on a real-time basis.

10.7.5 Time lag and incomplete coverage of data are essentially technological issues. The operationalisation of Very Small Aperture terminal (VSAT) would help in quick collection of data from the participants. Further, introduction of the depository system for non-Government instruments would also ensure timeliness and complete coverage of data on the primary and secondary market transactions. The introduction of the negotiated dealing screen (NDS) would facilitate availability of information on primary and secondary market transactions of all money market instruments (except bills rediscounting) on a real-time basis. In NDS, financial intermediaries would have connectivity through a terminal and would be able to transact both primary and secondary market deals through a computer screen. Information on volumes and

rates relating to these transactions would be available on all the terminals for each of the instruments on a real-time basis. As regards data on call/notice money market, with the upgradation of the data processing system underway, the coverage would be complete.

10.7.6 Arrangements relating to the setting up of a Clearing Corporation are under consideration. This would pave the way for opening up of repo transactions in non-Government securities, as well as widen the number of participants. It is expected that the Clearing Corporation will be operational by June 2001. Besides repo, it would also facilitate dissemination of data on secondary market transactions in money market securities that would pass through the proposed Clearing Corporation.

Deficiencies

10.7.7 Data on the money market released by the RBI compare favourably with the best international practices, but there is scope for refinement in tune with developments in financial markets and technological upgradation. Data on call/notice money market released on a daily basis cover about 75-80 per cent of the market. Data on commercial paper, certificates of deposit in the primary market and bills rediscounting are released by the RBI with a considerable time lag, while those related to the secondary market pertain only to those transactions which are routed through the National Stock Exchange.

Conclusions and Recommendations

10.7.8 In the case of the money market, there are no data gaps in term of adequacy and reliability though there is scope for further refinement to facilitate further development of the money market and integration of financial markets. This will be enabled by technological and institutional measures already under way. The Commission recommends the following:

(i) Introduction of the negotiated dealing screen (NDS) system should be operationalised urgently by RBI, so as to enable on-line access to data pertaining to all money market instruments. This would help reduce the time lag in release of data on call/notice money market, Commercial Papers (CPs), Certificates of Deposits (CDs) and bills rediscounting market.

(ii) Pending the introduction of NDS, RBI should improve coverage of daily data on call/notice money market transactions and reduce the time lag in data on Commercial Paper, Certificates of Deposit and the bills rediscounting market. This would be facilitated with the full-scale operationalisation of Very Small Aperture Terminal (VSAT), which would connect all the banks amongst themselves and with RBI and there would be inter-connectivity between branches of banks. Such a system would facilitate treasury management and management information system of banks as also reporting to RBI through electronic media. Hence, with faster submission of data by banks to RBI, the time lag in dissemination of data to the market would be greatly reduced.

(iii) While the setting up of a Clearing Corporation is a welcome step, efforts should be made to ensure that the Corporation aids the process of comprehensive, timely and reliable data dissemination in regard to secondary market transactions in both money market instruments and Government securities.

10.8 FISCAL STATISTICS

Introduction

10.8.1 Fiscal policy has a crucial bearing on macro-economic management within the frame of national economic policy and towards the attainment of the objectives of economic growth, equity and financial stability. Fiscal data serve to gauge the impact of fiscal policy on the Real,

Financial and External Sectors of the economy. The magnitude and quality of data produced and disseminated are conditioned by the Constitutional requirements and institutional arrangements. In this Report, the discussion will focus on the status of Fiscal Statistics of the Central Government and State Governments and the issues involved in data collection and dissemination, which is based on the Report of the *Committee on Fiscal Statistics* appointed by National Statistical Commission.

10.8.2 In India, the sources of fiscal data generally are the Government budget documents. The Government referred to is the general Government, which comprises Central Government, State Governments, and Governments of Union Territories.

10.8.3 The Government fiscal management is governed by the system of Legislative Financial Control enshrined in the Constitution of India (*Articles* 112-117, 264-293). This involves an elaborate process of presentation, scrutiny and passing of an Annual Budget and specific Parliament or Legislative approval for Government's taxation and expenditure proposals. Fiscal accounts are maintained on an elaborate 6-tier system of function-cum-programme basis of classification. The top layers of accounting classification are the Major and Minor Heads. Below the level of Minor Heads, there are three more layers of accounting classification. The last level (6^{th} level) is the 'Object Head' or the destination heads.

10.8.4 Fiscal data are also recast according to the economic and functional grouping of the activities. These are at present comprehensively compiled only in the case of the Central Government. Some State Governments also compile an economic and functional classification of the budgetary data.

Current Status

System of Data Collection and Dissemination

General Budget

10.8.5 The Office of the Controller General of Accounts (CGA) is vested with the responsibility of compiling the accounts of the civil ministries of the Government of India. The accounting set up in the ministries comprises a Principal Account Office (PrAO) at the ministry and a large number of Pay and Accounts Offices (PAOs), which form the basic accounting unit. The PAO maintains item-wise accounts of all the transactions involving Consolidated Fund, Contingency Fund and Public Accounts. Various subsidiary accounts such as Loan and Fund accounts are also maintained by the PAOs.

10.8.6 The Government accounts compiled by the PAOs are consolidated on a monthly basis in the PrAO at the ministry. The consolidated accounts of the ministry are rendered to the CGA for further consolidation and dissemination through the website with a time lag of one month. The data provide monthly actual (un-audited) and cumulative position of major items of receipts, expenditures and fiscal balance in relation to the budget estimates of the current fiscal year as well as a comparative position for the corresponding period of the previous year. The monthly fiscal data for the State Governments are compiled by the Office of the Accountant General (AG) of the respective states with a lag of two-three months but are not disseminated to the public at present.

10.8.7 The CGA also prepares the annual accounts of the Government, comprising the Union Government Finance Accounts and the Union Civil Appropriation Accounts. These documents are presented before the Parliament after their statutory audit by the Comptroller and Auditor General of Accounts (CAG). These are published as *Finance Accounts* of both Central and State Governments separately. The combined accounts of both the Governments have not been published by the CAG relate to 1985-86 and not available thereafter.

10.8.8 The principal source of fiscal data is the budget documents presented annually generally in February or March to the Parliament or State Legislature. The fiscal data presented in the budget cover budget estimates (BE) for the next fiscal year, revised estimates (RE) for the current fiscal year and final account figures (un-audited) for the previous year. The budget documents also provide time series data on select fiscal variables.

10.8.9 At present, the coverage of Indian Fiscal Statistics encompasses finances of Central Government and State Governments. The Government data comprises receipts (debt and non-debt components) and expenditure (revenue and capital). The period of data coverage under the minor and major heads of receipts and expenditures are three years namely, accounts for the previous year, RE for the current year and budget estimates (projection) for the next year.

10.8.10 The details on the financial position of Public Sector Enterprises both at the Central and State levels are made available with considerable time lag. Financial results of commercial undertakings like Posts and Telecommunication, etc. at the Central level are limited to the extent of those available in the budget documents. The Railway finances are available, in detail, separately in the Railway Budget.

10.8.11 The combined budgetary position of the Central and State Governments for the major heads of receipts and expenditures are generally published with a time lag of two years in the *Indian Public Finance Statistics*, published by the Ministry of Finance, Government of India. The consolidated fiscal statistics disseminated by the Ministry of Finance are also classified into broad categories of developmental and non-developmental expenditures.

10.8.12 The Planning Commission, Government of India disseminates a large volume of data on Fiscal Statistics relating to Annual as well as Five Year Plans - both sector- wise outlays and mode of financing - of the Central and the State Governments.

10.8.13 The Finance Commission, Government of India is another major source of data on Fiscal Statistics. The data disseminated through the Reports of the Finance Commission mainly includes the formula-based resource transfers from the Centre to the States and *inter se* distribution of devolution of resources under the awards of the Finance Commission.

10.8.14 The Reserve Bank of India (RBI) compiles and publishes general Government fiscal data, including debt, derived from the budget documents of the Central Government and State Governments. The data disseminated by the RBI are as under:

(a) The accounts of Central Government are analysed and published as an article on Central Government Finances in the RBI Monthly *Bulletin* within a period of two months after the presentation of Union Budget.

(b) The accounts of Indian Railways are analysed and published as an article on Railway Finances in the RBI Monthly *Bulletin* within a period of two months, after the presentation of the Railway Budget.

(c) The accounts of the State Governments and NCT Delhi are compiled, analysed and published as a comprehensive Study on Finances of State Governments. This involves two-stage data dissemination. First, a quick summary covering the aggregate position of State Governments finances, based on budgetary data, is prepared and published as an article in the RBI Monthly *Bulletin*, followed by a detailed study published separately within a period of 6 to 7 months of the presentation of the State budgets.

(d) The accounts of the Central Government and State governments along with the NCT Delhi are consolidated into Combined General Government Fiscal Data and published in the *RBI Annual Report* and *Handbook of Statistics on Indian Economy*. The data disseminated by the RBI through its publication also include details on net

RBI credit to Government, outstanding liabilities and explicit guarantees of both Centre and State Governments.

(e) Reserve Bank also compiles the Consolidated General Government Fiscal Data for the purpose of the Special Data Dissemination Standards (SDDS) of the International Monetary Fund. The data are disseminated through the RBI website and published in the RBI Monthly *Bulletin.*

Tax Statistics

10.8.15 The Budget documents of Centre and State Governments provide details of taxes, both direct and indirect taxes. The authority to levy taxes is divided between the Union Government and the State Governments under the relevant Acts[1]. The Union Government levies direct taxes such as personal income tax and corporate tax, and indirect taxes like custom duties, excise duties and central sales tax. The States are empowered to levy State sales tax and other local taxes like entry tax, octroi, etc.

10.8.16 The Department of Revenue, Ministry of Finance is responsible for all matters relating to the administration of Central taxes. The Central Board of Direct Taxes (CBDT) administers the direct taxes through its subordinate organisation namely, Income Tax Department while the Central Board of Excise and Customs (CBEC) is responsible for the administration of indirect taxes through Departments of Customs and Central Excise.

10.8.17 The Research and Statistics Wing of the Directorate of Income Tax (RSP&PR) of the CBDT is engaged in the collection and compilation of direct tax statistics from 300 field units located throughout the country. The data flow from the field offices of the Commissioners and Chief Commissioners of income tax to the Directorate of Income Tax (RSP&PR), where they are consolidated at the all-India level. The Directorate prepares various statistical statements and reports of different periodicities (monthly, quarterly and annual) based on the information received from the field offices. These reports and statements, essentially meant for departmental use, cater to the needs of the CBDT and Ministry of Finance.

10.8.18 The CBEC is responsible for levying, collecting and monitoring of Central excise and custom duties all over the country. The data pertaining to Central excise and customs are collected under Central Excise and Custom Law and Rules framed thereunder. Statistics relating to Central excise are generated on the basis of RT 12-return, a statutory return filed monthly by each Central excise assessee. The data flow from the range office (lowest formation of Central excise) to Commissionerate office through divisional offices and finally, to the Directorate of Statistics and Intelligence, which in turn submit the Reports to CBEC.

Deficiencies

10.8.19 The major deficiencies in the present system are listed in the following paragraphs:

General Budget Data

Classificational Limitation

10.8.20 Government accounts are maintained on a cash basis, i.e. transactions and events are recognised when cash is received or paid. Internationally, many Governments are switching over to accrual-based accounting. For a uniform system for compiling fiscal data and also for cross-

[1]The important direct tax Acts are Income Tax Act, 1961, Wealth Tax Act, 1957, and Expenditure Tax Act, 1987. The major indirect tax Acts administered by the Union Government are Central Excise & Salt Act, 1944, Customs Act, 1962 and Central Sales Tax Act, 1956. The State Sale Tax Acts are administered by the respective State Governments.

country comparison, the Manual on Government Finance Statistics is being revised by the International Monetary Fund to enable switching from cash to accrual accounting system.

10.8.21 In the case of some State Budgets either the data on accounts (actuals) are not available or the details given are limited. In some cases, only BE and RE details in the expenditure documents are being made available. In some cases, receipt budget documents are not being prepared.

Coverage

10.8.22 General Government constitutes only a segment of the public sector. The public sector undertakings are of three types namely, Government departments engaged in commercial activities such as the Railways, Corporations created under Acts of Parliament or the State Legislatures and companies having majority shareholding by the Government. In addition, there are societies promoted by government that function under separate laws applicable to them. The RE and BE of the internal and extra budgetary resources (IEBR) of the Central Public Sector Enterprises are available in the budget documents but the accounts data are not being published. Unlike the General Government, these Public Sector undertakings are not constitutionally bound to present their Annual Financial Statement, although the CAG makes an annual scrutiny of their accounts. The financial statements of these undertakings are finalised with a considerable time lag and are not uniform. Thus, the consolidated fiscal data capture only a part of the public sector.

10.8.23 The fiscal data pertaining to local Governments are not systematically codified nor presented as the budgetary operations of local Governments are generally subsumed in the States' or Central budgets. The database relating to the local authorities for the requirement of the national accounts statistics needs to be strengthened.

10.8.24 The external debt of Government of India as presented in the budget documents is at book value. Hence, it does not reflect the true debt position of the Centre at any particular point of time.

10.8.25 The use of disclosure norms adopted in the standard budgetary practices is limited in the case of State budgets. Most of the State Government budgets do not provide the basic deficit indicators like gross fiscal deficit, revenue deficit and primary deficit. Information on subsidies (both implicit and explicit subsidies), resource position of State level Public Enterprises, budgetary support to PSUs, information on outstanding liabilities are not generally presented in the State budget. The State Governments also do not provide high frequency data on major fiscal indicators on a monthly basis as is the practice followed by the Centre. A '*Core Group on Voluntary Disclosure Norms for State Governments'* constituted with the select group of Finance Secretaries under the initiatives of the RBI has gone into these issues and has made certain recommendations. These include among others the introduction of a *Budget at a Glance* (BAG) along the lines presented in the Central Government budget. Ten State Governments have already introduced 'BAG' in their budgets for 2000-01. The Committee has also recommended the introduction of a Budget Summary as a medium-term measure for enhancing transparency in the State budgets.

10.8.26 Though the Fiscal Statistics released by the Government of India are consistent with the IMF manual on Government statistics and the country is fulfilling the requirement under SDDS, there are certain areas of data gap in relation to the IMF code of good practice on Fiscal Transparency. These are *inter alia* the deficiency in compiling and publishing some of the important indicators of fiscal policy, for instance: operational balance, tax expenditures, quasi-fiscal activities, net worth and also information relating to fiscal risks such as contingent liabilities, impact of variation in the assumption on fiscal forecasts. There are also some indicators, which reflect the structural weakness of Government finances such as structural or

cyclically adjusted deficit and liquidity balance, which are not covered in the Indian Fiscal Statistics. These gaps were serious in respect of fiscal data pertaining to State finances.

10.8.27 The recently introduced Fiscal Responsibility and Budget Management Bill, which if passed, and becomes an Act would provide the necessary legal and institutional arrangement to make the budget processing more transparent in respect of the budget for the Centre.

Tax Statistics

10.8.28 The budget presents only the aggregate heads of major taxes both at the level of the Centre and State, and does not reflect the sector-wise collection or assessee's status-wise details. The estimates for State-wise devolution of taxes and duties are disseminated through the budgets. Details regarding tax refunds, tax arrears, accruals, cumulative collected for the previous years are not reflected in the budget. Similarly, only estimates are available for additional resource mobilisation measures proposal announced in the Budget. Tax expenditures arising in the context of various exemptions that are extended under various tax laws, are not reflected in the budget. The *All India Income Tax Statistics* (AIITS), an annual publication of the Income tax Department is based on a very small sample size and published with a considerable time lag.

Conclusions and Recommendations

10.8.29 In the foregoing sections, the current status of the fiscal data is assessed from the point of view of adequacy, timeliness and reliability. Such analysis revealed that the Central Government disseminates a detailed data set on Fiscal Statistics while the status of the States is not relatively robust. In view of the detailed review presented above, the Commission recommends the following:

General Budget Data

(i) The Expenditure Budget of Central Government provides data on Budget Estimates and the Revised Estimates of Internal and Extra Budgetary Resources (IEBR) of the Central Public Sector Enterprises. The account (actuals) figures on resources raised by these enterprises against the Budget Estimates (BE) and Revised Estimates (RE) are not available. Therefore, the details of actuals of IEBR (including the amount of External Aid) should be published in the Budget.

(ii) The accounts data on State-wise distribution and devolution of income tax, basic and additional excise duties, etc. are not published in the Receipt Budget of Government of India while the Budget Estimates (BE) and Revised Estimates (RE) are available. The account data on amounts of devolution actually transferred to the States are available elsewhere in the publications of Ministry of Finance and the Planning Commission. Therefore, the accounts data should be provided in the Budget documents for the subsequent years for the purpose of consistency.

(iii) Tax expenditure, which arise in the context of various exemptions that are extended under various tax laws, are yet to be quantified. Therefore, the details on both tax expenditure and implicit subsidies, tax arrears and tax refunds should be provided in the budgets of the Central and the State Governments.

(iv) The Combined Finance and Revenue Accounts published by the Comptroller and Auditor General of Accounts (CAG) is the only source where the Fiscal Statistics of both the Centre and individual States are published. At present, there is a considerable time lag in this publication. This publication should be released promptly and regularly.

(v) The detailed data of State Finances on a comparable basis is not available in the country. Though the RBI does publish an annual consolidated study, there persists a

need to have a detailed and comparable data set for each State – individually and consolidated. There are significant differences in the budgetary practices between different States. There has to be a uniform classification of a proper plan to classify the data on a comparable basis, eliminating inter and intra-Government transfers. The Central Government should therefore, ensure that such data are compiled and disseminated on an early basis.

(vi) No published information is available on various Centrally sponsored schemes. Therefore, the data on financing pattern of Centrally sponsored schemes in different States and the expenditures incurred in different States from Central funds and States' own contributions should be compiled and disseminated along with the Budget documents.

(vii) The State Governments do not provide high frequency data on major fiscal indicators on a monthly basis as is the practice followed by the Central Government. Therefore, the State Governments should make available to the public the data on major fiscal variables on a monthly basis.

(viii) To assess the current system of accounts and budgets of local bodies, and to establish uniform budget practices for local bodies on the pattern of Central and State Governments, a system of consolidation of accounts by the States should be evolved and thereafter followed at national level. At the initial stage, the accounts of bigger local bodies such as those of the metropolitan cities, municipal corporations and municipalities should be taken up completely, while the accounts of smaller bodies be covered through suitably designed sample surveys. The securities issued by the local bodies should be published in the State Government budgets.

(ix) The issue of providing guarantees has significant implications for the sustainability of the fiscal position of the Governments – Central and States. Further, some forms of guarantees, like the letters of comfort issued by State Governments to banks and financial institutions, are in nature of implicit guarantees, which are not included in the present estimates of guarantees in India, but are internationally treated as guarantees. Therefore, adequate arrangements for reporting and monitoring of guarantees granted by Central and State Governments should be instituted.

(x) The draft Manual on Government Finance Statistics 2000 of the International Monetary Fund (IMF) favours the revised principle of recording the flows on accrual basis switching over from the current system of cash basis. Accordingly, the Government may consider, in due course, dissemination of Fiscal Statistics on an accrual basis as per advice of the Comptroller & Auditor General of India (CAG).

Tax Statistics

(xi) The details regarding the tax records, revenue as raised, revenue foregone on account of concessions contained in the budget proposals, receipt on tax arrears of the previous years and taxes collected through special schemes are not separately indicated. This data in gross and net terms should be given in the Budget Documents in a more transparent and detailed manner.

(xii) The data on tax revenue of Central Government should be disseminated promptly and State wise break-up made available.

(xiii) The data published by the Directorate of Income Tax (RSP&PR) in its *All India Income Tax Statistics* (AIITS) are based on estimates derived from a small sample size and is therefore rendered unrepresentative. Therefore, the sample size and design should be modified to make it more representative and broad-based

considering the manifold increase in the number of assessees. Further, the time lag in the publication should also be reduced.

(xiv) The computerisation and net working of Field offices of the Central Board of Direct Taxes (CBDT) and Central Board of Excise and Customs (CBEC) should be completed on a priority basis for improving the data quality, better management and speedier transmission of data from the field offices to the Directorates at the Centre. To generate a comprehensive database on various aspects of Direct and Indirect Tax Statistics, the CBEC and CBDT should generate profiles of all tax assessees by computerisation of various returns filed by them.

(xv) The organisational set up for collection of statistics in the field offices of CBDT and CBEC should be strengthened. The Research and Statistics Wing, Directorate of Income Tax should be the nodal agency on all statistical activities and should function directly under CBDT. A Research Unit should also be set up in CBDT to undertake research studies on various aspects of tax planning.

Institutional

(xvi) A data warehouse for Fiscal Statistics at the National level within the Department of Economic Affairs (DEA) should be established. Such an institutional mechanism is intended to collect, compile and store the data generated and disseminated by various official agencies which would not only help to build up a comprehensive database on Indian Fiscal Statistics but also to identify the data gaps at the macro and micro levels.

10.9 BALANCE OF PAYMENTS

10.9.1 Balance of Payments (BoP) statistics systematically summarise, for a specific period, the economic transactions of an economy with the rest of the world. The compilation and dissemination of BoP data is the prime responsibility of RBI. In India, the compilation of BoP statistics is broadly consistent with the guidelines contained in the BoP Manual, 5th Edition, of the International Monetary Fund (BPM5). The format of the presentation of the BoP data for the period since 1990-91 is based on the recommendations of the High-Level *Committee on Balance of Payments*, 1993 (Chairman: Dr. C. Rangarajan).

10.9.2 While the basic format follows the recommendations of the Rangarajan Committee, several committees and groups have been periodically appointed to refine the data and to ensure timeliness of data dissemination namely, the Technical Group on Reconciling Balance of Payments and DGCI&S data on Merchandise Trade, 1995; the Sub-group on Reporting of Foreign Exchange Transactions, 1997; the Sub-group on Surveys for Balance of Payments Data, 1998, the Study Group on Merchandise Trade Data, 2000; and the Technical Group on Statistics of International Trade in Services, 2000.

10.9.3 The BoP can be broadly divided into two accounts namely, (a) current account, and (b) capital and financial account. The current account measures the transfer of real resources (goods, services, income and transfers) between an economy and the rest of the world. The capital and financial account reflects the net changes in financial claims on the rest of the world. The current account is further subdivided into merchandise account and invisibles account. The merchandise account consists of transactions relating to exports and imports of goods. In the invisible account, there are three broad categories namely, (a) non-factor services such as travel, transportation, insurance and miscellaneous services; (b) transfers which do not involve any value in exchange, and (c) income which includes compensation of employees and investment income. The capital account can be broadly broken up into two categories namely, (a) non-debt flows such as direct and portfolio investments, and (b) debt flows such as external assistance, commercial

borrowings, non-resident deposits, etc. The sum of the current account and capital account indicates the overall balance, which could either be in surplus or in deficit. The movement in overall balance is reflected in changes in the international reserves of the country.

Current Status

10.9.4 Under the current account, transactions in goods, services and income are covered. The data on merchandise trade are available from two sources namely, (a) from the Directorate General of Commercial Intelligence and Statistics (DGCI&S) on customs basis, and (b) from RBI on payments (which includes both receipts and payments) basis. The Daily Trade Return (DTR) is the primary source of recording exports data at DGCI&S, while RBI relies mainly on the R-return furnished by Authorised Dealers (ADs) to compile the exports and imports data. The data on merchandise exports in BoP are compiled on the basis of information available from the DGCI&S, after adjusting for time and exchange rate differences. The merchandise export data is recorded on free on board (f.o.b.) basis. It may be noted that export of software in physical form is captured by DGCI&S.

10.9.5 The customs record data on imports on the basis of the Bill of Entry prepared for goods entering in the customs area. The data on imports under BoP statistics are compiled mainly on the basis of returns submitted by ADs supplemented by information on the transactions not passing through the banking channel such as imports financed through credit taken abroad. Imports under the BoP data are recorded on the basis of date of payment or date of disbursal of loans, which may differ significantly from the recording of imports at the Customs end on the basis of actual arrival of goods.

10.9.6 Transactions in services under BoP consist of travel, transportation, insurance, Government not included elsewhere, and 'miscellaneous' services. The data on travel receipts are calculated on the basis of the number of tourist arrivals in India and Survey of Tourists Expenditure provided by the Ministry of Tourism, Government of India. Since the expenditure patterns of tourists from different regions differ, it would be desirable to conduct surveys on per capita tourist's expenditure by broad regions. Data on services are covered on a gross basis with a few exceptions such as receipts of Indian shipping and airline companies operating abroad. Under income, two types of transactions are recorded namely, compensation of employees and investment income. Investment income covers receipts and payments of dividends and profits on foreign investment, and receipts and payments of interest and other income.

10.9.7 Software exports have emerged as one of the most important items of services exports. The software exports are classified broadly into two types namely, on-site services and off-site services. On-site development refers to the work being done at the client's site, while off-site exports could be in physical form (software prepared on magnetic tapes and paper media) as well as in non-physical form. Software exports in non-physical form, in turn, relates to the direct transmission abroad through dedicated earth stations and satellite links, which get captured in the 'SOFTEX Forms' prescribed for the purpose by the Reserve Bank. Software exports in the physical form are captured by the trade data compiled by the DGCI&S and are reported under merchandise exports in the BoP data, as per the international practice. Software exports in non-physical form are recorded under 'miscellaneous' services as a part of non-factor services. Since the reporting mechanism at RBI captures software earnings to the extent remitted to India, the National Association of Software and Service Companies (NASSCOM) has devised a format in consultation with the RBI for collection of information on software exports, which are used as a benchmark for gross earnings.

10.9.8 Under the capital account, both equity and debt flows are covered. Debt flows comprise commercial borrowings, external assistance, short-term trade credits and Non-Resident Indian (NRI) deposits, while the equity flows comprise Foreign Direct Investment (FDI) and

portfolio investment. The BPM5 defines FDI as international investment with a lasting interest in an enterprise with the investor having at least 10 per cent equity holding. However, BPM5 allows for flexibilities from the 10 per cent criterion depending on presence of effective voice of the non-resident investors in the management of the firm. At present, direct investment into the country by non-residents is freely allowed in most sectors subject to certain sectoral ceilings on equity holdings. The FDI within the prescribed sectoral ceilings is freely allowed under RBI automatic route. FDI in restricted activities and in excess of the prescribed sectoral ceilings requires prior Government approval through the Secretariat for Industrial Assistance (SIA) and the Foreign Investment Promotion Board (FIPB). The non-resident FDI investors are also allowed to raise their stakes through acquisition of shares. The portfolio investment consists of the amount raised by Indian corporates through Global Depositary Receipts (GDRs) or American Depositary Receipts (ADRs), investments in Indian stock markets by foreign institutional investors (FIIs) and high net worth individuals and offshore funds.

10.9.9 The relevant data for the compilation of BoP are collected by RBI from various sources including the R-returns and other details submitted by the authorised dealers, exchange control records and various surveys. Quarterly data in detail on BoP, in US dollar and in Indian rupees, are disseminated by the end of the next quarter on RBI website and in RBI *Bulletin*. India is a signatory to the Special Data Dissemination Standards (SDDS) of the IMF and as such India meets the requirement of timeliness. The trade data released by DGCI&S with a lag of about a month are also released in the RBI *Bulletin*. RBI publishes important time series data on foreign trade and BoP in the *Handbook of Statistics on Indian Economy*.

10.9.10 With the replacement of the Foreign Exchange Regulation Act (1973) by the Foreign Exchange Management Act (1999) coupled with a policy of deregulation and liberalisation, the information system on BoP transactions will have to rely increasingly on aggregate positions reported by ADs and for disaggregated data on periodical or *ad hoc* surveys. Even in the case of merchandise trade as the rules governing surrender of foreign exchange by exporters get liberalised, it would be increasingly difficult to get statistics pertaining to merchandise trade on payments basis from ADs. In such a scenario, the trade data in BoP would have to be compiled exclusively on the basis of information available on customs records, as is the practice in a number of industrialised countries. Similarly, further liberalisation of capital account transactions may necessitate the use of surveys even for aggregate data.

Deficiencies

10.9.11 BoP data are compiled as per the international best practices, though certain aspects of data compilation and dissemination may require further refinements. During the late eighties and early nineties, the exports figures compiled by DGCI&S and RBI showed wide differences. A Technical Group (Chairman: Shri O.P. Sodhani) was constituted to find the proximate causes for the differences in trade data and to recommend suitable measures. The important causes identified for the differences in export statistics were: (i) two different source documents used by the two agencies, (ii) under-reporting of 'short shipment' or 'shut out' cases by the customs to RBI, (iii) certain types of goods not being captured by DGCI&S data but included in the payments data, and (iv) valuation and timing differences. The main recommendations of the Sodhani Technical Group were as follows: (i) the Daily Trade Return (DTR) should be the common basis for both agencies, (ii) DTR data should be transmitted to RBI and DGCI&S in a centralised manner, and (iii) DTR transactions matched with Export Negotiated Contract (ENC) data should form the basis for compilation of export data by RBI. In this connection it may be indicated that the Electronic Data Interchange (EDI) system has been implemented by the Customs at 24 major ports and DTR data are being received both by RBI and DGCI&S. Notwithstanding the implementation of some of the recommendations of the Sodhani Technical Group, the difference in exports figures compiled by DGCI&S and RBI has widened from US $ 1.6 billion in 1996-97

to US $ 3.0 billion in 1998-99 (see Table 10.2). There is, therefore, a need to identify and narrow down the differences.

Table 10.2: Differences between DGCI&S data and BoP data on payments basis

(In USD million)

Year	Merchandise Imports					
	DGCI&S	RBI #	Difference	DGCI&S	RBI #	Difference
1	2	3	4(3-2)	5	6	7(6-5)
1990-91	18145	17391	-754	24073	27914	3841
1991-92	17865	19219	1354	19411	21064	1653
1992-93	18537	19316	779	21882	23240	1358
1993-94	22238	24821	2583	23306	25069	1763
1994-95	26330	28377	2047	28654	33804	5150
1995-96	31794	31490	-304	36675	41727	5052
1996-97	33470	35116	1646	39132	46230	7098
1997-98	35006	37061	2055	41484	48472	6988
1998-99	33219	36205	2986	42389	47373	4984
1999-2000	37599	38689	1090	47212	55370	8158

#: Provisional

Notes:

1. RBI data on exports have been adjusted for timing and exchange rate difference, freight & insurance element and software service exports routed through SOFTEX forms (available since 1996-97).
2. Imports data have been adjusted for baggage gold & silver since 1992-93 as such data are not covered under DGCI&S.
3. Data for the period since 1996-97 are not strictly comparable with those for the earlier period due to changes in coverage.

10.9.12 On the basis of further examination of the persistence of difference in exports data, a Study Group (Convenor: Shri M. R. Nair) recommended the following steps: (a) The DGCI&S in consultation with the Customs should ensure complete coverage of exports data including those from minor ports and for all commodities including petroleum, oil and lubricants; (b) Large discrepancies in the matching of DTR and ENC data may be notified to the Customs authorities by RBI with a view to improving the quality of data reporting by the EDI system; (c) Transactions where the DTR value exceeds the ENC value need to be followed up with Customs and the Regional Offices of RBI so as to identify the nature of the discrepancies; and (d) RBI should undertake periodic studies to identify the sources of discrepancies between ENC data and R-return data at important AD branch levels. The Study Group, however, felt that some differences between the two sets of data would continue on account of valuation, as it may not be feasible to devise a uniform method of valuation due to practical difficulties.

10.9.13 The Sodhani Technical Group had identified coverage (such as import of defence items, aircrafts, ships and oil rigs), valuation and timing differences as the proximate causes of differences between imports data disseminated by DGCI&S and RBI. The extent of divergence in imports data had moderated from US $ 7.0 billion in 1996-97 to US $ 5.0 billion in 1998-99 which, however, widened to US $ 8.0 billion in 1999-2000 (see Table 10.2). On further examination of discrepancies in data, the Nair Study Group recommended the following corrective steps: (a) the DGCI&S should take steps to improve the coverage of data in consultation with the Customs for various items of data omitted, as also imports through various minor ports, (b) as there may be an element of overestimation of imports on payments basis in absence of documentary evidence on arrival of goods, the RBI may closely monitor and analyse

the quantum of default on this count, and (c) RBI needs to conduct surveys to assess the likely size of bank charges and interest element included in imports on payments basis.

10.9.14 Furthermore, exports of goods are not recorded on the change of ownership basis while import data are not compiled on the f.o.b basis. The possibilities of conducting surveys to collect information on freight and insurance components from DTR data need to be explored by RBI. This would in due course facilitate compilation of imports data on f.o.b. basis.

10.9.15 The data on travel receipts are not available with required details. Similarly, the gross earnings of foreign shipping and airline companies operating in India, and of Indian shipping and airline companies operating abroad are not available. The data on profit and dividends on account of direct and portfolio investment are also not available separately. Further, the classification of direct investment income into income on equity due to dividends and distributed branch profits and reinvested earnings and undistributed branch profits and income on debt (interest) is required. Similarly, under portfolio investment income, the income on equity (i.e. dividends) and debt (i.e. interest) need to be shown separately. Data on retained earnings on Indian investment abroad are also not covered at the preliminary stage due to non-availability of such data.

10.9.16 In the case of capital account, information regarding the dilution of equity holding by non-residents in India and disinvestments abroad by residents is not fully available and, therefore, not completely captured in BoP. Data on portfolio investment are not covered fully due to non-availability of information such as that on portfolio investment by NRIs. Suppliers' credit up to 180 days maturity is not included under 'other investment' as such data are not available.

10.9.17 As regards current and capital transactions relating to NRIs, there is some degree of overlap. For example, all private remittances from non-residents are assumed to have emanated from NRIs because no distinction is made between NRIs and other non-residents in the current account. Similarly, local withdrawals and redemptions of non-resident deposits are treated as part of private transfers with a contra entry in the relevant NRI deposit account. As a part of liberalisation as the policy regime tends to be less discriminative between NRIs and other non-residents, NRI transactions are increasingly being routed through the normal channels. For example, in the case of Foreign Direct Investment (FDI) into India, the treatment of NRIs is now similar to that of other non-residents with a few exceptions. Hence, the time-series data pertaining to NRIs need to be interpreted with caution.

10.9.18 As regards the legal provisions currently governing the data on BoP, RBI in exercise of the powers conferred by Sections 6 and 11 of the Foreign Exchange Management Act, 1999, (FEMA, 1999) may direct any authorised person to furnish such information, in such manner as it deems fit. Section 6 of the FEMA addresses the capital account transactions, and Section 11 of the Act empowers RBI to issue directions to authorised persons. Contravention of any direction of RBI by any authorised person or failure of any authorised person to file any return as directed by RBI will attract penal action.

Conclusions and Recommendations

10.9.19 The compilation and dissemination of BoP statistics is the prime responsibility of RBI. Keeping in view the importance of BoP statistics, several committees in the past had focused on various aspects of data reporting. The implementation of the recommendations of these committees has vastly improved the scope, coverage and timeliness of BoP data. The merchandise trade data with monthly frequency are available from DGCI&S with a lag of a month. The BoP data now largely conform to international standards. The quarterly BoP data are now available with time a lag of a quarter, which also meets the standards of SDDS of the IMF. However, certain discrepancies in data have persisted and certain new areas have emerged which need further attention. For example, the discrepancies in merchandise trade data both exports and

imports, between DGCI&S and RBI have persisted. There is a need for more detailed data on trade in services, which has emerged as an important component of balance of payments. The issues arising out of changes in mode of transactions brought about by technology such as e-commerce need to be studied. The Commission notes that there are at present a number of committees and groups focusing on some of these issues. As an overall assessment, the Commission feels that there is scope for further refinements in some of the BoP data components and there is a need for further strengthening the data reporting mechanism.

10.9.20 The Commission therefore recommends that:

(i) The implementation of recommendations made in the Reports of various committees and groups already constituted to closely examine different aspects of Balance of Payments (BoP) data needs to be expedited with a view to further refining items of the BoP statistics. In fact, there should be a continuous review of the methods of collecting data with regard to BoP on account of the anticipated developments in liberalisation of external sector transactions on both the current and capital accounts. In particular, this would be necessitated by any further review of repatriation and surrender requirements in the current account and liberalisation of the capital account.

(ii) Steps should be taken to identify and narrow down the differences in merchandise trade data as compiled by the Directorate General of Commercial Intelligence and Statistics (DGCI&S) and those reported on payments basis by RBI.

(iii) The coverage of Electronic Data Interchange (EDI) system should be enlarged to more ports and different types of shipping bills so as to facilitate a matching of exports data on the basis of Daily Trade Return (DTR) and those on the basis of exports negotiated contract (ENC). This would result not only in the narrowing down of differences in exports data between DGCI&S and RBI but would also facilitate recording of exports data on the basis of ENC statements reflecting change of ownership.

(iv) The coverage of DGCI&S data on imports should be enhanced to include defence items, aircraft, oilrigs, etc. This would help in narrowing down the differences between DGCI&S and RBI data.

(v) The import data should be compiled on free on board (f.o.b.) basis. RBI should examine the possibilities of conducting surveys to collect information on freight and insurance components from DTR data, which in due course would facilitate compilation of imports on f.o.b. basis.

(vi) The purpose codes prescribed for reporting of foreign exchange transactions by Authorised Dealers (ADs) to RBI should be enlarged to capture more disaggregated data on international trade in services. Further, the mechanism of data reporting by the ADs should be supplemented by surveys on important areas of services.

(vii) The tourist arrival figures as compiled by the Ministry of Tourism are used by RBI for estimating travel receipts. In order to improve the quality of these estimates, the Ministry of Tourism should conduct surveys on the expenditure pattern of tourists drawn from different broad regions of the world on a regular basis.

(viii) Although RBI collects data on software exports through Software Exports (SOFTEX) forms, it uses NASSCOM data as a controlling total for gross receipts from software exports. There is, however, a need to re-examine the current methodology on collection of software export data. RBI, therefore, should constitute a technical group consisting of members from RBI, Ministry of Commerce, CSO,

NASSCOM and a few major software companies to comprehensively examine the data reporting mechanism for software exports.

(ix) In a liberalising economy, it becomes increasingly necessary to rely on surveys to plug information gaps. RBI should conduct periodical surveys on dividends and profits arising out of foreign direct investment (FDI) and portfolio investment separately.

(x) There is a need for surveys by RBI on disinvestment in India and abroad by non-residents and resident Indians, respectively.

(xi) The RBI should take necessary steps to capture data on portfolio investment by NRIs in order to improve the coverage of the capital account in the BoP.

(xii) In order to ensure complete coverage of short-term credit, RBI should institutionalise a mechanism for collection of data on suppliers' credit up to 180 days, which would have an impact on the capital account of the BoP. This information is also required on stock basis to improve the coverage of the external debt statistics.

10.10 EXTERNAL DEBT AND INTERNATIONAL INVESTMENT POSITION

10.10.1 India's external debt is compiled on the basis of the recommendations of the Policy Group/Task Force on the External Debt Statistics of India (1992). India's External Debt Statistics cover borrowings by residents (including the Government sector) from non-residents and are presented under the following seven major categories namely, (a) borrowings from multilateral agencies (excluding IMF), (b) borrowings from bilateral sources, (c) borrowings from the IMF, (d) trade credits, (e) commercial borrowings, (f) NRI deposits, and (g) rupee debt. Long-term debt and short-term debt by original maturity are separately identified in the presentation. Moreover, borrowings from bilateral and multilateral agencies are classified into borrowings by the Government sector and the non-Government sector with further classification into concessional and non-concessional categories. At present, India's External Debt Statistics could be considered as among the best in comparison with other debtor countries in terms of coverage and transparency. India has adopted the internationally accepted 'core definition' of the gross external debt suggested by the International Working Group on External Debt Statistics (IWGEDS, 1988) with necessary country-specific adjustments. Recently, a Technical Group on External Debt (1998) had recommended further data refinements such as increasing the frequency of external debt data dissemination on a quarterly basis, compilation of external debt on the basis of residual maturity and improvements in the coverage of short-term debt. Compilation of the International Investment Position (INIP) statistics in India is done by RBI, based on the Census of India's Foreign Liabilities and Assets, which is conducted quinquennially, while for the intervening years, annual surveys are conducted.

Current Status

10.10.2 The data on external debt have, till recently, been disseminated for three reference periods (March, September and December) within five months of the reference date. The data pertaining to end-March are released by RBI in its *Annual Report*. The time-series data on external debt are also published in the *Handbook of Statistics on Indian Economy*, brought out by RBI. The data relating to September and December are published in the Economic Survey, Government of India and in *India's External Debt - A Status Report* released by the Ministry of Finance. With a view to providing data for all quarters, RBI has published data for the quarter ending June 2000 in the January 2001 issue of the Monthly *Bulletin*. Henceforth, the data on external debt would be available on a quarterly frequency.

10.10.3 External Debt Statistics reflect the external debt obligations of the country as a whole, i.e., the public sector including Government and private sector. The collection, compilation and publication of India's External Debt Statistics are the joint responsibility of the Ministry of Finance, Government of India and the Reserve Bank of India. The information is collected through the debtor reporting system and details under different categories of external debt are collected from various sources. A major part of the credit extended by the multilateral and bilateral sources, including bilateral component of export credits and the civilian component of rupee debt, are collected from the Office of the Controller of Aid Accounts and Audit (CAA&A), Ministry of Finance, while the External Debt Management Unit (EDMU) collects data on non-civilian rupee debt. The data on external commercial borrowings (ECBs), NRI deposits, debt owed to IMF and short-term trade credit are maintained by RBI, whereas the data on investments in debt instruments by 100 per cent Foreign Institutional Investors (FII) debt funds are collected from Securities and Exchange Board of India (SEBI). The provisional data involve some degree of estimation, but the data are revised as and when actual data are received. The final data are fairly robust as they are based on the actual transactions. Further, statistics on external debt are presented on the basis of original maturity and they adhere to the international definition of residents with the exception of Non-Resident (Non-Repatriable) [NR(NR)] deposits.

10.10.4 External debt is an integral part of the International Investment Position (INIP), which is the balance sheet of the economy's external liabilities and assets. External debt is the largest component of external liabilities recorded in the INIP, though its share has been declining. The data for the compilation of INIP are collected by conducting surveys or censuses on the basis of the information received from the identified entities. Schedules have been designed separately for corporate, banking, insurance sectors and financial institutions. India is committed to disseminate the quarterly INIP data from the quarter ending December 2001 by the end of June 2002.

10.10.5 Until the 1980s, most of the external debt of India was incurred on Government account because the external assistance, even to public enterprise or financial enterprise, was invariably channelled through the Government. In the 1980s, external debt was permitted mainly for public sector or through public sector financial intermediaries. It is primarily in the 1990s that private sector debt on commercial terms has gained in importance. Presently, Section 6 of the FEMA, 1999 governs the capital account transactions. Under this Section, Reserve Bank, while granting permission, may stipulate conditions and/or regulations with regard to the transactions under the capital account.

10.10.6 With regard to external debt, dissemination of quarterly data with a time lag of one quarter is under consideration of the IMF as a part of SDDS data category. The proposed sectoral classification of the stock data on external debt as per SDDS requirements is different from what is being used at present. As per the SDDS requirements, the stock of non-government external debt needs to be disseminated for two separate categories for banks and other sectors. The SDDS also requires dissemination of prospective amortisation payments.

10.10.7 While the SDDS prescribes the dissemination of data on the international investment position (INIP), it recognises that this is a new framework and that, at present, only a few countries compile it. Accordingly, subscribers have been given flexibility until the end of the year 2001 to compile and disseminate INIP data. The standard calls for the INIP to be compiled in accordance with the fifth edition of the IMF's Balance of Payments Manual. Assets and liabilities should be classified into direct investment; portfolio investment, showing a breakdown into equity and debt; other investment; and reserves (assets only). A breakdown of liabilities in the form of securities and loans, within-portfolio and other investment, by currency of issue and by original maturity (e.g. short-term, medium-term and long-term) is encouraged in situations where analysis of a country's debt is highly desirable. The IMF requires that data be disseminated on an

annual frequency (although quarterly dissemination is encouraged) with a timeliness of two quarters (one quarter encouraged).

Deficiencies

10.10.8 Statistics on India's external debt, though fairly comprehensive, suffer from certain deficiencies. There is no mechanism in place to collect data on suppliers' credit up to 180 days maturity (the trade-related suppliers' credit of more than 180 days and buyers' credit of all maturities require to be approved by RBI and as such there is a proper record of data). This issue was examined by a Study Group on Short-Term Debt (2000) under the aegis of the Monitoring Group on External Debt in the Ministry of Finance. In order to capture the entire amount of suppliers' credits, the Study Group recommended that the existing floppy-based R-Return reporting may be amended to include an additional field on date of shipment. The difference in the period between the date of shipment and date of payment could be taken as a measure of the period for which trade credits are outstanding. This method could be supplemented by other existing data sources. In addition, surveys on trade finance aimed at major import industries could also provide useful supplemental information.

10.10.9 The data on residual maturity for major components of external debt are available except for NRI deposits. There is, therefore, a need for data on NRI deposits by residual maturity for a comprehensive estimate of external debt by residual maturity. This issue was examined by a Study Group on NRI Deposits (2000) under the aegis of the Monitoring Group on External Debt. The Study Group has recommended introduction of a computerised Comprehensive Single Return (CS Return) for all NRI deposit accounts on the basis of software designed by the Group on the lines recommended by the Working Group on International Banking Statistics (WGIBS). The CS Return would be submitted to the RBI by head offices of banks, after collecting details from their branches on a quarterly basis, which *inter alia*, would provide information both by original maturity as well as by remaining maturity.

10.10.10 At present, the stock of FIIs investment in debt securities is estimated on the basis of accumulation of flows in the absence of direct data on stocks. The BoP Manual, 5th Edition of the International Monetary Fund (BPM5) recommends that the value of market-traded instruments be recorded on the basis of market prices, in the compilation of both BoP and INIP. Since external debt is a major component of INIP, there is need for uniform treatment of valuation. Amongst the various instruments covered under India's external debt, data on stock of FIIs' investment in debt securities will have to be compiled and further valued on the basis of market value. With respect to Government securities it should be possible for RBI to obtain this information. With regard to FIIs investment in non-Government securities, the current system does not enable SEBI to capture such data in respect of privately placed debt unless it happens to be listed on the stock exchanges.

10.10.11 The major deficiency in the mechanism for collecting data for INIP has been the poor and inadequate response to the surveys and censuses from the identified units. While a regular reporting mechanism for stock data on debt liabilities exists, similar arrangements for reporting of stock of non-debt liabilities and private corporate assets are not in place. Another factor is the valuation issue, as the data are reported on the basis of book value instead of at market value.

10.10.12 As regards INIP in the Indian context, the major components of INIP – external debt on the liabilities side and foreign exchange reserves of RBI – are available in a timely manner. Amongst other components of INIP, balances of Indian banks abroad (nostro balances) and balances of foreign banks in India (vostro balances) are also available in a relatively timely manner. In the case of non-debt liabilities, global and reliable estimates of such flows are available on a monthly basis. Since the response to the Census is inadequate and suffers from lags, stocks of such non-debt liabilities can be approximated by superimposing cumulative

inflows on benchmark stocks. Similarly, assets of corporates denoting ECB funds held abroad are available on quarterly basis with RBI. As regards assets denoting joint ventures abroad, stocks of such assets can be approximated by superimposing cumulative outflows on benchmark stocks. This process would enable a comprehensive and timely compilation of INIP.

Conclusions and Recommendations

10.10.13 The Commission notes that consequent to the recommendations of the Rangarajan Committee, the Government and RBI have given considerable attention to the issue of assessing and periodically disseminating external debt statistics of India. Thus, data on external debt in a disaggregated manner is disseminated in terms of both foreign currency and Indian rupees.

10.10.14 While the issue of External Debt Statistics has attracted focused attention in the international context in the recent period, the conceptual framework of India's External Debt Statistics was laid out much earlier by the Policy Group/Task Force on External Debt Statistics in 1992 and reviewed by the Technical Group on External Debt in 1998. India's External Debt Statistics, at present, are fairly comprehensive and are available on a quarterly basis. Nonetheless, in view of recent developments and particularly the increasing concern over short-term debt and progressive capital account liberalisation, there exists scope for further refinement of External Debt and related statistics, such as International Investment Position (INIP) statistics. On the basis of an overall assessment of the current status of statistics, the Commission recommends that:

(i) As suggested by the Study Group on Short-Term Debt under the aegis of the Monitoring Group on External Debt in the Ministry of Finance, in order to capture data relating to suppliers' credit up to 180 days, RBI should modify the existing floppy-based R-Return reporting by introducing an additional field on date of shipment. While this information is required for complete coverage of external debt, it would also enhance the coverage of short-term credits in the capital account of the balance of payments (BoP).

(ii) The RBI should introduce a computerised Comprehensive Single Return for Non-Resident Indian (NRI) Deposits as suggested by the Study Group on NRI Deposits for compilation of external debt data on residual maturity basis.

(iii) The quarterly external debt data are disseminated with a time lag of 5 to 6 months from the reference period. This time lag should be reduced to 3 months, which would also meet the Special Data Dissemination Standards (SDDS) requirement of timeliness.

(iv) Steps should be taken by agencies responsible for external debt data [namely, the Controller of Aid, Accounts and Audit, and External Debt Management Unit (EDMU) in the Ministry of Finance and RBI] to provide additional sectoral classification of non-government external debt into banks and other sectors (private and public non-bank enterprises), which would also meet the SDDS requirement of sectorisation.

(v) At present, the stock of Foreign Institutional Investors' (FIIs') investment in debt securities is estimated on the basis of accumulation of flows in the absence of direct data on stocks. RBI should take necessary steps to put in place a data collection mechanism for stock data on FIIs' investment in debt securities at market prices in consultation with Securities and Exchange Board of India (SEBI), FIIs and custodial banks.

(vi) The RBI should re-orient its methodology for compilation of data on International Investment Position (INIP) by making increasing use of flow data wherever the stock data are not readily available with a view to generating quarterly data with a

time lag of six months, which would meet the timeliness requirement under SDDS of the IMF.

10.11 FOREIGN EXCHANGE RESERVES

10.11.1 India's gross foreign exchange reserves comprise foreign currency assets of the Reserve Bank, gold held by RBI and Special Drawing Rights (SDRs) of the Government of India. India's Reserve Position in the International Monetary Fund is not included as part of foreign exchange reserves as they may not be available on immediate demand, although some countries do include these balances as part of their reserves.

Current Status

10.11.2 The RBI has the primary responsibility of collection, compilation and dissemination of data relating to foreign exchange reserves. The data are based on actual balances as per RBI records. The foreign currency assets, consisting of various currency holdings, are converted into US dollar using the New York closing exchange rates. Gold is valued close to the international market prices. Conversion of SDRs into US dollar is done at the rates released by IMF.

10.11.3 The data on foreign exchange reserves are disseminated on a weekly basis in the *Weekly Statistical Supplement* (WSS) to RBI Monthly *Bulletin* within a week of the reference date and in the RBI Monthly *Bulletin* with a lag of one month. The time series data are available in the *Handbook of Statistics on Indian Economy*. The data on sales and purchases of US dollar by RBI implying foreign exchange market intervention are also disseminated on a monthly basis with a lag of one month in the RBI Monthly *Bulletin*. Forward liabilities are published every month with a lag of one month from the date of reference in the RBI Monthly *Bulletin.* Incidentally, it may be noted that IMF's SDDS prescribes dissemination of data on total official reserve assets; other foreign currency assets; predetermined short-term drains on foreign currency assets; contingent short-term drains on foreign currency assets; and other related items in national currency and/or U.S. dollars with a time lag of one month (weekly encouraged). RBI has started disseminating international reserves data as per the revised data template of IMF to the extent possible.

10.11.4 The data-gathering process for foreign exchange reserves would not be adversely affected even if the country moves towards full capital account convertibility in the future.

10.11.5 The method of collection, compilation and dissemination of data on foreign exchange reserves is comprehensive and comparable with the international standards.

10.12 E-COMMERCE

Introduction

10.12.1 Electronic Commerce is a newly-emerging and fast growing way of conducting business. It is the way of advertising, buying, selling, and, in some cases, delivering goods and services. At its broadest, e-commerce is any type of business transaction or interaction in which the participants operate or transact business or conduct their trade electronically. Potentially this could include activities that include use of the telephone or the fax as well as the Internet.

10.12.2 The World Trade Organisation (WTO) defines e-commerce as:

> The production, distribution, marketing, sale or delivery of goods and services by electronic means.

10.12.3 The National Statistical Commission constituted a *Committee to identify information needs arising out of e-commerce activities* and to suggest institutional arrangements for data maintenance under the Chairmanship of Shri V.K. Duggal, Additional Secretary, Ministry of

Commerce and Industry. The Committee has preferred the comprehensive WTO definition for all practical purposes covering transactions through the telephone (particularly enhanced telecommunication technologies), facsimile and e-mail as well as online computer systems, electronic fund transfer (EFT), etc.

10.12.4 Broadly, EC transactions can be categorised in terms of target user groups such as business-to-business (e.g. procurement over computer networks), business-to-consumer (e.g. online retailing), business-to-administration (e.g. Government and business transactions), consumer-to-administration (e.g. filing of tax returns). The Committee felt that initially the focus should remain on business-to-business and business-to-consumer transactions for the first 3-4 years.

10.12.5 The measurement of electronic commerce as accurately as conventional commerce is nearly impossible given the difficulty of defining it and adequately capturing the value associated with it. Nevertheless, for policy purposes such statistics are very much needed to focus the policy debate so that action is directed towards activities that truly reflect the electronic commerce phenomenon, and avoid a simple transplantation of the traditional commerce business model to what is a much different environment on the Internet.

Data collection methodology

10.12.6 Conducting surveys on e-commerce service providers is a possible method of obtaining the required data. The surveys can be used to collect information with regard to infrastructure, electronic commerce transaction and electronic commerce supporting services with detailed breakdowns. The expertise for such a survey needs to be developed in the statistical system.

10.12.7 The legislation requiring modifications for the purpose of obligation on the part of data providers may cover Companies Act, Taxation Laws, etc. The Controller of Certifying Agency (CCA) will need to collect additional information on type of business of the unit at the time of registration.

Classification

10.12.8 National Industrial Classification (NIC), 1998 needs to be adopted to cover e-commerce activities in detail. Harmonised system for international trade could be also adopted.

Current Status

10.12.9 At present, an official database on e-commerce is not available.

Recommendations

10.12.10 The Commission recommends that:

(i) The database on electronic commerce has to be established. Since e-commerce is still at initial stages and has significant cross-border linkages, it is necessary for the Central Statistical Organisation (CSO) to closely align the statistical system with initiatives on World Trade Organisation.

(ii) It is necessary to conduct surveys covering e-commerce providers for data on income, expenditure, value added, etc.

11 PRICE STATISTICS

11.1 INTRODUCTION

11.1.1 The price indices in the system of economic statistics are closely watched indicators of macro-economic performances. They are direct indicators of the purchasing power of money in various types of transactions involving goods and services. As such, they are also used as deflators in providing summary measures of the volume of goods and services produced and consumed. Consequently, these indices are important tools in the design and conduct of the monetary and fiscal policy of the Government, and also of great utility in taking economic decisions throughout the private sector. In India, for these varied purposes Central and State Government agencies collect the primary data on prices. There are mainly three agencies namely, Labour Bureau in the Ministry of Labour, Office of Economic Adviser in Ministry of Industry and Central Statistical Organisation in the Ministry of Statistics and Programme Implementation responsible for the compilation and release of various indices. This chapter deals with the issues relating to a range of consumer price indices, wholesale price index number and the price collection mechanism.

11.2 NATIONAL CONSUMER PRICE INDEX NUMBERS

Current Status

11.2.1 At the national level, there are four Consumer Price Index (CPI) numbers. These are:

A. CPI for Industrial Workers (IW),
B. CPI for Agricultural Labourers (AL), CPI for Rural Labourers (RL) and
C. CPI for Urban Non-Manual Employees (UNME).

11.2.2 The base years of the current series of CPI(IW), CPI(AL) and CPI(RL), and CPI(UNME) are 1982, 1986-87 and 1984-85, respectively. While the first three are compiled and released by the Labour Bureau in the Ministry of Labour, the fourth one is released by the Central Statistical Organisation in the Ministry of Statistics and Programme Implementation.

A. CPI for Industrial Workers, CPI(IW)

11.2.3 The Current series of CPI(IW) on base 1982=100 replacing the old series of 1960 base with effect from October, 1988, covers industrial workers employed in any one of the seven sectors namely factories, mines, plantation, railways, public motor transport undertakings, electricity generation and distribution establishments as well as ports and docks. The index covers only manual workers irrespective of their income. The weighting diagram for this index was derived by conducting a Working Class Family Income and Expenditure Survey (WCFIES) in 70 selected centres (see Annexe 11.1) during 1981-82. Centres were selected purposively keeping in view the administrative needs for centre-based indices and adequate representation to geographical areas and industries. The process of selection of centres was done in three stages:

(a) The total number of centres (70) was allocated among the factory, mining and plantation sectors in proportion to the total employment in the country.

(b) The number of centres allocated to each sector were then distributed amongst States on the basis of industrial employment in a State subject to a maximum of five centres in a State in that sector.

(c) The actual centres were then selected on the basis of centre-wise industrial employment in consultation with the respective State Government.

11.2.4 Though, a centre is selected on the basis of workers in 3 sectors namely Factory, Mining and Plantation, but the detailed survey covered all the 7 sectors.

11.2.5 Centre-wise, the item basket was determined on the basis of WCFIES. The items retained in the basket accounted for a substantial share of expenditure in the group or sub-group of items and could also be allotted a price over the life of the series. The all-India index is a weighted average of 70 centres' indices. The weight assigned to each centre is the proportion of the estimated consumer expenditure of the centre to the aggregate consumer expenditure of all the centres. All-India weights of CPI(IW) at group and sub-group levels are given in Annexe 11.2.

11.2.6 Representative specifications of items for the purpose of pricing were selected by conducting a market survey in each centre. The retail prices used in the compilation of CPI(IW) are collected by the Labour Bureau through part-time price collectors, who are employees of the State Directorates of Economics and Statistics or State Labour Commissioners' offices on weekly, monthly and half yearly basis and from selected markets and shops. A six-monthly house rent survey is conducted by the staff of the Labour Bureau for collection of house rent data for compilation of house rent index, which is revised in January and July every year. The present CPI(IW) is under revision on the basis of FIES conducted in 78 selected centres during 1999-2000.

B. CPI for Agricultural Labourers and Rural Labourers, CPI (AL/RL)

11.2.7 A person is treated as an agricultural labourer if he or she follows one or more of the agricultural occupations in the capacity of a labourer on hire, whether paid in cash or kind or partly in cash and partly in kind. A rural labourer is defined as one who does manual work in rural areas in agricultural and non-agricultural occupations in return for wages in cash or kind, or partly in cash and partly in kind.

11.2.8 The source of weights for the current series of CPI(AL) and CPI(RL), with base 1986-87, released since November 1995, is consumption expenditure data collected during the NSS 38th Round of Consumer Expenditure Survey, 1983. For the purpose of collection of consumer expenditure data for deriving weighting diagrams for CPI(AL/RL) as a part of general consumer expenditure survey of NSSO, the rural labour household is defined as one which derives its major income during the last 365 days from wage paid manual employment (rural labour), *vis-à-vis* wage paid non-manual employment as also self-employment. From amongst the rural labour households, those households which earn 50% or more of their total income (from gainful occupation) during the last 365 days from wage paid manual labour in agriculture are categorised as Agricultural Labour Households. All-India weights of CPI(AL/RL) at group and sub-group levels are given in Annexe 11.2. This series is presently compiled for 20 States and All-India. Monthly price data collected from 600 villages spread over 20 States (see Annexe 11.3) by the field staff of FOD are used in the compilation of these indices. The sample of 600 villages is staggered over four weeks of a month with one-fourth of the sample covered every week. Prices are collected on the fixed price collection day which may be a "Hat" day for "Hat" or non-daily markets and any market day for daily markets. CPI(AL) is a sub-set of CPI(RL) series. The rural retail prices for these two index series are the same but the weighting diagrams are different.

C. CPI for Urban Non-manual Employees, CPI(UNME)

11.2.9 An urban non-manual employee is defined as one who derives 50 per cent or more of his or her income from gainful employment on non-manual work in the urban non-agricultural sector. The current CPI(UNME) series with base 1984-85, introduced in November 1987, derives the weighting pattern from the family living survey conducted during 1982-83 in 59 selected

urban centres. All-India weights of CPI(UNME) at group and sub-group levels are given in Annexe 11.2. Centres were selected keeping in view, (a) concentration of the UNME population at the centre, (b) inclusion of State capital cities, and (c) regional representation. The centres were allocated to different States broadly in proportion to their 1981 urban population with the limitation that not more than five centres were allotted to any State. For compilation of CPI(UNME), retail prices in respect of the selected items and services from selected markets in the 59 centres are collected by FOD on a monthly basis. The index is being released by CSO with a time lag of about two weeks. Some of the State Governments, public and private sector undertakings, foreign embassies, etc. are making use of this index for purposes of regulating Dearness Allowance. The index is also used for computing the advance tax liability of tax payers from capital gains by the Central Board of Direct Taxes.

Deficiencies

11.2.10 CPI numbers presently compiled relate to different base years and cater to specific segments of the population, and thus can be considered as partial indices. These indices are not oriented to reflect a true picture of the price behaviour and effect of price fluctuations of various goods and services consumed by the population in the country, over a period of time.

11.2.11 The Ministry of Statistics and Programme Implementation has proposed to undertake a compilation of CPI for entire rural and urban areas separately as a Plan activity. However, most of the revision exercises of CPIs show that it is difficult to obtain the necessary complement of resources including manpower even after the clearance of the scheme at the highest level in the Expenditure Finance Committee (EFC). For example, the scheme on CPI(IW) was cleared by the EFC in 1996. But the work could start only in 1999 due to various administrative reasons. To overcome these difficulties and to complete the revision exercise as per schedule, there is a need to streamline the administrative procedures so as to get the requisite resources such as hardware and manpower, etc. in a time-bound manner, once the scheme is cleared by the Expenditure Finance Committee (EFC).

11.2.12 For compilation of All-India CPI(IW), the difficulty arises mainly in demarcating the geographical regions which the different centre-indices can be taken to represent and also in deriving estimates of the total number of working class families in these regions. This is largely due to the fact that the choice of the constituent centres was not determined by the laws of probability but was made purposively (in consultation with the various State Governments) with a view to representing as many of the industrially important centres in each state as possible subject to the total number of centres being limited to 70. Therefore, adequate representation to all the States could not be ensured. The index of each of the selected centres in a State has, therefore, to be assumed to represent a larger section of the State's industrial population than what it might actually be able to. Problems in relation to the present CPI(IW) series, are:

(a) The Technical Advisory Committee on Statistics of Prices and Cost of Living Index Numbers (TAC on SPCL) felt that large cities, where the price situation would usually be subject to peculiar stresses and strains, should not be over-weighted in respect of their contribution to the all-India Index. Hence the TAC on SPCL recommended a method of allocation according to which each centre is assumed to represent an equal share of the working class population within the State, unless the actual working class population for a particular centre itself exceeded the proportionate share accruing to the centres was taken to determine its share and the remainder of the working class population in the State as a whole was equally distributed among the remaining constituent centres in the State.

(b) Precise figures relating to the number of working class families are not available for the different States. Firstly, an average at the State-level for the figure of 'number of

earners per family is worked out by taking a weighted average of corresponding figures for the constituent centres within the States, the weights being the estimates of the number of working class families relating to seven sectors at the centre. The population of working class families for a State was obtained by dividing the average daily employment in respect of the sectors covered by the average number of earners in the State. Thus it is seen that a number of assumptions seem to be inescapable in the process of arriving at the final weighting diagram for the all-India index.

(c) The coverage of the working class population for the all-India index falls short of the entire Indian Union to the extent of exclusion of a few States and Union Territories, like Himachal Pradesh, Tripura, Goa, Daman and Diu, Andaman and Nicobar Islands, Lakshadweep, Meghalaya, Manipur, Nagaland, Mizoram, Arunachal Pradesh, Sikkim, Dadra and Nagar Haveli.

11.2.13 In 1988, the Working Group on Price Statistics after considering the various aspects of collection of rural retail prices for the index including the present sampling frame of markets and price villages recommended that the overall sample size of villages be enhanced from 600 to 800 at the all-India level. The NSSO considered the recommendations of the Group and suggested some modifications in the procedure to be followed for collection of rural retail prices, keeping in view the availability of resources. The modified scheme envisaged collection of prices initially from a new set of 600 villages and subsequently, from 1000 villages with replacement of one-fifth of the sample villages every year. The Commission observed that the number of villages from which the rural retail prices are being collected still continued to be 600 only.

Conclusions and Recommendations

11.2.14 All Consumer Price Indices (CPI) presently compiled, are based on outdated base years. With a long period having elapsed since considerable changes in the economy have taken place affecting the general patterns and levels of consumption. Moreover, several new commodities and specifications have come into vogue while some of the earlier items and specifications have disappeared altogether from the market. The frame of outlets and rented dwellings prepared earlier may not be of any use now for substitution purposes. The Commission, therefore, recommends that:

(i) It should be mandatory on Labour Bureau and CSO to revise their series preferably every five years, but not later than ten years. In the case of CPI (AL) and CPI (RL), the base year should be revised five yearly, using the quinquennial NSS Consumer Expenditure Survey data.

(ii) For revision of the series, the administrative procedure should be streamlined in such a way that necessary resources are sanctioned in a time-bound manner. The exercise on revision of the base year should be completed by the concerned agencies within a one- year period preferably after the availability of the requisite data.

(iii) The procedure of allocation of weights to different centres covered under CPI(IW) for computation of the all-India CPI(IW) needs further examination by TAC on SPCL. A similar examination should also be done for CPI(UNME) series.

(iv) Increasing the present sample of 600 villages spread over 20 States selected for price collection under CPI (AL) and CPI(RL) should be examined by TAC on SPCL.

(v) As the current CPI series does not provide changes in the prices for the entire rural and urban population since they are designed to measure the changes in the prices of goods and services consumed by specific segments of the population, there is a need to compile the CPI separately for the entire rural and urban populations. TAC on SPCL should give a methodology for compilation of CPI for rural and urban areas

separately using quinquennial NSS Consumer Expenditure Survey Data for the preparation of the weighting diagram. TAC should also give a procedure for compiling a combined index based on these two indices. The existing system of price data collection should be suitably streamlined and augmented so as to provide price data for compilation of CPI for rural and urban areas.

11.3 STATE CPI NUMBERS

Current Status

11.3.1 Different States and Union Territories are also collecting price data and compiling various price indices on very old base years. There are only 19 States and UTs, which are constructing CPI numbers, pertaining to one segment or the other. Among the 19 States and UTs, which are engaged in compilation of CPI numbers, there are only five States with a base year 1981-82 or thereafter for the CPIs. For instance, the oldest base year is 1939, the latest being 1988-89. Thus, there is a wide variation among the base years of State series. Further, there is a diversity not only in the segments of the population for which CPI numbers are being compiled, but also in the number of representative items included in the item basket, periodicity and data sources. Information indicating the details of collection of price data and compilation of indices by various States and UTs has been presented in Annexes 11.4 and 11.5.

Deficiencies

11.3.2 The indices being compiled by the various States lack uniformity in their base year, item basket, periodicity, segments of population, method of compilation and the sources of data, and as such it is not possible to undertake a proper analysis of regional or State-level price variations based on such indices.

Conclusion and Recommendation:

11.3.3 States and Union Territories compile Consumer Price Indices catering to a specific segment of the population. Some of them also compile CPI numbers for rural and urban areas. These index numbers vary not only in base year but also in geographical and population coverage, item basket, periodicity and sources of data used. The Commission, therefore, recommends that:

(i) There is a need to bring uniformity of methodology in the computation of price indices compiled by the States and UTs so that meaningful analysis of regional price variation can be made. TAC on SPCL should suggest measures to ensure uniformity in compilation of CPI numbers by the States and UTs.

11.4 NATIONAL WHOLESALE PRICE INDEX NUMBER

Current Status

11.4.1 The Wholesale Price Index (WPI) series with base 1993-94 is compiled by the Office of Economic Adviser (OEA), Ministry of Industry, on a weekly basis, based on the price quotations collected by the official as well as non-official source agencies in respect of 435 selected items and commodities identified in the basket of the index. Owing to the wide variety of sources, centres, and specifications and due to the practical compulsion of collecting data by the voluntary method, it is difficult to maintain uniformity in the concept of wholesale price in the collection of price data. In many cases, these prices correspond to farm-gate, factory-gate or mine-head prices; and in many other cases they refer to prices at the level of primary markets, secondary markets or other wholesale or retail markets. The Ministry of Agriculture has defined wholesale price as the rate at which a relatively large transaction of purchase, usually for further sale, is effected. As per OEA, wholesale prices represent transactions at the primary stage, which

broadly correspond to producer's prices. In actual practice, the primary sales are not always held at ex-farm, ex-mines or ex-factory. Sometimes the sales are held ex-warehouses and in such cases the price quotations may include an element of the cost of transportation from the farm, mine or factory to warehouse. In certain trade transactions, the terms of delivery may include the cost of transportation up to the point of consumption. Thus, the WPI as presently compiled does not reflect either the producer price or market price in a consistent manner.

11.4.2 The commonly-used measure of inflation in the Indian economy is based on the WPI. As WPI measures the price change at the level of either the wholesaler or the producer and does not take into account retail margins, it thus represents the production side and not the consumption side. For a true measure of inflation, it is necessary to measure the changes in the prices only at the final stage of transaction.

Deficiencies

11.4.3 It seems that the voluntary system of primary data collection on a weekly basis is becoming unsustainable as the economy changes its character and levers of control. Some of the criticisms against WPI are as under:

(a) Divergent connotations of the concept of wholesale price
(b) Changes in quality of products
(c) Capturing shift in structure of economy
(d) Non-inclusion of Services Sector
(e) Weak price data collection mechanism
(f) Inadequate measure of inflation

11.4.4 The quality of primary data used in the compilation of the WPI has been criticised at various forums especially with regard to non-response and timeliness. The working group on the revision of the WPI under the Chairmanship of Professor S.R.Hashim also felt that the present system of data collection through the mail method seems to be quite passive due to a significant proportion of non-response and delay in sending the data and thus recommended that there should be a direct system of data collection to eliminate such problems. In order to examine the response rate at the time of release of provisional and final WPI, the Commission requested the office of Economic Adviser in the Ministry of Industry to provide the basic data in respect of all the 1,918 quotations of 435 items for the last one year for making an appropriate analysis. Even after reminders, the data have not been provided by the Office of Economic Adviser.

11.4.5 Price changes in the Services Sector are not duly accounted for in the WPI, even though they are largely influenced by inputs from the Industrial Sector. Today, the Services Sector has developed to such an extent that a major share of the country's GDP comes from this sector. The working group constituted for revision of WPI numbers has examined the issue of constructing a separate index for services. The group identified problems, which are likely to emerge such as availability of data on different services on a continuous basis, identifying services purchased by producers and services purchased by consumers, non-tradable services, etc. The group has recommended that a services index may be constructed by including financial intermediation (including banking, insurance, etc.), transport services (road and rail), communications (postal and tele-communication), water supply, electricity, gas and construction activity. Data on these services will have to be obtained from the concerned Government departments, private establishments and through specially-designed sample surveys. The Working Group on revision of WPI, has recommended that a Services Price Index should be developed, initially as a complement to the WPI. It should be merged with the WPI, once it has stabilised and established its robustness.

Conclusions and Recommendations

11.4.6 The Commission, therefore, recommends that:

(i) In order to obtain uniformity in the collection of wholesale price data, the Office of the Economic Adviser should explore the possibility of engaging exclusive staff for a weekly collection of price data. There should be a direct system of data collection to eliminate problems of non-response in the mail method.

(ii) An Expert Committee should be constituted to go into the quality aspects of WPI price data. To make the system transparent, the Office of Economic Adviser should make available detailed data to other Government agencies for official use.

(iii) To capture the recent changes in industrial structure on account of liberalisation and globalisation, there is a need to have periodic revisions of WPI numbers, preferably every five years but not later than ten years. The proposed revision should bring base years of WPI and CPI numbers much closer to each other.

(iv) A separate Services Sector Index should be developed, initially as a complement to the WPI. It should be merged with the WPI, once it has stabilised and established its robustness.

(v) The Working Group on Services Sector Index constituted by TAC on SPCL should suggest institutional mechanism for collection of requisite data for the Services Sector Index and also its periodical updation. The Group should also take into account requirements of the WTO categories as also National Accounts.

(vi) As the present WPI is an inadequate measure of inflation; there is a need for a separate index for measurement of inflation in the economy. The proposed CPI for the rural and urban areas could be used for this purpose.

11.5 STATE WPI NUMBERS

11.5.1 Various States and Union Territories also collect price data and compile wholesale price indices on different base years. For instance, Assam compiles its WPI with a base as old as 1953; Tamil Nadu with base 1970-71; West Bengal with base 1980-81. Further, the States compile indices for different groups such as agricultural commodities, manufactured items or both. The number of items in the basket of the various State series also differ significantly. Moreover, there are conceptual and technical difficulties in compiling State-wise WPI numbers. Since the indices being compiled by the various States lack uniformity in base year, item basket, periodicity, derivation of weighting diagram, method of compilation and the sources of data employed, it is impossible to undertake any analysis of regional or state-level wholesale price variations as supposedly reflected by such indices.

Conclusion and Recommendation:

11.5.2 The Commission observed that there are certain conceptual and technical difficulties in the compilation of State-level WPI numbers. It was also observed that many States are currently constructing State-level WPI and using them for different purposes. The Commission, therefore, recommends that:

(i) There is a need to bring uniformity in terms of base year, number of items, derivation of weighting diagram, data sources, etc. in the wholesale price indices compiled by the various States and UTs in order to make any meaningful analysis of regional variation in prices of wholesale transactions. All the State WPIs should have preferably the same base year or around that, as that of the all-India. TAC on SPCL should examine all issues including conceptual and technical difficulties in compilation of State WPI numbers.

11.6 EXISTING PRICE COLLECTION MECHANISM

11.6.1 The data on prices are regularly collected by Central and State Government Departments and agencies for varied purposes. These data basically form the source of varied information compiled in different forms in accordance with the specific needs of multiple agencies. Though efforts are being made to ensure the correctness and reliability of price data being collected by various agencies by introducing multi-tier supervision, yet the quality of data has been questioned at various forums on account of various reasons, such as:

(a) Involvement of multiple data collection agencies
(b) Use of varying concepts and definitions
(c) Non-existence of an exclusive field agency
(d) Non-standard specifications
(e) Repetition of prices due to non-response, and
(f) Meagre honorarium for data collectors.

11.6.2 The Committee of Secretaries observed that it may be advisable to use the same primary price data collected and collated by a standardised system to develop price index series for different segments of the population as well as for the entire rural and urban areas. The Committee finally decided that the two series of price data for urban and rural areas should be developed and the same data should be used for developing different price indices including those, which are currently published. In this context, a Sub-group of TAC on SPCL, has been constituted to recommend measures for improvements in the calculation of the WPI which include the strengthening of price data collection system, development of business services price index, etc. The Sub-group has already deliberated the various issues in detail and expressed a need to provide adequate resources for streamlining and strengthening the data collection mechanism, which would improve both the extent and quality of response. The group also felt that regular and systematic monitoring of price collection mechanism was necessary. For the purpose, the association of both Central and State Agencies is imperative. There is a need to undertake measures for speedier transmission of price data from data collecting agencies to the user organisations both at Central and State levels.

Conclusions and Recommendations

11.6.3 The Commission, therefore, recommends that:

(i) There is a need to unify the system of price data collection in such a way that the proposed mechanism should take into account the requirements of, at least, all central agencies compiling the price indices. The proposed system should be streamlined and strengthened in such a way that effective participation of both the Central and the State Agencies is ensured. The system would also facilitate the compilation of CPI for rural and urban areas with a substantial saving on the cost of price data collection. For speedier transmission of price data, appropriate tools of information technology should be deployed.

(ii) As there is no legislation of collection of price data at present, the feasibility of bringing it under the umbrella of Collection of Statistics Act, 1953 should be explored.

Annexe 11. 1

Centres of CPI(UNME) and CPI(IW)

State and U.T.	Centre of		Common Centres
	CPI(UNME)	CPI(IW)	
1	2	3	4
1.Andhra Pradesh	1. Hyderabad[1] 2.Visakhapatnam[2] 3. Warangal 4. Kurnool 5. Vijayawada	1. Hyderabad 2. Visakhapatnam 3. Warangal 4. Guntur 5. Gudur[@]	1. Hyderabad 2.Visakhapatnam 3. Warangal
2. Assam	6. Guwahati[3]	6. Guwahati 7. D.D.Tinsukhia[A] 8. Labac-silchar[A] 9. Mariani-Jorhat[A] 10.Rangapara-Tezpur[A]	4. Guwahati
3. Bihar	7. Ranchi 8. Patna 9. Muzaffarpur	11. Ranchi-Hatia 12. Jamshedpur 13. Jharia[@] 14. Kodarma[@] 15. Monghyr-Jamalpur 16. Noamundi[@]	5. Ranchi
4. Gujarat	10. Ahmedabad[4] 11. Bhavnagar 12. Rajkot 13. Surat	17. Ahmedabad 18. Bhavnagar 19. Rajkot 20. Surat 21. Vadodara	6. Ahmedabad 7. Bhavnagar 8. Rajkot 9. Surat
5. Haryana	14. Rohtak	22. Yamunanagar 23. Faridabad	-
6.Himachal Pradesh	15. Shimla	-	-
7.Jammu & Kashmir	16. Srinagar 17. Jammu	24. Srinagar	10. Srinagar
8. Karnataka	18. Bangalore 19. Hubli[5] 20. Gulbarga 21. Mangalore	25. Bangalore 26. Hubli-Dharwar 27. Belgaum 28. Mercara[A]	11. Bangalore 12. Hubli-Dharwar
9. Kerala	22.Thiruvananth-apuram	29.Thiruvanan-thapuram	

(Contd.)

	23. Calicut	30. Quilon 31. Alwaye 32. Mundakayam[A]	13. Thiruvanan-thapuram
10. Madhya Pradesh	24. Bhopal 25. Indore 26. Jabalpur 27. Gwalior	33. Bhopal 34. Indore 35. Jabalpur 36. Balaghat[@] 37. Bhillai	14. Bhopal 15. Indore 16. Jabalpur
11.Maharashtra	28. Mumbai 29. Nagpur 30. Pune 31. Sholapur 32. Aurangabad	38. Mumbai 39. Nagpur 40. Pune 41. Sholapur 42. Nasik	17. Mumbai 18. Nagpur 19.Pune 20. Sholapur
12. Manipur	33. Imphal	-	-
13. Nagaland	34. Kohima	-	-
14. Orissa	35. Cuttack[6] 36. Sambalpur	43. Rourkela 44. Barbil[@]	-
15. Meghalaya	37. Shillong	-	-
16. Punjab	38. Amritsar	45. Amritsar 46. Ludhiana	21. Amritsar
17. Rajasthan	39. Jaipur 40. Ajmer 41. Jodhpur	47. Jaipur 48. Ajmer	22. Jaipur 23. Ajmer
18. Sikkim	42. Gangtok	-	-
19. Tamil Nadu	43. Chennai 44. Coimbatore 45. Madurai 46. Salem 47. Tiruchirapalli	49. Chennai 50. Coimbatore 51. Madurai 52. Salem 53. Tiruchirapalli 54. Coonoor[A]	24. Chennai 25. Coimbatore 26. Madurai 27. Salem 28.Tiruchirapalli
20. Tripura	48. Agartala	-	-
21. Uttar Pradesh	49. Agra 50. Kanpur 51. Lucknow 52. Allahabad 53. Meerut	55. Agra 56. Kanpur 57. Varanasi 58. Saharanpur 59. Ghaziabad	29. Agra 30. Kanpur

(Contd.)

22. West Bengal	54. Calcutta 55. Asansol 56. Kharagpur 57. Siliguri	60. Calcutta 61. Asansol 62. Howrah 63. Durgapur 64. Darjeeling 65. Haldia 66. Jalpaiguri[A] 67. Raniganj[@]	31. Calcutta 32. Asansol
23. Chandigarh	58. Chandigarh	68. Chandigarh[3]	33. Chandigarh
24. Delhi	59. Delhi[7]	69. Delhi	34. Delhi
25. Pondicherry	-	70. Pondicherry	-
Total	**59 Centres**	**70 Centres**	**34 Centres**

Notes: (1). Besides the above 70 centres of CPI(IW), the price data are also collected from 6 centres namely, Kothagudem (A.P.), Himachal Pradesh, Bhilwara (Rajasthan), Chhindwara (M.P.), Tripura and Goa. The price data collected from these 6 centres do not form part of all-India Index,;

(2). A small segment of the population of Plantations and Mining Centres is semi-urban and rural. The remaining centres are Factory Centres (selected on the basis of employment in factory) are mostly urban.

1. Includes Secunderabad; 2. Includes Waltair; 3. Includes Dispur; 4. Includes Gandhinagar; 5. Includes Dharwar; 6.Includes Bhubaneshwar; 7. Includes New Delhi.

A. Plantation centres (selected on the basis of employment in Plantations); @ Mining Centres (selected on the basis of employment in Mining).

Annexe 11. 2

Weights* of various CPI series for All-India at Group and Sub-Group levels

No.	Group and Sub-Group	CPI(UNME) Base: 1984-85	CPI(IW) Base: 1982	CPI(AL) Base: 1986-87	CPI(RL) Base: 1986-87
1	2	3	4	5	6
I.	**Food, Beverages and Tobacco**	47.13	60.15	72.94	70.47
	1. Cereals	10.97	20.47	40.94	38.15
	2. Pulses	2.51	3.59	3.39	3.40
	3. Milk	9.02	6.45	3.74	3.94
	4. Edible Oils	4.39	5.03	3.83	3.79
	5. Meat	2.99	4.29	3.10	3.31
	6. Vegetables	4.31	5.71	4.18	4.05
	7. Fruits	1.99		0.88	1.00
	8. Sugar	1.84	2.72	2.58	2.59
	9. Salt and spices	1.53	3.18	4.12	3.92
	10. Beverages	6.12	5.56	2.39	2.62
	11. Pan, Tobacco, etc.	1.46	3.15	3.79	3.70
II.	**Fuel & Light**	5.48	6.28	8.35	7.90
III.	**Housing**	16.41	8.67	-	-
IV.	**Clothing & Footwear**	7.03	8.54	6.98	9.76
	1. Clothing	6.14	7.68	6.28	6.17
	2. Footwear	0.89	0.86	0.70	3.59
V.	**Miscellaneous**	23.95	16.36	11.73	11.87
	1. Amusement	2.19	1.40	0.53	0.60
	2. Personal Care	4.55	3.31	2.04	2.28
	3. Transport & Communication	5.18	2.65	1.67	1.80
	4. Education	4.58	1.74	0.41	0.39
	5. Medical	2.51	2.59	4.38	4.23
	6. Household Requisites	2.02	4.67	2.70	2.57
	7. Others	2.92			
	Total	**100.00**	**100.00**	**100.00**	**100.00**

Notes: (1) The sub-groups 'Vegetables' and 'Fruits' are combined into one sub-group in CPI(IW);
(2) Under group 'Miscellaneous' in CPI(IW), CPI(AL) and CPI(RL); the sub-group 'Others' has been included under sub-group 'Household Requisites';
(3) There is no 'Housing' group under CPI(AL) and CPI(RL) as the housing cost of the rural or agricultural labour population was observed negligible in the base year;
* Based on estimates of consumer expenditure generated from the data collected through respective Family Living Surveys conducted during 1982-83 for CPI(UNME) and 1981-82 for CPI(IW), and household consumer expenditure enquiry conducted during 1983 for CPI(RL) and CPI(AL).

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Annexe 11. 3

State-wise distribution of sample villages

from which retail prices are collected by NSSO

Sl.No.	State	No. of villages
1	**2**	**3**
1.	Andhra Pradesh	54
2.	Assam	27
3.	Bihar	39
4.	Gujarat	30
5.	Haryana	12
6.	Himachal Pradesh	9
7.	Jammu & Kashmir	21
8.	Karnataka	36
9.	Kerala	21
10.	Madhya Pradesh	69
11.	Maharashtra	54
12.	Manipur	9
13.	Meghalaya	9
14.	Orissa	33
15.	Punjab	15
16.	Rajasthan	21
17.	Tamil Nadu	33
18.	Tripura	9
19.	Uttar Pradesh	60
20.	West Bengal	39
TOTAL		**600**

Annexe 11. 4

Details of Price-Data Collected by States and Union Territories

State and UT	Price-Data	Periodicity
1	2	3
1. Andhra Pradesh	1. Retail prices of 64 essential commodities	Weekly
	2. Prices of 48 non-food items	Monthly
	3. Wholesale prices of 125 items of livestock, livestock products and feeds	Monthly
	4. Wholesale prices of 30 agricultural commodities	Monthly
	5. Prices of building material	Quarterly
	6. Farm harvest prices of agricultural commodities	*Kharif, Rabi*
	7. Daily agricultural labour wages from 66 centres	Monthly
2. Arunachal Pradesh	1. Retail prices of 85 essential food items	Fortnightly
	2. Retail prices of 82 non-food items	Monthly
	3. Prices of 12 essential commodities sold at Fair Price shops	Monthly
	4. Rates of service charges of 10 items from 12 markets	Quarterly
3. Assam	1. Urban and rural retail prices	Weekly/ Monthly
	2. Wholesale prices of food & non-food items	Weekly/ Monthly
	3. Prices of building materials	Quarterly
4. Bihar	1. Farm prices of all crops	Seasonal
	2. Retail prices of consumer items agricultural commodities	Weekly
5. Delhi (NCT)	1. Retail prices of 74 food and other items	Weekly
	2. Retail prices of 42 items	Monthly
	3. Wholesale prices of agricultural and other commodities	Weekly
	4. Building material rates and wage rates	Quarterly
6. Goa	1. Retail prices of essential items of food, fuel and light	Weekly
	2. Retail prices of items pertaining to middle class non-manual employees	Monthly
7. Gujarat	1. Wholesale and retail prices of selected agricultural items	Fortnightly
	2. Retail prices of six types of iodised and non-iodised salt	Monthly
8. Haryana	1. Retail consumer prices	Weekly/ Monthly
	2. Rural retail prices	Fortnightly
	3. Retail prices of essential commodities	Weekly
	4. Wholesale prices of agricultural commodities	Weekly
9. Himachal Pradesh	1. Retail prices of sixteen essential commodities	Weekly
	2. Wholesale and retail prices of selected commodities	Fortnightly
	3. Prices of livestock and poultry	Half-yearly

(Contd.)

State and UT	Price-Data	Periodicity
1	**2**	**3**
10. Jammu & Kashmir	1. Retail prices of essential commodities	Weekly
	2. Wholesale prices of agricultural commodities	Weekly
11. Karnataka	1. Prices of 20 selected commodities	Weekly
	2. Wholesale & retail prices of 110 agricultural commodities	Fortnightly
	3. Harvest prices of agricultural commodities	*Kharif*, *rabi* & summer
	4. Prices of building materials	Quarterly
12. Kerala	1. Wholesale prices of 38 agricultural commodities	Daily
	2. Retail prices of essential commodities	Daily & Monthly
	3. Retail prices of food items	Weekly & Quarterly
	4. Retail prices of agricultural commodities	Weekly
	5. Wholesale prices of coir and husk	Weekly
	6. Wholesale prices of agricultural commodities	Fortnightly
	7. Retail prices of farm products	Monthly
	8. Wholesale and retail prices of salt	Monthly
	9. Retail prices of essential non-food items	Monthly
	10. Retail prices of forest products	Quarterly
	11. Prices of building materials	Quarterly
	12. Retail prices of 1059 ayurvedic items	Annual
13. Madhya Pradesh	Wholesale prices of 290 agricultural commodities	Monthly
14. Maharashtra	1. Urban retail prices of 84 essential commodities from 31 centres	Weekly
	2. Rural retail prices of 59 essential commodities from 75 centres	Weekly
	3. Wholesale prices of essential commodities from 28 district HQs., and 10 chemical fertilisers from 30 centres	Fortnightly/ Monthly
	4. Retail prices of 30 important commodities from 59 centres	Monthly
15. Manipur	1. Retail prices of essential commodities and services from District HQs.	Monthly
	2. Retail prices of livestock and livestock products from district HQs.	Monthly
16. Meghalaya	Retail prices	Weekly/ Monthly
17. Mizoram	1. Retail prices of essential commodities, and prices of food and non-food items from urban towns	Weekly/ Monthly
	2. Retail prices of food and non-food items from Aizwal centre	Weekly
	3. Wholesale prices of 23 items from six urban centres	Monthly

(Contd.)

State and UT	Price-Data	Periodicity
1	2	3
18. Nagaland	1. Wholesale and retail prices of essential commodities	Weekly
	2. Rates of service charges from 9 centres	Weekly
19. Orissa	1. Rural retail prices	Fortnightly
	2. Farm harvest and wholesale prices of agricultural commodities	Weekly
	3. Prices of livestock and poultry	Monthly
	4. Prices of meat, egg and milk products	Fortnightly
	5. Prices of animal by-products	Quarterly
20. Punjab	1. Retail prices from all district HQs.	Weekly
	2. Retail price of 70 items for working class population	Weekly
	3. Retail prices of 82 items from six centres	Monthly
	4. Rural retail prices of 44 items from one village in each district	Monthly
	5. Wholesale prices of 49 commodities from 4 centres.	Weekly
21. Rajasthan	1. Retail prices of 49 essential commodities	Weekly
	2. Prices of building materials and wage rates of construction labourers	Quarterly
	3. Prices of livestock and livestock products of 61 items from 31 Dist. Hqs.	Weekly
22. Sikkim	NA	NA
23. Tamil Nadu	1. Wholesale and retail prices from 96 centres	Daily
	2. Wholesale prices from Chennai city	Monthly
	3. Wholesale and retail prices for Chennai city	Weekly
24. Tripura	1. Retail prices from Batala & Maharajganj	Weekly
	2. Retail and wholesale prices at sub-divisional HQs.	Fortnightly
	3. Rural retail prices from 168 markets	Monthly
25. Uttar Pradesh	1. Urban retail prices	Monthly
	2. Rural retail prices	Monthly
	3. Prices of building materials	Quarterly
26. West Bengal	1. Prices from Calcutta	Weekly
	2. Prices from 20 urban centres	Fortnightly
27. Lakshadweep	Prices of essential goods and services	Monthly
28. Dadra & Nagar Haveli	Farm harvest prices of agricultural commodities	Weekly
29. Daman & Diu	Retail prices of 97 commodities	Weekly
30. Andaman & Nicobar Islands	Retail prices for food and non-food items	Weekly
31. Chandigarh	None	None
32. Pondicherry	Wholesale and retail prices of important essential commodities	Weekly

Annexe 11. 5

Details of Price-Indices Compiled by States and Union Territories

State and UT	Price-Indices	Periodicity	Others indices
1	2	3	4
1. Andhra Pradesh	1. WPI of agricultural commodities Base : 1981-82	Monthly	IIP; Base1970; Monthly
	2. CPI(IW) for six centres; Base 1982	Monthly	
2. Arunachal Pradesh	None	None	None
3. Assam	1. WPI; Base 1953	Monthly	1. IIP; Base-1970; Annual;
	2. CPI(R) for Plains District; Base: 1944	Monthly	
	3. CPI (IW) for Digboi centres; Base: 1960	Monthly	2.Index no. of agricultural production;Base 1981-82; Annual;
	4. Index for farm harvest prices; Base 1970-71	Annual	
	5. Index number of parity between prices received and paid by farmers; Base 1944	Monthly	3. Index of Mineral production; Base 1970; Annual
4. Bihar	1. WPI for Agricultural commodities Base: 1991-92	Weekly	None
	2. CPI for Patna, Muzaffarpur and Dehri-on-Sone; Base 1939	Weekly	
5. Delhi (NCT)	None	None	IIP; Base `80-81; Quarterly
6. Goa	CPI; Middle class non-manual employees; Base 1982-83	Monthly & Quarterly	IIP; Base 1975; Quarterly/ Annual
7. Gujarat	Index numbers (Price relatives) for wholesale and retail prices for 8 selected agriculture items; Base 1970-71.	Monthly	IIP; Base 1970; Annual
8. Haryana	1. WPI of agriculture commodities; Base 1980-81	Monthly	1. IIP; Base 1985-86;
	2. CPI of essential commodities for rural sector; Base 1988-89	Monthly	2. Index number of agriculture production
	3. CPI(IW) for 6 centres; Base 1982	Monthly	
	4. Weighted index numbers of harvest prices of Agriculture commodities; Base 1980-81	Annual	
9. Himachal Pradesh	None	None	None

(Contd.)

10. Jammu & Kashmir	None	None	None
11. Karnataka	1. WPI for 33 agricultural commodities	Monthly	IIP; Base 1980-81; Annual
	2. CPI (IW) for 12 centres;Bbase 1987-88	Monthly	
	3. Price index (Rural & Urban); Base 1970	Monthly	
	4. Index numbers for farm harvest prices of 19 agricultural commodities. Base:1961-62	Seasonal	
12. Kerala	1. WPI for manufactured items of organised and un-organised sectors; Base 1952-53	Monthly	1. IIP
	2. CPI for 92 essential commodities Base : 1970	Monthly	2. Wage index of agricultural labourers
	3. Parity index of 45 agricultural commodities; Base 1952-53	Monthly	
14. Maharashtra	1. CPI (R); Base 1982	Monthly	None
	2. CPI (U); Base 1982	Monthly	
15. Manipur	Farm harvest price index of principal crops	NA	None
16. Mizoram	RPI for essential commodities	Monthly	None
18. Nagaland	CPI for 3rd and 4th grade government employees; base 1981-82	Monthly	None
19. Orissa	None	None	None
20. Punjab	1. WPI(Weighted/un-weighted) Base: 1979-80 to 1981-82	Monthly	1. IIP; Annual Base 1975-76;
	2. CPI(Working class); Base 1987	Monthly	2. Index for agricultural production
	3. Index for cost of construction of residential building	Quarterly	
21. Rajasthan	1. WPI for 22 centres in respect of 144 commodities; Base 1952-53	Weekly/ Monthly	IIP; Base 1970; Annual
	2. Index for building material and cost of Construction Base : 1971.	Quarterly	
22. Sikkim	NA	NA	NA
23. Tamil Nadu	1. WPI; Base 1970-71	Monthly	IIP; Base 1981-82; Monthly
	2. CPI(IW); Base 1982	Monthly	
	3. CPI(U) ; Base 1970-71	Monthly	
	4. CPI(R) ; Base 1970-71	Monthly	
24. Tripura	CPI (Middle Class) for Agartala; Base 1961	Monthly	None

(Contd.)

25. Uttar Pradesh	1. WPI; Base 1970-71	Quarterly	1. IIP; Base 1970-71; Quarterly
	2. CPI(U) & CPI(R); Base 1970-71	Quarterly	2. Index of wage rate for rural labourers; base; 1970-71
	3. Agricultural parity index of U.P.; Base 1970-71	Annual	3. Index; Cost of construction for Class IV employees; Base;1980-81.
26. West Bengal	1. WPI of agricultural commodities for Calcutta; Base 1980-81	Monthly	IIP; Base 1980-81 Quarterly
	2. CPI(U) for 21 urban centres including Calcutta; Base 1960	Weekly/ fortnightly	
27. Lakshadweep	CPI; Base 1975	Monthly	None
28. Dadra & Nagar Haveli	None	None	None
29. Daman & Diu	NA	NA	NA
30. A & N Islands	None	None	None
31. Chandigarh	None	None	IIP
32. Pondicherry	None	None	IIP; Base 1980- 81, Quarterly

Annexe 12.1

Data items in Fact Sheet of Non-Government Companies for the year, 1998-99

1. Company Name
2. Registration Number
3. Registered Office Address
4. Category
5. Industrial Activity Code
6. Authorised Capital
7. Paid-up Capital
8. Reserve & Surplus
9. Borrowings
10. Current Liabilities & Provisions
11. Gross Fixed Assets
12. Cumulative Provision for Depreciation
13. Capital Work in Progress
14. Land
15. Investments
16. Current Assets & Loans and Advances
17. Inventories
18. Cash in Hand
19. Bank Balance
20. Deferred Revenue Expenditure
21. Accumulated Losses
22. Sales/Turnover/Income
23. Other Income
24. Change in Stock
25. Compensation of Employees
26. Provision for Bad Debt
27. Depreciation
28. Interest Paid
29. Rent/Royalty
30. Profit Before Tax
31. Provision for Direct Tax
32. Profit After Tax
33. Dividend Paid
34. Net Addition to Reserve
35. Net Addition to Surplus
36. Earnings Per Share
37. Rate of Dividend

Annexe 12. 2

Data items included in CD-ROM

1. Company Name
2. Registration Number
3. Registered Office Address
4. Corporate Office (if any know)
5. Economic Activity Description
6. Economic Activity code (NIC)
7. Names of Directors on the Board and their Designations
8. Company Secretary
9. Auditors
10. Sales/Income/Turnover
11. Total Expenditure
12. Wages & Salaries Paid
13. Rent & Royalty Paid
14. Interest Paid
15. Profit Before Tax
16. Profit After Tax
17. Dividend Paid
18. Net Worth
19. Paid-up Capital
20. Reserves and Surplus
21. Current Liabilities & Provisions
22. Total Borrowings
23. Fixed Deposits
24. Public Deposits
25. Secured Loans
26. Unsecured Loans
27. Gross Fixed Assets and Net Fixed Assets
28. Net Fixed Assets
29. Investments
30. Net Current Assets
31. Inter-Corporate Investments
32. Miscellaneous Expenditure (to the extent not written-off)
33. Total Assets
34. Profit Margin
35. Return on Capital Employed
36. Share Holding Pattern
37. No. of Shares Bought Back
38. Amount Paid for In Buying Back of Shares
39. Auditors Qualification in Balance Sheets
40. Directors' Explanation if any

Annexe 12. 3

Balance Sheet Abstract & Company's General Profile

1. Name of the Company: _____

2. Corporate Identification No. (CIN)

3. Registration No. of Parent Company, if any:

4. Balance Sheet Date: (DD/MM/YY)

		/			/		

5. Accounting Period (No. of Months)

6. Capital Raised/Re-purchased during the year

Public	Rights	Bonus	Private Placement	Total (excl.GDRs)	Share Premium	GDR Issues	Buy-back

7. Sources & deployment of Funds

a. Liabilities:

Paid-up Capital	Reserves & Surplus	Secured Loans	Unsecured Loans	Current Liabilities & Provisions	Total Liabilities

b. Assets:

Gross Fixed Assets	Depreciation	Work-in-Progress	Investments	Current Assets	Misc. Expenditure	Total Assets	Revaluation

8. Foreign Assets & Liabilities

a. Liabilities	b. Assets
Direct Investment	Direct Investment
Portfolio Investment	Portfolio Investment
External Commercial Borrowing	Loans & Deferred Export Credit
Remittable Dividends	Dividends Receivable
Interest	Balances held Abroad
Technology Payments	Exports Proceeds not Realised
Other Liabilities	Other Assets
Total Liabilities	Total Assets

9. Performance of the Company & Appropriations

Raw Materials, etc.	Sale of Products/Services
Finished Goods	Other Income
Excise Duty	Total Income
Salaries, Wages, etc.	
Energy	Profit Before Tax
Research & Development	Corporate Tax
Technology payments, royalty etc.	
Advertisement, marketing etc.	Dividend Tax
Interest	Profit after Tax
Depreciation	Accrual for earlier years
Other Expenditure	Dividends
Total Expenditure	Retained Earnings

(Contd).

Balance Sheet Abstract & Company's General Profile

10. Generic Names of Five Principal Products/Services of the Company

Product/Service	Product/Service Code	Share in Turnover(%)

11. Employment

	Production	Managerial	Marketing/ Distn.	Finance & Admin.	R & D	Others	Total
Number							
Salaries, etc							

12. Director's Compensation:
a. Salaries & Perks: _____ b. Commission: _____ c. Share options: _____

13. Restructuring & Other Developments during the Year

Acquisition/Merger/Sale of Units	Y/N	Indirect Subsidiary of a Foreign Company/JV	Y/N
Change in Promoters of the Company	Y/N	Qualification of Accounts by Auditors	Y/N
Active Foreign Technical Collaborations	Y/N	New/Pending Environmental Litigations	Y/N
Acquisition of Patents (through in-house R&D)	Y/N	Criminal Proceedings against Company/ Directors	Y/N
Implementation of VRS, etc.	Y/N	Default on Repayment of Loans/Interest	Y/N
Strikes/Lockouts/Employee Unrest	Y/N	Initiation of Winding-up Proceedings	Y/N

14. Equity Shareholding Pattern (%Share)

Foreign Collabor-ator/ Parent	Other Foreign Share-Holders	Financial Institutions/ Indian VCFs	Mutual Funds	Banks	Other Corporate Bodies	Emplo-yees	Other Indivi-duals	Total	Promoters & Associates

15. Transactions in Foreign Exchange

Transaction Type	Exports / Imports		Dividends	Technology Payments, Royalties, etc.	Interest	Others	Total
	Total	To/From Affiliated source					
Receipts							
Payments							

12 CORPORATE SECTOR STATISTICS

12.1 CORPORATE SECTOR

Introduction

12.1.1 The growing importance of the Corporate Sector calls for greater transparency and availability of data. Furthermore, the withdrawal of direct regulatory functions by the Government such as industrial licensing, import licensing, capital issues and exchange controls means that a number of avenues of collection of data have ceased to exist while the need for them has grown for indicative planning, forecasting and research purposes. Finally, the onset of the knowledge-based sectors or the new economy requires better reporting standards of certain attributes to help monitor the national economic performance and to assess its future prospects.

Frame

12.1.2 The responsibility for collection, compilation, maintenance and dissemination of basic statistics on the Indian Corporate Sector is vested with the Department of Company Affairs (DCA). The registered companies are required to file certain documents and returns with the Offices of various Registrars of Companies (ROCs) under the provisions of the Companies Act, 1956. The most important of these are the Annual Reports and Balance Sheets of the companies and returns on share capital. Thus, the Corporate Sector Statistics maintained by the DCA are basically a by-product of the administration of the Companies Act. No regular or *ad hoc* surveys are conducted by the department to collect data on corporate entities.

12.1.3 According to the available information, there are 5.44 lakh companies registered with the Office of the Registrar of Companies (ROCs) as on 1 April 2000. Among them, 5.41 lakh companies are limited by shares and the remaining are either guarantee companies or companies with unlimited liabilities. During the last decade, on an average, around 34,000 new companies were added annually. A consolidated list of all the newly-registered companies in the year with their names, addresses, industrial activities and authorised capital is available month-wise. The distribution of companies by various categories such as Government and non-Government, public and private, State of registration and industrial activity is available. The capital raised by the existing companies is available on a quarterly basis. This set of data along with that available in the balance sheets of large-sized companies (companies with paid-up capital Rs. 50 lakh or more) is used as an input for estimating the total paid-up capital of the private Corporate Sector at the end of each financial year and to identify large-sized companies.

12.1.4 Fact sheets containing selected financial parameters culled out from the Balance Sheets and Profit and Loss Accounts filed by the companies in the respective ROC offices are generated for: (a) Large-sized non-Government companies, (b) Government companies, and (c) Indian subsidiaries of foreign companies. Besides, certain basic information is maintained on the branches of foreign companies, which have established their places of business in India. The number of financial parameters covered in the fact sheet for large-sized non-Government companies has been enhanced from the year 1998-99. A list of parameters covered is given in Annexe 12.1.

12.1.5 Data are available on companies liquidated and/or struck off under Section 560 of the Companies Act detailing the names, paid-up capital, industrial activity, State of registration, date

of liquidation, etc. Similarly, data on companies amalgamated or transferred from one State to another, and companies, which have changed their names, are also available on a monthly basis, and can be utilised in a suitable fashion.

12.1.6 Section 60 of the Companies Act, 1956, requires that the prospectuses issued by or on behalf of companies or in relation to companies inviting offers from the public and subscription or purchase of any share or debenture be delivered to the Registrar of Companies for registration. The prospectuses so registered in different ROC offices by non-Government, non-financial public limited companies are analysed and company-wise database created annually indicating the number of equity shares and preferential shares or debentures set aside for the public, existing shareholders, promoters, directors and associates, Non-Resident Indians (NRIs), foreign collaborators, financial institutions, banks, employees, mutual funds, underwriters and proprietors. Further, these prospectuses are analysed with reference to the cost of the project and its means of finance through public equity share capital, reserves and surpluses of the company, subsidies, debentures and bonds, deferred payment and loans from various financial institutions such as Industrial Development Bank of India (IDBI), Industrial Financial Corporation of India (IFCI), Industrial Credit and Investment Corporation of India (ICICI), Unit Trust of India (UTI), Life Insurance Corporation (LIC), State Financial Corporations (SFCs) and State Industrial Development Corporations (SIDCs), Banks, General Insurance Corporation (GIC) and insurance companies, promoters, directors and friends and others. This database created from the prospectuses is used by the Reserve Bank of India (RBI) for further analyses and studies.

12.1.7 The Department of Company Affairs has signed a Memorandum of Understanding with the Centre for Monitoring Indian Economy (CMIE) to bring out important Corporate Sector Statistics on CD-ROM as well as in book form, retrieving information from balance sheets, profit and loss accounts and other relevant documents of public limited companies from the year 1998-99 onwards. Items included in the CD are listed in Annexe 12.2. The CD-ROM contains information pertaining to roughly one-third (about 25,000) of the total number of public limited companies. Subsequently, the scope of the Memorandum has been extended to cover private limited companies also.

Strengths and Weaknesses

12.1.8 There are more than five lakh companies registered in the ROCs but the actual number of companies, which are operating, is not known. This situation seriously affects the reliability of various estimates. An exercise conducted in March 1999 indicated that about 47 per cent of the registered companies filed their balance sheet for the year 1997-98 with the ROCs. RBI studies on Company Finances are based on the annual reports and balance sheets of certain sample companies. In the absence of a reliable population frame, the RBI is not in a position to apply suitable sampling techniques. Further, the RBI is also constrained by the poor response from companies and non-receipt of annual reports directly from the ROCs. The RBI's findings are thus based mainly on the data of responding companies and the Fact Sheets prepared by the DCA. The reliability of the estimates of gross savings and investment in the private Corporate Sector arrived at by blowing up the sample results available from the RBI's studies in proportion to the coverage of the paid-up capital (PuC) of the sample companies to the PuC of all companies has been questioned time and again.

12.1.9 It is necessary that the DCA ensures supply of the company Annual Reports to the RBI. Furthermore, there should be no objection to the DCA supplying such Reports to private parties provided that, (a) wide dissemination, and (b) authenticity and reliability in use are ensured. All organisations that satisfy the above two requirements should have access to the same facility. These conditions could be incorporated in arrangements between the DCA and private parties.

12.1.10 The Working Group under Dr. Arun Ghosh on Modernisation of Indian Statistical System strongly recommended a one-time census of all genuine and operating companies to identify all bogus companies for de-registration. According to the group, the law may need an amendment and perhaps an Ordinance may be passed initially, followed by a Bill for presentation to Parliament, to enable this. Corporate winding up is a long-drawn procedure at present, but if the law provides for the disposal of assets and liabilities, there could occur a massive 'cleaning-up' operation. The Working Group also recommended that after a grace period of 3 months, any company which does not submit its accounts for the previous year be 'de-registered', and the fact be properly notified.

New Initiatives

12.1.11 The DCA has recently introduced a scheme of assigning a unique 21-digit Corporate Index Number (CIN) for registration of companies. The CIN has been designed to help easily identify or group the companies by State, industry (whether listed or not), economic activity, ownership and year of incorporation and will be applicable to all companies registering themselves from 1 November, 2000. The older companies will also be given the new registration number subsequently. All the Registrars of Companies (ROCs) will be brought under a network to facilitate the monitoring of the submission of various documents under the Companies Act. This facility will enable the identification of defunct companies, once the complete database is prepared. As computerisation is being introduced in a phased manner, the availability of the database is likely to take some time.

12.1.12 Another initiative undertaken by the DCA is the introduction of an amnesty scheme, "Company Law Settlement Scheme" (CLSS) giving an option to defaulting companies to file their requisite documents, by paying a lump-sum fee. As an offshoot of CLSS, the DCA has initiated a fast track exit route for de-registration of the defunct companies and has also waived some of the conditions.

12.1.13 There is a need to have a proper system of entering the information from the Annual Reports and Balance Sheets, in respect of a minimum set of variables required for the purposes of monitoring the frame, policy formulation and economic trend analysis. For this purpose, necessary statutory provisions, if required, may be put in force, apart from identifying an organisation from DCA, RBI, Security and Exchange Board of India (SEBI), etc. which can be entrusted with this responsibility. Suitable strengthening of statistical personnel wherever required may be provided. It is imperative to have a suitable fallback mechanism in the ROCs for administering the Act and monitoring the frame.

Recommendations

12.1.14 The Commission, therefore, recommends that:

(i) A one-time census of all registered companies to create a frame by eliminating closed down and defunct companies should be conducted. This will also facilitate the estimation of population parameters.

(ii) The Registrars of Companies (ROCs), vested with the responsibility of allotting the Corporate Index Number (CIN), should monitor the submission of Annual Reports rigorously for a proper implementation of the Act and for purposes of annual updation of the frame as well as improvement of the database.

(iii) In the long run, this process of assigning CINs along with updation in respect of closed down and defunct companies would result in a complete frame. It should be made compulsory through the provisions of the Companies Act to mention the unique code (CIN) in all returns submitted by the companies.

(iv) Since some attributes, like listing status, ownership, industrial activity and State of registration are likely to change over a period of time, the CIN should take into account the likely changes in these attributes with the passage of time, to maintain the continuity in information at the individual company level.

(v) The procedure of de-registration should be simplified by incorporating suitable provisions in the Companies Act.

(vi) At present, the DCA or ROCs are not processing the information contained in the Annual Reports and Balance Sheets. They should be entrusted with the responsibility of processing and dissemination of information in respect of a set of variables for monitoring and policy formulation. To accomplish these tasks, suitable strengthening of the statistical personnel should be provided.

(vii) The DCA should also ensure that annual reports of companies required by RBI whether listed, deemed or private limited are available to RBI so that further detailed analysis can be conducted. A mechanism for smooth supply of annual reports of all companies, both public limited and private limited, and both listed and non-listed, should be mutually agreed upon by the DCA and RBI.

12.2 STANDARDS OF DISCLOSURE/REPORTING

12.2.1 The Companies Act, 1956, provides the broad framework of disclosure in the Corporate Annual Report. The format and disclosure requirements have not changed since their amendment in the 1970s. Some of the Indian companies that are tapping the international capital markets are also required to present their accounts as per the US GAAP (Generally Accepted Accounting Principles), which are more transparent and detailed compared to disclosure norms under the Indian Companies Act. The format and contents of Annual Reports of Indian companies may need to be rationalized and recast in view of increasing global integration of capital markets and information needs. Due to non-uniform treatment of various items by companies, the various sources of data on the private Corporate Sector often offer grossly varying estimates of crucial parameters. Unless this problem is addressed, standardisation will have little meaning.

12.2.2 The disclosure norms defined in the Companies Act may be refined to cover the following variables in view of the current trends of globalisation and knowledge-based development:

(a) **Employment**: An important lacuna of the existing norms of disclosure is that companies are not required to report the number of persons employed by them. Number of employees and their functional composition (e.g. production, marketing and sales, administration and finance, research and development (R&D), etc.) needs to be reported. A similar functional break-up of employee compensation may also be provided. Although disclosure of employment has been included in the SEBI's Code on Corporate Governance, the Code is applicable only to stock-exchange-quoted companies. To bring in uniformity, all the companies should be required to report this information.

(b) **Certain Important Heads of Expenditure**: Certain heads of expenditure such as R&D expenditure and advertisement expenditure are required to be reported only if they exceed one per cent of the sales turnover. Hence, many companies, in spite of spending a considerable sum on R&D, choose not to report it, as it is within one per cent of their turnover. While this information is reported as part of the Directors' Report, it often does not find a place in the profit and loss account. It is important that such heads of expenditure are reported irrespective of their proportion due to their importance in the knowledge-based and competitive economy. Furthermore,

R&D expenditure should be broken up into capital and current expenditure. As is the current practice, the Directors' Report should continue to summarise the focus of R&D activity and notable achievements including the attempts towards absorption of imported technology. In addition, it should require the companies to report any patents obtained in India and abroad.

(c) **Overseas Operations**: Although exports are required to be reported, sales through overseas affiliates is not. Under Section 212 of the Companies Act, 1956, companies are required to provide profit and loss accounts of their subsidiaries (including overseas ones). However, the activities of joint ventures and other affiliates are not available. Overseas investments are important channels of globalisation of a company's operations. Hence, a portion of the Annual Report needs to be devoted to overseas operations providing details of exports (their break-up into exports to related companies and others, important markets, etc.), identifying foreign affiliates of the reporting company in different countries and their sales. Similarly, data on imports should be broken up into imports from affiliated sources (such as foreign parents or associates in the case of Foreign Direct Investment (FDI) companies) and others.

(d) **Foreign Collaboration and FDI**: The reporting company should, in a single block, provide information on the foreign collaborations entered into by it and those currently in force. This will cover the name of the collaborator and country, date of agreement, products and technologies covered in the collaboration, foreign equity involved if any, official approvals, period of validity of the agreement, and the status of implementation. This information will help in reconciling the foreign collaboration approvals and their implementation. Currently, very little follow-up is possible after a foreign collaboration is approved by the Government. Finally, total foreign ownership in the company along with its detailed break-up between foreign collaborators, foreign institutional investors, foreign nationals, non-resident Indians, overseas corporate bodies (OCBs) owned by NRIs, etc. needs to be reported. At present, the extent of foreign ownership is disclosed only to the extent dividend is to be remitted abroad in the reporting year. Given the growing importance of FDI in the globalising Indian economy, this information has become vital.

(e) **Foreign Assets and Liabilities**: Periodical surveys of India's foreign liabilities and assets are conducted by the RBI. The relevant particulars are sought from the identified corporate units along with a copy of their balance sheet. Non-response is said to be one of the problems faced in conducting these surveys. In this context, there is a need to strengthen the secondary data sources for filling in the response gap. One such major secondary source is the balance sheet of the companies. The balance sheet, however, does not explicitly state the foreign component either in the sources or in the application of funds. If the balance sheet shows explicitly the figures of foreign participation in equity capital and borrowings and also those of assets held abroad, and of loans and advances to foreign parties and investments made abroad, it would immensely help to improve the coverage of the census and surveys, as such data can be substituted for missing information pertaining to the non-responding companies. Repatriability details that are taken relating to the non-resident components may be incorporated in the appropriate schedules.

(f) **Capital Issues**: With the repeal of the Capital Issues Control Act, the availability of official data on capital raised by companies from the market has become tentative. One has now to rely on private agencies without knowing their reliability. Hence, companies may be required to indicate capital raised during the reporting period, separately indicating share premia, in their Annual Reports. In case of capital issues

by listed companies, close cooperation should be established between SEBI, DCA and RBI.

(g) **Mergers and Acquisitions**: The process of liberalisation is leading to industrial restructuring in the country. Hence, a large number of mergers and acquisitions (M&As) of companies and sales and purchases of industrial units are taking place. It is important that Annual Reports provide information on the acquisition of a substantial interest in another undertaking, or acquisition of a substantial interest in the reporting company by another group or company. If the acquirer happens to be an existing shareholder of the company, then the total shareholding after the additional acquisition should also be reported. Although SEBI has a Take-Over Code, a large number of M&A deals do not come under its purview either because they involve unlisted companies or because the acquisition is a result of an overseas M&A between the foreign parents of the companies concerned. There is need for a more systematic and purposive reporting on the M&A activity in the Indian Corporate Sector. This information would especially be useful in the implementation of the Competition Policy. Details relating to valuation of M&A should also be furnished in full.

(h) **Shareholding Pattern**: The present format for reporting the shareholding pattern needs to be modified to reflect the ownership and control characteristics better. Given the level of aggregation and classification, it is not possible from the present format to identify controlling interests and their stake in the risk capital. Shareholding of controlling interests should be identified separately in each of these categories namely, foreign shareholding, inter-corporate investments and individual shareholders. It could conveniently be presented in the form of a short table, which gives the controlling and non-controlling interests in each of these categories. This is in addition to what is presently being reported under the Shareholding of Directors and Their Relatives. The foreign shareholding should be reported separately for foreign collaborators, foreign nationals, holders of American Depositary Receipts (ADRs) and Global Depositary Receipts (GDRs), foreign institutional investors, Non-Resident Indians, etc. as indicated earlier.

(i) **Directors' Report**: In addition to the other items, the Directors' Report could provide a statement on major litigations relating separately to taxes, duties, labour, company law, environment, etc. and the directors in their personal capacity.

Standardisation of Format: Balance Sheet Abstract (BSA)

12.2.3 In order to facilitate electronic processing of the Annual Report data, the reporting format needs to be redesigned and standardised. For this, various formats for data collection issued by the Bureau of Economic Analysis (BEA) of the US Department of Commerce may provide a useful guide.

12.2.4 The Balance Sheet Abstract (BSA) serves a useful function of providing summary information in a form suitable for Electronic Data Interchange (EDI). It may facilitate the task of periodic entering of data on key variables for the entire Corporate Sector. One major problem with the present BSA format is that it does not enable direct and easy computerisation of the data. It does not enable automatic verification of certain financial data. It does not have even the number of months to which the report refers. As a result, direct comparisons could lead to misleading conclusions (say, the sales of a company whose accounting period was extended to 18 months and that of a company which closed accounts in 12 or 9 months). Comparisons based on BSA can also be misleading because of lack of uniformity in the concepts followed by different companies (e.g., inclusion or exclusion of excise duty when reporting sales). Nor can one get the total assets as the current assets are reported net of current liabilities and provisions. While major

products are reported, their relative importance for the companies is not available in the BSA. Companies also do not know which coding pattern to follow in case of services.

12.2.5 Besides removing these deficiencies, the BSA could be expanded slightly to facilitate availability of timely and relevant aggregates for the Corporate Sector. Some qualitative response variables (Yes or No type) could be added to facilitate a purposive sorting of companies. While there could be a case for not increasing the size of the Annual Report, it needs to be underlined that the design of the report plays a major role in determining the size of the Annual Report. A suggested format for the BSA, which does not significantly increase the size of the Annual Report, is given in Annexe 12.3.

Recommendations

12.2.6 The Commission, therefore, recommends that:

(i) The minimum list of variables to be added in the Annual Report or Balance Sheet along with the format of Balance Sheet Abstract (BSA) should be finalised by the Department of Company Affairs (DCA) in consultation with the concerned agencies such as the Reserve Bank of India (RBI), the Securities and Exchange Board of India (SEBI), the Central Statistical Organisation (CSO), etc.

(ii) A standard format should be formulated for uniform and timely reporting of data and to facilitate electronic processing.

12.3 INSTITUTIONAL ARRANGEMENT FOR NON-LISTED COMPANIES

12.3.1 Information on a number of Listed Companies is accessible through Bombay Stock Exchange Official Directory, CMIE's PROWESS, Capital Line 2000, etc. It should be underlined that even these sources do not cover the entire listed segment possibly due to non-availability of Annual Reports, cost considerations and heavy emphasis on companies attracting the investor's interest. For instance, while there are a little less than 10,000 listed companies as per SEBI, the number of companies for which some minimum financial data are available in PROWESS for the years 1996-97, 1997-98 and 1998-99 ranges between 5,000 and 6,000 (including foreign banks and some unlisted companies). If one wishes to study a common sample for all the three years, the number falls to a little less than 4,000. The number of companies shrinks further if a longer period is considered. Indeed, data on all the listed companies is not available from any single source. Even more problematic is getting the information on closely-held Public Limited Companies and Private Limited Companies. Further, in the liberalized Foreign Direct Investment (FDI) regime, a number of companies, even though possessing a substantial turnover and scale of operations, do not get listed and operate as closely-held companies. The passenger car and household appliances industries offer excellent examples in this regard. Detailed data on the operations of many important companies in these industries remain virtually inaccessible to policy planners, researchers and industry analysts. There is a need to define a new criterion to identify important companies that may be treated as deemed widely-held irrespective of their listing on the stock exchange, as is being practised in the US, and therefore suitable for detailed disclosures.

Recommendations

12.3.2 The Commission, therefore, recommends that:

(i) Companies having assets or sales over, say, Rs. 50 crores (on the lines of deemed public company in the Companies Act), or having a market share of over 10 per cent in a particular market segment, or those with controlling foreign interest should be brought under some legal obligations to provide for necessary disclosure of annual reports and their accessibility to the public. Such transparency with regard to reporting and disclosure requirements should be adequate, even if not necessarily on par with listed companies.

(ii) The DCA should have the primary responsibility of bringing out basic statistics in respect of such companies.

13 NATIONAL ACCOUNTS STATISTICS

13.1 EXISTING PUBLICATION OF NAS AND ITS RELEASES

Nature of National Accounts Statistics

13.1.1 The system of National Accounts Statistics (NAS) consists of a coherent, consistent and integrated set of macro-economic accounts - current and accumulation accounts, balance sheets and tables based on agreed concepts, definitions and accounting rules. From the stage of production of goods and services to the stage of their final disposal, innumerable transactions take place. National Accounts help us to understand in a nutshell how these various transactions are inter-related and give us an idea of the working of an economy. The NAS are compiled to meet the needs of Government, private analysts, policy makers and decision takers. The major use of the NAS is to assess how a country's economy is performing over time. These data are immensely useful for the purpose of building-up macro-economic models for projecting long and short-term expectations about future prospects. The Gross Domestic Product (GDP), which is the value in monetary terms of all goods and services produced in the economy in a given period of time, is the most important macro-economic aggregate of National Accounts. It is also used as a denominator for the estimation of rates of saving, capital formation, fiscal deficit, current account deficit, interest payments, expenditure on various social sectors, to name a few.

13.1.2 The Central Statistical Organisation (CSO) in the Ministry of Statistics and Programme Implementation (MoSP&I) is responsible for the compilation of NAS. At the State level, State Directorates of Economics and Statistics (DESs) have the responsibility of compiling there State Domestic Product and other aggregates.

13.1.3 The statistics that are released by the CSO and the State DESs relate to various macro-economic aggregates of the Indian economy. The aggregates compiled and released (at current and constant prices) at annual periodicity by the CSO include gross and net domestic product by economic activity, consumption, saving, capital formation and capital stock, public sector transactions and dis-aggregated statements, as well as the four consolidated accounts of the nation namely, (a) Gross Domestic Product and expenditure, (b) National Disposable Income and its appropriation, (c) Capital Finance; and (d) External transactions. The CSO also releases the quarterly GDP estimates on the last working day of each quarter, the estimates pertaining to the previous quarter. In addition to these macro-aggregates, the CSO compiles and releases the Input Output Transaction Table (IOTT) at a periodicity of 5 years and the State-wise and crop-wise value of the output of agricultural crops at an *ad hoc* periodicity. The CSO also maintains the database on Gross and Net State Domestic Products, by industry, which is compiled by the State DESs.

13.1.4 The NAS are compiled by the CSO, following the recommendations and guidelines enunciated in the United Nations System of National Accounts (UN-SNA). Recommendations of the latest UN-SNA 1993 are being incorporated into the NAS to the extent permitted by the data system. The base year revisions and changes in the database and methodology of the series of National accounts are effected by the CSO with the consent and approval of the Advisory Committee on National Accounts, which is chaired by an eminent economist from a Non-Governmental Organisation and consists of members from both Government and non-Government institutions and research bodies. The CSO revises the base year of the NAS series,

periodically, utilising the work-force estimates available from the Population Census and the quinquennial surveys on employment and unemployment conducted by the National Sample Survey Organisation (NSSO). At the time of the revision of base years, the CSO undertakes a large-scale review of the methodology adopted and the current database that is available on various economic activities of the country.

Current Status of National Accounts Statistics

13.1.5 The CSO released the current series of NAS with 1993-94 as Base Year, in February 1999. This series was introduced after a comprehensive review of the database as well as the methodology employed in the estimation of various aggregates. It also involved a number of revisions arising out of conceptual and methodological improvements as well as use of the latest available data. Details of the revisions and methodology adopted are published in the publication of CSO (1999), "New Series on NAS: Base Year 1993-94". The previous series of NAS had 1980-81 as the base and was released in the year 1987. Base Years have been revised periodically by the CSO in the past, starting from 1948-49 to 1960-61 and 1970-71.

Annual National Accounts Statistics

Advance estimate of National income and its update

13.1.6 The first estimates of the Annual National Income for a reference year are released by the CSO, about two months before the close of the year, in the form of Advance Estimates (AE) of National Income. These estimates present at both current and constant prices and at factor cost, the Gross National Product (GNP), Net National Product (NNP), Gross Domestic Product (GDP), Net Domestic Product (NDP), and Per Capita Income (Per Capita Net National Product at factor cost) by industry. These estimates are subsequently revised and released on the last working day of June, i.e. with a lag of three months, as updates of advance estimates. The AE are compiled using the methodology evolved by the CSO which is similar to the methodology adopted for the Quick Estimates (QE) and are based on anticipated agricultural production and industrial production, analysis of budget estimates of Government expenditure and performance of key sectors like railways, communication, banking and insurance, available at that point of time.

Quick Estimates of National Income and related aggregates

13.1.7 Quick Estimates of NAS and the Revised Estimates of the earlier years are released by the CSO utilising the available data of various sectors provided by the statistical system, in the month of January or February of the following year (with a 10-month lag). Along with the Quick Estimates for the previous financial year, estimates for the earlier years are also revised using the detailed data supplied by various source agencies.

Annual Publication of National Accounts Statistics

13.1.8 The detailed methodology employed in the compilation of NAS and the data sources used are given in the CSO publications: (a) National Accounts Statistics- Sources and Methods, 1989, and (b) New Series on National Accounts Statistics: Base Year 1993-94, 1999.

13.1.9 The annual NAS are released by the CSO in its annual publication, "National Accounts Statistics". This publication follows the Press Note on "Quick Estimates of National Income, consumption expenditure, saving and capital formation". The NAS publication is divided into 5 parts.

Part-I: Macro-economic Aggregates

13.1.10 Macro-Economic Aggregates present the summary statements of macro-economic aggregates (GDP, NDP, GNP, and NNP at factor cost and market prices, indirect taxes less

subsidies, Consumption of Fixed Capital, Net National Disposable Income, Personal Disposable Income, Private Final Consumption Expenditure (PFCE) in the domestic market, Government Final Consumption Expenditure (GFCE), exports and imports, Gross Domestic Capital Formation, Net Domestic Capital Formation and Savings) and their inter-relationships, growth rates, implicit price deflators, consolidated accounts of the nation (GDP and Expenditure, National Disposable Income and its appropriation, Capital Finance and external transactions) and performance of the public sector.

Part-II: Domestic Product

13.1.11 The part of NAS entitled `Domestic Product' presents statements on GDP and NDP by sector of origin or by economic activity (agriculture, forestry and logging, fishing, mining and quarrying, registered and unregistered manufacturing, electricity, gas and water supply, construction, trade, hotels and restaurants, railways, transport by other means, storage and communication, banking and insurance, real estate, ownership of dwellings and business services, public administration, defence and other services), along with the percentage distribution and growth rates.

Part III: Consumption, Saving and Capital Formation

13.1.12 Consumption, Saving and Capital Formation provides the estimates of PFCE, (compiled by 161 commodity groups, but presented in the NAS by about 38 commodity groups, the broad groups being, food, beverages and tobacco, clothing and footwear, gross rent, fuel and power, furniture, furnishing, appliances and services, medical care and health services, transport and communication, recreation, education and cultural services and miscellaneous goods and services. The PFCE estimates are also presented by type of goods namely, durable goods, semi-durable goods, non-durable goods, services, direct purchase abroad by resident households and direct purchase in the domestic market by non-resident households and extra territorial bodies.

13.1.13 Gross Domestic Savings is presented by type of institutions namely, households, private corporate and public sector. The Household Sector Savings is presented separately for Financial Savings (in the form of changes in currency, net deposits, shares and debentures, net claims on Government, life insurance funds, provident and pension funds) and savings in the form of physical assets comprising construction and machinery and equipment. Private Corporate Sector Savings is presented separately for the components of non-financial and financial joint stock companies and co-operative banks and societies. The Public Sector Savings is presented separately for Government Administration, Departmental Commercial Undertakings (DCUs), Non-Departmental Commercial Undertakings (NDCUs) – Government companies and statutory corporations. Consumption of Fixed Capital (CFC) and Net Domestic Savings are also presented separately for the three types of institutions namely, public, private corporate and household.

13.1.14 The estimates of Capital Formation comprising Fixed Capital Formation and Change in Stocks are presented by type of assets (separately construction, machinery and equipment) and by type of institutions, i.e. public, private corporate and household sectors. Estimates of Capital Formation are also presented (at current and constant prices) by industry of use.

13.1.15 The estimates (separately at current and constant prices) of Net Fixed Capital Stock (NFCS), inventory and Net Capital Stock are presented by type of institutions namely, public sector – separately for administrative departments, DCU and NDCU, private corporate sector – separately for joint stock companies and co-operative banks, societies, and the household sector. The estimates (separately at current and constant prices) of NFCS, Inventory and Net Capital Stock are also given by industry of use in this part.

Part-IV: Public Sector Transactions

13.1.16 'Public Sector Transactions' deal, besides details of the Public sector component of aggregates like GDP and NDP (by type of institution and economic activity), GFCE (by purpose), Savings, Capital Formation; this part also presents the economic accounts separately for administrative departments, Departmental Commercial Undertakings (DCUs) and Non-Departmental Commercial Undertakings (NDCUs). Estimates of Factor Incomes, i.e. compensation of employees and operating surplus of the public sector by economic activity and type of institution are also presented. Thus information is presented in a three-fold classification namely, by factor incomes, by economic activities and by type of institutions. Property incomes namely, components of rent, interest and Financial Intermediary Services Indirectly Measured (FISIM) in public sector are also presented by type of economic activity and type of institution.

13.1.17 This part gives data on the NDP of the public sector separately for Central Government and State Government (separately for each of the States), local authorities and quasi-Government bodies. GDP from the public sector is presented at current and constant prices, separately by type of economic activity and type of institution. Similar, information is also given for the NDP.

13.1.18 The Final Consumption Expenditure of the administrative departments are given separately for the expenditures on compensation of employees, net purchase of commodities and services separately by the Central Government, State Government and local authorities.

13.1.19 Item-wise details of Domestic Saving, Gross Capital Stock, and Net Domestic Capital Formation in the public sector are provided in the same details for the economy as a whole. Capital formation in the public sector is also presented by type of assets namely, buildings, roads and bridges, other construction works, transport equipment, machinery and equipment, change in stocks and CFC separately for the institutions namely, administrative departments, DCU and NDCU. The estimates of net capital stock in the public sector are presented in the same detail as for the economy as a whole, mentioned earlier. Another important area in the public sector transaction is the details of expenditure of the administrative departments by economic and purpose classification. The economic classification categories are the current expenditure separately on consumption expenditure, subsidy, current transfers to local bodies and other current transfers in capital expenditure, the gross fixed capital formation, change in stock, net investment in stock, capital transfers to local bodies, other capital transfers, loans and advances to local bodies and loans and advances to the domestic sector. The categories of the purpose classification provided for in the tabulation of the expenditure of administrative departments are: General Public Services – separately on general administration, regulation, and general research, Defence, Education – separately on "administration, regulation and research" and on schools, universities and institutions; Health – separately of administration, regulation and research, hospitals, clinics and health services; Social Security and Welfare Services; Housing and other amenities; Cultural recreational and religious services; Economic services separately on (a) general administration regulation and research; (b) agriculture, forestry and fishing; (c) mining, manufacturing and construction; (d) electricity, gas and water supply; (e) atomic energy; (f) transport and communication; (g) other economic services, Other services – separately on relief on calamities and other miscellaneous services.

13.1.20 GFCE is also presented by purpose classification where Government includes both Central and State Governments. The Consumption Expenditure of local bodies is however, excluded in this tabulation as their details is not available. This part also gives the details of the production account separately for railways and communication, departmental enterprises other than railways and communication and producers of Government services. Income and Outlay Accounts are given separately for railways, communication and administrative departments

including departmental enterprises other than railways and communications. Capital Finance Accounts are given separately for railways, communication and administrative departments including departmental enterprises other than railways and communication. The Production Account of non-departmental enterprises as a whole, non-departmental non-financial enterprises and non-departmental financial enterprises are given separately. The Income and Outlay Account of non-departmental non-financial enterprises and non-departmental financial enterprises are given separately. Similarly, the Capital Finance Account of non-departmental non-financial enterprises and non-departmental financial enterprises are given separately.

Part-V: Disaggregated Statements

13.1.21 'Disaggregated Statements' presents detailed disaggregated statements at the crop/item/category level. The statements include the details of value of output, input and value added for each type of economic activity. Thus the details provided under agriculture relate to the value of output of each of the crops as well as various livestock products and the total inputs used in the sector by items. Under mining and quarrying, the details provided relate to the value of output and inputs of major minerals and minor minerals with further disaggregation of major minerals into fuel minerals, metallic minerals and non-metallic minerals. The nature and extent of disaggregated data vary from industry to industry depending on the availability of information and procedure of estimation. Besides, disaggregated estimates, in respect of savings, relate to financial assets and the liabilities of the household sector. Capital Formation by type of assets and by type of institutions and external transaction accounts are also presented in this part.

Factor Incomes

13.1.22 The publication NAS also presents the factor incomes and property incomes by organised and unorganised sectors and by economic activity. The details of factor incomes provided refer to compensation of employees, operating surplus (in the case of organised sector) and mixed income (in the case of unorganised sector). The details of property incomes provided refer to rent, interest and Financial Intermediary Services Indirectly Measured (FISIM) (earlier referred to as imputed bank charges). Estimates of factor incomes are presented at current prices only.

Notes on Methodology

13.1.23 The publication presents at the end, a section of Notes on Methodology, which provides information on the revisions in the estimates indicating broadly the changes in the methodology and new source material used, for the benefit of the users.

Special Statements

13.1.24 In addition to the regular statements, special statements are included in the publication to provide from time to time, data on such aggregates/components which are either not of regular nature or which are presented for the first time or which refer to the back year estimates of the current series. Sometimes, memorandum items are also presented in the form of special statements. Special tables are also included from time to time on an *ad hoc* basis.

Releases of National Accounts Aggregates

13.1.25 The CSO releases various estimates of GDP and other related aggregates for a particular reference period at different points of time, utilising the data available at those points of time. While the Quarterly GDP estimates are released with a lag of one quarter, the AE of annual National income are released about 2 months before the close of the year. These AE are subsequently revised and released along-with the 4th quarterly estimates of GDP on the last working day of June, i.e. with a lag of 3 months. The Quick Estimates (QE) of National Income, Consumption Expenditure, Saving and Capital Formation are released generally in the month of

January or February of the following year (with a 10-month lag) utilising the latest available detailed data of various sectors provided by the statistical system. Along with the Quick Estimates, the estimates for the previous years are also revised and released simultaneously. Revisions in the quarterly GDP estimates continue together with the corresponding annual estimates. The annual estimates undergo revision for about two to three years after the release of QE. It has been seen that the extent of revision after 3-4 years is only minimal.

Table 13. 1: Sector-wise position of data for estimates for the same year

Sector	Advance Estimate	Quick Estimate	Revised Estimate-1	Revised Estimate-2	Revised Estimate-3
(a) Agriculture, Forestry and Fishing	Advance Estimates of *kharif* agriculture production. Limited data on *rabi* sowings. Quarterly estimates of fish production	Revised Estimates of agriculture production on principal crops. Provisional data on forestry and fishing. Estimates compiled at All-India level	Final Estimates of agriculture production. Forestry and fishing estimates compiled at state level. State level price data partially available	Land utilisation statistics. Data from cost of cultivation studies. Estimates discussed with States and finalised.	Land utilisation statistics and data from cost of cultivation studies, if not available in the previous year
(b) Mining	Production of coal, crude petroleum and IIP (Mining) for 8 months	Provisional data on quantity and output from IBM and inputs/ output from Coal India Ltd./ Tata Iron & Steel Company Pvt. Sector (TISCO)	Revised data on quantity and output and inputs from IBM and inputs /output from Coal India Limited (CIL) / TISCO / Pvt. Sector. Inputs from Oil & Natural Gas Commission (ONGC) / Oil India Limited (OIL)	Data on minor minerals, after being finalised with States.	Data on inputs, if not available earlier
(c) Manufacturing	IIP for 8 Months	IIP	Provisional ASI results	Final ASI results	Final ASI results, if not available in the previous year
(d) Electricity, Gas and Water Supply	Index of electricity and budget estimates of expenditure of Centre and States	Annual reports of Central under-takings and some of the State under-takings for electricity; revised estimates of expenditure of Centre and States for water public sector.	Annual reports of Central and state undertakings for electricity; actual estimates of expenditure of Centre and States for water public sector; data from GAIL, M/o Non-Conventional Energy, KVIC and Municipalities	Reports/data if not available in the previous year	Reports/data if not available in the previous years

Sector	Advance Estimate	Quick Estimate	Revised Estimate-1	Revised Estimate-2	Revised Estimate-3
(e) Construction	Production data for 8 months on cement, steel, coal, IIP (metal and wood products)	Production data for 12 months on cement, steel, coal, IIP (metal and wood products), budget documents (revised estimates)/ annual reports	Budget documents (actual estimates)/ annual reports	Reports not available in the previous year	Reports not available in the previous year
(f) Trade	Gross trading index compiled on the basis of the output of commodity producing sectors	Budget documents (revised estimates)/ annual reports; enterprise survey results, if available	Budget documents (actual estimates)/ annual reports, provisional data on Pvt. Corporate sector; enterprise survey results	Reports not available in the previous year; data on Pvt. Corporate sector; enterprise survey results, if available	Reports not available in the previous years; enterprise survey results, if available
(g) Hotels and Restaurants	-do-	-do-	-do-	-do-	-do-
(h) Railways	Data for 8 months on net tonne kms. and passenger kms.	Annual railway budget (revised estimates)	Annual railway budget (actual estimates)		
(i) Other Transport	Data for 8 months on production of commercial vehicles, cargo handled at major ports and net tonne kms. /passenger kms. in the case of air transport	Budget documents (revised estimates)/ annual reports; enterprise survey results, if available and cargo handled in major ports	Budget documents (actual estimates)/ annual reports; enterprise survey results, if available and number of registered commercial vehicles	Reports not available in the previous year; data on Pvt. Corporate sector; enterprise survey results, if available	Reports not available in the previous years; enterprise survey results, if available
(j) Storage	Projected	Projected	Annual reports of warehousing corporations and provisional results of ASI	Annual reports of warehousing corporations and ASI final results	
(k)Communication	Data for 8 months on postal and telecom. Revenue and on wholesale price index	Budget documents (revised estimates)	Budget documents (actual estimates) and data on physical indicators		

Sector	Advance Estimate	Quick Estimate	Revised Estimate-1	Revised Estimate-2	Revised Estimate-3
(l) Banking and Insurance	Data for 8 months on aggregate deposits and aggregate credits	Provisional data on banking and annual reports of non-banking financial institutions and insurance companies	Final data on banking and annual reports of non-banking financial institutions and insurance companies	Annual reports of non-banking financial institutions, if not available earlier	Annual reports of non-banking financial institutions, if not available earlier
(m) Real Estate, Business Services, Ownership of Dwellings	Budget estimates of expenditure of Centre and States – for public part	Projections of workforce on the basis of long-term survey results, budget documents (revised estimates)/ annual reports	Budget documents (actual estimates)/ annual reports	Reports not available in the previous year	Reports not available in the previous year
(n) Public Administration	Budget estimates of expenditure of Centre and States	Revised estimates of expenditure of Centre and States	Actual estimates of expenditure of Centre and States		
(o) Other Services	Budget estimates of expenditure of Centre and States – for public part	Projections of workforce on the basis of long term survey results, budget documents (revised estimates)/ annual reports.	Budget documents (actual estimates)/ annual reports	Reports not available in the previous year	Reports not available in the previous year

13.1.26 A summary of aggregate GDP growth rates at current and constant prices in different years is presented in Table 13.2 (Series at 1980-81 base, estimates at 1980-81 prices), Table13. 3 (Series at 1980-81 base, estimates at current prices), Table13.4 (Series at 1993-94 base, estimates at 1993-94 prices) and Table 13.5 (Series at 1993-94 base, estimates at current prices).

Table 13.2:Growth Rates in GDP Estimates (at 1980-81 prices)
(Series with 1980-81 as base year)

Year	Advance Estimate	Quick Estimate	Revised Estimate-1	Revised Estimate-2	Revised Estimate-3
1991-92		1.2	1.1	0.9	0.8
1992-93	4.2	4.0	4.3	5.1	5.3
1993-94	3.8	4.3	5.0	6.0	6.2
1994-95	5.3	6.3	7.2	7.8	-
1995-96	6.2 7.0 (Revised.AE)	7.1	7.2	-	-
1996-97	6.8 6.8 (Revised.AE)	7.5	-	-	-
1997-98	5.0 5.1 (Revised.AE)	-	-	-	-

Note: Revised AE was released for the first time for the year 1995-96

Table 13.3:Growth Rates in GDP Estimates (at current prices)
(Series with 1980-81 as base year)

Year	Quick Estimate	Revised Estimate-1	Revised Estimate-2	Revised Estimate-3
1991-92	14.6	16.0	15.5	15.7
1992-93	13.8	13.7	14.0	14.1
1993-94	12.7	14.7	16.0	16.2
1994-95	18.1	17.3	18.4	-
1995-96	14.8	15.9	-	-
1996-97	14.2	-	-	-

Note: AE were not prepared at current prices in the old series

Table 13.4: Growth Rates in GDP Estimates (at 1993-94 prices)
(Series with 1993-94 as base year)

Year	Latest Estimates (Series with 1980-81 as base year)	Estimates released in 1999	Estimates released in 2000	Estimates released in 2001
1994-95	7.8	7.8	7.0	7.3
1995-96	7.2	7.6	7.3	7.3
1996-97	7.5 (QE)	7.8	7.5	7.8
1997-98	5.1 (Revised.AE)	5.0 (QE)	5.0	4.8
1998-99	-	5.8 (AE) 6.0 (Revised.AE)	6.8 (QE)	6.6
1999-2000	-	-	5.9 (AE) 6.4 (Revised.AE)	6.4 (QE)
2000-01	-	-	-	6.0 (AE)

Table 13.5: Growth Rates in GDP Estimates (at current prices)
(Series with 1993-94 as base year)

Year	Latest Estimates (Series with 1980-81 as base year)	Estimates released in 1999	Estimates released in 2000	Estimates released in 2001
1994-95	18.4	18.1	17.0	17.4
1995-96	15.9	16.9	16.7	17.0
1996-97	14.2	16.5	15.9	15.9
1997-98	-	11.0 (QE)	11.9	11.8
1998-99	-	15.4	16.5 (QE.)	16.3
1999-2000	-	-	9.6 (AE) 9.9(Revised.AE)	10.5 (QE)
2000-01	-	-	-	11.4 (AE)

Note: 1. QE: Quick Estimate; AE: Advance Estimate
2: AE were not prepared at current prices in the Year 1999 and earlier
3: The growth rates are with reference to the latest available estimates at the point in the release cycle in all the above four tables.

13.1.27 Differences between various estimates for the same year arise mainly due to delay in the availability of data on the cost of cultivation studies, land utilisation statistics, Annual Survey of Industries, non-departmental commercial undertakings and data on certain sectors like mining, transport and banking. For a given year, two years prior to the reference year of the Quick Estimate, the estimates are more or less final, after they are discussed with the States. The land utilisation statistics, ASI results, detailed data on the banking sector, are available by this time. The availability of important data at different points of time for a particular year is shown below.

Table 13.6: Data Used for Compilation of Different Estimates of GDP of a Given Year

Nomenclature of Estimate	Availability Of Data
Advance Estimate	AE of agriculture production (after the *kharif* harvest for (July to June) agriculture year), index of industrial production for 8 months, production of data on infrastructure industries and on services sectors like, railways and air in terms of net tonne kms and net passenger kms, cargo handled at major ports, postal and telecommunication revenue, revenue expenditure of Central Government and wholesale/consumer price indices for 8 to 9 months and budget estimates of Centre and States.
Quick Estimates	Revised Estimates of agriculture production, index of industrial production, revised budget estimates of Centre and States, reports of commercial undertakings and provisional data on other sectors and prices at All-India level.
Revised Estimates-1	Final estimates of agriculture production, provisional ASI results, actual estimates of Centre and States' expenditures, additional reports of commercial undertakings, provisional data on private corporate sector and detailed data on other sectors and prices at State level.
Revised Estimates-2	Land-utilization statistics (for grass, fodder and other miscellaneous crops), final ASI results, final data on private corporate sector and detailed data of all sectors. Estimates are made final in consultation with the State DESs.
Revised Estimates-3	Delayed receipt of data in respect of some items under Revised Estimates-2 and reports of commercial undertakings.

Recommendations on the publication of NAS and Press Releases

13.1.28 The credibility of NAS has been often questioned by users in the 1990s because of the large differences (in absolute magnitude as well as in terms of growth rates) in sectoral or aggregate estimates in different stages of revisions arising from delays or major revisions undertaken by the source agencies. It is particularly important to minimise the delays as well as major revisions. It is recommended that:

(i) The Cabinet Secretariat or a similar high-level authority at the Centre and in the States should impress upon the source agencies to supply the requisite basic data for National Accounts Statistics (NAS) in a timely and reliable fashion by minimising delays and major revisions;

(ii) The National Accounts Division (NAD) of Central Statistical Organisation (CSO) should explicitly announce the time-table of release of NAS and strictly adhere to it;

(iii) The NAD of CSO should explicitly provide clarifications for the large differences (magnitude to be specified) from one revision to another for the same year in the sectoral and aggregate estimates along with the mention of the source agencies concerned;

(iv) The list of such source agencies causing delay and major revisions be notified to the apex technical agency, National Commission on Statistics, which would be in charge of supervising and monitoring the statistical system for information, appropriate action and devising institutional correctives.

13.2 AN OVERVIEW OF THE INDIAN SYSTEM OF NATIONAL ACCOUNTS

13.2.1 It is emphasised that in view of the essentially de-centralized character of the Indian Statistical System, the continental size of the country with large diversities and federal character of polity, the Indian System of National Accounts to include regional accounts at the State level and below. The term National Accounts Statistics (NAS) in this overview should be interpreted in the inclusive sense.

13.2.2 The NAS is a framework that provides an internally consistent description of National macro economy based on the processing of data generated by the entire National statistical system. The estimates of National income and related aggregates and accounts are derived statistics that draw on basic data available from different primary sources. The primary sources consist of data generated as a by-product of public administration system (such as land records, collection of direct and indirect taxes, civil registration of births and deaths, etc.) as well as data collected directly through censuses and sample surveys conducted by official agencies of the Central and State Governments. For certain newly emerging activities such as software, where official statistical system is not currently in place, NAS also draws on selective non-official sources. The accuracy and quality of the National account estimates depend on (a) geographical coverage and quality of primary data; and (b) the methods, procedures and approximations used in translating the primary data into NAS framework. While the underlying concepts and methodology of compilation has been mostly standardised under the United Nations' System of National Accounts (UN-SNA), procedures and approximations are shaped by the country-specific data collection system. For making the estimates comparable over time and internationally, the National Accounts Division (NAD) of the Central Statistical Organisation (CSO) maintains detailed, well documented methods and procedures unchanged till the revision of the base year when efforts are made to bring about improvements in these respects while bridging data gaps and introducing newly available better quality data.

13.2.3 Given the use of wide-ranging data sources with varying quality in different spheres in the compilation of National Accounts in all the countries of the world, weaknesses in the National statistical system get reflected in the NAS. In the federal political framework, the Indian Statistical System is decentralised in character so that NAS necessarily have to depend on a large number of autonomous source agencies. NAD often finds itself unable to make source agencies appreciate the requirements of National Accounts for timely reporting as well as for additional data or wider coverage. In a continental country like India, regional diversities in public administration and the importance given to collection, maintenance and dissemination of statistics also influence their quality. Data used for Central fund allocation to States create their own problems of reliability when they are generated by the concerned administrative departments. National Sample Survey Organisation (NSSO) has been carrying out periodic surveys that provide input into the National income estimation. While the surveys give reasonably good estimates at the all-India level, they have to grapple with the basic character of the Indian economy while collecting information about employment, incomes, trade and profit margins. This relates to predominance of self-employment in agriculture as well as non-agricultural rural and urban areas where connection of earning members to the labour market is loose and amorphous, workers often engage in multiple activities during the year, income streams are irregular, enterprises do not keep accounts and entries into and exits out of enterprises are common. Over the years, the involvement of State statistical bureaus in conducting surveys and type studies for evolving norms for National income estimation has also been on the decline. It is also important to point out that survey-based estimates have their inherent limitation in terms of known sampling errors and unknown non-sampling errors.

13.2.4 Standard texts on National Accounts do mention independent checks on National account aggregates by estimating them through three alternative methods: income, expenditure

and commodity flow. Data limitations however, do not permit these independent consistency checks. Often, certain National account identities are used to derive certain components as residuals. For example, aggregate PFCE in the Indian system of National Accounts.

13.2.5 In India, the basic (gross or net) domestic product estimates at factor cost by industry or sector of origin can be broadly classified into two broad categories from the viewpoint of differences in database. Direct estimates are based on annually available statistics on a regular basis so that they reflect year-to-ear variations in the concerned economic activities. The second broad category of indirect estimation has to be resorted to when regular annual statistics are not available. In such cases, periodic benchmark survey based estimates are derived for the survey year and are extrapolated backward or forward on the basis of (often) -physical indicator of activity in the sector. The degree of approximation in this context critically depends on the sensitivity of the indicator in reflecting year-to-year variations in the concerned economic activity. By type of institutions, direct estimates mostly relate to public (of which Government proper is a component) and private corporate sector so that the estimates relating to them usually constitute what is usually referred to as "organized" sector or segment of the economy. Indirect estimates mostly relate to households (including non-profit institutions serving households) and constitute the residual 'unorganized' sector or segment of the economy.

13.2.6 While direct estimates are based on annually available statistics, their translation into National account aggregates often requires the use of certain norms, rates and ratios or other assumptions. In the absences of timely availability of annual estimates, advance, quick or provisional estimates often resort to readily available indicators of activity in the sector. Their revisions after the use of regular annual statistics sometimes bring about major changes in the provisional estimates. In such cases, the fault lies with the quality of data provided by the source agency supplying provisional indicators as well as delays by the source agency generating annual regular statistics. NAD of CSO however unfairly finds itself at the receiving end of the criticism.

13.2.7 The CSO has been publishing the basic documentation of methods of National account compilation in the periodical publication, National Accounts Statistics – Sources and Methods. It is released after each major revision of the estimates at updated price-base. Two publications so far available relate to 1970-71 and 1980-81 price series. The latest revision has been undertaken with 1993-94 price base. The share of "direct estimates" in aggregate GDP rose from 57.6 per cent in the 1970-71 base series to 63.7 per cent in the 1980-81base series and further to 89.6 per cent in 1993-94. In the latest series, the sectoral share of direct estimates varies between 100 per cent (mining, registered manufacturing, electricity, gas and water supply, railways and public administration and defence sectors) to 26.6 per cent (forestry sector).

13.2.8 CSO has been associating technical experts and representatives of DES with the estimation of NAS in the form of Advisory Committee on National Accounts (ACNA). Eminent experts like Professor Moni Mukherjee (who was the Secretary to the first National Income Committee after independence) and Professor V.M. Dandekar has been a Chairman of ACNA.

13.2.9 The detailed documentation in the foregoing sections at the sectoral, sub-sectoral and regional level of methods and data sources for compilation of NAS was meant to bring out the underlying problems and difficulties most of which are shared by many other countries in the world. Steps for improvements should obviously be directed toward improving the quality, coverage and timeliness of "direct" estimates while raising their share in a given aggregate or sub-aggregate at the National and regional level. "Indirect" method of estimation has to be resorted to in sectors and activities mostly marked by self-employment in small Own-account or household enterprises (requiring periodical survey-based benchmark estimates) or where large regional diversities in economic practices exist (requiring type-studies). In these cases, often times, the physical indicators used for extrapolating the benchmark year estimate backward and

forward are themselves interpolated estimates thereby further increasing the degree of in-directness. While type studies necessarily have to be regionally dispersed and decentralized, the possibility of carrying out annual surveys obviously suggests itself to reduce the degree of in-directness. However, the costs and benefits of doing so Centrally need to be weighed carefully. Uneven development of survey capabilities across States would favour Centralized arrangement. While this argument is indeed persuasive, two considerations go against it. One, the decentralized character of the Indian Statistical System that has also been stressed in terms of reference of the Commission. Two, Centrally carried out sample surveys with uniform survey methods have possibly come in the way of innovative experimentation in survey methods to capture the regionally unique features. Eliciting cooperation of the States in carrying out requisite State level sample surveys and type studies would not only improve the quality of regional accounts but would also improve the reliability of National estimates. This appears to be a cost-effective strategy for improving the methods of compilation as well as database. However, the past institutional arrangements of conference of Centre and State Statistical Organisations (COCSSO) and National Advisory Board on Statistics (NABS) have become non-functional over time. The technical leadership, guidance and coordination provided by the Central Statistical Organisation (CSO) in the 1970s and 1980s appear to have waned in the 1990s. The recommendations of the National Statistical Commission with regard to improving the National statistical system would have an important bearing on this issue. The recommendations in respect of agriculture, industry, trade and services sector would also contribute toward improving the quality, reliability and timeliness of "direct" estimates. With reference to the "indirect" estimates, our recommendations flowing from the foregoing arguments are institutional in nature.

13.2.10 It is therefore recommended that:

(i) Urgent steps be taken to revive and restore the legitimate role of NAD of the CSO in providing technical leadership, guidance and coordination in the compilation of National and Regional Accounts.

(ii) Steps be taken to activate the institutionalised interaction between NAD of CSO and State Directorate of Economic and Statistics (DES) through periodical meetings to discuss the weaknesses in data and problems, and difficulties emerging from the foregoing detailed discussion of NAS and chalk out mutually agreed programme for improving the reliability, timeliness and credibility of the Indian System of National Accounts.

(iii) The meetings be used to impress upon the States to carry out State level annual or benchmark surveys keeping in view the needs of the system of National Accounts;

(iv) Priorities in carrying out the benchmark sample surveys be worked out keeping in view (a) the share of the concerned aggregate/sub-aggregate in the total at the State/National level and (b) urgency of updation in terms of the year, of last survey, used in the estimation.

(v) In line with the decentralised character of the Indian Statistical System, the States develop the necessary survey organising capabilities.

13.3 GROSS DOMESTIC PRODUCT

Brief Method of compiling Gross Domestic Product estimates by Industry

13.3.1 Broadly, the methodology for compiling the estimates of GDP consists in dividing the whole economy into various sectors comprising primary, secondary and tertiary activities. The estimates of GDP in respect of agriculture, forestry and logging, fishing, mining and quarrying, registered manufacturing (establishments registered under Factories Act, 1948) and construction are based on production approach. Income approach is used in the estimation of

GDP originating in Un-registered manufacturing (establishments not registered under Factories Act), electricity, gas and water supply, trade, hotels and restaurants, transport, storage, communication, banking and insurance, real estate, ownership of dwellings, business services, public administration and defence and other services. The estimates of various services in the public sector are compiled by analysing the budget documents and annual reports of departmental and non-departmental commercial undertakings, those of the organised (registered) manufacturing sector are made using data from the Annual Survey of Industries, the estimates relating to the unorganised sectors in various economic activities are made using the figures of per worker value added available from the results of follow-up surveys of the Economic Census and the labour force in the activity. Generally, the unorganised sectors estimate of GDP is compiled for the base year or the bench mark survey year and estimates of subsequent years are obtained by moving the base year estimate with the help of appropriate physical indicators. The extent of this type of indirect estimation in the compilation of annual GDP estimates is indicated in various Annexes. Annexe 13.1 gives the list of items, sector-wise, estimates for which are compiled by indirect methods, while Annexe 13.2 gives the proportion of direct estimation in the GDP during the benchmark year and for a year other than the benchmark year, both for the series (at base 1980-81) and the series (at base 1993-94) of NAS; and Annexe 13.3, the list of benchmark surveys used in series (at base 1993-94) of NAS.

Source Agencies, in the compilation of Gross Domestic Product Estimates

Agriculture

13.3.2 The principal source agency for data on the agriculture sector is the Directorate of Economics and Statistics, Ministry of Agriculture. Out of about 78 crops, crop-groups for which estimates of value of output are prepared, data on area and yield in respect of 49 principal crops (see Annexe 13.4) are available with a reasonable time lag from the DESMOA. For other crops, although the area figures are available from the DESMOA, production estimates are based on the information supplied by the State Government sources and *ad hoc* reports. Data on State level weighted average prices of crops, which are used for evaluating the corresponding output of State level crops, are made available by the State DESs.

13.3.3 The principal sources of data for inputs are the results of the Cost of Cultivation Studies (CCS) (for list of crops covered under CCS see Annexe 13.5), State DESs, State Agriculture Departments, Central Electricity Authority, Fertiliser Association of India and Pesticides Association of India.

Livestock

13.3.4 The source agency for the data on milk, egg and wool is the Department of Animal Husbandry and Dairying (DAHD), which collects this information through the Integrated Sample Survey conducted by the State AHDs. Estimates of meat and the number of slaughtered and fallen animals are available from the State AHDs and DESs and that of the livestock population from the DESMOA and State AHDs from the results of Livestock Censuses. Estimates of silk and honey are available from the respective Boards and State AHD.

Forestry

13.3.5 The sources for data on production of forest products (industrial wood, fuel-wood and minor forest products) are the various Forest Departments of State Governments (SFD). However, the estimates of production of fuel-wood reported by the SFDs are considered totally unreliable as most of the fuel-wood is lifted in an unauthorised way. For the purpose of estimation of GDP, the output of fuel-wood is estimated from the consumption side making use of the results of NSS on consumption expenditure of households.

Fishing

13.3.6 The main source of data for inland fishing, marine fishing and production of prawns is the Ministry of Agriculture. The source agencies for data on other ancillary activities like sun drying of fish and salting of fish are the State Fisheries Departments. Data on prices are made available by the DESs.

Mining

13.3.7 The source agencies for the major minerals are the Indian Bureau of Mines (IBM), Coal India Ltd. (CIL) and its subsidiaries, and Oil and Natural Gas Corporation (ONGC). The information on minor minerals is obtained from the State Geological Departments. The information on the material inputs is available from the Office of Coal Controller, IBM, ONGC and Oil India Limited. An Enterprise Survey conducted in 1992 is the new source on minor minerals.

Registered Manufacturing

13.3.8 The registered sector of manufacturing covers all factories employing 10 or more workers and using power and those employing 20 or more persons but not using power, and *bidi* and *cigar* establishments registered under Bidi and Cigar Workers' Act, 1966 employing 10 or more workers using power and 20 or more workers but not using power. Data on products and by-products of the factories covered under Factories' Act, 1948 and material inputs are collected annually through the Annual Survey of Industries (ASI) by the CSO. Factories employing 100 persons or more are covered on a census basis and other factories are covered on a sample basis. Non-response is taken care of by adjusting the estimates of GDP on the basis of the number of workers in the non-responding units assuming that the gross value added per worker in the responding and non-responding unit is of the same order.

Unregistered Manufacturing

13.3.9 Data from unregistered manufacturing (factories other than those covered under the ASI) is not collected on an annual basis. Data from such units is collected once in five years on a sample basis through the Follow-up Surveys of the Economic Census. Directory Establishments employing 6 persons and more and Non-Directory establishments employing 1 to 5 persons and Own-account Enterprise with no hired worker are covered separately in the Follow-up Surveys. The Index of Industrial Production (IIP) is generally used for extrapolating the benchmark estimates.

Electricity, Gas and water supply

13.3.10 Information on output/sales of and material inputs into electricity, gas supply by pipeline and water supply, are available in respect of departmental undertakings, Central and State Power Corporations, State Electricity Boards. For data on gobar gas, the source agencies are the Ministry of Non-conventional Energy and the Khadi & Village Industries Commission (KVIC). Estimates of water supply are based on the data of responding municipalities and estimates of workforce engaged in this activity.

Construction

13.3.11 Information on current production exports and imports and intermediate consumption of basic construction materials are available from various official sources. Information on the other construction materials is based on the norms provided by National Buildings Organisation (NBO), Central Public Works Department (CPWD) and Central Building Research Institute (CBRI) on various types of constructions namely, residential buildings, non-residential buildings, roads, bridges, and the like. Information on expenditures made on the *kutcha* construction in respect of the public sector is culled out from the budget documents of the administrative

departments and annual reports and DCUs and NDCUs. In case of the private corporate sector, for kutcha construction, the information on construction activities in plantations of Tea, Coffee and Rubber is taken from the Tea, Coffee and Rubber Boards. The sources of information for the household sector are the All-India Debt and Investment Survey (AIDIS) and some old NSS reports.

Trade, hotels and restaurants

13.3.12 For the public sector components of Trade, Hotels and Restaurants, information on factor incomes is available in the budget documents/annual reports of the departmental and non-departmental commercial undertakings. For the organised private sector components, estimates of value added and work force are taken from the Reserve Bank of India (RBI)'s, Company Finance Studies and the publications of the Directorate General of Employment and Training (DGE&T). For the unorganised segments of trade and hotels and restaurants, benchmark estimate (prepared on the basis of working force and per worker value added) is moved with the help of a physical indicator namely, the Gross Trading Income. The per worker value added information is available from the Enterprise Surveys conducted quinquennially by the CSO/NSSO.

Transport, Storage and Communication

13.3.13 The activities of transport services by railways and other means, and storage and communication are compiled separately for the public sector, private organised sector and unorganised sector. For the public sector component, the requirements relating to factor incomes, capital formation and other aggregates are based on the budget documents and annual reports of the departmental and non-departmental commercial undertakings. For the private sector, particularly the private shipping companies and air transport, the annual reports of the companies are available which provide the required information for compiling GVA and other aggregates. For the unorganised segments of other activities namely, mechanised road transport, non-mechanised road transport, sailing vessels other than ships, the services incidental to transport and storage, GDP estimates are built up using estimates of workforce and per worker value added from bench mark surveys. Estimates for years other than the benchmark survey year are made on the basis of appropriate physical indicators, like commercial vehicles registered and cargo handled at major ports.

Banking and Insurance

13.3.14 As most of the banking and insurance activities are in the public sector, requisite data are available from the annual reports. Also, the RBI provides information on the banks including the Reserve Bank. The information on cooperative credit societies is available from the Statements Relating to the Cooperative Movement in India published by the National Bank for Agricultural and Rural Development (NABARD).

Services

13.3.15 In public administration and defence, information on compensation of employees is available from the budget documents. However, the requisite data in respect of local bodies are not available. The estimates in respect of local bodies are prepared on the basis of transfers made by the State Government to the local bodies. For the rest of the services activities, the estimates of unorganised component are built-up using various sources of data, like Population Census (for dwellings), NSS (for rent per dwelling), Bar Council (for number of registered advocates), Ministry of Human Resource Development (for recognised educational institutions), Enterprise Surveys (for value added per worker) and Directorate General of Employment and Training (DGE&T) (for number of workers in the organised sector, which is required to derive the workforce in the unorganised sector) and other *ad hoc* sources.

Methodology of compilation of GDP estimates by industry

Agriculture and allied activities

13.3.16 In the NAS, the agriculture sector includes agriculture proper, livestock and operation of the irrigation system. Agriculture proper includes various crops including plantation crops, agricultural and horticultural services and ancillary activities like gur making, transportation of own produce to the primary markets and activities yielding rental income from machinery. The livestock sector covers breeding and rearing of animals and poultry, production of milk, slaughtering, preparation and dressing of meat, production of raw hides and skins, eggs, dung, raw wool, honey, silk worm cocoons and increment in livestock. The estimates of domestic product from these activities are prepared using the production approach, except in the case of operation of irrigation system, which is arrived at from the Government records through the income approach. The production approach requires estimation of gross value of output and value of inputs.

13.3.17 In respect of the sub-sector agriculture proper, the estimates of value of output are prepared separately for all the 78 crops/crop-groups. These 78 crops are divided into four categories namely, principal crops, minor crops, miscellaneous and unspecified crops and other products and by-products. The estimates of value of output for the 49 principal crops are prepared using the production figures compiled by the DESMOA and the prices relating to the peak marketing period prevailing in the primary market Centres compiled by the State Directorates of Economics and Statistics (DES's). In the case of minor crops like cashewnut, indigo and papaya, the area and outturn figures are available with a time lag of one year. In respect of minor crops such as mango, citrus fruits, grapes and other fruits and vegetables, the estimates of production are built up from the data provided by the National Horticulture Board (NHB) and the State DESs. The source for production figures of, coffee, rubber and opium are the Coffee Board, Rubber Board and Central Bureau of Narcotics, respectively. The estimated production of tea is arrived at by utilising the information on processed tea received from the Tea Board. The miscellaneous and unspecified crops cover other cereals, other oil seeds, other sugars, other fibres, other dyes and tanning material, other drugs and narcotics, other condiments and spices, other fruits and vegetables, fodder, miscellaneous food crops, grass and miscellaneous non-food crops. In respect of these crops, area figures are available from the DESMOA and data on value of output per hectare are estimated using the norms provided by various surveys conducted by the NSSO and the estimates of value of output of the respective crop groups. The benchmark estimates of production of fodder related to the year 1955-56 and the area figures available from the DESMOA are the two sources for estimating the output of fodder. In the case of grass, the area figures are estimated from the Land Use Statistics (LUS) and the source for yield estimate is the NSS Report No.65, "Tables with Notes on Animal Husbandry year 1951-52". The products and by-products include stalks and straw, *arhar*, sesamum, jute and cotton sticks, bagasse and cane trash. The primary source of data for these, with the exception of bagasse, is the CCS, which give the estimates of by-products in terms of value of output per hectare. In the case of bagasse, the estimate is arrived at as a percentage of quantity of sugarcane that goes into the making of gur.

13.3.18 The estimates of value of output for the livestock sector are prepared separately for the items, milk, meat group, eggs, wool and hair, dung, silk-worm cocoons, honey and increment in livestock. The value of output of these products is estimated utilising the figures of production finalised by the Technical Committee for Directions (TCD) and made available by the Department of Animal Husbandry & Dairying (DAHD) and the price figures furnished by the State DESs. In the case of the meat group, which comprises meat (including edible offal and glands and poultry meat), meat products (like fats, legs and head) and by-products (like hides, skins, guts, blood, bones, horns and hoofs), the production figures are estimated with the help of

yield rates and the number of slaughtered animals, furnished by the State Animal Husbandry & Dairying AHD's. The estimates of other meat products and by-products are based on the number of slaughtered animals and fallen animals, wherever applicable, and the corresponding yield rates available from various Directorates of Marketing & Inspection (DMI) reports. The estimates of poultry meat are prepared in terms of the number of adult fowls and chicken slaughtered using information on the utilisation of eggs and chicken that survived. The estimates of dung are prepared on the basis of information on livestock population and evacuation rates supplied by the DAHD, as well as the results of Integrated Sample Survey. The utilisation rates of dung used as manure and used as fuel are also supplied by the Department of AHD. In the case of silk and honey, the output figures of silk worm cocoons by types namely, mulberry, tasar, ericot and muga and honey are available with Central Silk Board and Khadi and Village Industries Commission (KVIC), respectively. The estimates of increment in livestock population are estimated by extrapolating the population figures available from the successive ILC's. The State-weighted average prices required for estimating the value of output for both agriculture and livestock products are supplied to the CSO by the State DESs.

13.3.19 In order to avoid double counting the value of the product, the value of inputs, which are also, outputs of some items, are deducted, to arrive at the Gross Value Added (GVA). The inputs, generally being common to both the livestock and agriculture sub-sectors, are estimated for the sector as a whole. Thus, GDP figures are not separately available for the agriculture and livestock sub-sectors. (Utilising the rates and ratios available from the Input-Output Transactions Tables of the CSO, the GDP estimates for these two sub-sectors have been made by the CSO and presented in the NAS publications.) The inputs of the agriculture sector are divided into ten items namely, seed, organic manure, chemical fertilisers, current repairs, maintenance of fixed assets and other operational costs, feed of livestock, irrigation charges, market charges, electricity, pesticides and insecticides and diesel oil. Data on seed rates are available from the Cost of Cultivation Studies (CCS) as well as the State Agriculture Departments and the reports of the Directorate of Marketing and Inspection. In the case of organic manure, it is assumed that the output of dung manure in the livestock sector is equivalent to the organic manure input in the agriculture sector. The estimates of value of chemical fertilisers consumed are arrived at by using the figures of material-wise distribution of chemical fertilisers published by the Fertiliser Association of India and the retail prices. The livestock feed comprises of roughage and concentrates. The roughage include cane trash, grass, fodder, stalks, straw, and the like, while concentrates are oil cakes, crushed pulses, grains, grams, rice bran, husk, oil seeds, *gur*, and other concentrates. The entire production of fodder, cane trash and grass and 95 per cent of production of stalks and straws in the agriculture sector are considered to be consumed by the livestock population. Adjustment is made towards the consumption of these items by the animals, which are not directly connected, to the agriculture sector. The estimates of concentrates fed to livestock are largely based on the feed rates collected under the 30th Round of NSSO in 1975-76, studies conducted by the IASRI as well as by the State DES's. The estimates of irrigation charges are based on the information available from the State Irrigation Departments. The estimates of market charges are arrived at by conducting a special study with the help of State DES's and the DESMOA, covering various agricultural and livestock commodities and several primary-marketing centres. These market charges as a proportion of the value of output are assumed to be constant during a period of a few years and are therefore, not revised every year. Whereas the estimates for electricity and pesticides and insecticides are based on the information received from the Central Electricity Authority and the Pesticides Association of India, the estimates of diesel oil are prepared using the norms available from the CCS and figures of the number of diesel engines and tractors available from the State DES's. The estimates of repairs and maintenance are prepared using the norms available from the AIDIS.

Forestry and Logging

13.3.20 Major products comprise industrial wood and fuel wood. Minor products include items like bamboo, fodder, lac, sandalwood, honey, resin and gum. The main sources of data are the State Forest Departments and the Government budget documents. The recorded production of fuel wood is too low on account of the huge unauthorised cutting and lifting in India. Thus the total estimated consumption expenditure on fuel wood is taken as the proxy of value of output. The estimates of fuel wood consumption are based on large-scale quinquennial household consumer expenditure surveys conducted by the NSSO.

Fishing

13.3.21 The activities covered in this sector are - (a) fishing in ocean, coastal, offshore and inland waters for commercial purposes, (b) subsistence fishing in inland waters (c) gathering of sea weeds, sea shells and other ocean and coastal water products, and (d) fish curing. Data on production, prices, and value of fish catch are supplied by the State Fisheries Departments and the State DESs.

Mining and Quarrying

13.3.22 This sector comprises extraction of minerals which occur in nature as solids, liquids or gases with all the supplementary operations for dressing and beneficiating ores and other crude minerals. The major sources of data for fuel minerals namely, coal and lignite and major metallic minerals and non-metallic minerals are the IBM, Coal India Ltd. and the Office of the Coal Controller. The Oil and Natural Gas Commission (ONGC) provides data on production, prices and inputs of petroleum and natural gas. Data on minor minerals mainly in the form of clay, stones, marbles, building materials are supplied by the State Geological Departments. Data on inputs in respect of major minerals are supplied by the Coal Controller, ONGC and IBM. Data on inputs in respect of minor minerals are based on results of the Sample Surveys conducted by the NSSO in respect of households engaged in extraction of such minerals.

Registered (Organised) Manufacturing

13.3.23 Manufacturing establishments registered under the Indian Factories/Bidi and Cigar Workers Act are included in this sector. Data on the output and inputs for this sector are collected under the Annual Survey of Industries (ASI). Industry-wise estimates are released in the CSO publication, "ASI Summary Results" for the factory sector. The GDP for the registered manufacturing sector is prepared by following the production approach (which is the total output at ex-factory prices minus the total input valued at purchasers' prices) using the ASI-Summary Results for the factory sector. The estimates are adjusted for non-response on the basis of the workers of non-responding units.

Unregistered (Unorganised) Manufacturing

13.3.24 The estimates of GVA for this sector of the benchmark year are obtained as a product of the estimated work force and the GVA per worker available from the results of the Follow up Surveys of Economic Census conducted periodically by the CSO and the Census of Small Scale Industries conducted by the Office of the Development Commissioner for Small Scale Industries. For years other than the survey year, the estimates are moved forward for current and constant price estimates with the help of suitable price and quantity (IIP) indices separately for each 2-digit industry group.

Electricity

13.3.25 GDP at current prices is worked out by the income approach. The estimates of factor incomes are obtained from the analysis of data contained in the annual reports of the electricity boards, power corporations, annual budget documents of the Central and State Governments,

private electricity companies and co-operative units and the electricity undertakings of local bodies. Estimates of GDP at constant prices are obtained by moving forward the base year (1993-94) estimates with the Index of Total Power Generation.

Gas

13.3.26 Data sources utilised for the estimation of the gas sector GVA are the accounts of the Gas Authority of India. Estimates in respect of gobar (organic) gas is worked out from the data supplied by Khadi and Village Industries Commission (KVIC). Estimates at constant prices are worked out from the output at 1993-94 prices using the base year input output ratios for each sub sector separately.

Water Supply

13.3.27 In case of Government and municipal water supply undertakings, the Net Value Added (NVA) is to be taken as a compensation of employees. In the case of the private sector, the estimates of compensation of employees is worked as a product of wages per worker and the total work force engaged in the private sector water supply works. To these the operating surplus in respect of water supply works available from ASI data are added to arrive at the total NVA for the sector. Estimates of CFC worked out separately for the public and private sectors are added to obtain the estimates of GVA. Estimates at 1993-94 prices are obtained in respect of the public sector by deflating the current price estimates with the consumer price index of industrial workers. In the case of the private sector, the 1993-94 base year estimates are moved forward with the index of the work force. To these, the CFC at 1993-94 prices is added separately for each sub-sector to arrive at the GDP at 1993-94 prices.

Construction

13.3.28 Estimates of basic material inputs in *Pucca* construction works is estimated by adding together the value of commodities for construction at prices paid by the builders at the site of construction following the commodity flow approach. The value of output in *kutcha* construction in the public sector and private corporate sector is estimated from the data available in the annual budget documents of the Government and the annual reports of the Rubber, Tea and Coffee Boards on plantation works. In case of the household sector the component of *kutcha* construction works is estimated from the All-India Debt and Investment Survey (AIDIS) results for the year 1992. For the other years, the estimates are moved forward with suitable indicators. For *Pucca* construction, based on information available from Central Public Works Department, National Building Organisation and survey results a fixed percentage of material inputs is taken as factor inputs, i.e. GVA in the base year. For other years, the value of material input is duly adjusted for wage and price indices. In the case of labour-intensive *kutcha* construction works, 75 per cent of the value of output is taken as GVA. Estimates at constant prices are arrived at by deflating the current price GVA estimates by suitable price indices.

Trade, Hotels and Restaurants

13.3.29 Current price estimates of GVA in respect of the public sector are based on the annual budget documents and annual reports of trading enterprises. In case of the private corporate sector and cooperatives, the estimates are based on sample studies undertaken by the Reserve Bank of India (RBI) and annual report of the National Bank for Agriculture and Rural Development (NABARD), respectively. For the remaining unorganised part of the trading activity the estimates for the base year (1993-94) are estimated from the results of the Follow up Surveys of the Economic Census and work force. For other years, the base year estimates in respect of unorganised trade are moved forward with the help of the Gross Trading Income (GTI) specially worked out from the marketable surplus and trade margins of various commodities. Constant price estimates are arrived, by moving forward the base year estimates by the index of

GTI. The GTI at constant price is also compiled (on the same lines as that in the case of GTI at current prices) by using value of output of commodity producing sectors at constant prices.

Railways and Communication

13.3.30 The estimates are based on data available in the annual budget documents and the annual reports of Railways and Communication Departmental enterprises. Constant price estimates are arrived at by moving forward the base year (1993-94) estimates by suitable quantum indices.

Transport other than Railways

13.3.31 For the organised public sector part, the estimates are based on annual data available from the budget documents and annual reports of the public sector transport enterprises. For the unorganised part, the base year estimates are based on the results of the Follow up Surveys of Economic Census.

Storage

13.3.32 Estimates in respect of public sector are worked out from the data contained in the reports of the Central and State warehousing corporations. In respect of cold storage, the estimates are based on ASI data, whereas for storage activities in the unorganised sector, the estimates are based on Follow up Surveys of Economic Census duly adjusted with a suitable indicator for the base year and other years. The constant price estimates are prepared by moving forward the base year estimates with the help of quantum indices specially constructed for the purpose.

Banking and Insurance

13.3.33 Detailed data are available from the annual reports of the Reserve Bank of India, non-banking financial companies and corporations and also the Life Insurance and General Insurance Corporations. In respect of post office saving banks and postal life insurance, data are available from the annual budget documents of the Central Government. Data in respect of cooperative credit societies are available from the NABARD. Estimates at constant price are arrived at by using suitable quantum indices in each case. In the absence of data in respect of unorganised moneylenders, the GVA for this sub sector is estimated as one third of the GVA in respect of organised non-banking financial companies and corporations in public and private sectors.

Real Estate, Ownership of Dwellings and Business Services

13.3.34 Estimates in respect of real estate and business services are based on the sample analysis of joint stock companies adjusted for full coverage on the basis of paid up capital of such companies. The estimates in respect of ownership of the dwelling is based on the number of dwellings as per the Population Census and gross rental per dwelling available from the NSSO survey results. Constant price estimates are worked out by moving forward the base year estimates with suitable quantum indices.

Public Administration and Defence

13.3.35 Annual estimates of NVA, which comprise only the compensation of the employees is worked out from the data contained in the Government budget documents. Estimates of CFC worked out separately are added to NVA to arrive at GVA estimates. Estimates of GVA at constant 1993-94 prices are worked out by deflating the current price NVA by consumer price indices (CPI) of Industrial Workers and adding to it the CFC at 1993-94 prices.

Other Services

13.3.36 The Current price estimates in respect of the organised public sector part are based on data available in the budget documents in respect of education, medical, radio & television broadcasting and sanitary services. For the unorganised sector, like tailoring services, barber and beauty services, and laundry, & domestic services, etc. the estimates are worked out on the basis of data on GVA per worker available from Follow up Surveys of the Economic Census and work force. The estimates at constant prices in respect of the public sector are arrived at by deflating the NVA at current prices by the CPI and adding to it the CFC at 1993-94 prices and in case of the unorganised sector moving forward the base year estimates with the growth in the working force of the corresponding services.

13.3.37 The sources of data for different data categories in detail are indicated in the Table 13.7 below. Also given in the last column is the contribution to total output/input/GDP of the country (estimated using IOTT 1993-94 data, which gives such data separately) and a contribution within the sector's output/input/GDP for the year 1993-94, along with the method of estimation, for the corresponding data categories listed.

Table 13. 7: Existing Data Sources for the Series with base 1993-94

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
(a) Agriculture and Livestock Gross value added is estimated as value of output minus the value of inputs, both at current and at constant prices. Thus the estimates of value added for this sector at constant prices are obtained by the method of double deflation. Both value of output and value of inputs are measured separately at constant prices and at current prices. Estimates of gross value of output are available at detailed crop level from principal crops; inputs are estimated at the aggregate level for all crops put together.		
Principal Crops Area and production of principal crops and Prices. *(For estimating the value of output of these crops.)*	Department of Agriculture and Cooperation (DAC), which collects this data through the State Agriculture Statistical Authorities (SASAs). Statistics flow as a by-product of the State Revenue Departments. The schemes in place are the Timely Reporting Scheme (for preliminary estimates of area), complete enumeration (for fully revised estimates) and crop-cutting experiments (for yield estimates). State DESs for prices, which collects the data during the peak marketing season from the primary marketing centres.	Value of output estimates made by **direct** methods (production % price), both at current and at constant prices. These crops account for 10.0 % of the total value of output of the country (based on input-output transactions table, 1993-94, the total value of output of the country is Rs. 15,00,114 core, total inputs Rs. 7,01,037 crore and GDP Rs. 7,99,077 crore during 1993-94) and 69.0 % of value of output of the agriculture sub-sector.
Minor Crops Area, production and prices of minor crops (tea, coffee, rubber, horticultural crops other than those covered under principal crops, opium, flowers and cashewnut) *(For estimating value of output of these crops.)*	Tea Board, Coffee Board, Rubber Board, National Horticulture Board, Central Bureau of Narcotics and Cashewnut Board.	Value of output estimates made by **direct** methods (production % price), both at current and at constant prices. These crops account for 2.1 % of total value of output of the country and 14.6 % of value of output of agriculture sub-sector.

Data category and its use in NAS	**Source of data for the series (base 1993-94)**	**Method of Estimation and its share in 1993-94**
Miscellaneous Crops Area for the Miscellaneous crops (other cereals, other sugars, other oilseeds, other fibres, other drugs and narcotics, other condiments and spices, other pulses, other fruits and vegetables, fodder, grass, mulberry and Miscellaneous food and non-food crops. *(For estimating the value of output of these crops.)*	DAC	Value of output estimates is made by **indirect** methods using value of output per hectare of respective crop-groups (area % value of output per hectare), both at current and at constant prices. These crops account for 0.9 % of the total value of output of the country and 6.1 % of value of output of agriculture sub-sector.
By-products Area and cost of cultivation studies for the crops paddy, wheat, *bajra*, barley, *jowar*, maize, *ragi*, gram, moong, *arhar*, urad, groundnut, cotton, jute, sugarcane, poppy seed. *(For estimating the value of output of these crops.)*	DAC for all crops other than the poppy seed Narcotics Board for by-products of poppy seed.	Value of output estimates are made by **direct** methods using value of output of by-products per hectare of the respective crops (area % value of output per hectare), both at current and at constant prices. These crops account for 1.0 % of total value of output of the country and 6.6 % of value of output of agriculture sub-sector.
Other Products Prices for the products *gur* and bagasse; area for land under kitchen garden. *(For estimating the value of output of these crops.)*	State DESs for prices and NSSO surveys on landholdings.	Value of output estimates are made by **indirect** methods using rates (updated at the time of base year revision on the basis of data supplied by the Directorate of Sugar, Ministry of Agriculture) of production of *gur* and bagasse from sugarcane to obtain production figures and the prices, both at current and at constant prices. For kitchen garden, the area under this is estimated as a ratio (estimated from the NSSO survey) of total area. The value of output is estimated as production % value of output per hectare of the crop-group 'fruits and vegetables', both at current and at constant prices. These crops account for 0.5 % of total value of output of the country and 3.6 % of value of output of agriculture sub-sector.
Milk, Egg and Wool Production and prices of milk, egg and wool. *(For estimating the value of output of these crops.)*	Department of Animal Husbandry and Dairying, which collects this data through the Integrated Sample Survey, conducted by the State Animal Husbandry Departments. State DESs for prices.	Value of output estimates made by **direct** methods (production % price), both at current and at constant prices. These items account for 3.1 % of total value of output of the country and 68.4 % of value of output of livestock sub-sector.
Meat, cattle/buffalo hides, goat/sheep skins, dung – Production and prices of the items like cakes, manure and that used silk-eri, *tussar*, *muga*, honey, bee wax *(For estimating the value of output of these items).*	State DESs for production and prices of meat hides skins and dung; Central Silk Board and the Khadi and Village Industries Commission for other items for production and prices.	Value of output estimates made by **direct** methods (production % price), both at current and at constant prices. These items account for 0.9 % of total value of output of the country and 20.7 % of value of output of livestock sub-sector.

Data category and its use in NAS	**Source of data for the series (base 1993-94)**	**Method of Estimation and its share in 1993-94**
Other livestock products Production and prices of all other livestock products, fats, heads and legs, edible offal and glands, poultry meat, meat by-products guts, blood, esophagus, useless meat, meat by-products – bones, horns, hoofs, tail stumps, and increment in livestock. *(For estimating their value of output.)*	DAC through the Indian Livestock Census conducted once in about 5 years, State Animal Husbandry Departments, Directorate of Marketing and Inspection, National Sample Survey Organisation (NSSO), State DESs for prices.	Value of output estimates made by **indirect** methods – firstly, estimates of production are made on the basis of yield rates and value of output estimate is made as production % price, both at current and constant prices. These items account for 0.5 % of total value of output of the country and 10.9 % of value of output of livestock sub-sector.
Inputs – seed pesticides, electricity, chemical fertilisers, and organic manure and irrigation charges. *(For deriving the value of inputs; and, consequently the value added estimates.)*	DAC through the Cost of cultivation studies (annual), State budget documents, Central Electricity Authority, Pesticide Association of India, Fertiliser Association of India and the State DESs.	Value of input estimates, both at current and constant prices made by **direct** methods – as consumption % price, except in the case of irrigation charges, which are estimated at current prices by the analysis of budgets and at constant prices by extrapolating the base year figures with the index of area irrigated through Government sources. These items account for 2.9 % of total value of inputs of the country and 38.8 % of value of inputs of agriculture sector.
Inputs – repair and maintenance, diesel oil, market charges, feed of livestock.	AIDIS, 1991-92 State DESs, DAC, and NSSO.	Estimates made by **indirect** methods. Repair and maintenance AIDIS data for both current and constant prices. Diesel oil **At current prices** Value of inputs = no. Of diesel engines/tractors % consumption in value terms per diesel engine/tractor in the current year. **At constant prices** Value of inputs = no. Of diesel engines/tractors % consumption in value terms per diesel engine/tractor in the base year. Market charges Market charges = .0129 (which is derived from the benchmark survey done by DAC in 1997) % value of output, both at current and constant prices. Feed of livestock Value of roughage's = value of output of fodder, grass, cane trash + .95 % (value of output of straw and stalks) and Value of concentrates =Consumption rates of different categories of animals of different items % population of these categories % Weighted average price of different items, both at current and constant prices. These items account for 4.5 % of total value of inputs of the country and 61.2 % of value of inputs of agriculture sector.

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
(b) Forestry and logging Gross value added is estimated as value of output minus the value of inputs, both at current and at constant prices. Thus the estimates of value added for this sector at constant prices are obtained by the method of double deflation. Both value of output and value of inputs are measured separately at constant prices and at current prices.		
Production of Major and minor forest products *(For estimating value of output.)*	State Forest Departments (SFD) for both production and prices.	Value of output estimates made by **direct** methods (production % price), both at current and constant prices, for major forest products; value of output estimates provided as such by the SFDs for minor forest products These items account for 0.2 % of total value of output of the country and 26.8 % of value of output of forestry sector.
Production of Fuel wood *(For estimating value of output)*	NSSO consumption expenditure survey for 1993-94	Value of output estimates made by **indirect** methods (production % price), both at current and constant prices; production estimated from consumption data from NSSO surveys. These items account for 0.6 % of total value of output of the country and 73.2 % of value of output of forestry sector.
Inputs of forestry sector *(For estimating value of inputs.)*	*Ad hoc* norm of 10% of value of output based on analysis of a few State Government Budget Documents.	Value of inputs estimated by **indirect** methods Estimated to be 10 % of total value of output, at both current and constant prices. These items account for 0.2 % of total country's inputs and 100 % of sector's inputs.
(c) Fishing Gross value added is estimated as value of output minus the value of inputs, both at current and at constant prices. Thus the estimates of value added for this sector at constant prices are obtained by the method of double deflation. Both the value of output and value of inputs are measured separately at constant prices and at current prices.		
Production of Marine and inland fish, subsistence fishing, fish curing *(For estimating value of output.)*	Ministry of Agriculture and State Fisheries Departments for production and State DESs for prices.	Value of output estimates made by **direct** methods (production % price), both at current and constant prices. These items account for 0.7 % of total value of output of the country and 100.0 % of value of output of fishing sector.
Inputs - *(For estimating value of inputs.)*	*Ad hoc* norms supplied by State Fisheries Departments.	Value of inputs estimated by **indirect** methods 22.5 % of value of output for marine fish and prawns, 10 % for inland fish and 1 % for drying of fish, at both current and constant prices. These items account for 0.2 % of total country's inputs and 100 % of sector's inputs.
(d) Mining and Quarrying Gross value added is estimated as value of output minus the value of inputs, both at current and at constant prices. Thus the estimates of value added for this sector at constant prices are obtained by the method of double deflation. Both value of output and value of inputs are measured separately at constant prices and at current prices.		

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
Production of Coal and lignite *(For estimating value of output.)*	Coal India Ltd. and its subsidiaries, TISCO, IBM for production, prices and value of output.	Value of output estimates made by **direct** methods, at current prices by analysis of annual reports in the case of coal; and for coal at constant prices and for all other items at both current and at constant prices, as production % prices. These items account for 2.5 % of total GDP of the country.
Production of Crude Petroleum and natural gas *(For estimating value of output and inputs.)*	Oil and Natural Gas Commission and Oil India Limited (for production, prices and inputs).	
Production of other major minerals *(For estimating value of output)*	IBM	
Production of Minor minerals *(For estimating value of output)*	State Geological Departments, data relates to value terms.	
Inputs of coal and lignite *(For estimating value of inputs)*	Office of Coal Controller and Neyveli Lignite Corporation.	
Inputs of Metallic and non-metallic minerals *(For estimating value of inputs)*	IBM	
Inputs of minor minerals *(For estimating value of inputs)*	State Geological Departments	
(e) Registered Manufacturing Gross value added is estimated as value of output minus the value of inputs, at current prices. At constant prices, estimates of output and value added are obtained by deflating the respective estimates at current prices by price indices, at 2-digit level industry-groups Thus the estimates of value added for this sector at constant prices are obtained by the method of single deflation. Estimates of GDP are prepared at current prices first, and estimates at constant prices are obtained subsequently through single deflation by output price indices.		
Output, inputs and value added.	Annual Survey of Industries (for final estimates); the Index of Industrial Production for QE; Wholesale Price Indexes for price deflators at 2-digit level industry classification.	GDP estimates made through **direct** methods at current prices and through single deflation, at constant prices. These estimates account for 10.4 % of total GDP of the country and 100 % of sectoral GDP estimates.
(f) Unregistered Manufacturing Gross value added is estimated through indirect method as product of workforce and value added per worker (VAPW), for the benchmark year, at constant prices, at 2-digit level industry-groups. For the subsequent years, estimates at constant prices are extrapolated with the IIP data at 2-digit level industry groups. Estimates of GDP at current prices are obtained by inflating the constant price estimates with the price indices, at 2-digit level industry-groups. Estimates of GDP are prepared at constant prices first, and estimates at current prices are obtained subsequently.		

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
Estimates of work-force, value added per worker and Estimates of GDP	Second All-India Census of Small Scale Industrial Units, 1987-88 conducted by the Office of the Development Commissioner for Small Scale Industries (DCSSI) for value added per worker (VAPW) of SSI units. Survey on unorganised manufacturing sector conducted by the NSSO, 1994-95 for VAPW for benchmark year. NSS 1993-94/Population Census, 1991 for Workforce (WF) estimates. CSO for the IIP Ministry of Industry for the WPI.	Estimates of GDP are made through **indirect** methods. For the current year estimates of GDP at constant prices are made through extrapolating the benchmark data with the IIP data at 2-digit level industry groups. Estimates at current prices are made by superimposing the constant price data of GDP with the price indices at 2-digit level industry groups. These estimates account for 5.5 % of total GDP of the country and 100 % of sectoral GDP estimates. The SSI component accounts for 1.6 % of country's GDP and 27.6 % of sector's GDP; the non-SSI component accounts for 4.1 % of country's GDP and 72.4 % of sector's GDP.
(g) Electricity, Gas and Water supply Gross value added at current prices is estimated by the production approach for electricity, whereas for gas and for the water-public part by the income approach (sum of factor incomes and consumption of fixed capital) and for the water-private part, as a product of workforce and salaries and wages plus operating surplus from ASI. At constant prices, GDP estimates are prepared by moving the benchmark estimates with Index of Quantum Sales of Electricity in the case of electricity sub-sector, with the Index of Number of Bio Gas Plants in the case of gobar gas part, deflating the current price estimates with the Index of Price of Gas for the gas part, deflating the current price estimates with CPI (IW) for the water part. Estimates of GDP are prepared separately at current and constant prices for electricity and gobar gas. For all other sub-sectors, estimates at current prices are prepared first and estimates at constant prices are obtained subsequently.		
Electricity Value of output and material inputs.	Annual reports of State Electricity Boards for output and inputs Annual reports of electricity generating private companies for output and inputs.	Estimates of GDP made by **direct** methods, through production approach (value of output-material inputs) at current prices. At constant prices, GDP estimates are prepared by moving the base year estimates with the index of quantum sales of electricity. These account for 2.1 % of total GDP of the country and 86.3 % of sector's GDP.
Gas Value of output and material inputs.	Ministry of Non-Conventional Energy for number of bio gas plants Khadi and Village Industries Commission (KVIC) for value of production Gas Authority of India Ltd. for output and inputs	Estimates of GDP made by **direct** methods, through production approach (value of output-material inputs) at current prices. At constant prices, GDP estimates are prepared by moving the base year estimates with the Index of no. of bio gas plants for the gobar gas part and by deflating with the Index of price of gas for gas part. These account for 0.1 % of the total GDP of the country and 4.9 % of sector's GDP. The *gobar* gas part accounts for 0.05 % of country's GDP and 2.1 % of sector's GDP. The gas part accounts for 0.07 % of country's GDP and 2.8 % of sector's GDP

Data category and its use in NAS	**Source of data for the series (base 1993-94)**	**Method of Estimation and its share in 1993-94**
Water Data on factor incomes	Budget documents of Centre and States for data on salaries and wages. Data from municipalities for data on salaries and wages Annual Survey of Industries for data on operating surplus.	Estimates of GDP made by **direct** methods, through income approach (sum of factor incomes and consumption of fixed capital) for the water-public part and as a product of the workforce and salaries and wages plus operating surplus from ASI, for the water-private part, at current prices. At constant prices, the estimates of GDP are obtained by deflating the current price estimates of GDP by the CPI (IW). The water – public part accounts for 0.08 % of country's GDP and 3.3 % of sector's GDP. The water-private part accounts for 0.14 % of country's GDP and 5.6 % of sector's GDP.
(h) Construction Gross value added is estimated separately for the *Pucca* construction part and for the kuchha construction part. The estimates of the *Pucca* construction part at current prices are prepared by the commodity flow method taking into account (a) the basic items (i) cement and cement products, (ii) iron and steel, (iii) bricks and tiles, (iv) timber and roundwood; and (b) other materials. The estimates of the kuchha construction part at current prices are prepared by the expenditure method taking into account the expenditures made by public sector, private corporate sector and household sector. The estimates of GDP at constant prices are prepared by deflating the current price GDP estimates by the Index of Wages of Construction Workers		
Value of output of *Pucca* construction (through commodity flow approach).	Cement Controller of India, Joint Plant Committee, the Annual Survey of India, estimates of unorganised manufacturing, the National Buildings Organisation, Coal Controller, Central Public Works Department and several ad-hoc sources	Estimates of GDP made by **direct** methods. The value of output of *Pucca* construction is estimated through commodity flow approach (arriving at the availability for construction from the production figures after accounting for inter-industry consumption, net exports and consumption expenditure) for four basic materials (mentioned above), other materials and factor incomes, at current prices. The GDP is estimated to be 53.4 % of value of output. At constant prices, the estimates of GDP are prepared by deflating the current price estimates of GDP by the index of wages of construction workers. The *Pucca* construction part accounts for 4.2 % of country's GDP and 81.6 % of sector's GDP Cement and cement products account for 0.8 % of country's GDP and 16.1 % of Sector's GDP Iron and steel account for 1.4 % of country's GDP and 27.5 % of Sector's GDP Bricks and tiles account for 0.4 % of country's GDP and 6.8 % of Sector's GDP Timber and round wood account for 1.3 % of country's GDP and 24.5 % of Sector's GDP Other construction materials account for 0.9 % of country's GDP and 18.4 % of Sector's GDP

Data category and its use in NAS	**Source of data for the series (base 1993-94)**	**Method of Estimation and its share in 1993-94**
Value of output of labour-intensive *kutcha* construction (through expenditure approach)	Annual budget documents, annual reports of Tea, Coffee and Rubber Boards, NSSO, and the All-India Debt and Investment Survey	Estimates of GDP made by **direct** methods for the public sector part and private corporate sector part, through expenditure approach (expenditures made on *kutcha* construction), at current prices. At constant prices, estimates of GDP are prepared by deflating the current price GDP estimates by the index of rural unskilled labour For the household *kutcha* construction part, estimates of GDP are prepared by **indirect** methods, using AIDIS data, at current prices. At constant prices, estimates of GDP are prepared by deflating the current price GDP estimates by the index of rural unskilled labour The *kutcha* construction in public sector and private corporate sector accounts for 0.1 % of country's GDP and 2.4 % of sector's GDP The *kutcha* construction in household sector accounts for 0.8 % of country's GDP and 16.0 % of sector's GDP
(i) Trade, Hotels and Restaurants Gross value added is estimated separately for the public sectors, private corporate sector and unorganised segment. For the public and private corporate sector parts, estimates of GDP are prepared separately at current and constant prices. While the current price estimates of GDP for the public sector are prepared by the analysis of budgets and accounts, those of private corporate sector are prepared from the data given by the RBI's study of finances of sample companies. At constant prices, GDP estimates of public sector are prepared by moving the base year estimates with the Quantum Index (obtained on the basis of purchase and sales of public sector trading companies), those of private corporate sector are prepared by moving the base year estimates with the Index of Deflated Sales of corporate sector (by WPI of manufactured products and non-food articles). For the unorganised part, estimates of GDP at current and constant prices are prepared by moving the base year estimates (value added per worker % work force) with the gross trading income of commodity producing sectors at current and constant prices, respectively.		
Public Sector	Budget documents and annual reports/ accounts of Central and State trading companies.	The GDP estimates are prepared by **direct** methods. Current price estimates are prepared by the analysis of budget documents and annual reports and constant price estimates are prepared by extrapolation with the quantum index of purchases and sales of public sector trading companies These account for 0.6 % of country's GDP and 4.6 % of sector's GDP
Private corporate sector, including cooperatives	Company Finance Studies of RBI, NABARD	The GDP estimates are prepared by **direct** methods. Current price estimates are prepared from the RBI's study and constant price estimates are prepared by extrapolation with the Quantum Index of Purchases and Sales of private corporate sector trading companies. These account for 0.9 % of country's GDP and 7.0 % of sector's GDP.

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
Un-organised	Enterprise survey, 1996-97 for VAPW for benchmark year NSS, 1993-94 / Population Census, 1991 for WF estimates	The GDP estimates are prepared by **indirect** methods. Current and constant price estimates are prepared by extrapolating the base year estimates with Index of Gross Trading Income (prepared on the basis of value of output of commodity producing sectors and imports), at current and constant prices, respectively. These account for 11.3 % of country's GDP and 88.3 % of sector's GDP.
(j) Railways The GDP estimates are prepared separately for current and constant prices. While the current price estimates are prepared by the income approach (sum of factor incomes), the constant price estimates are prepared by extrapolating the base year estimates with an index of passenger kilometres and net tonne kilometers.		
Value added	Statistical publications from the Railway Board budget documents of Central Government.	The GDP estimates are prepared by **direct** methods. Current price estimates are prepared by the income approach (sum of factor incomes), the constant price estimates are prepared by extrapolating the base year estimates with an index of passenger kilometers and net tonne kilometers. These account for 1.2 % of country's GDP and 100.0 % of sector's GDP.
(k) Transport by other means Gross value added is estimated separately for the public sectors, private corporate sector and unorganised segment. For the public and private corporate sector parts, estimates of GDP are prepared separately at current and constant prices. While the current price estimates of GDP for the public sector are prepared by the analysis of budget documents and annual reports, those of private corporate sector are prepared through production approach from the data given in the annual reports. At constant prices, GDP estimates of public and private corporate sector are prepared by moving the base year estimates with various quantum indices (details given under sub-sectors, below). For the unorganised part, estimates of GDP at constant prices are prepared first by moving the base year estimates (value added per worker % work force) with various quantum indices (details given under sub-sectors, below) and the current price estimates of GDP are prepared by superimposing the price indices on the constant price GDP estimates		
Mechanised Road Transport -Public Sector	**Analysis of Union and State Budgets** Analysis of Annual reports/ Accounts of State Road Transport Undertakings.	Estimates of GDP are prepared by **direct** methods. Current price estimates are prepared by analysis of budget documents and annual reports and constant price estimates by extrapolating the base year estimates with Quantum Index of Passenger Kilometres These account for 0.5 % of GDP of the country and 12.0 % of sector's GDP.
Mechanised Road Transport -Private unorganised part	Enterprise surveys 1993-94 for VAPW for benchmark year. NSS, 1993-94 / Population Census, 1991 for WF estimates, Ministry of Surface Transport for category-wise number of registered vehicles.	Estimates of GDP are prepared by **indirect** methods. Constant price estimates are prepared first by extrapolating the base year estimates with Index Number of Registered Vehicles. Current price GDP estimates are prepared by inflating the constant price GDP estimates by CPI (UNME) of transport and communication. These account 2.0 % of GDP of the country and 50.9 % of sector's GDP.

Data category and its use in NAS	**Source of data for the series (base 1993-94)**	**Method of Estimation and its share in 1993-94**
Non-Mechanised Road Transport	Enterprise survey, 1993-94 for VAPW for benchmark year NSS, 1993-94 / Population Census, 1991 for WF estimates; indexes of agriculture and industrial production and CPI (IW).	Estimates of GDP are prepared by indirect methods. Constant price estimates are prepared first by extrapolating the base year estimates with Combined Index of Agriculture and Industrial production. Current price GDP estimates are prepared by inflating the constant price GDP estimates by CPI (IW). These account for 0.3 % of GDP of the country and 8.2 % of sector's GDP.
Air Transport -Public part	Budget documents and annual reports	Estimates of GDP are prepared by **direct** methods. Current price estimates are prepared by analysis of budget documents and annual reports and constant price estimates by extrapolating the base year estimates with Quantum Index of Revenue Passenger kilometers, cargo tonne kilometers and mail tonne kilometers These account for 0.2 % of GDP of the country and 5.4 % of sector's GDP
Air Transport -Private part	Analysis of accounts of scheduled air operators, Private air operators, Flying and Gliding clubs	Estimates of GDP are prepared by **direct** methods. Current price estimates are prepared by analysis of annual reports and constant price estimates are arrived at deflating the current price GDP estimates by CPI(UNME) (single deflation) These account for 0.001 % of GDP of the country and 0.02 % of sector's GDP
Water transport – Public sector	Budget documents and Annual reports	Estimates of GDP are prepared by **direct** methods. Current price estimates are prepared by analysis of budget documents and annual reports and constant price estimates by extrapolating the base year estimates with Quantum Index of Cargo Handled and Passengers Carried by the shipping companies. These account for 0.2 % of GDP of the country and 6.2 % of sector's GDP
Water transport – Private organised part	Annual reports of companies, for value of output and inputs	Estimates of GDP are prepared by **direct** methods. Current price estimates are prepared by analysis of annual reports and constant price estimates by deflating current price estimates with CPI(IW) (single deflation) These account for 0.1 % of GDP of the country and 2.7 % of sector's GDP.
Water transport Ocean and coastal – private unorganised part	Enterprise survey, 1993-94 for VAPW for benchmark year NSS, 1993-94 / Population Census, 1991 for WF estimates Ministry of Surface Transport for data on cargo handled by steamer and sailing vessels.	Estimates of GDP are prepared by **indirect** methods. Constant price estimates are prepared first by extrapolating the base year estimates with index of cargo handled by steamer and sailing vessels (coastal). Current price GDP estimates are prepared by inflating the constant price GDP estimates by CPI (IW). These account 0.04 % of GDP of the country and 1.0 % of sector's GDP.

Data category and its use in NAS	**Source of data for the series (base 1993-94)**	**Method of Estimation and its share in 1993-94**
Inland water transport - Private unorganised part	Enterprise survey, 1993-94 for VAPW for benchmark year NSS, 1993-94 / Population Census, 1991 for WF estimates Directorate of Economic and Statistics Ministry of Agriculture (DESMOA) Ministry of Industry for Index of agricultural Production (IAP) and IIP.	Estimates of GDP are prepared by **indirect** methods. Constant price estimates are prepared first by extrapolating the base year estimates with a combined index of agriculture and industrial production. Current price GDP estimates are prepared by inflating the constant price GDP estimates by CPI(IW) These account 0.1 % of GDP of the country and 2.7 % of sector's GDP
Supporting services to water transport	Enterprise survey, 1993-94 for benchmark year, NSS, 1993-94 / Population Census, 1991 for WF estimates Ministry of Surface Transport for cargo handled at major ports	Estimates of GDP are prepared by **indirect** methods. Constant price estimates are prepared by extrapolating the base year estimates with index of cargo handled at major ports. Current price GDP estimates are prepared by extrapolating the base year estimates with the growth rates observed in the public sector These account 0.32 % of GDP of the country and 4.1 % of sector's GDP
Services incidental to transport	Railway Board for commission data	Estimates of GDP are prepared by **indirect** methods. Current price GDP estimates are obtained as 68.75% of the total commission paid to the booking agents by the railways, road, air and water transport. Constant price estimates are prepared by deflating the current price GDP estimates with the Implicit Price Index of road air and water sub-sectors (single deflation). These account 0.3 % of GDP of the country and 6.8 % of sector's GDP.
(l) Storage Estimates of GDP are prepared separately for warehousing corporations, cold storage and storage, n.e.c. For the warehousing corporations, estimates at current prices are prepared by analysis of annual reports. Estimates at constant prices are prepared by deflating the current price GDP estimates by a price index based on the changes in warehousing charges. For the cold storage part, estimates at current prices are prepared from the ASI results. Estimates at constant prices are prepared by moving the base year estimates with index of agriculture production For the storage, n.e.c. estimates at constant prices are prepared first by extrapolating the base year estimates with inter-survey growth in work force. Current price GDP estimates are prepared by inflating the constant price estimates with CPI(UNME)		
Warehousing	Accounts of Central and State Warehousing Corporations	Estimates of GDP are prepared by **direct** methods. Estimates at current prices are prepared by analysis of annual reports. Estimates at constant prices are prepared by deflating the current price GDP estimates by a price index based on the changes in warehousing charges These account 0.02 % of GDP of the country and 29.3 % of sector's GDP

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
Cold Storage	Annual Survey of Industries	Estimates of GDP are prepared by **direct** methods. Estimates at current prices are prepared from the ASI results. Estimates at constant prices are prepared by moving the base year estimates with the index of agriculture production These account 0.01 % of GDP of the country and 15.5 % of sector's GDP
Storage n.e.c.	NSS, 1993-94 / Population Census, 1991 for WF estimates and enterprise surveys, 1992-93 for VAPW for benchmark year, and CPI (UNME)	Estimates of GDP are prepared by **indirect** methods. Estimates at constant prices are prepared first by extrapolating the base year estimates with inter-survey growth in work force. Current price GDP estimates are prepared by inflating the constant price estimates with CPI (UNME) These account 0.04 % of GDP of the country and 55.1 % of sector's GDP
(m) Communication Estimates of GDP are prepared separately for public and private segments. For the public part, estimates at current prices are prepared by analysis of budget documents and at constant prices by extrapolating the base year estimates with a combined weighted index of number of money orders, number of telegrams, number of telephones and number of postal articles, with respective earnings in the base year as weights For the private segment, estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI(UNME)		
Communication – public sector	Budget documents	Estimates of GDP are prepared by **direct** methods. Estimates at current prices are prepared by analysis of budget documents and at constant prices by extrapolating the base year estimates with a combined weighted index of number of money orders, number of telegrams, number of telephones and number of postal articles, with respective earnings in the base year as weights These account 1.1 % of GDP of the country and 93.0 % of sector's GDP.
Communication Services – Private sector	Enterprise survey, 1991-92 benchmark year for VAPW, NSS, 1993-94 / Population Census, 1991 for WF estimates.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.1 % of GDP of the country and 7.0 % of sector's GDP.
(n) Banking and Insurance Estimates of GDP are prepared separately for commercial banks, banking Department of RBI, non-banking financial institutions, Post Office Savings Bank, Employees Provident Fund Organisation and Postal Life Insurance, cooperative credit societies and life and non-life insurance. Estimates of GDP at current prices are prepared from direct data At constant prices, estimates for commercial banks, banking Department of RBI, non-banking financial institutions, cooperative credit societies and life and non-life insurance segments are prepared by moving the base year estimates with suitable indices (details given below), those for post office savings bank, employees provident fund organisation and postal life insurance are prepared by deflating current price GDP estimates by CPI(IW).		

Data category and its use in NAS	**Source of data for the series (base 1993-94)**	**Method of Estimation and its share in 1993-94**
Commercial banks	RBI for group-wise data on earnings and expenses of banks	Estimates of GDP are prepared by **direct** methods. Estimates at current prices are prepared from directly available data. At constant price, the GDP estimates are prepared by moving the base year estimates by the index of deflated aggregates deposits and credits (deflated by the WPI). These account 1.8 % of GDP of the country and 34.3 % of sector's GDP
Banking department of RBI	RBI for data on income and expenditure	Estimates of GDP are prepared by **direct** methods. Estimates at current prices are prepared from directly available data. At constant price, the GDP estimates are prepared by moving the base year estimates by the index of deflated aggregates deposits and credits (deflated by the WPI) These account 0.4 % of GDP of the country and 6.9 % of sector's GDP
Non-banking Financial institutions – organised part	Annual reports of Non-departmental Non-banking financial companies and corporations containing their annual accounts, Annual Accounts of private financial companies (ICICI and HDFC), RBI Bulletin.	Estimates of GDP are prepared by **direct** methods. Direct data on non-departmental financial companies and corporations, ICICI and HDFC For private non-banking financial companies the data on income and expenditure for a set of sample companies published in RBI bulletin is blown up with the total paid up capital of non-government, non- banking financial companies (excluding ICICI and HDFC) These account 1.6 % of GDP of the country and 31.1 % of sector's GDP
Non-banking financial institutions – unorganised part		For the unorganised financial sector, the GDP = one third of GDP estimates in the organised sector (Non- Banking Financial Companies) These account 0.5% of GDP of the country and 9.3 % of sector's GDP
Post Office savings bank (POSB), Employees provident fund organisation (EPFO) and postal life insurance	Budget Documents	Estimates of GDP are prepared by **direct** methods. Estimates at current prices are prepared from directly available data. At constant price, the GDP estimates are prepared by deflating the current price GDP estimates by CPI(IW) These account 0.1 % of GDP of the country and 1.1 % of sector's GDP
Co-operative credit societies	NABARD for income and expenditure	Estimates of GDP are prepared by **direct** methods. Estimates at current prices are prepared from directly available data. At constant price, the GDP estimates are prepared by moving the base year estimates by the average of Index of Deflated Aggregates Deposits and Index of Membership These account 0.2 % of GDP of the country and 4.3 % of sector's GDP

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
Life insurance	Annual reports of LIC for economic classification	Estimates of GDP are prepared by **direct** methods. Estimates at current prices are prepared from directly available data. At constant price, the GDP estimates are prepared by moving the base year estimates by the average of deflated indices of life fund and sum assured These account 0.3 % of GDP of the country and 5.8 % of sector's GDP
Non-life insurance	Annual reports of Insurance Companies for economic classification	Estimates of GDP are prepared by **direct** methods. Estimates at current prices are prepared from directly available data. At constant price, the GDP estimates are prepared by moving the base year estimates by the deflated index 'Gross premium less claims', for non-life insurance other than ESIC. For ESCI, the current price estimates are deflated with the WPI. These account 0.4 % of GDP of the country and 7.1 % of sector's GDP.
(o) Real estate, ownership of dwellings and business services Estimates are separately prepared for real estate, ownership of dwellings, legal services and business services. For the real estate, GDP estimates at constant prices are prepared first by using inter-survey growth in workforce and current prices subsequently by inflating the constant price GDP estimates with CPI (UNME). For the ownership of dwellings, GDP estimates at constant prices are prepared first by using inter-censal growth in residential houses and current prices, subsequently, by inflating the constant price GDP estimates with index of house rent. For the legal services, GDP estimates at constant prices are prepared first by using inter-survey growth in workforce (bar council based) and current prices subsequently by inflating the constant price GDP estimates with CPI (UNME). For the business services (other than software development) GDP estimates at constant prices are prepared first and current prices subsequently by inflating the constant price GDP estimates with CPI (UNME) and for software services, current price estimates are first and constant price by deflating by CPI (UNME).		
Real estate	Enterprise survey, 1991-92 for VAPW benchmark year NSS, 1993-94 / Population Census, 1991 for WF estimates.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI(UNME) These account 0.04 % of GDP of the country and 0.7 % of sector's GDP
Ownership of dwellings	1991 Census for residential houses NSS 50th round, 1993-94 for rent per household.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-censal growth in dwellings. Estimates at current prices are prepared by inflating the constant price estimates by index of house rent These account for 5.4 % of GDP of the country and 89.4 % of sector's GDP

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
Legal services	Bar Council of India for WF data, from the Enterprise Survey, 1991-92 for Gross VAPW for benchmark year	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI(UNME) These account 0.2 % of GDP of the country and 3.3 % of sector's GDP
Business services accounting, and other items under NIC 891 architectural and engineering NIC 894	NSS, 1993-94 / Population Census, 1991 for WF estimates. Budget documents for VAPW as proxy	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce Estimates at current prices are prepared by inflating the constant price estimates by CPI(UNME) These account for 0.1 % of GDP of the country and 1.9 % of sector's GDP.
Software development NIC 892	NASSCOM for output Annual reports/ accounts of software companies for GVA to GVO ratio CSO for CPI (UNME).	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at current prices are prepared by using the NASSCOM data on value of output. Estimates at current prices are prepared by deflating the current price estimates by CPI (UNME). These account 0.1 % of GDP of the country and 2.1 % of sector's GDP.
Business consultancy NIC 893	NSS, 1993-94 / Population Census, 1991 for WF estimates RITES for VAPW	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.1 % of GDP of the country and 1.1 % of sector's GDP.
Other business services (NIC 895-899)	Enterprise survey, 1991-92 for VAPW for benchmark year. NSS, 1993-94 / Population Census, 1991 for WF estimates.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.1 % of GDP of the country and 1.6 % of sector's GDP.
(p) Public Administration and Defence Estimates of GDP are prepared at current prices first through income approach (compensation of employees is taken as the net domestic product) and constant price GDP estimates are prepared next through single deflation.		

Data category and its use in NAS	**Source of data for the series (base 1993-94)**	**Method of Estimation and its share in 1993-94**
Value added	Budget documents of Centre, State and local bodies and CPI (IW). For quasi-Government bodies, the NSS, 1993-94 / Population Census, 1980-81 for workforce and DGE&T for the organised sector's workforce.	Estimates of GDP are prepared by **direct** methods through income approach (only compensation of employees). Estimates at constant prices are made by single deflation by CPI (IW). These account for 5.4 % of country's GDP and 100 % of sector's GDP.
(q) Other Services Estimates of GDP are prepared separately for the public part, private organised part and private unorganised part. For the public part, estimates of GDP are prepared through income approach at current prices first and through single deflation at constant prices next. For the private organised and unorganised parts, estimates are prepared at constant prices first and through inflation the current prices next, except in the case of research and scientific services (organised) for which estimates of GDP at current prices is prepared first, and through single deflation constant price GDP estimates next.		
Education, medical, sanitary, and TV and radio -Public sector	Budget documents for salaries and wages.	Estimates of GDP are prepared through **direct** methods, through income approach at current prices first and by single deflation for constant price GDP estimates, next. These account for 2.4 % of country's GDP and 37.9 % of sector's GDP.
Education -Private recognised	NSS, 1993-94 / Population Census, 1980-81 for WF estimates M/O HRD for salaries and wages.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (IW). These account 1.2 % of GDP of the country and 19.6 % of sector's GDP.
Education -Private un-recognised	Enterprise survey, 1991-92 for VAPW benchmark year NSS, 1993-94 / Population Census, 1980-81 for WF estimates.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.1 % of GDP of the country and 1.3 % of sector's GDP.
Medical and health -Private Organised	DGE&T (2-3 years time lag and available at 3-digit NIC) for WF VAPW of public services under medical and health.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by an Index on VAPW services under medical and health. These account 0.1 % of GDP of the country and 1.2 % of sector's GDP.
Medical and health -Private unorganised	Enterprise survey, 1991-92 for VAPW benchmark year NSS, 1993-94 / Population Census, 1980-81 for WF estimates.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.4 % of GDP of the country and 5.9 % of sector's GDP.

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
Sanitary services -Private sector	NSS, 1993-94 / Population Census, 1980-81 for WF estimates Municipalities reports for VAPW.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by an Index on VAPW of municipalities. These account 0.1 % of GDP of the country and 1.2 % of sector's GDP.
TV and radio -Private sector	NSS, 1993-94 / Population Census, 1980-81 for WF estimates / DGE&T for WF estimates. Public administrative & defence sector's VAPW.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.003 % of GDP of the country and 0.05 % of sector's GDP.
Research and scientific services -Organised	DGE&T publication (2-3 years time lag, data available at 3 digit-NIC) for WF Annual reports/ Accounts of research Institutes for VAPW.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at current prices are prepared by moving the base year estimates with the inter-survey growth in workforce and VAPW from the annual reports of research institutes. Estimates at constant prices are prepared by deflating the current price estimates by CPI (IW). These account 0.2 % of GDP of the country and 3.3 % of sector's GDP.
Research and scientific Services -Unorganised	Enterprise survey, 1991-92 for VAPW benchmark year NSS, 1993-94 / Population Census, 1980-81 for WF estimates.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.04 % of GDP of the country and 0.6 % of sector's GDP.
Religious and other community services	Enterprise survey, 1991-92 for VAPW benchmark year NSS, 1993-94 / Population Census, 1980-81 for WF estimates.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.1 % of GDP of the country and 1.6 % of sector's GDP.
Recreation and entertainment	Ministry of Finance for taxes and tax rates Enterprise survey, 1991-92 for GVA / GVO ratio	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared on the basis of tax rates and taxes collected. These account 0.1 % of GDP of the country and 1.1 % of sector's GDP.

Data category and its use in NAS	Source of data for the series (base 1993-94)	Method of Estimation and its share in 1993-94
Personal services **domestic** **barber and beauty shops** **laundry, dyeing** **others**	Enterprise survey, 1991-92 for VAPW benchmark year NSS, 1993-94 / Population Census, 1980-81 for WF estimates	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.6 % of GDP of the country and 9.2 % of sector's GDP.
Tailoring services	NSS, 1993-94 / Population Census, 1980-81 for WF estimates NSS unorganised manufacturing sector survey for VAPW benchmark year.	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by VAPW of manufacture of ready-made garments. These account 0.5 % of GDP of the country and 7.3 % of sector's GDP.
Services/ activities, n.e.c.	Enterprise survey, 1991-92 for VAPW benchmark year NSS, 1993-94 / Population Census, 1980-81 for WF estimates	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by inflating the constant price estimates by CPI (UNME). These account 0.4 % of GDP of the country and 6.6 % of sector's GDP.
International and other extra-territorial bodies	NSS, 1993-94 / Population Census, 1980-81 for WF estimates; VAPW from budget documents as proxy	Estimates of GDP are prepared by **indirect** methods. Estimates of GDP at constant prices are prepared by moving the base year estimates with the inter-survey growth in workforce. Estimates at current prices are prepared by multiplying the workforce with three times the VAPW of public administration and defence. These account 0.2 % of GDP of the country and 3.4 % of sector's GDP.

Data Gaps in the estimates of GDP by industry

Agriculture

13.3.38 Major data gaps in the agriculture sector relate to yield estimates of crops other than the principal crops. In the case of minor crops, yield estimates are available only after a considerable time lag, from State DESs and are also not generally based on scientific methods. Although some States have initiated a Scheme for "Crop Estimation Surveys on Fruits and Vegetables and Minor Crops", to estimate yield rates of fruits and vegetables as well as minor crops, the scheme does not have an All-India coverage. In the case of grass and fodder, estimates are based on very old yield rates, relating to 1952-53. The estimate of area under grass is also based on very old norms and is based on LUS. The other data gaps relate to the production of new-emerging commercial crops like mushrooms, flowers and other high-valued herbs and spices, which are not grown in the areas presently covered under the *patwari* system. Also missing from the production estimates, is the output of crops grown on the roadside, adjacent to railway tracks and community lands, which are not covered under the *patwari* system?

13.3.39 Regarding area estimates of major crops, it has been observed from the results of the Scheme on Improvement of Crop Statistics (ICS), (physical verification of crop enumeration and checking of crop abstract statements in 10,000 villages, as far as area is concerned and inspection of about 30,000 crop-cutting experiments as far as yield estimates are concerned out of a total of 5,00,000 experiments) that there is some under-enumeration of area under these crops. It is possible that there is over-reporting of 'other area' as a consequence of this, since the total area under all crops remains the same. Due to the present size of the sample being small, it has so far not been possible to apply any correction factors to the area (and yield) estimates released by the State Agricultural Statistics Authorities (SASAs) or the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA). The scheme of ICS has been discussed in detail in the Section 4.3 of Chapter 4 on Agriculture Statistics.

13.3.40 In some of the States (Andhra Pradesh, Haryana, Himachal Pradesh, Jammu and Kashmir), *girdwari* is undertaken only twice a year. It is likely that the production of crops sown and harvested between two *girdwaris* is missed in the data of these States. It is suggested that a uniform procedure could be recommended for undertaking girdwari four times a year in all the States, as is the practice now in the States of Assam, Bihar, Orissa, Tamilnadu and West Bengal.

13.3.41 In the recent years, a trend of increasing food-grain stocks has been observed, even when the total production is showing a decline. Part of this could be due to under-reporting of area figures as revealed by the ICS findings. However, since stocks are a function of procurement price, issue price and market price, it is possible that there need not be under-estimation. It is suggested that the DESMOA may undertake food-balance studies, every year at least for important crops. This would provide a consistency check to the estimates of agriculture production.

13.3.42 In respect of prices, ideally, these should relate to the first point of transaction, at which income accrues to the producer. Unfortunately, such data is not available and estimates are usually based on prices prevailing in the primary marketing Centres during the peak marketing period. In order to estimate the value of agricultural crop output at factor cost, it is necessary to evaluate transaction at different points of the year, at first point of transaction price after production. In the absence of data on such prices the district level output, evaluated as the average price in the district, is treated as transacted at the average price prevailing in different primary marketing Centres during the peak marketing period in a district. The Price data (average annual prices for different crops) collected and supplied by the States for the compilation of National Accounts refers to the prices prevailing during the peak marketing period in the primary marketing Centres. Section 4.10 of Chapter 4 on Agriculture Statistics discusses agriculture Prices in detail. Sometimes, it is observed that these prices reported by the States are under-stated, as devolution of Central funds, to some extent, depends on the estimated per capita State income. It is necessary that such price data is provided by the DESMOA, which would then be free from bias or alternatively the devolution of funds may be de-linked from the per-capita income of the States. See Section 4.10 of Chapter 4 on Agricultural Statistics.

13.3.43 In the case of material inputs, the seed rates of crops other than those for which CCS is being conducted, relates to NSS 1951-52 and various marketing reports of DMI. Even the CCS is not conducted in all the States and norms of neighbouring States are applied to the States where CCS is not being done. This is a major data gap as different States have different farm and soil conditions. In the case of chemical fertilisers, pesticides and insecticides, instead of consumption figures, estimates are being prepared using dispatch figures, because the consumption figures from the CCS relate only to major crops/States. For a detail discussion on CCS reference may be made to Section 4.12 of Chapter 4 on Agriculture Statistics. The estimates are very weak as far as feed of livestock is concerned. The benchmark estimates of production of fodder and grass are based on the NSS, 1955-56 survey. The estimates of yield rates of stalks and straws other than

those available from Crop Cutting Surveys are based on the NSS 1951-52. The estimates of quantity and percentage of different components of concentrates consumed per cattle are based on NSS 1975-76 survey and studies conducted by IASRI. The item-wise consumption of roughage and concentrates consumed by different categories of livestock are not available. This is essential both for the construction of the input-output transaction table as well as reliable estimates of livestock feed. Such data separately for rural and urban areas will help in evaluating the value of output of animals used in sectors other than agriculture and livestock. Data on operational costs and repair and maintenance is very weak. Estimates of repair and maintenance are based on rough norms based on AIDIS conducted once in ten years. The annual estimates are, therefore, very weak due to the absence of annual indicators. Based on the limited data available on the operational costs of livestock products, it is assumed to be 0.25 per cent of value of output. Data on market charges of livestock products is also not available.

13.3.44 For estimating the contribution of different factors in the generation of income namely, land, labour, capital and entrepreneurship (which respectively generate rent, including imputed rent on account of owned land, compensation of employees, including that of family labour, interest and profits), data required in detail on these are not available. Although, data is available from CCS with a considerable time lag, no such details are available as far as the livestock sector is concerned. The DAHD's surveys on cost of inputs and the ISS both collect data on these aspects, but unfortunately, the same are not being tabulated. In order to implement the 1993 SNA, which, *inter alia*, recommends preparation of the sequence of accounts for various institutional sectors, data in detail is required on factor incomes cross-classified by type of institutions, particularly for the agricultural households. For compiling the agricultural satellite accounts (as recommended by the FAO), the focus is on the agricultural households (households engaged predominantly in agricultural operations). Data on income-expenditure from agricultural activities, as well as from other subsidiary activities, capital assets and capital expenditures need to be collected from the agricultural households for compiling these satellite accounts. Presently, there is no survey/Census, which focuses on agricultural households. Whereas the Agriculture Census has operational holding as the unit, the Livestock Census is household based. It is suggested that these two Censuses could be combined, with a view to also include the requirements of FAO on the compilation of satellite accounts for agricultural households. Such an integrated Census would enable us to meet all the requirements of FAO with reference to agriculture, livestock and income-expenditure. It is possible to capture operational holding data through the household approach.

13.3.45 Quarterly estimates of agricultural production required for the preparation of quarterly GDP estimates, are presently based on a crop-calendar and not on actual production, as required. This is unsatisfactory, as crop calendars do not follow a quarterly system. This needs to be corrected. For compiling the environmental accounts information relating to the imputed cost for degradation and depletion on the non-produced natural assets like soil and water and other assets are not available, but required to be generated. Initially, this may require extensive research work to be initiated at a place like Indian Agricultural Statistics Research Institute (IASRI) with the cooperation of the agricultural universities.

Livestock

13.3.46 Reliable estimates of livestock production are available for three major products namely, milk, eggs and wool, although the time lag of these estimates is of the order of two years. However, estimates of milk from animals other than cows, buffaloes and goats are not available and thus, not included in the GDP estimates. Similarly, the utilisation rates of milk in fluid form or after being converted into desi ghee, butter, khoa, cream, and similar other items, within the households, are not available. In the absence of this data, estimates of value of output of milk are being prepared as if milk is consumed as such. In the case of meat, estimates of yield are not

generally based on any scientific techniques, although some States are generating the estimates using the Integrated Sample Survey results. Besides, reliable estimates of the number of animals slaughtered in places other than the slaughterhouses like unorganised slaughterhouses and religious slaughters are not available. The estimates of yield rates of meat products and by-products are based on very old norms derived from the DMI studies. In addition, there is no data on the number of fallen animals and these are estimated using DMI 1961 studies on the subject. In the case of poultry meat, the estimated number of fowls, ducks killed and average meat yields per bird are not available. These are based on some very rough norms and studies conducted by the IASRI. The estimates of hair and bristles suffer due to lack of scientific studies on the yield of these items. The present estimates are based on DMI 1958, 1961 and 1962 studies. The evacuation rates of animals in terms of dung and its utilisation as manure and for fuel purposes too are based on a limited study conducted by a few States and co-ordinate by the Department of AHD in 1984-85. However, some of the States are able to generate presently the evacuation rates of dung from Integrated Sample Survey results. In the case of estimates of increment in livestock, the estimates are based on successive Indian Livestock Censuses (ILC's) and using extrapolation techniques. The ILC is unfortunately not conducted at the same time by all the States. Besides, if the reference period happens to coincide with a drought year, as happened in the case of 1987, the estimates for the subsequent years based on extrapolation would totally go awry. This technique also does not take into account the present conditions, like death of animals due to natural calamities. Therefore, there is a data gap to the extent that there are no reliable estimates of livestock population on an annual basis, due to lack of annual data on the number of deaths of different categories of animals. However, with additional tabulations, the data collected in the Integrated Sample Survey could be used to generate the annual livestock population numbers. For details Section 4.13 of Chapter 4 on Agriculture Statistics may be referred.

Forestry

13.3.47 The sources of data for the forestry sector are mainly the State forest Departments on production of major and minor forest products, NSS consumer expenditure surveys for consumption of fuelwood and State DESs for prices. The data gaps are mainly on account of non-availability of species-wise production and prices, incomplete measure of reporting of production, non-availability of data on production and prices of most of the minor forest products, lack of adequate data on prices, time-lag and non-availability of data relating to material inputs of the forestry sector. Due to non-availability of information on material inputs, these are estimated to be 10 per cent of the total value of output. Detailed data on factor incomes is also not available. For details, Section 4.17 of Chapter 4 on Agriculture Statistics may be referred.

Fishing

13.3.48 The data gaps in the case of the fishing sector relate to estimates of production of inland fish, subsistence fish, dried and salted fish, gathering of pearls, chunks, sea-shells, etc. and on material inputs. In the absence of data on material inputs, 22.5 per cent of output in the case of marine fish and 10 per cent of output in the case of inland fish is taken as material inputs. For details, Section 4.16 of Chapter 4 on Agriculture Statistics may be referred.

Mining

13.3.49 The position of data availability with respect to major minerals, both in the public and private sector, is sound. The source agencies for the data on major minerals are the respective Public Sector companies, Office of the Coal Controller and the IBM. As far as minor minerals are concerned, statistics are compiled by the State Geological Departments, but the coverage, timeliness and quality of these statistics are not considered to be as reliable as that of major minerals. Data on material inputs, particularly in the case of minor minerals, is generally not

available on a year-to year basis. The contribution of these minor minerals is, however, quite small.

Manufacturing-registered

13.3.50 The details required and presently available from the Annual Survey of Industries (ASI) for the compilation of GDP from the registered manufacturing are (a) ex-factory value of all products and by-products including semi-finished goods manufactured, (b) receipts for industrial and non-industrial services rendered to others, (c) value of fixed assets produced by the factory for its use, and (d) net balance of goods sold in the same condition as purchased. For inputs, data pertain to: (a) raw-materials, components, chemicals, packing materials and stores actually used for the production process, (b) fuel, lubricants, electricity, water and similar other inputs (c) costs of non-industrial services received, (d) cost of material consumed for repairs and maintenance of fixed assets including cost of work done by others to the fixed assets, (e) cost of contract and commission work done by others on materials supplied by the factories, and (f) cost of office supplies. However, for the compilation of NAS, information available from the ASI has to be updated keeping in view the non-response factor. The summary results mentioned above provide supplementary information regarding the number of both units and the number of workers. In the estimates of GDP, industry-wise estimates of output and GVA published in the ASI are adjusted upward by the ratio of employment in the non-responding factories to the total employment in the responding factories of the census sector. The information on non-responding units can be said to be an area of data gap for the registered manufacturing sector as it is not known whether the non-responding units were functioning normally or were closed.

Manufacturing – unregistered

13.3.51 The estimates for the unregistered sector are prepared initially for a benchmark year using the results of the NSS on unorganised manufacturing sector. The estimates for subsequent years are made by extrapolating the benchmark estimates with the Index of Industrial Production (IIP) at the 2-digit level.

13.3.52 The data gaps in this case relate both to the benchmark estimates and the current year's estimates. In the case of benchmark estimates, it is observed that the share of unorganised manufacturing in total manufacturing has been declining steadily over the years. Whether this is due to under reporting by the respondents in the case of NSS unorganised manufacturing survey or whether a decline of the unorganised manufacturing sector has occurred, needs further examination.

Table 13. 8: Gross Domestic Product of Manufacturing Sector (at Current Prices)

(Rs. in Crores)

Item	1980-81 (1980-81 series)	1993-94 (1980-81 series)	1993-94 (1993-94 series)
Manufacturing (registered sector)	12281	81229	81873
Manufacturing (unregistered sector)	9363	46417	43620
Total manufacturing sector	**21,644**	**1,27,646**	**1,25,493**
Contribution in total manufacturing sector			
Manufacturing registered sector	56.7	63.6	65.2
Manufacturing unregistered sector	43.3	36.4	34.8

13.3.53 The physical indicators used for extrapolating the benchmark estimates are the IIP data at the 2-digit level, (in the absence of annual surveys on the unorganised manufacturing sector) and all the weaknesses in the IIP get indirectly reflected in the estimates of unorganised manufacturing sector's GDP estimates. Further, the IIP at best represents movements mainly in the organised manufacturing sector.

Electricity, Gas and Water Supply

13.3.54 The bulk of these economic activities are in the public sector and as such, the data gaps in this sector are not serious. The gaps here relate to lack of detailed information on gobar gas production and private water supply units.

Construction

13.3.55 The various norms used in the estimation of output and material inputs on construction are old and need review. These norms/proportions are not based on satisfactory data. It is desirable that different types of construction are classified into homogenous groups and that the proportions of other materials and value added to materials for each group is worked out on a more satisfactory basis by making proper studies by the concerned Organisations/Departments.

Trade, Hotels and Restaurants

13.3.56 The estimates of public sector are based on current data and can be considered as reliable. For the private organised part, estimates are prepared on the basis of employment data from the DGE&T and income data from the RBI's Company Finance Studies. For the unorganised part of the activity, the bench mark estimates are based on data available from Enterprise Surveys. The Enterprise Surveys are not co-terminus with the benchmark year. Also the estimates of per worker value added derived from the Enterprise Surveys, particularly in the case of trading activities, are unreliable particularly for non-directory trading establishments and Own-account trading enterprises. The Enterprise Survey results have shown a very low per worker value added in many cases in the three rounds of Surveys held so far. An alternative approach for capturing the contribution of these sectors has been tried in a special survey conducted by the NSSO during 1998-99, by asking direct questions on factor incomes. However, the results of the special survey have not shown improvement. An experimentation in survey methods of estimation is needed in enterprise surveys covering trading activity.

Transport, Storage and Communication

13.3.57 The estimates of value added from railways and communication are based on up-to-date and reliable information. The quality of the estimates of the unorganised sector depends on the quality of data captured by the Enterprise Surveys conducted to capture the information on the unorganised segments of the activities of transport other than railways, storage and communication.

Banking and Insurance

13.3.58 In the absence of any direct data for measuring the volume of activity of the unorganised non-banking financial undertakings and own-account moneylenders, the GVA for this sub-sector is presently estimated as one third of the GVA in respect of organised non-banking financial companies/corporations in public and private sectors.

Services

13.3.59 For services, such as, education, research and scientific, medical and health, sanitary, religious community, legal, recreation and entertainment, and personnel services the data gaps present are similar to those mentioned for the services n.e.c. In case of educational services, the requisite information is available for recognised institutions from the Ministry of Education and University Grants Commission. For unrecognised educational institutions an assumed proportion of the GVA from the recognised institutions was considered in the past for National accounting. The Enterprise Surveys, 1991-92, have provided information on the unrecognised educational institutions, but the quality of the data captured from the Enterprise Surveys has a limitation. The income of private tutors is not captured adequately by the survey. For medical and health services, information on the public sector component is available from the budget documents.

For the unorganised segments of various services, the data required relates to the work force, per worker value added for the base year and physical indicators for the movement to other years. The information on per worker value added is available from the Enterprise Surveys conducted for the purpose.

13.3.60 Till regular annual surveys are undertaken to estimate the work force engaged in individual services and the value added per worker, estimates in this sector will continue to be based only on the quinquennial data on employment by NSSO and the population census data and other limited information on value added per worker obtained from the Enterprise Surveys, whose quality has been unsatisfactory.

Rates and Ratios used in the estimation of GDP by industry

13.3.61 In the compilation of GDP estimates, a large number of rates and ratios are used. Estimates of GDP based on such rates and ratios account for about 10 per cent of the GDP estimates. The rates and ratios used in the GDP estimates are conveniently summarised below:

Agriculture

13.3.62 There are certain crops for which production estimates are available but not prices. In such cases, their prices are related to other crops for which they are known and are used for estimating the value of output. These rates are updated in consultation with the State DESs at the time of revising the base year. These rates are as follows:

Small Millets	75 per cent of the weighted average price of *jowar, bajra,* barley, maize and *ragi*.
Other Pulses	85 per cent of weighted average price of *arhar*, *urad, moong*, *masoor*, and horsegram.

13.3.63 There are certain miscellaneous crops for which area is known but not production. For estimating the value of output of such crops, per hectare value of output is derived by assuming certain rates as follows:

Other oil seeds	85 per cent of weighted average value of output per hectare of linseed, castor, sesamum, niger and safflower;
Other Sugar	90 per cent of weighted average value of output per hectare of sugar cane and *gur*;
Other Fibres	90 per cent of weighted average value of output per hectare of sanhemp and mesta;
Other drugs and narcotics	90 per cent of weighted average value of output per hectare of opium in case of M.P., Rajasthan, and U.P. For remaining States 90 per cent of weighted average value per hectare of tobacco leaves and tobacco stems;
Other condiments and spices	90 per cent of weighted average value of output per hectare of cardamom, dry chillies, dry ginger, and black pepper;
Other fruits and vegetables	weighted average value of output per hectare of banana, mango, citrus fruits, cashew nut, potato, sweet potato, tapioca and onion.

13.3.64 Rates are also used for production for estimating the value of output, in the following cases :

Tea	22.5 per cent of raw tealeaves is taken to be the processed tea (Based on information provided by Tea Board);
Fodder	7.0 Tonne/hectare for Karnataka and Rajasthan, 2.82 Tonne/hectare for Maharashtra, 9.342 Tonne/hectare for other States (based on NSS 1952-53, where estimated area is available);
Grass	State-wise yield rates % area under grass (4% area under Permanent pastures and other grazing lands + area under Miscellaneous tree crops + 2 % area under cultivable waste and + 2 % area under fallow land + net area sown (based on NSS 1952-53);
Gur	10 per cent of cane remaining (Total cane *minus* cane used for seeds, *chewing*, khandsari and by sugar factories) (based on information provided by Directorate of Sugar, Ministry of Agriculture);
Baggase	22.5 per cent of *gur* production (based on information provided by Directorate of Sugar, Ministry of Agriculture)

Livestock

13.3.65 Rates used for production for estimating the value of output of, the livestock products for which only population estimates are known:

Goat hair, camel hair and pig bristles	Yield estimates range from 0.01 kg. Per animal to 1.1 kg per animal (based on DMI, 1958-59 studies. Recently, the State Governments have started supplying this information from the Integrated Sample Survey.
Meat by-products and meat products Like heads and legs, fats, blood, horns, Useless meat, tail stumps, esophagus, glands fallen animals	Yield rates vary from State to State (based on DMI, 1957 and 1961); mortality rates % population in the specific category (based on DMI, 1961).

Inputs of Agriculture and Livestock

13.3.66 Rates used for estimating the input of seeds of certain crops for which value of output is known (based on DMI, 1958):

Masoor	11.3 per cent of value of output of the crop;
Other Pulses (including horse-gram)	3.95 per cent of value of output of the crops;
Other oilseeds (including Niger, Safflower, Sunflower and Soyabean)	9.53 per cent of value of output of the crops;

Sweet potato 12.l per cent of value of output of the crop.

13.3.67 Rates are used for estimating the input of concentrates fed to the livestock. The rates are based on NSS 1975-76 survey report and use the formula:

Input of livestock concentrate = (feed per animal in quantity) % (number of animals).

Fishing

13.3.68 Rates used for estimating the repairs and maintenance and other operational costs (i.e. the total value of inputs) of fishing sector are:

22.5 per cent of the total value of the marine fish and prawns;
10 per cent of the total value of the inland fish;
1 per cent of the total value of the subsistence fish and dried and salted fish (based on the information provided by the States at the time of revision of base year to 1993-94).

Forestry

13.3.69 Rates used for estimating the value of output of unrecorded industrial wood (based on Timber Trends Study, 1957-58) are 10 per cent of the value of output of recorded production of industrial wood.

13.3.70 Rates used for estimating the value of inputs of forestry sector are taken as 10 per cent of the value of output (based on the analysis of budget documents of forest departments carried out by the States from time to time).

Banking and Insurance

13.3.71 Rates used for estimating the value added from unorganized non-banking financial sector are assumed to be 1/3rd of the value added by the Government and private non-banking financial companies.

13.3.72 Recommendations on Gross Domestic Product

(i) Recommendations in chapter 4 to 12 in respect of Official Statistics relating to different sectors of the economy be implemented speedily so as to improve the quality of data going in to the compilation of National Accounts Statistics from primary source agencies.

(ii) The major weakness lies in estimating the contribution of the large number of unorganised and small self-employed enterprises in manufacturing and services, where the basic problems are those of irregular income streams, multiple activities undertaken during a year, absence of business accounts, and frequent entries and exits of units. While benchmark enterprise surveys currently provide the available database, the characteristic features mentioned above pose formidable challenges of survey design survey methodology and survey practices. It is therefore recommended that, periodical benchmark surveys of unorganised enterprises be continued while simultaneously conducting pilot studies for improving the technical survey design methods and practices.

(iii) For updating rates and ratios used in GDP estimation by industry of origin, it is recommended that type studies (Appendix 13.1) in different parts of the country, to provide reasonably representative estimates at the National level, be conducted regularly with the help of State Directorates of Economics and Statistics.

13.4 PRIVATE FINAL CONSUMPTION EXPENDITURE

Brief Methodology of Compiling Private Final Consumption Expenditure

13.4.1 Private final consumption expenditure (PFCE) includes final consumption expenditure of (a) households and (b) non-profit institutions serving households (NPISH) like *temples, gurdwaras*. The final consumption expenditure of households relates to outlays on new durable as well as non-durable goods (except land) and on services. This consumption expenditure also includes the imputed gross rent of owner-occupied dwellings, consumption of Own-account production evaluated at producers' prices and payments in kind of wages and salaries valued at cost, e.g., provision for food, shelter and clothing to the employees. The final consumption expenditure of non-profit institutions serving households includes the value of goods and services produced for own use on current account i.e., the value of gross output reduced by the sum of the value of their commodity and non-commodity sales. This would include transfers in kind of non-durable goods and services from Government Administration, industries and rest of the world. The final consumption expenditure of households and non-profit institutions serving households are estimated together and are not available separately. However, expenditures on second hand goods are not included.

13.4.2 Estimates of PFCE are obtained by following the commodity flow method. The commodity - flow method of estimating PFCE on a given item group consists of subtracting intermediate consumption, Government final consumption, exports, changes in stocks and investment from net availability given by domestic production plus imports. The quantity of final consumption obtained from commodity balances is generally evaluated at market prices.

Sources of data in the compilation of Private Final Consumption Expenditure

13.4.3 The basic data on output and prices are mostly the same as those utilised for the preparation of GDP estimates. The sources of data and the method used for the estimation of PFCE are indicated in the table given below:

Table13.9: Sources of data used and method of estimation of PFCE

Sl. No.	Source data for the 1993-94 series	Method of estimation and its share in 1993-94
(a) food and non-food products (agricultural)		
Foodgrains	Production – Same as for GDP Wastages – latest DMI Reports Marketable surplus ratios – Ministry of Agriculture Inter Industry Consumption - Latest DMI and ASI reports. Imports and Exports - DGCI and S Allocation of partly capital goods - All-India Debt and Investment Survey (AIDIS), 1981-82 Government consumption – Analysis of Government's annual budget documents. Trade and Transport Margins (TTM) - Data collected from co-operatives/ super markets Retail Prices - NSSO/DESMOA for rural / urban retail prices.	The production data is adjusted for seed and feed to work out marketed surplus and quantity retained by producers. The marketable surplus is further adjusted for stock, wastage, net imports, inter-industry consumption and Government consumption, to work out net marketable supplies, which are available for consumption. The quantity retained by the producers and net marketable supplies are evaluated separately. The ex-farm prices for evaluation of quantity retained by the producers are the same as used in the estimates of domestic retail prices and urban retail prices are used, to evaluate net market supplies. The values of quantity retained and net market supplies available for consumption are added to obtain estimates. These items account for 15.2 % of PFCE and 10.2 % of GDP
Bread and biscuits	Same sources as mentioned against manufacturing sector, below.	For registered manufacturing sector, value of output is taken from ASI. For the unregistered

Sl. No.	Source data for the 1993-94 series	Method of estimation and its share in 1993-94
		manufacturing sector, GVA as available for manufacturing of food products at 2-digit level of NIC for domestic product is converted into value of output with the help of output to GVA ratio based on 50th round NSS survey results. The value of output thus arrived at is bifurcated into 'bread and biscuits' and 'others' with the help of working force in these industries. The combined value of output from registered and unregistered sectors is marked up with TTM of these items to arrive at the value at market prices. These items account for 0.4 % of PFCE and 0.3 % of GDP.
Sugarcane, *gur*, refined sugar and palm sugar	Same sources as mentioned for the foodgrains and manufacturing sector.	Same procedure as adopted for the foodgrains and manufactured products. These items account for 3.3 % of PFCE and 2.2 % of GDP.
Oils, vanaspati, mustard, coconut, gingelly, groundnut, linseed, castor, other edible oils, imported oils and oilseeds, sesamum, linseed, rapeseeds/mustards and others	Same sources as mentioned for the foodgrains and Manufacturing sector.	same procedure as adopted for the foodgrains and manufactured products These items account for 3.8 % of PFCE and 2.6 % of GDP.
Fruits and vegetables, banana, mango, grapes, citrus fruits, cashew kernels, onion, other fruits and vegetables, groundnuts, fruits and vegetable products, coconut, copra, potato, sweet potato, tapioca, milk and milk products.	Same as above.	Same as above. These items account for 19.5 % of PFCE and 13.1 % of GDP.
Beef, pork, mutton, goat meat, buffalo meat, other meat products, ducks fowls, chicken, and eggs and fish and fish products.	Same as above.	Same as above. These items account for 3.7 % of PFCE and 2.5 % of GDP.
Coffee, tea, cocoa, spices, salt, and sugar confectionery and other food products.	Same as above, except for spices and salt, for which the source of data is the NSS Consumer Expenditure Survey.	Same as above, except for spices and salt, which are prepared using the value of per capita consumption. These items account for 2.9 % of PFCE and 1.9 % of GDP.
Non-alcoholic and alcoholic beverages.	Same as for manufacturing sector.	Same as for cereals These items account for 0.4 % of PFCE and 0.2 % of GDP.
Pan, arecanut, opium, other ingredients of pan.	Same as above, except for pan, for which the source of data is the NSS Consumer Expenditure Survey.	Estimates prepared using the value of per capita consumption These items account for 0.5 % of PFCE and 0.3 % of GDP
Tobacco raw, cigarettes, biris, snuff, cigars and cheroots and other tobacco products.	Same sources as those used for foodgrains in the case of raw tobacco Same sources as those used for manufacturing sector for others	Same method as that used for foodgrains in the case of raw tobacco. Same sources as that used for manufacturing sector for other items. These items account for 2.7 % of PFCE and 1.8 % of GDP.

Sl. No.	Source data for the 1993-94 series	Method of estimation and its share in 1993-94
(b) Manufactured products		
Cotton, silk, woolen and miscellaneous textiles, carpets, coir, wooden furniture, paper, footwear, leather products, tyres, tubes and other rubber products, plastics, toilet articles, fireworks, glass products, earthenware, non-metallic products, steel furniture, metal utensils, other metal products, refrigerators, office machinery, non-electric machinery, batteries, electric appliances, radio and TV sets, motor vehicle parts, motor cycles, scooters, photographic equipment and optical, watches and clocks, jewellery, sports goods, musical instruments, stationery articles and miscellaneous personal goods.	GDP and output by-products:- Same as for GDP Share of consumable goods: *Registered*: Detailed ASI results at commodity level. *Unregistered*: Surveys conducted by the NSSO . Excise and Import duty: DGCI&S Imports and Exports: DGCI&S Government consumption: Budget documents Partly capital goods: AIDIS, 1981-82. Non households / inter-industry consumption: DMI and ASI reports. Trade and Transport Margins: data collected from cooperatives / super markets Change in stocks: *Registered*: ASI *Unregistered*: surveys conducted by the NSSO.	Database for the preparation of estimates for a majority of manufactured items is the same as those utilised for estimation of domestic product. Since the commodity wise details of value of products and by-products for consumable goods are not available in ASI ' summary results' for factory sector; Detailed ASI results of production available for the latest year (1993-94) at commodity level are utilised to develop ratios for working out the share of items consumed by the households to the total production. Applying these ratios to the products and by-products of summary results (3-digit level of NIC code) of ASI, the relevant output of commodity products are estimated. For the unregistered manufacturing sector, the basic data are the same as those utilised for estimation of domestic product. These estimates of domestic product are converted into values of output and by-products on the basis of product-GVA ratios as available from the results of Enterprise Survey of NSSO, 1994-95. The above value of the products available at a 2-digit level of NIC are further split up at 3-digit level of NIC Code on the basis of working force (1993-94). The commodity-wise norms of the proportion of total value of products and by-products to the value of consumable goods have been arrived at, on the basis of special tabulations carried out on the data collected in the NSS survey on Unregistered manufacturing. The estimates of distributive margins for the manufacturing sector are built up on the basis of data on wholesale and retail prices of representative items received from the various cooperative stores/super bazaars. The distributive margins for certain commodities are also supplemented by collecting data for comparable specifications featuring in the WPI and DESMOA's weekly bulletin of urban retail prices of essential commodities and NSSO rural retail prices at All - India level. The difference between retail price and corresponding wholesale price expressed as a percentage of the distributive margins so arrived at are suitably adjusted for margins between ex-factory and wholesale prices. These distributive margins are applied to the imports also. Import Duties and excise duties are added to the value of output of different commodities before applying the distributive margins. These items account for 11.9 % of PFCE and 8.0 % of GDP
(c) Services		
Purchase of transport services	Railway Board Ministry of Surface Transport	The estimates of PFCE in respect of mechanised road transport (buses and

Sl. No.	Source data for the 1993-94 series	Method of estimation and its share in 1993-94
- Rail, air, buses including tramways, taxis auto-rickshaws and organised water transport.	Enterprise Surveys of NSSO/CSO Air India and Indian Airlines – annual reports.	tramways, taxis and auto-rickshwa), rail transport, air transport and organised water transports are based on the total passenger earnings in these services. For railways, air transport and organised shipping 80 %, 5 % and 75 % of the earnings are taken as PFCE. These items account for 5.8 % of PFCE and 3.9 % of GDP.
Non-mechanised road transports, unorganised river and canal transport and unorganised sea/ocean transport.	Same sources as those used for the GDP estimates.	For non-mechanised road transport as also for Un-organised inland water transport, the output to value added ratios are applied to the estimates of GVA as available separately for rural and urban areas, to obtain the estimates of value of output. Of this 95 % is taken as the private consumption expenditure. In the case of coastal and ocean-going sailing vessels, the estimates of GDP from passenger services are converted to output by using the proportion of domestic product to gross passenger earnings in organised shipping and 5 percent of this is taken as private consumption expenditure. These items account for 0.4 % of PFCE and 0.2 % of GDP.
Services incidental to transport	Same sources as those used for the GDP estimates.	The estimates of private consumption expenditure for services incidental to transport are based on gross agency earnings, which are available from the same sources from where gross earnings of the various transport services are obtained. 5 % of the agency earnings are taken as PFCE. These items account for 0.002 % of PFCE and 0.001 % of GDP.
Communication	Department of Telecommunications Department of Posts.	40 % of the total earnings from postal articles, money orders, telephone and telegraph is assumed to be the share of PFCE. These items account for 0.7 % of PFCE and 0.5 % of GDP
Recreation, Education and Cultural services	Ministry of HRD RBI	For recreation and entertainment, the estimates of PFCE are built up on the basis of rates of entertainment taxes and revenues of State Governments. The estimates under educational services are prepared for such services as purchased by the households. The estimates of recurring expenditure by recognised educational institutions are obtained from ministry of Human Resource Development and 4.5 % of this is assumed to be the expenditure by Un-recognised institutions. Expenditure on private tuition is estimated on the basis of consumer expenditure survey results of NSSO. Government expenditure on education obtained through purpose classification of expenditure contained in general Government budgets have been deducted to arrive at the PFCE. The imputed service charge is measured as excess of property income (which is essentially interest received by those institutions from loans and other investments made from the deposits they held over the

Sl. No.	Source data for the 1993-94 series	Method of estimation and its share in 1993-94
		interest they pay out to the depositors. These items account for 1.9 % of PFCE and 1.3 % of GDP
Medical care and Health Services	NSSO Consumer Expenditure Survey, 1993-94	In the case of expenditure on medical care and health services, household expenditure on medicine and services is estimated on the basis of value of per capita consumption expenditure available in various reports of NSSO consumer expenditure surveys. The receipts by Central Government on account of Central Government Health Scheme compiled from the Central Government budget is also taken as an item of household consumption. These items account for 3.3 % of PFCE and 2.3 % of GDP
Personal care and effects (barber and beauty shops, religious, other personal, sanitary, domestic, laundry, and general insurance services, petrol and diesel, repair charges including insurance, road tax, services n.e.c., tailoring services and TV and Radio services and other miscellaneous services namely, banking charges, legal, business services and life ins.	Same sources as those used for the GDP estimates	The estimates for religious and other community services and other personal services like domestic services, laundry, barber and beauty shops and sanitary services are domestic product based. The total output in the case of religious and domestic services is treated as household consumption while for laundry services and barber and beauty shops 90 % and 98 %, respectively, of output are taken. For business services, 10 % of output is assumed to be household expenditure while for legal services it is 75 %. For sanitary and other personal services the share for household consumption is 50 % while for services n.e.c. It is 30 %. The PFCE on banking and insurance charges is estimated as imputed charges. These items account for 8.5 % of PFCE and 5.7 % of GDP.
Gross rent and water charges	Same as above.	The expenditure on house rent (including repair and maintenance) is estimated to include rented dwellings and imputed rent of owner occupied dwellings. Water charges are only for urban areas only, at 3% GVA. These items account for 8.4 % of PFCE and 5.6 % of GDP.
Hotels and restaurants	Same as above.	The estimates of GVA are converted into the value of output on the basis of the corresponding relationship observed for similar public limited companies. Of the total expenditure, 33% is taken as PFCE. These items account for 1.0 % of PFCE and 0.7 % of GDP.
Fuel and power namely, electricity, LPG, kerosene, coal, soft coke, firewood, vegetable waste, dung cake, lignite, gas coke, bagasse, charcoal and gobar gas.	Central Electricity Authority Ministry of Petroleum and Natural Gas KVIC. Same sources as used for GDP estimates.	Data on electricity sold to domestic consumers and prices is obtained from the Central Electricity Authority. For LPG domestic consumption and retail prices are obtained from the Ministry of Petroleum and Natural Gas. For kerosene oil, while the data on domestic consumption is from the Ministry of Petroleum and Natural Gas, the prices are obtained as weighted average of retail prices

Sl. No.	Source data for the 1993-94 series	Method of estimation and its share in 1993-94
		of rural (NSSO) and urban (DESMOA) with weights as per capita consumption of kerosene based on NSSO consumer expenditure surveys. In case of firewood, production is the same as used for estimation of value of output in the forestry sector. Urban production is assumed to be 10 % of the total production and the same is evaluated at the urban retail price. The remaining production in the rural areas is evaluated at the price used for estimation of value of output of the total value of rural and urban areas thus estimated, 96 % is taken as PFCE. Gobar gas consumption is taken from the annual report of the KVIC These items account for 5.8 % of PFCE and 3.9 % of GDP.

Data Gaps in the Estimation of PFCE

13.4.4 As explained earlier, the PFCE includes the consumption expenditure of (a) households, and (b) NPISHs. Whereas the consumption expenditure of households is available from the NSS quinquennial household consumer expenditure surveys, the same is not available from the NPISHs. Therefore, consumption expenditure of the NPISHs is the major data gap in the direct estimation of PFCE. The other important data gap is the absence of annual consumer expenditure surveys. Some information is available from the annual thin sample surveys of the NSSO but the same can not be used for estimating the PFCE due to the non-availability of the detailed commodity wise consumption. For NPISHs, in the absence of a frame for these bodies, it has not been possible to launch any sample surveys. Due to these reasons, the commodity flow approach is followed in the NAS for estimating the PFCE.

13.4.5 In the commodity flow approach adopted for the private consumption expenditure, the basic data on output and prices are mostly the same as those utilised for the preparation of GDP estimates and as such, shortcomings in the GDP estimates would be reflected in the measurement of private consumption as well. The recommendations made in the GDP section would also have an effect on the improvement of the quality of PFCE estimates. Besides these, the wastage ratios for most of the commodities used in the PFCE are based on the Directorate of Marketing and Inspection (DMI) reports, which are very old. Also, the trade and transport margins (TTM) used for various commodities are based on data obtained from co-operative stores and super bazar in the 1980s. The shortcomings in wastage ratios, TTMs and retail prices would also be inherent in the estimates of PFCE. In the estimation of PFCE, mostly assumed rates and ratios are used, in the absence of direct estimates.

Rates, Ratios and share used in the estimation of PFCE

13.4.6 In the compilation of PFCE rates and ratios used, are indicated below:

(a) Share of PFCE in services incidental to transport to total earnings.

(b) Share in PFCE of the total output of economic activities packing, crating and travel booking and other travel services for land, water and air transport.

(c) Share of private consumption to total earnings of taxi, auto rickshaw, bus, railways and air transport.

(d) Share of private consumption of repair of vehicles to total repair cost.

(e) Ratio of PFCE to total earnings of postal articles, money orders telephones and telegrams.

(f) Ratio of PFCE to GDP of other services such as Business Services, Religious services (NIC-940), Legal services (NIC-830), Domestic Services (NIC-960), Laundry services (NIC-961), Barber and beauty shops (NIC-962), Sanitary Services (NIC-910), other personal services (NIC-969), Services n.e.c. (NIC-990).

(g) Share of PFCE to total GDP of hotels and restaurants.

(h) Ratio of PFCE to total sales of kerosene.

(i) Ratio of PFCE to total disposable supplies for consumption of coal.

(j) Ratio of PFCE to total disposable supplies in respect of soft coke.

(k) Ratio of PFCE to output of firewood.

(l) Ratio of PFCE to production of vegetable wastes.

(m) Ratio of PFCE to the production of bagasse.

(n) Ratio of PFCE to production of dung cake.

(o) Ratio of PFCE to available supplies of lignite.

(p) Ratio of PFCE to disposable supplies of Gas coke.

(q) Ratio of PFCE to output of charcoal.

Variation between PFCE and NSS Estimates of Household Consumption Expenditure

13.4.7 The major reasons for the difference in the estimates of PFCE given in the NAS with those of the Consumption Expenditure Surveys (CES) of the NSSO are (a) inclusion of the consumption expenditure of NPISHs in the PFCE, whereas the same are out of the purview of CES, (b) exclusion of houseless and the institutional population like the inhabitants of orphanages, prison and hospitals, in the CES, while the consumption of these persons are included in PFCE, c) inclusion of imputed rentals of owner-occupies dwellings in the PFCE, whereas the CES includes only the rent on dwellings actually paid. The other reasons for the variation between the two sets of estimates are the differences in the coverage of items, the reference period (PFCE refers to the financial year, while the CES generally to agriculture year), and the approaches of estimation (PFCE is mostly through commodity flow approach and the CES is from household surveys).

13.4.8 The CSO and the NSSO have jointly conducted a study, "Cross-Validation Study of Estimates of Private Consumption Expenditure Available from Household Survey and National Accounts", for the Study Group on Non-sampling Errors and prepared a report. This report extensively deals with the differences between the two sets of estimates, at detailed item level. The recommendations contained in this report are:

(a) The available estimates of average prices, whether peak-season or wholesale or retail are based on the data collected in the regular price collection schemes. Commodities transacted in the market vary in quality over a wide range. But, for each commodity, prices of only a fixed set specified qualities are collected in the price collection schemes, notwithstanding the changes in the market shares of different qualities that take place over time. The NSS implicit prices, on the other hand, represent the average price of the commodities appropriately weighted by the actual shares of different qualities in the current consumption basket. Apart from the price data available from the regular price collection system, the CSO uses price data from various other sources while deriving the NAS value estimates. For example, the data source like CEA is used for price of electricity, Ministry of

Petroleum and Natural Gas for price of L.P.G. and kerosene and the NHB for prices of non-forecast fruit crops. Often, just a marking-up rate (for example, for the price of *dal* obtained from 'retained' grains) is applied on the price of a product to estimate the price of its derivatives. Thus, the prices used for NAS estimates may often be inappropriate for evaluating the value of consumption. Instead, use of NSS implicit prices for deriving NAS value estimates would be more appropriate, whenever the NSS quantity estimates appear to be reasonably accurate. For this purpose, the NSS implicit prices can be generated from the data collected in the CES, separately for consumption out of home-grown stock and that out of quantity purchased. The feasibility of deriving NAS value estimates using NSS implicit prices requires a comprehensive study.

(b) A simple average of prices of *atta, maida* and *suji* is used at present in the NAS to represent the price of all wheat products, instead of working out the values of the products individually. The procedure needs to be corrected in this respect.

(c) The accuracy of the NAS estimates, being derived by the commodity flow approach, depends heavily on the accuracy of rates, ratios and norms applied on the production estimates for netting out the amounts used for further production in the form of seeds, feeds and inter-industry consumption. The NAS estimates also depend on the estimated ratio of marketable surplus. The rates used for allocating the production of durables to the households and industry are largely based on subjective judgements. For example, the ratios assumed for estimating private consumption of rail and bus services is based entirely on subjective judgements. These need to be replaced by proper estimates based on objective studies. On the other hand, the NSS estimates of travelling expenses, i.e. rail, air and bus fares, incurred by the households appear to suffer from gross under reporting. A study is required to be undertaken to explore alternative means of collecting data particularly on rail and bus fares paid by the households.

(d) The data on change in stock used at present in PFCE are not appropriate on two counts. First it relates to nonconformity of the time frames. While the reference time-frames of production data for all agricultural produce is the agricultural year, the data on change in stock for the public sector are based on the data on the stocks at the beginning and end of the financial year available from the budget documents and annual reports. Use of quarterly data on stock of food-grains in the public sector may help reduce this non-conformity inherent in the present methods of estimating change in stock and production. Second, there is hardly any data on change in stock for the household sector. So far, the enterprise surveys have failed to provide useable estimates of change in stock. Thus, special studies need to be undertaken to explore alternative ways of estimating the change in stock in the household sector.

(e) At present, no provision out of the marketed surplus is made for intermediate consumption of food items like pulses, chickens, eggs, *vanaspati*, etc. in industries. In case of *gur* and sugar, only 5 per cent of the total production is assumed to go in further production as intermediate consumption. The inter-industry consumption rates of these food items, which appear to have been increasing in recent years, need to be estimated from the appropriate type

studies. Under statement of inter-industry consumption results in double counting of production and over statement of private final consumption.

(f) That the NSS underestimates the consumption of durable has been suggested by a number of scholars in the past. Minhas (1988) while commenting on the possibility of underestimation of durable consumption in the CES, noted that non-cooperation from the affluent households could be the main reason for the downward bias. Recently, Lal, Mohan and Natarajan (2001) have compared the NSS estimates of consumption of certain durables with the figures of their sales published in various newspapers and business magazines. They have observed that the NSS estimates of private consumption is as low as one-fourth of the production of durable like televisions, tape recorder, electric fan and two-wheelers. This calls for a further investigation for identifying the possible reasons for this discrepancy between the NAS and NSS estimates.

(g) The inclusion of 'repair services' (activity-group 97 according to NIC 1987) in the NAS estimate for the item group "transport equipment and operational cost" leads to duplication of operational cost of owned transport equipment. The procedure needs to be corrected in this respect.

(h) The entire amount of output of NIC (1987) activity group of 201, i.e. manufacturing of dairy products, from the ASI is at present assumed to be milk products, whereas a large part (about 40*per cent*) of it is in fact liquid milk of different kinds. Though this does not affect the aggregate estimate for the item group 'milk and milk products', it understates the consumption of liquid milk. The estimates of milk products like butter and *lassi* are based on norms worked out in the past for the practices prevalent at that time. These too require revision, as the methods of disposal of milk produce have undergone vast changes in the recent past. Type studies in different regions of the country or a country-wide survey on methods of disposal of milk produced are required to be undertaken to generate the required estimates on milk used for further production in the household sector.

(i) The NAS estimate on 'medical and health care', being based entirely on the NSS estimate, excludes the consumption of the NPISHs. The distribution of consumption expenditure of the NPISHs over all the food and non-food item-groups is not expected to be similar to that of the household consumption expenditure. In fact, NPISHs, being more active in the fields of health and education, are expected to have proportionately larger shares in these two item-groups. To estimate the magnitude and distribution of consumption expenditure of the NPISHs, it is necessary to take up a special study to start with, and carry out surveys on a continuing basis for a regular flow of data.

(j) The exact definition of 'firewood and chips' used for the CES is not clear from the 'Instructions to Field Staff, 50th Round'. The CSO uses the NSS estimate of consumption of 'firewood and chips' under the assumption that while it includes vegetable wastes like jute, cotton and *arhar* sticks, it excludes the wood used in the funerals. The exact definition of 'firewood and chips' is required to be specified clearly in the instructions for the future CESs.

(k) A mechanism is to be devised in the CES for collecting the data on cooked meals received, as part of wages, by workers engaged in providing services for household consumption from the employer household, so that the

necessary correction for the omission in the NSS estimate may be made. This cannot be derived from the data collected in CESs at present.

(l) The NSS estimates of fruit consumption fall far short of the NAS estimates. Possibly, non-cooperation of the affluent is one of the reasons for underestimating fruit consumption in the CES. Besides, investigating for other possible reasons for underestimation in the CES, reconciliation of the difference between the estimates of fruits consumption requires a comprehensive study of the estimation procedure followed by the SHBs for obtaining area, production and productivity estimates of different fruits. Also required are studies for building wastage-to-marketed surplus ratios, as the ratios used at present are based on DMI studies, as old as of 1968-69.

(m) Lastly, for quite a few item-groups belonging mostly to the service sector, the NAS estimates of gross value added (GVA) and private consumption are based on independent sources of data. The NAS estimate for consumption of road transport services by bus, taxi and auto-rickshaw as well as that of repair services of owned conveyance is derived using the data on number vehicles available from the Ministry of Surface Transport. For the item-group 'medical and health services', 'salt', 'spices' and 'pan', the NAS estimates are derived from the NSS estimates, since the latter are known to represent the household consumption better. Thus, for these item-groups, the estimates of output, which are required for PFCE estimates, are not expected to be necessarily consistent with the estimates of GVA. In other words, it is a possible source of statistical discrepancy in the NAS. It is therefore felt that the feasibility of using a common data set for both GVA and PFCE estimates for these item-groups needs to be explored further.

13.4.9 Recommendations on estimation of PFCE

(i) Existing weak areas in the estimation of Private Final Consumption Expenditure (PFCE) relate to outdated basis for (a) marketable surplus ratios and wastage ratio in agricultural crops, fruit and vegetables and meat and meat products, (b) trade and transport margins, and (c) various rates and ratios. It is recommended that periodical and geographically dispersed type studies/case studies be carried out for continual updation**.**

(ii) As part of the Study Group on non-Sampling Errors, Central Statistical Organisation (CSO) and National Sample Survey Organisation (NSSO) jointly carried out "Cross-Validation Study of Estimates of Private Consumption Expenditure Available from Household Survey and National Accounts" to bring out major sources of differences between Private Final Consumption Expenditure from National Accounts and Consumer Expenditure from National Sample Survey. It is therefore recommended that studies be carried out to correct the item-level weaknesses noted in the Cross Validation Studies in both the sources so that discrepancies in the two estimates would be minimised.

(iii) The weakest link in the estimation of Private Final Consumption Expenditure (PFCE) has been the indirect coverage of the Non-profit Institutions Serving Households (NPISHs). It is recommended that periodical surveys/type studies be conducted to collect income and expenditure of NPISHs.

(iv) The sampling design of the annual consumer expenditure surveys carried out by National Sample Survey Organisation (NSSO) be examined with a view to (a) reducing sampling error of the annual estimate and (b) assessing the feasibility of obtaining sub-round-wise estimates for quarterly estimation.

13.5 GOVERNMENT FINAL CONSUMPTION EXPENDITURE

Brief Method of compiling estimates of GFCE

13.5.1 Final consumption expenditure of administrative departments is equivalent to the current expenditure on compensation of employees, purchase of non-durable goods and services net of sales and the CFC. By convention, expenditure on durable goods, which are used for defence, are also treated as part of consumption expenditure of the Government.

Sources of data used in the estimation of GFCE

13.5.2 The sources of data for administrative departments are the annual budget documents of the Central, State and Local Governments and finance accounts published by the Comptroller and Auditor General of India.

Table 13.10: Sources of data used and method of estimation of GFCE

Sl. No.	Source of data	Method of estimation and its share in 1993-94
Government final consumption expenditure	Same sources as those used for the GDP estimates	Sum of compensation of employees, net purchase of goods and services and CFC (no provision is made in the budget documents for CFC of the Central/State Governments and local authorities. These are worked out from the estimated value of capital stock and the expected age of various types of assets at the aggregate level) The GFCE accounts for 11.4 % of GDP

Data Gaps in the Estimation of GFCE

13.5.3 Current data are available for preparation of the estimates and accounts. However, problems exist in that, certain State Governments do not provide a detailed break up of expenditure under certain heads of accounts. In such cases, the norms as worked out on the basis of earlier data are used. In the case of local bodies data are generally not available on a regular basis. Only four States (Delhi, Meghalaya, U.P. and Maharashtra) carry out annually a complete analysis of the accounts of the local bodies, annually. For the States other than these, the estimates are currently based on grants available from the budget documents of the respective States as also information received on local bodies from the above-mentioned States. Collection of data from a large number of urban and rural bodies as also irregularity in finalisation of the annual accounts of these bodies are major problems for the State DESs. In case of non-response the States prepare the estimates and accounts by moving forward and/or updating the estimates and accounts of previous year(s) on the basis of grants received by such bodies from the Central/State Governments. Therefore, the major data gap in the estimation of GFCE is the data on local bodies.

13.5.4 Recommendations on estimation of Government Final Consumption Expenditure:

(i) The major data gap in the estimation of Government Final Consumption Expenditure (GFCE) being with respect to local bodies, it is recommended that the State Directorates of Economic and Statistics (DES) should analyse the budgets of the local bodies every year for estimating all the National Accounts aggregates including GFCE.

13.6 SAVING AND CAPITAL FORMATION

Brief Method of Compiling Estimates of Saving and Capital Formation

13.6.1 The methodology of compiling the estimates of saving and capital formation in India has been examined by two Expert Committees: the K.N. Raj Committee, "Capital Formation and Saving in India 1950-51 to 1979-80", (Report published in February 1982) and the Raja J. Chelliah Committee "Report of the Expert Group on Saving and Capital Formation", December 1996, respectively. The estimates of capital formation are prepared separately by three methods, i.e from the financing side as the sum of saving and net capital inflow from abroad, by assets and by industry of use (sum of gross fixed capital formation (GFCF) and change in stocks). Of the three independently derived estimates of domestic capital formation, the estimate derived from the financing side namely, sum of domestic saving and net capital inflow is judged to be firmer than the estimates of domestic capital formation by assets and institutions and is, therefore, taken to be the control total for domestic capital formation. The difference between the control total and domestic capital formation by assets and by institutions are shown as errors and omissions. Domestic household saving in the form of physical assets appear as a component of domestic saving and domestic capital formation and on which no direct estimate is available from year to year. Consequently, domestic household saving in the form of physical assets, in effect, turns out to be the residual adjusting variable for ensuring identity between the three independently derived estimates of domestic capital formation. Both the Raj Committee and Chelliah Committee were uncomfortable with household saving in the form of physical assets being arrived at as a residual but did not suggest any alternative method.

13.6.2 Raj Committee (set up in 1981) on the method of estimation of Saving and investment, specified the role of the RBI and the CSO in preparing the estimates on saving and investment. While the RBI was recommended to prepare the estimates for the private corporate business sector and on financial saving (except life insurance, provident and pension funds) of household sector, the estimates for the rest of the institutional sectors and components as well as total domestic saving were to be compiled by the CSO.

Saving

13.6.3 Saving represents the excess of current income over current expenditure of various sectors of the economy. It is the balancing item on the income and outlay accounts of the producing enterprises, households, Government administration and other final consumers. Estimates of domestic saving are prepared at current prices only by type of institutions i.e., public sector, private corporate sector and household sector (residual), separately.

13.6.4 In respect of public sector the data available in the Government budget documents and annual reports of the enterprises are analysed in detail. The estimates of saving are derived from the income and outlay accounts in respect of administrative departments and departmental and non-departmental enterprises separately.

13.6.5 Estimates in respect of the private corporate sector are based on an analysis of the annual accounts of sample companies duly adjusted for full coverage on the basis of data on paid up capital of all companies. The estimates in respect of co-operative societies are worked out from the data supplied by the NABARD.

13.6.6 The estimates of financial saving in respect of households including non-profit institutions and unincorporated private business are estimated by changes in the net financial assets held by them such as: currency, deposits with financial institutions, shares and debentures, claims on Government, net equity in the life funds, provident and pension funds net of changes in financial liabilities. The estimates in respect of various financial instruments are arrived at as a residual after duly accounting for such instruments held by public and private corporate sectors.

In estimating the financial saving of the households, increments in their holdings of financial assets are calculated net of increments in their financial liabilities. These annual flows are compiled instrument-wise. As the household sector is an unorganised sector and its balance sheets are not available, its financial flows are either estimated on the basis of firm information obtained from the accounts of counterpart institutions engaged in transactions with the households or as a residual after deducting the accounted financial information for the other sectors from the financial totals or are based on the information collected on sectoral distribution either directly or on the basis of surveys. In the case of households, saving in the form of physical assets for own use as accounted for under capital formation estimates are also added. This means that the capital formation estimates of the household are taken as saving in physical assets of the households.

Capital Formation

13.6.7 Gross capital formation (GCF) refers to the aggregate of gross additions to fixed assets (i.e., fixed capital formation) and change in stocks during the counting period. Fixed assets comprise construction and machinery and equipment (including transport equipment and breeding stock, draught animals, dairy cattle and the like). Construction for military purposes (other than construction or alteration of family dwellings for military personnel) defence equipment, increase in the stocks of defense materials and durable goods in the hands of the households are excluded from the scope of capital formation. However, capital outlays of defence enterprises on ordnance and clothing factories are included. The estimates of capital formation for the entire economy, by assets, are based on a commodity flow approach except the part of *kutcha* construction works. Estimates are based on current data in respect of outlays on new construction works, purchase of machinery and equipment and net addition to inventories. Data on expenditure on *kutcha* construction works are available from various budget documents in respect of public sector and the reports of various plantation boards. In the case of the household sector, estimates of the output of *kutcha* construction are based on AIDIS as discussed under the GVA of the construction sector. The estimates of inventories and change in stocks are made by industry of use. Whereas the public and private corporate sector's estimates are made on the basis of analysis of budget documents and annual reports of DCUs/NDCUs, and the RBI's study of company finances, those of the household sector are made initially for the benchmark year and for the subsequent years, through appropriate indicators. For the agriculture sector (which includes livestock), the change in stocks in the household sector are the increment in livestock of certain categories of animals, which are available every year. There are no change in stocks for the forestry, fishing, construction, electricity, gas, and water supply sectors, railways, banking and insurance, communication, real estate, ownership of dwellings and business services, other services and public administration and defence in the household sector. For the mining sector, the household sector's inventories are based on the results of the enterprise survey on minor minerals. For subsequent years, they are made through extrapolation with value of output of minor minerals. For the registered manufacturing sector, the estimates of inventories of household sector are those held by individual proprietorship, joint family and partnership firms, data on which are available from the ASI. For the unregistered manufacturing sector, the benchmark estimates are made using Enterprise Survey results and for subsequent years, by extrapolating with GDP of unregistered manufacturing sector. For trade, hotels and restaurants and other transport and storage sectors, the household inventories are based on Enterprise Survey results for the benchmark year. Estimates for the subsequent years are based on bank advances in the case of trade, growth in number of enterprises in the case of hotels and restaurants and growth in GDP in the case of other transport and storage sectors.

13.6.8 The estimates of capital formation for the public sector are based on the analysis of budget documents and annual reports of Department/Non-Department Commercial Undertakings (DCUs/NDCUs). In the case of the private corporate sector, the estimates are prepared on the

basis of the results of sample companies published by RBI, duly adjusted by the data on paid up capital for all companies for full coverage. Making use of almost the same sources of data, estimates are also prepared by industry of use. However, because of dissaggregation of data by various industrial sectors the estimates by industry by use as well as by type of assets and institutions generally do not tally. The estimates at constant (1993-94) prices are worked out with the help of suitable price indices as applicable by various assets, institutions as well as industry groups separately.

13.6.9 For the purpose of compiling the various rates of capital formation, the aggregate arrived at as the sum of saving and net capital inflow is taken to be the firmer estimate of capital formation than that by assets and industry of use. The difference between this estimate and the estimate of capital formation arrived at by the commodity flow method, by assets is shown as 'errors and omissions'. The following table shows the extent of difference between the three estimates of capital formation, for the year 1993-94.

Table 13.11: Estimates of Capital Formation for the year 1993-94

(Rs. Crores)

Items	Capital formation, 1993-94
Capital formation as sum of saving and net capital inflow	1,98,412
Capital formation by type of assets and by institutions	1,82,619
Capital formation by industry of use	1,81,133

Existing data sources

13.6.10 The sources of data for saving in respect of public sector are the same as those used for estimating the GDP and other aggregates for this sector. For the private corporate sector and for the household saving in financial assets (except life insurance, provident and pension funds), the source agency is the RBI. The NABARD supplies information in respect of cooperative societies. For the saving in financial assets (insurance, provident and pension funds), the sources of data are the Life Insurance Corporation of India, Provident Fund Organisation and the budget documents. For the saving of households in physical assets, a residual method of estimation is used i.e. total domestic capital formation *minus* capital formation by public and private corporate sector.

13.6.11 The sources of data for the GFCF (by type of assets), in respect of construction are the same as those used for the GDP estimates. For machinery and equipment, the sources of data are the Annual Survey of Industries and the 5-yearly surveys conducted by the NSSO on unorganised manufacturing. The sources of data for the public, private corporate and cooperative societies are the budget documents/annual reports of administrative departments, departmental commercial undertakings and non-departmental commercial undertakings, the RBI and the NABARD, respectively. The estimates of household GFCF are derived by the residual method.

13.6.12 The sources of data for the GFCF by industry of use for the public, private co-operate sector and cooperative societies are the same as those mentioned earlier. For the household sector, the sources of data are the AIDIS and the enterprise surveys conducted from time to time.

13.6.13 The sources of data and the method of estimation are summarised below in a tabular form:

Table 13.12: Sources of data, and method of estimation of Saving and Capital Formation

Sl. No.	Source of data	Method of estimation and its share in 1993-94
(a) Gross Domestic Saving		
Household Sector		Total of Financial Saving and Saving in the form of Physical Assets. The household sector accounts for 81.8 % of gross domestic saving of the country
Financial Saving **Currency** **Net Deposits** **Shares and debentures** **Net Claims on Government** **Provident and Pension Fund** **Insurance Fund**	RBI Provident Fund Organisations LIC Budget documents	Residual methods i.e. Total minus that for Public Sector and Private Corporate Sector except for P.F. and Pension fund and Life funds. P.F and Pension Fund = Contribution - Withdrawals + Interest. Life Fund = Income – Expenditure. The financial saving of the household sector accounts for 48.9 % of gross domestic saving of the country.
Saving in the form of physical Assets	Household Capital Formation	Household investment in fixed assets is derived as residual deducting the corresponding estimates of public and private corporate sector from the total capital formation by assets plus change in stock. The saving in physical assets of household sector accounts for 32.8 % of gross domestic saving of the country
Private corporate sector	RBI	Total of joint stock companies and co-operative bank and societies. The private corporate sector accounts for 15.4 % of total gross domestic saving of the country
Companies	RBI	Retained profit plus depreciation provision. These account for 14.7 % of total gross domestic saving of the country.
Co-op banks and societies	NABARD	Gross saving is equal to sum of statutory reserve and other reserves. These account for 0.7 % of the total gross domestic saving of the country.
Public Sector		Total of public authorities and non-departmental enterprises. The public sector accounts for 2.8 % of total gross domestic saving saving of the country.
Public authorities	Budget Documents	Total of Government administration and departmental commercial enterprises (have negative saving in 1993-94).
Government Administration	Budget Documents	Current receipt minus current expenditure (have negative saving in 1993-94).
DCUs	Budget Documents	Current receipt minus current expenditure. These account for 3.8 % of total gross domestic saving of the country.
NDCUs	Annual Reports	Gross Saving is equal to Net transfer to balance sheet + transfer to reserve adjusted for expenditure net of income relating to previous year + Depreciation. These account for 12.4 % of total gross domestic saving of the country,

Sl. No.	Source of data	Method of estimation and its share in 1993-94
Net Capital Inflow from abroad	RBI	Net capital inflow is the deficit of the nation on current account in balance of payment account excluding official transfer payment. This component accounts for 2.4 % of gross capital formation.
Aggregate Gross Domestic Capital Formation		Aggregates Gross Domestic Saving plus net Capital Inflow from abroad
(b) GROSS FIXED CAPITAL FORMATION (GFCF) BY TYPE OF ASSETS		
Construction	Four basic materials namely, Cement and Cement Products, Iron and Steel, Bricks and Tiles and Timber and Roundwood *plus* other materials	Through commodity flow approach for accounted construction using basic materials, other materials and factor payments and expenditure approach for unaccounted construction. Construction accounts for 47.5 % of GFCF of the country
Public sector	Budget documents for admn. departments Annual reports for others	New capital outlay on construction as obtained from the analysis of Budget documents and annual reports. This accounts for 19.8 % of GFCF of the country and 41.7 % of total construction.
Private corporate sector	RBI, NABARD and Tea, Coffee and Rubber Boards	Same method as worked out for the construction sector This accounts for 4.0 % of GFCF of the country and 8.4 % of total construction.
Household sector	Residual Method and All-India Debt and Investment Survey (AIDIS) 1991-92.	Total Value of Construction less Value of Output in Public Sector and Private Corporate Sector is the value of output in household sector, less repairs and maintenance of households plus new outlays in rural and urban residential and non-residential buildings and other construction works (covered through AIDIS). This accounts for 23.7 % of GFCF of the country and 49.9 % of total construction.
Machinery and transport equipment	ASI for organised sector DGCI&S for foreign trade Receipt Budget for duties NSSO for unorg. Sector Software Cos. Reports	Sum of total Ex-factory value of capital goods + Import + Import duty + Re-Export + TTM - Exports + Fixed Assets in livestock + GFCF in Computer Software. Machinery and equipment accounts for 52.5 % of GFCF of the country**.**
Public sector	Budget documents and Annual reports of DCUs and NDCUs	Capital outlay and repair and maintenance as obtained from the analysis of Budget documents and Annual reports. This accounts for 17.5 % of GFCF of the country and 33.4 % of total machinery and equipment.
Private corporate sector	RBI for corporate sector NABARD for co-ops.	Based on data from RBI and NABARD. This accounts for 23.9 % of GFCF of the country and 45.5 % of total machinery and equipment.
Household sector		Derived as a residual from the total This accounts for 11.0 % of GFCF of the country and 21.1 % of total machinery and equipment.
(c) GROSS FIXED CAPITAL FORMATION (GFCF) BY INDUSTRY OF USE		
Agriculture **Public sector**	Budget documents and annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports. Agriculture sector accounts for 7.1 % of GFCF.
Private Corporate Sector	RBI	GFCF of sample joint stock companies are blown up on the basis of paid up capital.

Sl. No.	Source of data	Method of estimation and its share in 1993-94
Household sector Construction Machinery	AIDIS 91-92	Base year estimates (based on AIDIS) are moved with output of agriculture and increment in livestock. Base year estimates (based on AIDIS) are moved with ASI data.
Forestry and logging Public sector	Budget documents and Annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and Annual reports Forestry sector accounts for 0.3 % of GFCF.
Private corporate sector	RBI	GFCF of sample joint stock companies are blown up on the basis of paid up capital.
Household sector		Public Sector estimates inflated by 5.4 %
Fishing public sector	Budget documents and Annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports Fishing sector accounts for 0.7 % of GFCF.
Private corporate sector	RBI	GFCF of sample joint stock companies are blown up on the basis of paid up capital.
Household sector	Livestock Census	GFCF estimated directly
Mining and quarrying public sector	Budget documents and annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports Mining sector accounts for 4.1 % of GFCF.
Private corporate sector	RBI	GFCF of sample joint stock companies are blown up on the basis of paid up capital
Household sector	Enterprise Survey, 1992-93	Base year estimate are moved with minor mineral output
Manufacturing, registered Public sector	Budget documents and annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and Annual reports. Registered Manufacturing accounts for 25.2 % of GFCF.
Private corporate sector	RBI NABARD	GFCF of sample joint stock companies are blown up on the basis of paid up capital and the Co-operative Societies are based on the data obtained from NABARD
Household sector	A S I	GFCF estimated by using proportion of Gross Fixed Assets of household to the total GFCF of ASI. The data on flow of assets on GFCF of ASI are available from Annual survey of Industries.
Manufacturing, unregistered	NSS Unorganised manufacturing sector survey, 1994-95	The benchmark estimates are prepared directly using the results of the survey. Estimates for subsequent years are through extrapolation with GDP of the sector. This sector accounts for 9.0 % of GFCF.
Electricity, gas and water supply Public sector	Budget documents and Annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and Annual reports. This sector accounts for 12.6 % of GFCF.
Private corporate sector	RBI	GFCF of sample joint stock companies are blown up on the basis of paid up capital
Household sector	M/Non-Conventional Energy Sources Budget documents	(i) G F C F= Number of bio-gas plants % Price of bio-gas plants (ii) Capital transfers to the households

Sl. No.	Source of data	Method of estimation and its share in 1993-94
Construction **Public sector**	Budget documents and annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports. This sector accounts for 1.1 % of GFCF.
Private corporate sector	R B I	GFCF of sample joint stock companies are blown up on the basis of paid up capital.
Household sector		Base year estimates of all institutional sectors are prepared by using capital output ratio (which is based on analysis of reports of some of public and private joint stock companies engaged in construction during 1981-82). For subsequent years estimates are moved by GVA growth. GFCF estimates of public and private corporate sector estimates deducted from total GFCF estimates to get household estimates.
Trade **Public sector**	Budget documents and Annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports. Trade sector accounts for 2.1 % of GFCF.
Private corporate sector	RBI NABARD	GFCF of sample joint stock companies are blown up on the basis of paid up capital and the Co-operative Societies are based on the data obtained from NABARD
Household sector	Enterprise Survey 1993-94,WPI	Base year estimate are prepared by using the survey results. For subsequent years estimates are moved by GVA growth.
Hotels and restaurants **Public sector**	Budget documents and annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports. Hotels and restaurants sector accounts for 1.1 % of GFCF.
Private corporate sector	R B I	GFCF of sample joint stock companies are blown up on the basis of paid up capital
Household sector	Enterprise Survey 1993-94,WPI	GFCF estimated by applying growth of no. of enterprises and WPI price index. Estimates of private corporate sector are deducted from these estimates.
Railways	Budget documents and Annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports. Railways account for 2.8 % of GFCF.
Transport by other means **Public sector**	Budget documents and Annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and Annual reports. Transport by other means account for 6.2 % of GFCF.
Private corporate sector	R B I	GFCF of sample joint stock companies are blown up on the basis of paid up capital
Household sector		Base year estimates are prepared by using Capital output ratio (which are based on analysis of reports of various shipping companies, airports, road transport companies and NSS enterprise survey results). For subsequent years estimates are moved by GVA growth. Estimates of private corporate sector are deducted from these estimates.
Storage **Public sector**	Budget documents and annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and Annual reports. Storage sector accounts for 0.1 % of GFCF.

Sl. No.	Source of data	Method of estimation and its share in 1993-94
Private corporate sector	R B I	GFCF of sample joint stock companies are blown up on the basis of paid up capital
Household sector	Enterprise Survey 1992-93	Beyond Survey Year estimates are moved with GFCF as obtained for storage from A S I
Communication Public sector	Budget documents and Annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports. Communication sector accounts for 3.2 % of GFCF.
Banking and Insurance Public sector	Budget documents and Annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports. This sector accounts for 4.1 % of GFCF.
Private corporate sector	R B I, NABARD	GFCF of sample joint stock companies are blown up on the basis of paid up capital and the Co-operative Societies are based on the data obtained from NABARD
Real estate, ownership of dwellings and business services Public Sector	Budget documents and annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and Annual reports. This sector accounts for 11.3 % of GFCF.
Private corporate sector	RBI	GFCF of sample joint stock companies are blown up on the basis of paid up capital
Household sector	AIDIS, 1991-92 Budget documents	Estimates are moved by applying growth of no. of residential houses and the WPI Capital transfers from the budget documents
Public administration and defence	Budget documents and annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports. This sector accounts for 11.3 % of GFCF.
Quasi Government Organisation	ICAR and CSIR Reports	Capital output ratio derived from these reports is applied on the GDP of the sub-sector
Other services Public sector	Budget documents and annual reports	Capital outlay on construction and machinery as obtained from the analysis of Budget documents and annual reports. Other services account for 2.6 % of GFCF.
Private corporate sector	RBI	GFCF of sample joint stock companies are blown up on the basis of paid up capital.
Household sector	Enterprise Survey 1991-92	Base year estimates are from enterprise survey and for other years, estimates are moved with the growth in GFCF of other services for public sector.

Data gaps in the estimation of saving and capital formation

Saving

13.6.14 The estimates of saving suffer from a number of limitations mainly due to deficiency of data. This particularly refers to the estimates on various financial instruments from the private corporate and household sector. Since saving is the excess of income over expenditure, the major data gaps relate to the household sector, NPISHs, local bodies and quality problems on the data of private corporate sector. In the absence of direct data, the estimates of saving of household sector in physical assets is derived as residual.

Gross Fixed Capital Formation

13.6.15 Regarding the estimates of GFCF by type of assets, a number of rates and ratios are used in respect of both construction and machinery and equipment. For machinery and equipment, the data gap relates to domestic production in unregistered manufacturing sector. Surveys on this are conducted only once in 5 years. In the absence of annual data, the benchmark estimates are extrapolated with the GVA of the unorganised manufacturing sector. The proportions used for estimating the production of capital goods out of partly capital goods and part of capital goods are based on household durable goods as obtained from AIDIS, 1981-82. The AIDIS, 1991-92 did not collect information on household assets at the beginning and at the end of the reference period. In the absence of this information in AIDIS 1991-92, the rates and ratios prepared on the basis of AIDIS 1981-82 are being continued. Similarly, for estimates of GFCF by industry, the data gaps are the lack of annual Enterprise Surveys and surveys on NPISHs, as well as data on local bodies. With regard to local bodies, regular and complete accounts are available only in respect of four States, i.e. Maharashtra, Uttar Pradesh, Meghalaya and Delhi. The estimates of GFCF for the household sector are derived as residual, in the absence of direct data. Both the Raj Committee and Chelliah Committee were uncomfortable with household saving in the form of physical assets being arrived as a residual but did not suggest any alternative method.

13.6.16 The estimates of change in stocks in household trading establishments are prepared on the basis of bank advances and other indirect approaches. The benchmark estimates come from the Enterprise Surveys, which have a periodicity of over 5 years.

Rates and Ratios used in the Estimation of GFCF

13.6.17 In the compilation of GFCF, a number of rates and ratios are used. These in brief, are given below, along with the sources and their current status of updation.

Construction

(a) Cement:

- Transport margin from point of purchase to site of construction: 2 percent of the value of cement used in construction based on the IOTT -1993-94.
- Cement used as input in other industries: 10.87 percent of total quantity of cement dispatched based on the IOTT 1993-94.

(b) Cement Products:

- Trade, transport and other charges: 25 per cent of the value of cement products used in construction based on the IOTT 1993-94.

(c) Iron and steel:

- Trade, transport and other charges: 23.1 percent of the value of iron and steel used in construction based on the IOTT 1993-94.

(d) Timber:

- Trade, transport and other charges: 7 percent of the value of timber used in construction based on the IOTT- 1993-94.
- Timber used in construction: 48.5 per cent of production of timber on the basis of information contained in the Timber Trends Study for the Far East, Country Report for India, Inspector General of Forests, Ministry of Agriculture, 1958

(e) Round wood:

- Trade, transport and other charges: 50 per cent of the value of round wood used in construction based on the IOTT-1993-94.

(f) Railway sleepers:

- Trade, transport and other charges: 5 per cent of the value of railway sleepers based on the information obtained from the Railway Board.

(g) Industrial wood:

- Proportion of timber in the production of 91.86 per cent of the quantity based on information available from State Forest Departments during 1980s.

(h) Proportion of round wood:

- Proportion of round wood in the production of industrial wood: 7.95 per cent of the quantity based on information available from State Forest Departments.
- Round wood used in construction: 38.3 per cent of the production of round wood on the basis of information contained in the Timber Trends Study, 1958.

(i) Veneer Plywood :

- Trade, transport and other charges: 25 per cent of the value of veneer and plywood used in construction based on based on the IOTT 1993-94.

(j) Bricks and Tiles

- Value of bricks produced by rural households for own use: 10 percent of the value of output of bricks and tiles produced in the unregistered manufacturing sector on the basis of data on working force engaged in the manufacturing of structural clay products as per population census.
- Trade, transport and other charges: in organized sector, it is 27.8 per cent of the value of bricks and tiles on the basis of IOTT 1993-94.

(k) Other construction Materials:

- Value of 30 percent of the value of total materials used in construction: based on the information obtained from NBO, CPWD and CBRI during the 1980s.
- Quantity of coal burnt for production of one-lakh bricks in the unorganized sector: 16 tonnes on the basis of the information collected from the office of the Coal Controller.
- Factor Incomes (including CFC) going into accounted construction: 53.4 per cent of the value of all material inputs used in construction on the basis of information available from CPWD, NBO and CBRI, Roorkee in 1997. Value of construction in rural residential buildings (total estimated from AIDIS):
    - Accounted in commodity flow approach: 72 per cent of the total value of rural residential buildings
    - Unaccounted in commodity flow approach: 28 per cent of total value of rural residential buildings based on 49th round on housing conditions in India in 1992.

(The procedure for estimating the labour-intensive kutcha construction undertaken in the public sector, private corporate sector and household sector is by expenditure approach. While the estimates of public sector are prepared from the annual budget documents, those of the private corporate sector (plantations) are prepared on the basis of annual data on area of extensions, replacements and replantations available in the annual reports of Tea, Coffee and Rubber

Boards as well as data on the cost of plantations as obtained from the respective Boards, those of household sector the estimates are based on the data thrown by the decennial survey All-India Debt and Investment Survey.)

Value of construction in urban residential buildings (total estimated from AIDIS):

- Accounted in commodity flow approach: 80 per cent of total value.
- Unaccounted in commodity flow approach: 20 per cent of the value of construction based on the information contained in 49th Round on "Housing Conditions in India in 1998".

(l) Machinery and Equipment:

- Parts of capital goods treated as capital goods: 50 per cent of the value. This proportion has been determined in the light of data contained in the annual reports of various manufacturing concerns. The proportions of partly capital goods attributable to capital formation are (See Annexe 13.6) are based on AIDIS, 1981-82, special Tabulation by the Reserve Bank of India for National Accounts Division of Central Statistical Organisation. The rates remain unchanged, as the AIDIS, 1991-92 did not have data at the beginning and closing of the year on consumer durables used by the households (did not collect this data in the survey).
- Parts of partly capital goods: 50 per cent of the proportions applicable to respective partly capital goods.

(m) Change in Stocks

- Estimates of inventories in unregistered manufacturing sector: based on the results of 51st round of NSSO Survey, 1994-95 results.
- Estimates of stocks of food grains with the private traders: based on results of enterprise surveys on trade, hotels and restaurants. Estimates for subsequent years are made by extrapolating the benchmark data with the bank advances given to these enterprises.

13.6.18 Recommendations on estimation of Saving and Capital Formation :

(i) The problems in the estimation of saving and investment of the private corporate sector have been traced to the doubts about the representative character of the sample companies and inadequacies in the blow-up factor. It is recommended that corrective steps contained in the recommendations in Chapter 12 of the report on the Corporate Sector be implemented speedily.

(ii) The second major weakness in the estimation of saving and investment relates to the indirect residual estimation of savings in the form of physical assets undertaken by household enterprises and own account un-incorporated enterprises for which decennial all India debt and investment surveys provide benchmark estimates. It is therefore recommended to (a) examine the feasibility of reintroducing the receipts and disbursement block with last 365 days as a reference period as was the case with the National Sample Survey integrated household schedule from 1964-65 (19^{th} round) to 1970-71 (25^{th} round) in the current annual surveys of household consumer expenditure; and (b) experiment with the survey methodology for improving the estimation of capital formation from the enterprise surveys.

(iii) Various rates and ratios are used in the estimation of Capital Formation in construction, machinery and equipment and change in stock as also in the estimation of trade and transport margins. It is recommended that necessary type studies (Appendix-13.2) to update them be carried out in a geographically dispersed fashion.

(iv) The following observations which appeared in the Chelliah Committee Report are still valid and need attention of the concerned agencies for implementation:

(a) A reasonably expeditious system needs to be evolved to reduce the time lag in making available the flow of funds accounts.

(b) Dissemination of details of capital financing separately on foreign direct investment, domestic investment and borrowing, retained earnings of foreign controlled rupees companies and branches of foreign companies in National Accounts.

(c) The Perpetual Inventory Method of preparing the estimates of Consumption of Fixed Capital may be reviewed periodically for assumptions made regarding the average life of various assets.

(d) All States should compile estimates of total capital formation.

(e) Public sector information in respect of local bodies should be improved. States need to make arrangements for consolidation of statistics from the annual statements of receipt and expenditure in respect of their local bodies.

(f) For improving the estimates of saving and capital formation for the corporate sector, the top 1500 companies (out of over 3 lakhs companies), which would account for a predominant proportion of total saving/capital formation should be covered on a census basis. For the remaining companies estimates may be built up on a sample basis.

(g) The flow of funds data should be used for estimating household saving in the form of currency. For the years for which flow of funds data are not available, the average ratio for the past three years should be applied.

(h) Consumer credit extended by banks and non-banking financial companies should be shown separately in the National Accounts Statistics.

(i) Feasibility of conducting independent income expenditure surveys on a periodic basis should be explored for validation of the estimates generated by Central Statistical Organisation through residual method for the household saving in the form of physical assets.

(j) Present All-India Debt and Investment Survey (AIDIS) covers only households. Entire household sector includes unincorporated enterprises and non-profit institutions as well. To obtain the estimates of complete household sector, Enterprise Surveys on the lines of AIDIS may be designed and conducted periodically preferably every five years.

(k) In the case of deep discount bonds and zero coupon bonds, interest accruing needs to be spread out.

(l) All new financial instruments such as warrants which are traded apart from the underlying securities to which they are linked should be taken into account in the estimation of saving as and when complete relevant data become available.

(m) Software and database which are purchased from the market by the business enterprises should be treated as part of capital formation. However, the increase in productivity of the existing software due to development of utilisation techniques should not be treated as part of capital formation.

13.7 REGIONAL ACCOUNTS

Brief Background on the Compilation of Regional Accounts

13.7.1 The State Accounts statistics are an extension of the system of National Accounts to the regional level. These comprise of various accounts indicating the flows of all transactions within a time period between the economic agents constituting the State economy and their stocks. These accounts include various items like total output of the economy, the intermediate expenditure, States domestic product, factor incomes, consumption expenditure, capital formation, capital stocks and CFC.

13.7.2 The most important aggregate of the States accounts is the States domestic product (SDP) (States income). The States income can conceptually be prepared by adopting two approaches namely, income originating and income accruing. In the income originating approach, the measurement corresponds to income originating to the factors of production physically located within the geographical boundaries of States and represents net value of goods and services produced within the State. The income accruing approach, which relates to the income accruing to the normal residents of a State, provides a better measure of the welfare of the residents of the State. Due to a non-availability of data on inter-State flows of goods and services, compilation of estimates of State income on income accruing concept is not possible. Compilation of other aggregates and State accounts is also problematic, due to the absence of requisite data, particularly on the inter-State flows of incomes. These issues had been gone through by the Committee on Regional Accounts (RAC), set up by the Government in May 1972. The RAC submitted its First Report in 1974 and the Final Report in 1976. In the first report, the RAC recommended a set of Standard Tables mainly to meet the immediate requirements of the policy makers at the regional level. The committee submitted its second and final report to the Government in September 1976. In the final report, the Committee recommended a System of Regional Accounts (SRA) consisting of three consolidated accounts, mentioned below. The list of accounts and supporting tables of the system of regional accounts are indicated in Annexe 13.7. The reports also describe the concepts, coverage and method of estimation of various aggregates appearing in the Accounts and Standard Tables. Further the reports deal with major gaps in the existing data system and make recommendations for the collection of essential statistics required for satisfactory measurement of regional income and related aggregates and for the construction of the recommended SRA. The committee felt that an accounting framework for the States can be recommended, but there is little point in recommending one for regions smaller than States, like districts.

Consolidated accounts of the region

- Production account
- Income and outlay account
- Capital finance account

Household accounts

- Income and outlay account
- Total consumption and income of the population

Accounts of State and Local Governments

- Production account of State Government Departmental enterprises
- Production account of State Government non-departmental enterprises
- Income and outlay account of State Government administrative departments and departmental enterprises
- Income and outlay account of State Government non-departmental enterprises

- Capital finance account of State Government non-departmental enterprises administrative departments and departmental enterprises
- Capital finance account of State Government non-departmental enterprises

Status of Implementation of the Recommendations of RAC

13.7.3 The State DESs under the advice/guidance of CSO and Advisory Committee on National Accounts, have been trying to implement the recommendations to the extent that data is available. The State-wise position of compilation of various accounts and supporting tables are given at Annexe 13.8, Annexe 13.9 and Annexe 13.10 respectively. The position of compilation of estimates of the district domestic product estimates is given at Annexe 13.11. The estimates of supra-regional sectors in respect of both the domestic product and gross fixed capital formation are allocated by the CSO on the basis of a set of indicators. A brief write-up on this is included at Annexe 13.12. In brief the progress of implementation of the recommendations of the RAC as follows:

(a) All the States and UTs, with the exception of D and N Haveli, Daman and Diu and Lakshadweep, are preparing the estimates of GSDP and NSDP at current and constant prices.

(b) The State/UT of Andhra Pradesh, Assam, Bihar, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal are preparing the SDP estimates by areas (districts) by commodity producing sectors only and out of which the States/UTs of Andhra Pradesh, Bihar, Haryana, Karnataka, Kerala, Maharashtra, Rajasthan, Tamil Nadu, and West Bengal prepare the district estimates for all the sectors. The State of Arunachal Pradesh is in the process of preparing district-level estimates.

(c) The States/UT of Andhra Pradesh, Bihar, Goa, Gujarat, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Orissa, Punjab, Tamil Nadu, Uttar Pradesh, West Bengal and Delhi are preparing the Economic and Purpose Classification of the Expenditure of Administrative Departments.

(d) None of the States/UT except Tamil Nadu (that too only at current prices) is known to have been prepared the Consumption Expenditure.

(e) None of the States are preparing input-out tables.

(f) The States of Andhra Pradesh, Assam, Gujarat, Haryana, H.P., Karnataka, Kerala, M.P., Maharashtra, Meghalaya, Orissa, Punjab, Rajasthan and Tamil Nadu are preparing the estimates of Gross Fixed capital Formation (GFCF). None of the UTs are preparing the GFCF estimates.

(g) None of the State/UTs appear to have been preparing the Consolidated Account of the Region and accounts for the Household sector. However, the States of Haryana, Himachal Pradesh, Kerala, Madhya Pradesh and Tamil Nadu are preparing the complete accounts of Public Adminstration and Local Bodies. Whereas the States/UT of Andhra Pradesh, Manipur and Rajasthan prepare the accounts of only Public Administration and the States/UT of Gujarat, Karnataka, Tripura and Pondicherry are preparing the Public Sector Accounts relating to administrative departments only.

Data Gaps in the Compilation of Regional Accounts

State Domestic Product

13.7.4 For the purpose of compiling the SDP estimates, the major data gaps appear to be the absence of certain key datasets at the State level namely,

- Cost of Cultivation Studies for most crops
- Index of Industrial Production
- Wholesale Price Index
- Consumer Price Index
- Corporate Sector Statistics
- Benchmark Surveys of Enterprises
- Annual Surveys of Enterprises
- Indicators to extrapolate the estimates based on five-yearly benchmark surveys
- Local bodies

State Income, Disposable Income, Saving and Net Lending from Other Regions

13.7.5 The compilation of State income (following the income accruing approach) and other aggregates, requires data on inter-State flows of income and net lending from other regions, besides the estimates of consumption expenditure of households through the NSSO Quinquennial survey and non-profit institutions serving households (NPISH), which are not available even at the All-India level. At this juncture it may be difficult to collect the data on these items, with the exception of the consumption expenditure of households and NPISHs. Even for this aggregate, the approach followed for the All-India estimates (the commodity-flow) may not hold good at State level, as this approach again requires inter-State movement of goods and services.

Capital Formation, Capital Stock and Consumption of Fixed Capital

13.7.6 Currently, some States are compiling estimates of gross fixed capital formation (GFCF) by assets and industry for the public sector, while three States are also compiling the GFCF estimates for the Whole State economy. Since estimates of construction and machinery equipment are already compiled for the SDP estimates, it may not be difficult to compile GFCF estimates at State level, with certain assumptions. The CSO has provided necessary technical guidance from time to time on the compilation of GFCF at the State level. Once the States start compiling the GFCF estimates, a database on this could be developed, which in the long run, will be used for compiling the estimates of capital stock and CFC.

13.7.7 Guidelines for bridging the data gaps in regional accounts:

(i) Cost of Cultivation Studies: The Cost of Cultivation Studies (CCS) is conducted by the Directorate of Economics and Statistics, Ministry of Agriculture (DESMOA) through the agricultural universities. The number of crops covered in each State is very few and the sample size (about 10,000) is too small to give reliable estimates. The time lag in the release of the results of these studies is of the order of 3 years. For generating the input structure of different crops in each State and UT, it would be desirable to conduct large-scale sample surveys on inputs of agricultural crops, by State Directorates of Economics and Statistics rather than the current practice of "studies". This would enable coverage of most crops in all the States, a manifold increase in the current sample size and a reduction of the time lag in releasing the estimates with the help of computerisation.

(ii) Index of Industrial Production: Most States and UTs do not have a database on the industrial production in their States. The Annual Survey of Industries (ASI) is the only source of data on industrial activity in the States. As the ASI is annual and the

time lag in the availability of its results being about two years, there is no data on the current industrial production scenario at State level. While there is an Index of Industrial Production (IIP) at the National level, the absence of a corresponding index for the States is a major data gap. The development and maintenance of an IIP by each State and UT would lead to an enormous improvement in the State Domestic Product estimates. The State/UT IIP could be used to prepare the Advance and Quick Estimates of SDP and would also act as a crosscheck to the ASI results. The States could consider using the frame/database of Directorates of Industries or/and the Central Excise or Sales Tax authorities. While the weights for different industry/commodity groups at State level could be taken from the ASI results, the monthly production figures collected either directly or from the database of the Central excise authorities, from a fixed sample (with suitable adjustments for new units, information on which is available with the above mentioned two organisations) would enable the States to have an IIP for their States.

(iii) Consumer Price Index**:** Most States publish State-level consumer price indices (CPI). All-India CPI for industrial workers and urban non-manual employees are based on CPI for various centres in the country from which price quotations are collected for this purpose. It is desirable for the States to review existing CPI or introduce State-level CPI (where none exists today) for the purpose of estimation of the State domestic product.

(iv) Corporate Sector Statistics**:** For most services sectors, the GDP estimates are derived separately for the corporate sector, on the basis of the RBI's company finance statistics. The same source is also used for generating domestic product estimates for the corporate sector segment at the State level. However, the size of the sample is considered too small even at the National level to give reliable estimates at industry-group level. At the State level, the estimates are not considered scientific even at the aggregate level, much less at the sectoral level. If States manage to compile corporate statistics (the number of corporations may not be many in a single State) on the basis of the frame available with the Regional Registrars of Companies, even once in five years, the quality of SDP estimates will considerably improve.

(v) Benchmark Surveys of Enterprises: Benchmark sample surveys of enterprises have been conducted about once during five years by Central Statistical Organisation (for directory enterprises) and National Sample Survey Organisation (for non-directory enterprises). A decision has been taken that the NSSO will carry out sample surveys for both sets of (manufacturing and service) enterprises. The States participate in these surveys with a matching sample. The results generated by NSSO are not designed to yield estimates of the State/industry group at the State level. If the Central and State samples could be pooled (copies of the filled-up NSSO schedules could be obtained from the NSSO Regional Offices located in the States) and analysed by the States, there would be a significant improvement in the quality of the SDP estimates that are based on these benchmark surveys.

(vi) Annual Surveys of Enterprises: The major data-gap in the Gross Domestic Product or the State Domestic Product estimates is considered to be the absence of annual surveys of enterprises (with the exception of registered manufacturing). This has also been so identified by the Regional Accounts Committee (RAC) in 1970s. However, due to various reasons (particularly attributable to lack of resources), the annual surveys of enterprises have not found a place in the statistical system of the country. However, it would be desirable to conduct these annual surveys of enterprises by using a fixed sub-sample of the benchmark sample (such a recommendation was also made by the RAC) and collecting information on about five items namely,

employment, production/total receipts, salaries and wages, capital expenditure and changes in stocks. The problem of exits of the enterprises could be overcome by assuming that the proportion of exits in the fixed sample and the population is the same. For the new enterprises, which come into existence, a correction factor could be applied on the basis of information on the number of enterprises (for any segment of the enterprises for which such information is available) starting economic activity in the State, from the State Directors of Industries or the District Industries Centres.

(vii) Indicators to Extrapolate the Estimates Based on Five-Yearly Benchmark Surveys: Currently, for the purpose of preparing annual Gross Domestic Product and State Domestic Product estimates on unorganised manufacturing and services sectors, various physical indicators of activity are used to extrapolate the benchmark estimates (for example, in the case of unregistered manufacturing, the Index of Industrial Production). However, it is essential to have a reliable set of proxy indicators and ensure that data are available on them on annual basis. The introduction of annual surveys on enterprises, stated in the above para, would generate the database required for extrapolating the benchmark estimates.

(viii) Local Bodies: There are a large number of local bodies in each State and since they get grants from the State budgets and also generate their own resources (for example, municipalities), it is necessary that their budgets/accounts are analysed and expenditures properly accounted for in the State Domestic Product/Gross Domestic Product estimates, as also under other expenditure categories of National Accounts. Currently the estimates of local bodies are prepared on the basis of grants shown in the State budgets, which implies that resources generated internally by these bodies are not covered. At the Central Statistical Organisation (CSO) level, it is not possible to analyse the annual budgets of these local bodies' and efforts have to be initiated only at the State level. Appropriate inclusion of local bodies' expenditures in the State accounts will reflect a correct picture of the public sector component.

(ix) Capital Formation, Capital Stock and Consumption of Fixed Capital: The State Directorate of Economics and Statistics should start compiling the estimates of Gross Fixed Capital Formation (GFCF), on the basis of the guidelines provided by the Central Statistical Organisation (CSO) from time to time. Once the States start compiling the GFCF estimates, a database on this could be developed, which in the long run, would be used for compiling the estimates of capital stock and CFC. State DES may examine the guidelines in consultation with CSO for the compilation of capital formation, capital stock and CFC.

(x) Appointment of Expert Groups**:** For developing the State accounts as recommended by the Regional Accounts Committee (RAC), it is necessary that an Expert Group is appointed in each of the States. These Expert Groups would oversee the methodological aspects of the compilation of State accounts and make suitable recommendations to the State Governments and also the Advisory Committee on National Accounts, from time to time. The States of Karnataka and Rajasthan have recently constituted Expert Groups to look into various aspects relating to the improvement of estimates of SDP and expenditure aggregates. Such expert groups must be constituted by other States as well. At present, the CSO looks after these issues in consultation with the Advisory Committee on National Accounts in respect of both National and State Accounts.

(xi) Need for Resources**:** Improvement in the quality of SDP estimates and other aggregates requires the introduction of various surveys and the development of database, besides the availability of adequate trained personnel. All these require resources. Importance needs to be attached to State income estimates. Without

providing adequate resources, it may not be feasible for the States to come up with improvements in the State income estimates. In most States, only a skeleton contingent of staff have been given the responsibility of compiling the SDP estimates, which barely manages to put together the annual estimates. The State Income Units in various States must be augmented with qualified personnel. This could be done by the DESs by re-deploying the staff appropriately.

(xii) District Domestic Product: There has been an increasing demand for the estimates of the district domestic product (DDP) below the State level in the context of calculating district level human development index (HDI). The Commission would like to point out that (a) the DDP estimates, wherever currently available, cover mostly major agricultural crops only or at best commodity producing sectors covering agriculture and industry because of problems of data availability at the district level; (b) that available DDP estimates are calculated by income-originating (by sector of origin) method; (c) that conceptually, for HDI, what are needed are DDP estimates by the income accruing method in order to reflect district-level living standards; and (d) that currently available data do not permit calculation of DDP by the income-accruing method. It would be desirable to develop some appropriate indicators of the living standards at the village/block/district level. Techniques of small area statistics may be used to estimate these indicators on the basis of State/regional level statistics capabilities.

13.8 UNITED NATIONS - SYSTEM OF NATIONAL ACCOUNTS

United Nations - System of National Accounts 1993

13.8.1 The NAS are compiled by the CSO, following the recommendations and guidelines enunciated in the United Nations - System of National Accounts (UN-SNA), brought out by the United Nations for the purpose of standardisation of computations of NAS and comparability of these statistics across the countries. The CSO has been broadly following the UN-SNA, as revised from time to time. The Recommendations of the latest UN-SNA, 1993 (which was prepared under the auspices of the Inter-Secretariat Working Group on National Accounts comprising of the United Nations, International Monetary Fund (IMF), World Bank, Organisation for Economic Cooperation and Development (OECD) and the Commission of the European Communities-EUROSTAT) are also being incorporated to the extent permitted by the data system.

13.8.2 The position of major recommendations of the 1993 UN-SNA, vis-à-vis, the Indian system of NAS, is given in the following table:

Table 13.13: Recommendations of UN-SNA 1993, vis-à-vis, NAS

Items	UN-SNA 1993 Recommendation	Status of implementation in the Indian NAS, 1993-94 series
(a) Production boundary		
	Illegal activities to be accounted for	These are not explicitly accounted for. However, for the unorganised sector, estimates are based on work force, (which are compiled from the results of household surveys on employment and unemployment) and hence illegal activities are accounted for indirectly. For agriculture sector, estimates are based on land-use statistics and, therefore illegal crops are covered indirectly, under 'area under other crops'. In the forestry sector, 10% of production of major forest products is assumed to be from illegal felling of trees. Firewood production is captured from the consumption estimates and hence accounts for illegal gathering of firewood. However, smuggling and other explicit illegal activities are not directly covered in

Items	UN-SNA 1993 Recommendation	Status of implementation in the Indian NAS, 1993-94 series
		the NAS.
	Production of goods within households for own-consumption	The agricultural production of the backyard/foreyard has been covered in the new series of NAS. As regards capturing production of other goods within the households, no information is available at present. Time-use survey has recently been conducted on a pilot basis, through which production of the UN-SNA activities within households could be estimated. The feasibility of such an exercise is being undertaken, though valuation of such production remains a problem area.
(b) Assets Boundary		
	Entire expenditure on mineral exploration to be treated as capital formation	Implemented, with effect from 1993-94, during 1999, at the time of the revision of base year from 1980-81 to 1993-94.
	Expenditure on software	Implemented, to the extent the information is reported separately by the enterprise. We have decided not to include the development of own-account software and databases, due to non-availability of data on such software and its valuation. Implemented, with effect from 1993-94 during 1999, at the time of the revision of base year from 1980-81 to 1993-94.
	Government defence expenditure on fixed assets other than weapons and their means of delivery	Only the dwellings for the military personnel are included
	Valuables like: precious metals (non monetary gold if used as store of value) and stones, antiques and other art objects	The recommendation is supported in principle but not feasible to implement on account of non-availability of data.
	Entertainment, literary or artistic originals	Not implemented
	Charging CFC on Government fixed assets including roads and bridges and buildings	Implemented, with effect from 1993-94 during 1999, at the time of the revision of base year from 1980-81 to 1993-94.
(c) Institutional sector classification and accounts		
	Sequence of accounts have to be compiled for five broad institutional sectors namely, non-financial corporations, financial corporations, general Government, households, non-profit institutions serving households and rest of the world	Accounts are prepared only for the public sector (Administrative departments, departmental commercial undertakings and non-departmental commercial undertakings) which correspond to general Government and Government-owned part of non-financial and financial corporations according to UN- SNA 1993 and rest of the world. Accounts are not being compiled for Financial and Non Financial Private Corporate Sector.
Production account	Uses and resources of GDP by institutions /activity/IOTT	Prepared for public sector and total economy; IOTT is also compiled roughly every 5 years.
Income and appropriation account	Distribution of National income by institutions and its appropriation	Income-outlay account of public sector only; National disposable income and its appropriation for the whole economy.
Accumulation account	Capital account, financial account, other changes in volume of assets account, revaluation account	Capital finance account for the public sector and the whole economy, capital formation and saving
Commodity flow and balances	Supply-use table and IOTT	IOTT – industry X commodity, once in 5 years

Items	UN-SNA 1993 Recommendation	Status of implementation in the Indian NAS, 1993-94 series
Balance sheets	To be compiled as part of integrated set of accounts	Not compiled
Natural resources accounts	Recommended as satellite accounts	Not compiled. Pilot studies were conducted by TERI and Govt. of Goa. The studies are yet to be finalised.
Social accounting matrix	Recommended	Only IOTT is compiled
Valuation	Output and value added are to be valued at basic, producer's and purchaser's prices	Estimates of value added are presented at factor cost and market prices.
(d) Time of recording		
Crops	Cultivated natural growth to be included in output as work in progress and gross fixed capital formation over the entire period of their growth process.	The existing NAS treatment is to include agriculture and forest products in output when harvested. in respect of all the crops. If the crop cycle is less than one year , then it will not make a difference in the annual estimates of GDP
Livestock	Livestock raised for food are to be treated as work-in-progress until slaughtered. Furthermore, entries are to be recorded for own account production as the animal grows.	This recommendation is not implemented in the NAS, the current treatment being to include livestock in production only when slaughtered or exported alive.
Speculative constructions	The speculative construction to be shown as part of inventories until the ownership has been transferred to the eventual user of the asset. Hence it should not be treated as gross fixed capital formation until that time. Output remains part of the work in progress of the institutional unit producing the asset until sold. In this way, consistency will be maintained between the financing of the activity and the production. However, construction for own-use or work completed under contract of sale is to be included as gross fixed capital formation as the work is put in place.	The treatment suggested for own-account construction is being followed for all building and construction activity, including speculative constructions.
Transactions	All transactions to be recorded on an accrual basis in order to reflect the time when the transactions occurred rather than when it may be paid for.	In the NAS, transactions are recorded in the mixed way, in that the accounts of the companies are kept on accrual basis whereas the Government transactions are on cash basis. The extent to which accrual accounting can be implemented more widely for the general Government sector in the NAS will depend on the progress made by the Central and State Government bodies in introducing accrual accounting in their own public accounts.

Items	UN-SNA 1993 Recommendation	Status of implementation in the Indian NAS, 1993-94 series
Classification of expenditures	Classifications of functions of Government (COFOG), individual consumption by purpose (COICOP), producers by purpose (COPP) and non-profit institutions by purpose (COPNI) to be compiled.	COFOG and COICOP are prepared in the 1968 framework and details are available to compile in the new framework. COPP and COPNI are not compiled in the NAS.
(e) Others		
Output of insurance	Premium supplement to be included in the output of insurance	Implemented, during 1999, at the time of the revision of base year from 1980-81 to 1993-94.
FISIM	Distribution to industry and final users	Followed
Mixed income	The return to labour and capital for unincorporated enterprises owned by households to be termed as 'mixed income'.	Implemented with effect from 1993-94, during 1999, at the time of the revision of base year from 1980-81 to 1993-94.
Statistical discrepancy	No statistical discrepancy; emphasis on classification, simplification and harmonisation	Statistical discrepancy is recorded
Estimates at constant prices	For full system of National accounts	Major aggregates only. Disposable income and saving are prepared only at current prices
Chain volume measures	Constant price estimates are also to be prepared by chain volume measures	No chain linking is done. The estimates are available at fixed base year (current base 1993-94)

Implementation of UN-SNA 1993

13.8.3 To help monitor the progress of implementation of UN-SNA 1993by member countries, the Inter Secretariat Working Group on National Accounts (ISWGNA), which the UN has set up for this purpose has developed a set of phases/milestones, indicated below. These milestones form the roadmap to the member countries in their efforts to implement the UN- SNA 1993.

Table 13.14: Milestones in the Implementation of UN-SNA 1993

Phases	Milestones
Pre UN-SNA 1993	Basic data on prices trade production, etc.
Phase-1	GDP by industry and expenditure at current and constant prices
	Phase-1 plus
Phase-2	External transactions with the rest of the world including macro indicators such as GNI (GNP), National disposable income, etc.
	Phase-2 plus
Phase-3	Production accounts of all institutional sectors and integrated accounts of general Government until financial accounts
Phase-4	Phase-3 plus
	Integrated accounts of all other institutional sectors until capital accounts
Phase-5	Phase-4 plus
	All financial accounts of all institutional sectors
Phase-6	Phase-5 plus
	Other changes in assets accounts of all institutional sectors and balance sheets for all institutional sectors

13.8.4 India is in phase-3 as at present, as the accounts for Government and the total economy, as well as for the public sector segment of non-financial and financial corporations are compiled regularly.

GDP Estimates by Industry with reference to UN-SNA 1993

13.8.5 The features of UN-SNA 1993, which are incorporated into the NAS are (a) imputed value of own-account labour treated as mixed income of self-employed, (b) allocation of Financial Intermediary Services Indirectly Measured (FISIM) to the users of these services, and (c) valuation of non-market agricultural crops and ownership of dwellings on the basis of price of similar product made by market producers.

13.8.6 Recommendations on Extended Production Boundary with reference to United Nations - System of National Accounts 1993 (UN-SNA 1993)

(i) For covering the production of goods within households for own consumption, the NSS consumer expenditure surveys need to account for these separately. Production of services by the households for their own consumption is not to be covered in the Gross Domestic Product GDP estimates. However, output of services produced with the help of domestic servants, who are members of households need to be accounted in the GDP estimates. This might be quite difficult to capture separately in the present statistical system. The valuation of such services may be imputed on the basis of the value of output of domestic servants, who are own-account enterprises in their own right.

(ii) Regarding concealed and underground production, many activities are covered implicitly, through the various approaches followed in the estimation of Gross Domestic Product (GDP). For example, in the case of agriculture, illegal crops are implicitly covered under the miscellaneous category "area under other crops"; in the case of firewood, the production estimates are made through consumption approach; in the case of construction, through commodity flow approach; and in the case of unorganised sectors, through the employment approach. The indirect approach of estimation currently followed may be continued, as direct survey of concealed and underground production is not possible.

Saving and Capital Formation with reference to UN- SNA 1993

13.8.7 The UN-SNA 1993 has expanded the coverage of asset boundary to cover new items like cultivated assets, mineral exploration, computer software, entertainment and literacy or artistic originals, associated cost of capital assets transfer from one hand to another and defence expenditure on capital equipment, which are usable for civilian purposes. The UN-SNA1993 also includes as capital formation, the expenditures on produced assets that are not used primarily for production or consumption, but acquired and held as stores of value. Examples of valuables are precious metals (non monetary gold if used as store of value) and stones, antiques and other art objects. Besides the expanded coverage of asset boundary, the UN-SNA1993 also recommends compilation of sequence of accounts (which includes accumulation accounts) for five institutional sectors of general Government, financial corporations, non-financial corporations, NPISHs and households.

13.8.8 The features of UN-SNA1993, which have been incorporated into the NAS are (a) expenditures on mineral exploration as capital expenditure irrespective of the outcome of the explorations, and (b) estimation of consumption of fixed capital of all fixed assets including Government buildings, roads, dams, etc. as per perpetual inventory method (PIM).

13.8.9 As per UN- SNA1993, annual accrued interest on the Bonds should be taken instead of lump sum payments to the household at the time of maturity. All new financial instruments

such as warrants, futures, swaps, etc. would need to be taken into account in the estimation of saving by the RBI as and when such data become available.

Capital Formation

13.8.10 Detailed information on capital formation (new items) like computer software, entertainment and literacy or artistic originals are not available. But in the UN-SNA1993, these need to be treated as capital formation. In addition, information required under UN-SNA1993and is also not available relates to associated cost of capital assets transfer from one hand to another for the household, defence expenditure on capital equipment such as on radar, satellite launching systems, vehicles and on construction of buildings for office, hospitals and schools, etc. and on other construction works like roads, airfields and docks, etc. which are usable for civilian purposes. Similarly, information on valuables is also not available.

13.8.11 For presenting the capital formation estimates at further dissaggregated level, as recommended in UN-SNA1993, break-up of household capital formation separately is required for (a) households (b) Non-Profit Institutions serving households (NPISH), (c) NPIs financed by financial corporations and (d) NPIs financed by non-financial corporations.

13.8.12 Recommendation on saving and Capital Formation with reference to UN-SNA 1993.

(i) Type studies may be conducted on extended asset boundary to capture the necessary data like Cost of transfer of capital assets from one unit to the other unit; copyrights/ patents, film originals, books and artistic originals; Defence expenditure on capital assets like vehicles, construction of buildings for office, hospitals, schools, roads, airfields, etc., which could be used for civilian purposes; Expenditure on purchase of software, databases, etc.; and, information on valuables like: precious metals (non monetary gold if used as store of value) and stones, antiques and other art objects.

(ii) UN-SNA 1993 recommends that trees, which are repeatedly used to produce valuable goods, are to be taken as cultivated assets. It is recommended that the item, trees which are used repeatedly or continuously to produce product, such as fruits and rubber, be treated as capital formation.

(iii) The originals of films/books/research/artistic work, identified by copy rights/patents, need to be taken as a part of capital formation. The research and development expenditure should not be capitalised, when research succeeds, it results in new copy rights/patents which in turn get included in capital assets.

(iv) Defence expenditure on capital equipment such as radar, satellite launching system and vehicles, construction of buildings for offices, hospitals and schools, etc. and other construction works like roads, air fields, docks which are useable for civilian purposes, should be considered as part of gross capital formation as per UN-SNA 1993.

Institutional Sector Accounts, and Sequence of Accounts

13.8.13 The current data gaps are the absence of accounts in respect of, non-financial corporations, households and non-profit institutions serving households. It is therefore recommended that:

(i) Efforts should be made to develop suitable frames for non-financial corporations, households and non-profit institutions serving households and collect information on regular basis on their income and expenditures.

(ii) With regard to extended production and asset boundaries, as and when new estimates are introduced for extended production and extended assets (in relation to the existing boundaries in UN-SNA 1968), they be indicated in separate rows and not merged with the estimates in order to maintain UN-SNA1968 consistent boundaries, so as to maintain inter-temporal comparability of National Accounts aggregates.

Appendix 13.1

Type studies Recommended on Gross Domestic Product

Study No.	Area/Sector	Description of the topics	Benefits of the study	Year of last type study
I	Agriculture	Yield estimates of crops other than the principal crops, grass and fodder crops	These are presently not available. The study will enable in improvement of the quality of production estimates for these crops. These crops account for 28.3 % of the total output of the agriculture sector and 3.6 % of gross output of the entire economy in 1993-94.	Grass and fodder - NSS 1952-53 For other crops, estimates are made on the basis of value of output per hectare of similar crops.
II	Agriculture	Production of newly emerging commercial crops like mushrooms and other high valued herbs and spices; ancillary activities like cut and dried flowers.	No reliable estimates are presently available. The study will enable us to know the estimated production of these crops.	Not included in the GDP estimates.
III	Agriculture	Seed rates of crops other than those covered in the Cost of Cultivation Studies	These are presently available from the States or based on DMI 1958 studies The study will enable improvement in the quality of input-seed estimates of these crops. These account for 4.1 % of the inputs of the sector and 0.3 % of the total input of the economy.	For the crops masoor, other pulses, horsegram, other oilseeds, and sweet potato, seed rates are based on DMI, 1958. The State Governments furnish annually seed rates of crops other than those covered under CCS and mentioned above. These are *ad hoc* estimates.
IV	Livestock	Number of fallen animals, production of goat hair, camel hair and pig bristles and meat by-products	The study will enable in updating the rates of these items. These account for18.6 % of the livestock sector's output and 0.8 % of the total output of the economy.	DMI studies of 1957, 1958, 1961
V	Livestock	Estimates of consumption of roughage and concentrates (including composition) consumed by different categories of cattle	The study will result in improving the quality of input estimates of livestock sector. These inputs account for 45.3 % of the inputs of the sector and 1.5 % of the aggregate inputs of the economy.	NSS 1975-76
VI	Forestry	Production of minor forest products.	These are currently based on royalty figures. The study will result in improving the quality of these estimates. These products account for 13 % of the output of the sector and 0.1 % of total output of economy.	State Governments furnish these estimates on the basis of royalty figures, annually.

Study No.	Area/Sector	Description of the topics	Benefits of the study	Year of last type study
VII	Forestry	Unrecorded industrial wood. Inputs in forestry sector	The study will help in updating the present ratio of 10 % of output. The inputs account for 0.1 % of total input of the economy.	Based on budget analysis in respect of Government forests by the States from time to time.
VIII	Fishing	Estimates of production of fish and prawns from fish ponds cultivation and subsistence fish.	No reliable estimates are available. These account for 5.1 % of sector's output and neg. proportion of output of total economy.	Estimates of cultivated fish are furnished by the States, but they are not considered reliable in the absence of a census of inland water bodies.
IX	Fishing	Inputs in fishing sector	The study will help in updating the present ratio of 10 to 22.5 % of output. The inputs account for 0.2 % of total input of the economy.	Based on the information provided by the State fisheries departments in 1993-94.
X	Banking	Information relating to the details of activities of unorganised non-banking financial undertakings and Own-account money lenders.	The study will result in improvement of quality of the sector's estimates. This accounts for 6.6 % of the sector's output and 0.3 % of total output of the economy.	Assumed ratio. AIDIS does not capture data on money lenders
XI	Local Bodies	Budgetary transactions of local bodies.	The study will result in improvement of quality of the sector's estimates. This accounts for 6.1 % of the public sector's output and 0.3 % of total GDP of the economy.	Only four States, Delhi, Meghalaya, U.P. and Maharashtra are doing annually, a complete analysis of local bodies accounts.

Appendix 13.2

Type studies Recommended on Capital Formation

Study No.	Area/Sector	Description of the topics	Benefits of the study	Year of last type study
Capital Formation - by type of assets				
I.	Capital formation - construction	Timber, round-wood used in construction and quantity of coal required for production of 1 lakh bricks	The study will result in updating the rates used in the estimates of capital formation. The fixed capital formation accounts for 21.4 % of GDP. Construction accounts for 47.5 % of GFCF. Bricks and tiles and timber and round wood account for 17.4 % of construction GDP.	Office of Coal Controller for bricks. Others the Timber Trends Study, 1958.
II.	Capital formation – machinery and equipment	Parts of capital goods and partly capital goods to be treated as capital goods and output of capital goods in total output in unregistered manufacturing sector	The study will result in updating the rates used in the estimates of capital formation. The fixed capital formation accounts for 21.4 % of GDP. Machinery & equip. accounts for 52.6 % of GFCF. These items account for 35.9 % of GFCF- Machinery & Equipment.	AIDIS 1981-82
III.	Trade and transport margins	Updation of marketable surplus ratios, and trade and transport margins	The study will result in updating these rates	DMI studies in 1980s
IV.	Change in stocks	Stocks of food grains in trade and change in stocks of small scale manufacturing units	The study will result in updating the data used in the estimates of capital formation.	Enterprise surveys, 1994-95 and 1996-97

Annexe 13. 1

Sector-wise Items of Output/Input/GDP, Compiled as Indirect Estimates

Sector	For Benchmark Year	For Subsequent Years
1	**2**	**3**
1. Agriculture	Others (oilseeds, sugar, fibres, indigo, drugs & narcotics, condiments & spices), misc. crops, by-products, kitchen garden, meat, hair & bristles, inc. in livestock, inputs: organic manure, repair & maintenance, feed of livestock, market charges, diesel oil	Others (oilseeds, sugar, fibres, indigo,, drugs& narcotics, condiments & spices), misc. crops, by-products, kitchen garden, meat, hair& bristles, inc. in livestock, inputs: organic manure, repair & maintenance, feed of livestock, market charges, diesel oil
2. Forestry	Fuel-wood, inputs	Fuel-wood, inputs
3. Fishing	Inputs	Inputs
4. Mining		
5. Registered Manufacturing		
6. Un-registered Manufacturing	DC (SSI) part	Entire sector
7. Electricity	Gas, non-conventional	Gas, non-conventional
8. Construction	Kutcha construction of households	'Other materials' in the commodity flow approach and kutcha construction of households
9. Trade		Other than public sector
10.Hotels & restaurants		Other than public sector
11. Railways		
12. Other transport	Private Water transport	Other than public sector
13. Storage		Other than public sector
14. Communication	Private Communication	Private Communication
15. Banking & Insurance	Unorganised banking services	Unorganised banking services
16. Real estate, etc	Inputs	Entire sector
17. Public Administration		
18. Other services	Recreational services	Other than public sector

Annexe 13. 2

Estimates of GDP, 1993-94 and 1996-97 - Direct and Indirect Estimates

Industry	GDP, 1993-94		GDP, 1996-97		FOR THE BENCHMARK YEAR						OTHER THAN A BENCHMARK YEAR					
					Series with 1993-94 as base year			Series with 1980-81 as base year			Series with 1993-94 as base year			Series with 1980-81 as base year		
					Prop. of direct est. within the sector, 1993-94			Prop. of direct est. within the sector, 1980-81			Prop. of direct est. within the sector, 1996-97			Prop. of direct est. within the sector, 1985-86		
	(Rs.Crores)	Prop. (%)	(Rs.Crores)	Prop. (%)	Output	Input	GDP	Output	Input	GDP	Output	Input	GDP	Output	Input	GDP
1 Agriculture	221834	28.4	334029	27.0	85.0	40.7	77.3	87.7	56.3	81.1	85.8	33.6	77.8	85.1	50.6	78.1
2 Forestry	11454	1.5	14493	1.2	29.2	0.0	26.6	30.9	0.0	28.1	31.0	0.0	28.2	30.0	0.0	28.0
3 Fishing	8679	1.1	14083	1.1	100.0	0.0	87.8	97.3	0.0	90.6	100.0	0.0	87.9	97.3	0.0	90.3
4 Mining	20092	2.6	27568	2.2	100.0	100.0	100.0	100.0	97.0	99.5	100.0	100.0	100.0	100.0	97.0	99.5
5 Registered	81873	10.5	143859	11.6	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
6 Unregistered	43620	5.6	70831	5.7	0.0	100.0	73.3			34.5			4.0			35.8
7 Electricity, Gas & Water supply	18984	2.4	29944	2.4			99.1			100.0			99.2			96.6
8 Construction	40593	5.2	63315	5.1	91.7	96.6	93.6	98.9	94.4	97.2	74.0	77.8	75.5	51.1	71.1	58.7
9 Trade	93206	11.9	160323	13.0			100.0			11.4			5.3			12.1
10 Hotels&restaurants	6163	0.8	10722	0.9			100.0			15.9			3.2			16.4
11 Railways	9648	1.2	13256	1.1	100.0	100.0	100.0			100.0	100.0	100.0	100.0			100.0
12 Transport by other means	31429	4.0	51922	4.2			99.1			34.8			21.5			24.4
13 Storage	634	0.1	951	0.1			100.0			35.8			52.1			38.0
14Communication	9420	1.2	17201	1.4	92.5	92.5	92.5			100.0	94.3	93.7	94.2			100.0
15 Banking & insurance	41665	5.3	72044	5.8			93.4			98.6			94.8			90.8
16 Real estate, etc	48419	6.2	65997	5.3	100.0	9.3	94.8			0.0			0.0			0.0
17 Public Admn.	43636	5.6	65146	5.3			100.0			92.4			100.0			92.4
18 Other Services	49996	6.4	81606	6.6			98.9			39.6			36.9			39.6
GDP	**781345**	**100.0**	**1237290**	**100.0**			**89.6**			**63.7**			**60.0**			**62.2**

Annexe 13. 3

Survey Results Used for the Unorganised Segments of Various Sectors for the Benchmark Year, 1993-94

Sector	Survey results used for benchmark year, 1993-94
1	2
1. Work-force estimates	Quinquennial Survey on Employment and Un-employment, 1993-94 (50th round), NSSO
2. Mining	Enterprise Survey, 1992-93
3. Unregistered manufacturing	Survey on Unorganised Manufacturing Sector in India, 1994-95 (NSS 51st round)
4. Construction	All-India Debt and Investment Survey (AIDIS) 1991-92
4. Trade	Enterprise Survey, 1996-97 Trade survey, 1997 (NSS 53rd round)
5. Hotels and restaurants	Enterprise Survey, 1993-94
6. Transport	Enterprise Survey, 1993-94
7. Storage and warehousing	Enterprise Survey, 1992-93
8. Ownership of dwellings	Consumer Expenditure Survey, 1993-94 (50th round), NSSO
9. Other Services	Enterprise Survey, 1991-92

Annexe 13.4

List of Principal Crops and their Value of Output

(Rs. Crore)

Crop	Value of Output, 1993-94
1	**2**
1. Rice	42330
2. Wheat	22543
3. Jowar	3511
4. Bajra	1629
5. Maize	3008
6. Ragi	724
7. Small millets	281
8. Barley	497
9. Gram	5172
10. Arhar	2567
11. Urd	1133
12. Moong	1219
13. Masoor	642
14. Khesari	367
15. Moth	-
16. Horse gram	188
17. Peas and beans	462
18. Other kharif pulses	227
19. Other *rabi* pulses	116
20. Groundnut	7503
21. Sesamum	702
22. Rapeseed & mustard	5376
23. Linseed	338
24. Castor seed	623
25. Safflower	421
26. Niger seed	194
27. Coconut	3849
28. Sunflower	1315
29. Soyabean	3628
30. Cotton lint	8136
31. Jute	726
32. Mesta	68
33. Sanhemp	23
34. Black pepper	203
35. Dry chillies	1496
36. Dry ginger	341
37. Turmeric	1012
38. Arecanut	1305
39. Cardamom	300
40. Coriander	241
41. Garlic	433
42. Potato	3311
43. Tapioca	956
44. Sweet potato	322
45. Onion	1255
46. Banana	4321
47. Sugarcane	14606
48. Tobacco	1034
49. Guarseed	332
Total principal crops	144688
Value of output of all crops	204874
Percentage share of principal crops	70.6

Annexe 13.5

Crops Covered Under Cost of Cultivation Studies in Different States/Years

Sl. No.	Name of the Crop	States Covered	Years during which the Crop was Covered
1	**2**	**3**	**4**
1	Paddy	Andhra Pradesh	1990-91 to 1998-99
		Assam	-Do-
		Bihar	-Do-
		Haryana	-Do-
		Karnataka	-Do-
		Kerala	-Do-
		Madhya Pradesh	-Do-
		Orissa	-Do-
		Punjab	-Do-
		Tamil Nadu	-Do-
		Uttar Pradesh	-Do-
		West Bengal	-Do-
2	Wheat	Bihar	1990-91 to 1998-99
		Gujarat	-Do-
		Haryana	-Do-
		Himachal Pradesh	-Do-
		Madhya Pradesh	-Do-
		Punjab	-Do-
		Rajasthan	-Do-
		Uttar Pradesh	-Do-
		West Bengal	1990-91 to 1995-96
3	Maize	Bihar	1990-91 to 1998-99
		Himachal Pradesh	-Do-
		Madhya Pradesh	-Do-
		Rajasthan	-Do-
		Uttar Pradesh	-Do-
4	Jowar	Andhra Pradesh	1990-91 to 1998-99
		Gujarat	1990-91 to 1995-96
		Karnataka	1990-91 to 1998-99
		Madhya Pradesh	-Do-
		Maharashtra	-Do-
		Rajasthan	-Do-
		Tamil Nadu	-Do-
5	Bajra	Gujarat	1990-91 to 1998-99
		Haryana	-Do-
		Karnataka	-Do-
		Maharashtra	-Do-
		Rajasthan	-Do-
		Tamil Nadu	-Do-
		Uttar Pradesh	-Do-
6	Barley	Rajasthan	1990-91 to 1998-99
		Uttar Pradesh	-Do-
7	Gram	Madhya Pradesh	1990-91 to 1998-99
		Rajasthan	-Do-
		Uttar Pradesh	-Do-

Sl. No.	Name of the Crop	States Covered	Years during which the Crop was Covered
1	**2**	**3**	**4**
8	Urad	Andhra Pradesh	1990-91 to 1998-99
		Madhya Pradesh.	-Do-
		Maharashtra	-Do-
		Orissa	-Do-
		Tamil Nadu	-Do-
		Uttar Pradesh	-Do-
9	Moong	Andhra Pradesh	1990-91 to 1998-99
		Madhya Pradesh	-Do-
		Maharashtra	-Do-
		Orissa	-Do-
10	Arhar	Andhra Pradesh	1990-91 to 1992-93
		Gujarat	1990-91 to 1998-99
		Karnataka	1991-92 to 1992-93
		Madhya Pradesh	1990-91 to 1998-99
		Maharashtra	1990-91 to 1992-93 & 1996-97 to 1998-99
		Uttar Pradesh	1990-91 to 1998-99
11	Soya bean	Madhya Pradesh	1990-91 to 1998-99
		Uttar Pradesh	1990-91 to 1995-96
12	Groundnut	Andhra Pradesh	1990-91 to 1998-99
		Gujarat	-Do-
		Karnataka	-Do-
		Maharashtra	-Do-
		Orissa	-Do-
		Tamil Nadu	-Do-
13	Sunflower	Karnataka	1990-91 to 1998-99
		Maharashtra	-Do-
14	Sesamum	Rajasthan	1990-91 to 1998-99
		Tamil Nadu	-Do-
		Uttar Prdaesh	-Do-
15	Linseed	Madhya Pradesh	1990-91 to 1992-93
		Uttar Prdaesh	1990-91 to 1992-93
16	Rapeseed & Mustard	Assam	1990-91 to 1998-99
		Haryana	-Do-
		Madhya Pradesh	1993-94 to 1998-99
		Punjab	1990-91 to 1998-99
		Rajasthan	-Do-
		Uttar Pradesh	-Do-
17	Safflower	Karnataka	1990-91 to 1998-99
		Maharashtra	-Do-
18	Cotton	Andhra Pradesh	1990-91 to 1998-99
		Gujarat	-Do-
		Haryana	-Do-
		Karnataka	-Do-
		Madhya Pradesh	-Do-
		Maharashtra	-Do-
		Punjab	-Do-
		Tamil Nadu	-Do-

Sl. No.	Name of the Crop	States Covered	Years during which the Crop was Covered
1	**2**	**3**	**4**
19	Jute	Assam	1990-91 to 1998-99
		Bihar	-Do-
		Orissa	-Do-
		West Bengal	-Do-
20	Sugarcane	Andhra Pradesh	1990-91 to 1998-99
		Bihar	-Do-
		Gujarat	1993-94 to 1995-96
		Haryana	1990-91 to 1998-99
		Karnataka	-Do-
		Maharashtra	-Do-
		Punjab	1990-91 to 1995-96
		Uttar Pradesh	1990-91 to 1998-99
21	Tobacco	Andhra Pradesh (Special Study)	1990-91 to 1998-99
22	Onion	Karnataka	1990-91 to 1998-99
		Maharashtra	-Do-
		Orissa	-Do-
23	Tapioca	Kerala	1990-91 to 1998-99
24	Potato	Bihar	1990-91 to 1998-99
		Himachal Pradesh	-Do-
		Uttar Pradesh	-Do-
		West Bengal	-Do-

Annexe 13.6

Proportions of Partly Capital Goods Treated as Capital Goods

Sl. NO	Partly Capital Goods Groups in machinery & equipment*	NIC-1987	% used
	1	2	3
1.	Wood furniture	276, 277 & 279	73
2.	Carpets	263	24
3.	Tyres & tubes	310	77
4.	Other rubber products	312	69
5.	Steel furnitures	342	73
6.	Metal utensils	346	27
7.	Refrigerators	355	59
8.	Sewing machine	359	690
9.	Type writers	358	79
10.	Electrical goods	363,364	74
11.	Radio & T.V.	365, 366	5
12.	Motor vehicles (cars)	373, 374	36
13.	Motor cycles, scooters & cycles	375, 376	69
14.	Photographic goods	381	26
15.	Watches & clocks	382	34
16.	Musical instruments	386	85

* Based on AIDIS, 1981-82, Special tabulation by the RBI for NAD of CSO.

Annexe 13.7

Accounts and Supporting Tables of the System of Regional Accounts

SL. NO.	ACCOUNTS
1	2
I	**Consolidated Accounts of the Region**
	Account 1 Production Account
	Account 2 Income and Outlay Account
	Account 3 Capital Finance Account
II	**Household Account**
	Account 4 Income and Outlay Account
	Account 5 Total Consumption and Income of the Population
III	**Accounts of State and Local Governments**
	Account 6.1 Production Account of State Government Departmental Enterprises
	Account 6.2 Production Account of State Government Non-Departmental Enterprises
	Account 7.1 Income and Outlay Account of State Government Administrative Departments and Departmental Enterprises
	Account 7.2 Income and Outlay Account of State Government Non-Departmental Enterprises
	Account 8.1 Capital Finance Account of State Government Departmental Enterrises
	Account 8.2 Capital Finance Account of State Government Non-Departmental Enterprises

SL. NO.	Supporting Tables
1	2
Table 1	State domestic product and related aggregates
Table 2.1	Gross State domestic product at factor cost by industry of origin (at current prices)
Table 2.2	Gross State domestic product at factor cost by industry of origin (at constant prices)
Table 3.1	Net State domestic product at factor cost by industry of origin (at current prices)
Table 3.2	Net State domestic product at factor cost by industry of origin (at constant prices)
Table 4.1	Share of public sector in the State domestic product (at current prices)
Table 4.2	Share of public sector in the State domestic product (at constant prices)
Table 5.1	Gross State domestic product of commodity-producing sectors by areas (at current prices)
Table 5.2	Gross State domestic product of commodity-producing sectors by areas (at constant prices)
Table 6	Selected components of State domestic final expenditure (at current prices)
Table 7	Economic and purpose classification of the expenditure of administrative departments
Table 8.1	Private final consumption expenditure by object (at current prices)
Table 8.2	Private final consumption expenditure by object (at constant prices)
Table 9	Distribution of households and persons by per capita household expenditure groups (at current prices)
Table 10	Distribution of households and persons by per capita household income groups (at current prices)
Table 11	Distribution of households and persons by per capita household asset groups (at current prices)
Table 12.1	Gross domestic fixed capital formation by types and by agencies (at current prices)
Table 12.2	Gross domestic fixed capital formation by types and by agencies (at constant prices)
Table 13	Price indices by industry groups (base year = 100)
Table 14	Manpower by industry groups and agencies
Table 15	Socio-economic indicators of the region (for each district)

Annexe 13.8

Status of Regional Accounting System of Various States/Union Territories

Sl. No.	State	Consolidated A/c of the Region			Household A/c		Accounts of Public Sector and Local Government					
		A/c-1	A/c-2	A/c-3	A/c-4	A/c-5	A/c-6.1	A/c-6.2	A/c-7.1	A/c-7.2	A/c-8.1	A/c-8.2
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Andhra Pradesh						Y	Y	Y	Y	Y	Y
2	Arunachal Pradesh											
3	Assam											
4	Bihar											
5	Goa											
6	Gujarat						Y		Y		Y	
7	Haryana						YY	YY	YY	YY	YY	YY
8	Himachal Pradesh						YY	YY	YY	YY	YY	YY
9	Jammu & Kashmir											
10	Karnataka						Y		Y		Y	
11	Kerala						YY	YY	YY	YY	YY	YY
12	Madhya Pradesh						YY	YY	YY	YY	YY	YY
13	Maharashtra											
14	Manipur											
15	Meghalaya						Y	Y	Y	Y	Y	Y
16	Mizoram											
17	Nagaland											
18	Orissa											
19	Punjab											
20	Rajasthan						Y	Y	Y	Y	Y	Y
21	Sikkim											
22	Tamil Nadu						YY	YY	YY	YY	YY	YY
23	Tripura											
24	Uttar Pradesh						Y		Y		Y	
25	West Bengal											
	Union Territories											
1	A & N Islands											
2	Chandigarh											
3	D & N Haveli											
4	Daman & Diu											
5	Delhi											
6	Lakshadweep											
7	Pondicherry						Y		Y		Y	

Note: Y – Yes for public sector, YY – Yes for public sector and local Government.

Annexe 13.9

Status of Regional Accounting System of Various States/UTs

Sl. No.	State	Supporting Tables																				
		1	2.1	2.2	3.1	3.2	4.1	4.2	5.1	5.2	6	7	8.1	8.2	9	10	11	12.1	12.2	13	14	15
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Andhra Pradesh	Y	Y	Y	Y	Y			Y	Y		Y						Y		Y		Agri
2	Arunachal Pradesh	Y	Y	Y	Y	Y			@	@												
3	Assam	Y	Y	Y	Y	Y			Y	Y								Y		Y		Y
4	Bihar	Y	Y	Y	Y	Y						Y						Y		@		Agri
5	Goa	Y	Y	Y	Y	Y						Y								Y		
6	Gujarat	Y	Y	Y	Y	Y						Y						Y				
7	Haryana	Y	Y	Y	Y	Y			Y	Y								Y	Y	Y		Agri
8	Himachal Pradesh	Y	Y	Y	Y	Y			Y	Y		Y						Y		@		
9	Jammu & Kashmir	Y	Y	Y	Y	Y																
10	Karnataka	Y	Y	Y	Y	Y			Y	Y		Y						Y		Y		Agri
11	Kerala	Y	Y	Y	Y	Y			Y	Y		Y						Y				Y
12	Madhya Pradesh	Y	Y	Y	Y	Y			@	@								Y		Y		Agri
13	Maharashtra	Y	Y	Y	Y	Y			Y	Y		Y						Y				
14	Manipur	Y	Y	Y	Y	Y						@								@		
15	Meghalaya	Y	Y	Y	Y	Y						Y						Y				
16	Mizoram	Y	Y		Y																	Y
17	Nagaland	Y	Y	Y	Y	Y																
18	Orissa	Y	Y	Y	Y	Y						Y						Y	Y	Y		
19	Punjab	Y	Y	Y	Y	Y			Y	Y		Y						Y		Y		Y
20	Rajasthan	Y	Y	Y	Y	Y			Y	Y								Y		Y		Y
21	Sikkim	Y	Y	Y	Y	Y																
22	Tamil Nadu	Y	Y	Y	Y	Y			Y	Y		Y	Y					Y		Y		Y
23	Tripura	Y	Y	Y	Y	Y																
24	U.P.	Y	Y	Y	Y	Y			Y	Y		Y								Y		Y
25	W Bengal	Y	Y	Y	Y	Y			Y	Y		Y						Y		Y		Y
	UTs																					
1	A & N Islands	Y	Y	Y	Y	Y																
2	C'garh	Y	Y		Y																	
3	D & N Haveli																					
4	Daman & Diu																					
5	Delhi	Y	Y	Y	Y	Y						Y						Y		Y		
6	L'dweep																					
7	P'cherry	Y	Y	Y	Y	Y			Y	Y								@		Y		

Note: Y: Yes, @: Under Progress

Annexe 13.10

Status of Estimates of Gross Capital Formation

(at Current Prices)

Sl. No.	States	Total GFCF	Public Sector
1	**2**	**3**	**4**
1	Andhra Pradesh	Yes	Yes
2	Assam	Yes	Yes
3	Bihar	No	Yes
4	Delhi	No	Yes
5	Gujarat	No	Yes
6	Haryana	Yes	Yes
-7	Himachal Pradesh	No	Yes
8	Karnataka	Yes	Yes
9	Kerala	Yes	Yes
10	Madhya Pradesh	Yes	Yes
11	Maharashtra	No	Yes
12	Meghalaya	No	Yes
13	Orissa	No	Yes
14	Punjab	Yes	Yes
15	Rajasthan	Yes	Yes
16	Tamil Nadu	Yes	Yes

Annexe 13.11

States Preparing District-Level Estimates

Sl.No.	State/U.T.	Commodity Producing Sectors	All Sectors
1	**2**	**3**	**4**
1.	Andhra Pradesh	Yes	Yes
2.	Arunachal Pradesh	under progress	No
3.	Assam	Yes	Yes
4.	Bihar	Yes	Yes
5.	Haryana	Yes	Yes
6.	Karnataka	Yes	Yes
7.	Kerala	Yes	Yes
8.	Madhya Pradesh	Yes	Only for the year 1995-96
9.	Maharashtra	Yes	Yes
10.	Rajasthan	Yes	Yes
11.	Tamil Nadu	Yes	Yes
12.	Uttar Pradesh	Yes	No
13.	West Bengal	Yes	Yes

Note - Chandigarh & Pondicherry being the single-district States do not propose to build district-level estimates.

Annexe 13.12

Indicators Used for Allocating Estimates of Supra-Regional Sectors

1. Railways

The factor income namely, compensation of employees, interest and profit (including depreciation) at the national level are distributed among the zonal railways, in proportion to:

(a) Total cost of staff excluding the cost of staff engaged in railway workshops (manufacturing) and artisans (construction),
(b) Capital at charge, and
(c) Net earnings, respectively.

Compensation of employees of Railway Board and zonal headquarters is allocated separately to the respective States on the basis of their location. Since the railway zones do not coincide with the State boundaries, a further allocation of zonal estimates becomes necessary. The value added for each zonal railway is divided into two parts namely, value added from passenger traffic and value added from goods traffic on the basis of zone wise data on passenger and goods earnings, respectively (available in the annual statistical statements of the Indian Railways). These estimates of value added from passenger traffic/goods traffic in each zone are then re-allocated among the States falling within each zone on the basis of information on vehicle kilometer per route per day or net tonne kilometer per route per day (available from Railway Board).

2. Communication

The gross estimates at the State level are prepared on the basis of detailed data collected from Department of Posts, Department of Telecommunication, VSNL & MTNL.

a) For Deptt. of Posts and Deptt. of Telecommunication, the all-India estimates of compensation of employees are distributed among postal/telecom circles on the basis of disbursement of wages and salaries of postal/telecom staff. The interest is allocated in proportion to the current circle-wise cumulative capital expenditure obtained by adding the current expenditure to the previous cumulative expenditure. The gross profit from post is distributed on the basis of salary and wages whereas gross profit from telecommunication is distributed in the ratio of circle wise net operating income of telecommunication only. Rent in both the cases is allocated in proportion to State-wise total number of post offices. Generally, the postal/telecom circles are co-terminus with the State boundaries. In those cases where the circle covers more than one State, allocation to the States is done on the basis of the number of workers within each State.
b) Statewise information in respect of OCS and MTNL is directly available.
c) Statewise CFC of communication is subtracted from the gross estimates to obtain the net estimates. Constant price estimates are obtained by applying the all-India deflator uniformly on all States.

3. Banking & Insurance

The all-India estimates of compensation of employees are allocated to States on the basis of State wise data on distribution of employees in respect of commercial banks and the Life Insurance Corporation. The State-wise data on wages and salaries are obtained from the concerned organisations viz. (a) Banking Department of Reserve Bank of India, (b) Industrial Finance Corporation of India, (c) Unit Trust of India, and (d) Cooperative Societies. The State-wise allocation of operating surplus of these activities is done on the basis of data obtained from concerned agencies on relevant indicators, viz. Loans and advances (Commercial Banks and Industrial Finance Corporation of India), net premium income and sum assured (LIC), deposits (Banking Department of RBI), financial disbursements (UTI),

investments and profits (Cooperative Credit Societies). For other activities covered under this industry, State-wise estimates are obtained by allocating the net value added by related indicators, viz. (a) paid up capital (for non-Banking Financial Companies), (b) commitments (for Agricultural Refinance Development Corporation), (c) Financial assistance utilised (for IDBI), (d) loans released (for NCDC), (e) gross collections under small saving schemes (for Post Office Saving Banks), (f) Business and property assessed to income tax (for fire insurance), (g) value of exports and re-exports (for marine insurance), (h) number of vehicles registered under Motor Vehicles Act (for miscellaneous insurance), (i) wages & salaries (PLI), and (j) State-wise expenditure incurred on provision of medical benefits (Employees State Insurance Corporations).

4. Central Government Administration

Estimates of net value added for Central Government Administration are prepared using the income approach, the compensation of employees being the only factor income. For current price estimates, the total salary & wages of Central Government Administration are taken from the budget documents from which the salary & wages of Defence, Offices Abroad, Para Military Forces, UT covered under Home Ministry Budget, Issue Deptt of RBI and Atomic Energy are subtracted and the balance is distributed among various States & UTs in the ratio of State-wise Central Government Employees (as have been once calculated in 1988-89). To these estimates of salary & wages, State-wise estimates of salary & wages in respect of Issue Deptt of RBI and Atomic Energy as available from RBI & budget documents respectively are added to get the final State-wise estimates of Salary & wages for Central Govt. Administration. The estimates of Central Government Administration at constant prices are made by deflating the current price estimates using the CPI (Industrial Workers).

The estimates of Gross Value Added are obtained by adding the CFC estimates for Central Govt. Administration at the all-India level and then distributing the all-India gross estimates to different States in the same ratio as net estimates. The CFC estimates for Central Government Administration are obtained from the CFC of Public Administration & Defence by applying the same ratio as the all-India NSDP of Central Government Administration to the NDP of Public Administration and Defence. This process is used for estimates at current prices as well as at constant prices.

ACRONYMS

AAI	Airports Authority of India
ACNA	Advisory Committee on National Accounts
ADB	Asian Development Bank
ADRs	American Depositary Receipts
AdSS	Administrative Statistical System
AE	Advance Estimates
AG	Accountant General
AICTE	All India Council of Technical Education
AIDIS	All India Debt & Investment Survey
AIES	All India Educational Survey
AIITS	All India Income Tax Statistics
AIRCS	All India Rural Credit Survey
AIRDIS	All India Rural Debt and Investment Survey
AIU	Association of Indian Universities
ALE	Agricultural Labour Enquiry
AMFI	Association of Mutual Funds in India
ANC	Ante-Natal Check up
ANM	Auxiliary Nurse Mid-Wife
ASI	Annual Survey of Industries
ASSOCHAM	Associated Chambers of Commerce and Industry
BAG	Budget at a Glance
BE	Budget Estimates
BEA	Bureau of Economic Analysis
BgSE	Bangalore Stock Exchange
BoP	Balance of Payments
BPM5	BoP Manual, 5th Edition of the IMF
BR	Business Register
BSA	Balance Sheet Abstract
BSE	Bombay Stock Exchange
BSO	Block Statistical Organisation
BSR	Basic Statistical Returns
CAA&A	Controller of Aid Accounts and Audit
CAB	Cotton Advisory Board
CACP	Commission for Agricultural Costs and Prices
CADAs	Command Area Development Authorities
CADP	Command Area Development Programme
CAG	Comptroller & Auditor General of India
CAPE	Crop Acreage and Production Estimation
CARE	Credit Analysis and Research Limited
CBDT	Central Board of Direct Taxes
CBEC	Central Board of Excise and Customs
CBHI	Central Bureau of Health Intelligence
CBRI	Central Building Research Institute
CBS	Consolidated Banking Statistics

CCA	Controller of Certifying Agency
CCIT	Chief Commissioner of Income Tax
CCS	Cost of Cultivation Studies
CD	Compact Disk
CD Blocks	Community Development Blocks
CDs	Certificates of Deposits
CDSL	Central Depository Services Limited
CEA	Central Electricity Authority
CFC	Consumption of Fixed Capital
CGA	Controller General of Accounts
CGHS	Central Government Health Scheme
CGWB	Central Ground Water Board
CHC	Community Health Centre
CIF	Chief Inspector of Factories
CIFRI	Central Inland Fisheries Research Institute
CII	Confederation of Indian Industries
CIL	Coal India Limited
CIN	Corporate Index Number
CIWTCI	Central Inland Water transport Corporation of India
CLSS	Company Law Settlement Scheme
CMFRI	Central Marine Fisheries Research Institute
CMI	Census of Manufacturing Industries
CMIE	Centre for Monitoring of Indian Economy
CMO	Chief Medical Officer
COCSSO	Conference of Central and State Statistical Organisations
COFOG	Classifications of Functions of Government
COICOP	Classification of Individual Consumption by purpose
COOIT	Central Organisation for Oil Industry and Trade
COPNI	Classification of non-Profit Institutions by Purpose
COPP	Classification of Producers by Purpose
CoR	Certification of Registration
CP	Commercial Papers
CPC	Central Pay Commission
CPD	Coordination & Publication Division
CPI	Consumer Price Index
CPI (AL)	CPI Agricultural Labourers
CPI (IW)	Consumer Price Index (Industrial Workers)
CPI (R)	CPI Rural
CPI (RL)	CPI (Rural Labourers)
CPI (U)	CPI (Urban)
CPI (UNME)	CPI (Urban Non-Manual Employee)
CPR	Couple Protection Rate
CPWD	Central Public Works Department
CRIS	Committee on Reforms in Insurance Sector
CRISIL	Credit Rating Information Services of India Limited
CRR	Cash Reserve Ratio
CRS	Civil Registration System

CSEKL	Capital Stock Exchange Kerala Limited
CSO	Central Statistical Organisation
CV	Commercial Vehicle
CW	Consultancy Wing
CWC	Central Water Commission
CWWG	Crop Weather Watch Group
DAC	Department of Agriculture & Cooperation
DAHD	Department of Animal Husbandry & Dairying
DARE	Department of Agricultural Research and Education
DCA	Department of Company Affairs
DCI	Dental Council of India
DCI&S	Development Commissioner for Iron and Steel
DCSSI	Development Commissioner for Small Scale Industries
DCU	Departmental Commercial Undertakings
DDP	District Domestic Product
DEAP	Department of Economic Analysis and Policy
DES	Directorate of Economics and Statistics
DESACS	Department of Statistical Analysis and Computer Services
DESMOA	Directorate of Economics and Statistics, Ministry of Agriculture
DFHI	Discount and Finance House of India
DG&CEO	Director General and Chief Executive Officer
DGCI&S	Directorate General of Commercial Intelligence and Statistics
DGCSO	Director General Central Statistical Organisation
DGE&T	Directorate General of Employment and Training
DGFASLI	Directorate General of Factory Advice Services & Labour Institutes
DGFT	Directorate General of Foreign Trade
DGHS	Directorate General of Health Service
DGIT	Director General of Income Tax
DIC	District Industries Centre
DICGC	Deposit Insurance and Credit Guarantee Corporation
DIETS	District Institutes of Education Training
DISE	District Information System for Education
DISNIC	District Information System of National Informatics Centre
DIPP	Department of Industrial Policy and Promotion
DGTD	Directorate General of Technical Development
DME	Directory Manufacturing Establishment
DMI	Directorate of Market and Inspection
DNBS	Department of Non-Banking Supervision
DoE	Department of Electronics
DoPT	Department of Personnel and Training
DOT	Department of Telecommunications
DPC	Departmental Promotion Committee
DPD	Data Processing Division
DPEP	District Primary Education Programme
DS&HE	Department of Secondary and Higher Education

DSDO	Data Storage and Dissemination Office
DSE	Delhi Stock Exchange
DTL	Demand and Time Liabilities
DTO	Department of Telecom Operations
DTR	Daily Trade Return
DTS	Department of Telecom Services
EARAS	Establishment of an Agency for Reporting Agricultural Statistics
EB	Enumeration Block
EC	Economic Census
ECB	External Commercial Borrowing
ECD	Economic Census Division
ECGC	Export Credit Guarantee Corporation
EDCIL	Educational Consultants India Limited
EDI	Electronic Data Interchange
EDMU	External Debt Management Unit
EDP	Electronic Data Processing
EFC	Expenditure Finance Committee
EFT	Electronic Fund Transfer
EGS	Education Guarantee Scheme
ELC	Equipment Leasing Company
EMIP	Employment Market Information Programmes
ENC	Export Negotiated Contract
ENVIS	Environmental Information System
EPF	Employees Provident Fund
EPFO	Employees Provident Fund Organisation
ER-I & II	Employment Return I & II
ESI I-IV	Educational Statistics 1-IV
ERU	Economic Research Unit
ESCAP	Economic and Social Commission for Asia and the Pacific
ESIC	Employees State Insurance Corporation
ESIS	Employees State Insurance Scheme
EUS	Employment-Unemployment Survey
EXIM	Export Import Bank of India
f.o.b.	Free on Board
FAO	Food & Agricultural Organisation
FASAL	Forecasting Agricultural output using Space, Agro-meteorology and Land based observations
FCNR(B)	Foreign Currency Non-Resident Accounts (Banks)
FDES	Framework of Environment Statistics
FDI	Foreign Direct Investment
FEMA	Foreign Exchange Management Act
FI	Financial Institution
FICCI	Federation of Indian Chambers of Commerce and Industry
FIIs	Foreign Institutional Investors
FIIS	Financial Institutions Information System
FIPB	Foreign Investment Promotion Board
FISIM	Financial Intermediary Services Indirectly Measured

FLS	Family Living Survey
FOD	Field Operations Division
FSI	Forest Survey of India
FSS	Financial Sector Survey
FSU	First Stage Unit
FuS	Follow-up Surveys
GAAP	General Accepted Accounting Principles
GAIL	Gas Authority of India Limited
GC	Governing Council
GCES	General Crop Estimation Survey
GDI	Gender Development Index
GDP	Gross Domestic Product
GDRs	Global Depositary Receipts
GFCE	Government Final Consumption Expenditure
GFS	Government Finance Statistics
GIC	General Insurance Corporation of India
GIS	Geographical Information Systems
GNP	Gross National Product
GTI	Gross Trading Income
GVA	Gross Value Added
GVO	Gross Value of Output
HAG	Higher Administrative Grade
HCV	Heavy Commercial Vehicle
HDFC	Housing Development Finance Corporation
HDI	Human Development Index
HFC	Housing Financing Company
HLCC	High Level Coordination Committee
HMIS	Health Management Information System
HPFC	Hire Purchase Financing Company
HUDCO	Housing & Urban Development Corporation
HUF	Hindu Undivided Family
IAIS	International Association of Insurance Supervisors
IAMR	Institute of Applied Manpower Research
IAP	Index for Agriculture Production
IASRI	Indian Agricultural Statistics Research Institute
IBM	Indian Bureau of Mines
IBS	International Banking Statistics
IC	Investment Company
ICAR	Indian Council of Agriculture Research
ICD	International Classification of Diseases
ICE sector	Information Technology, Communication and Entertainment sector
ICFRE	Indian Council of Forestry Research & Education
ICICI	Industrial Credit and Investment Corporation of India
ICS	Improvement of Crop Statistics
IDBI	Industrial Development Bank of India
IDFC	Infrastructure Development Finance Company
IDR Act	Industrial Development Regulation Act

IEBR	Internal and Extra Budgetary Resources
IEC	Information, Education & Communication
IES	Indian Economic Service
IFCI	Industrial Finance Corporation of India
IIBI	Industrial Investment Bank of India Limited
IIP	Index of Industrial Production
ILAFS	Infrastructure Leasing And Financial Services
ILC	Indian Livestock Census
ILO	International Labour Organisation
IMD	Indian Meteorological Department
IMF	International Monetary Fund
IMR	Infant Mortality Rate
INFOTERRA	A Global Environmental Information Network of United Nations Environment Programme
INIP	International Investment Position
IOTT	Input-Output Transactions Table
IPP	Index of Prices Paid
IPP-CP	IIP – Capital Formation
IPP-FC	IIP – Final Consumption
IPP-IC	IIP – Final Intermediate Consumption
IPR	Index of Prices Received
IRDA	Insurance Regulatory Development Authority
ISCO	International Standard Classification of Occupations
ISE	Inter-connected Stock Exchange
ISEC	International Statistical Education Centre
ISI	Indian Statistical Institute
ISIC	International Standard Industrial Classification
ISM&H	Indian Systems of Medicine and Homeopathy
ISRO	Indian Space Research Organisation
ISS	Indian Statistical Service
ISO	Information System Organisation
ISWGNA	Inter Secretariat Working Group on National Accounts
IT	Information Technology
ITC(HS)	Indian Trade Classification based on Harmonised Commodity Description and Coding System
ITT	Index numbers of Terms of Trade
IUD	Intra-Utrine Device
IWGEDS	International Working Group on External Debt Statistics
IWT	Inland Water Transport
JAG	Junior Administrative Grade
JCCS	Junior Certificate Course in Statistics
KVIC	Khadi & Village Industries Commission
LBS	Locational Banking Statistics
LC	Loan Company
LIC	Life Insurance Corporation of India
LPG	Liquid Petroleum Gas
LSE	Ludhiana Stock Exchange
LUS	Land Use Statistics

MACT	Motor Accident Claims Tribunal
MBFC	Mutual Benefit Financial Company
MCCD	Medical Certification of Cause of Death
MCH	Maternal and Child Health
MCI	Medical Council of India
MCPC	Middle Class Price Collection
MFS	Monetary and Financial Statistics
MHRD	Ministry of Human Resource Development
MIS	Management Information System
MIUs	Market Intelligence Units
MoS&PI	Ministry of Statistics and Programme Implementation
MoWR	Ministry of Water Resources
MPR	Monthly Progress Report
MRPC	Market Research & Planning Cell
MSE	Madras Stock Exchange
MSFTI	Monthly Statistics of Foreign Trade in India
MTP	Medical Termination of Pregnancy
MVA	Motor Vehicles Act
NABARD	National Bank for Agriculture and Rural Development
NABS	National Advisory Board on Statistics
NACO	National AIDS Control Organisation
NAD	National Accounts Division
NAIS	National Agricultural Insurance Scheme
NAS	National Accounts Statistics
NASSCOM	National Association of Software and Service Companies
NBFC	Non-Banking Financial Company
NBFIs	Non-Banking Financial Intermediaries
NBNFC	Non-Banking Non-Financial Company
NBO	National Buildings Organisation
NCA	National Commission on Agriculture
NCAER	National Council of Applied Economic Research
NCERT	National Council of Educational Research and Training
NCFC	National Crop Forecasting Centre
NCS	National Commission on Statistics
NCTE	National Council of Teacher Education
NDCU	Non- Departmental Commercial Undertakings
NDME	Non-Directory Manufacturing Establishment
NDP	Net Domestic Product
NDS	Negotiated Dealing Screen
NE	North Eastern
NES	National Employment Service
NFHS	National Family Health Survey
NFP	National Focal Point
NFSG	Non-Functional Selection Grade
NGO	Non-Governmental Organisation
NH	National Highways

NHB	National Horticultural Board
NIA	National Insurance Academy
NIAC	New India Assurance Company Limited
NIC	National Industrial Classification
NICNET	National Informatics Centre Network
NIEPA	National Institute for Educational Planning & Administration
NIPFP	National Institute of Public Finance and Policy
NISHAN	National Identity System Home Affairs Network
NIUA	National Institute of Urban Affairs
NNP	Net National Product
NOF	Net Owned Funds
NPA	National Plan of Action
NPE	National Policy on Education
NPISH	Non-Profit Institutions Serving Households
NPR	National Population Register
NR(NR)	Non-Resident (Non-Repatriable)
NRA	Natural Resource Accounting
NRI	Non-Resident Indian
NSC	National Statistical Commission
NSCCL	National Securities Clearing Corporation Limited
NSDL	National Securities Depository Limited
NSE	National Stock Exchange
NSEIL	National Stock Exchange of India Limited
NSO	National Statistical Office
NSS	National Sample Survey
NSSO	National Sample Survey Organisation
NTMIS	National Technical Manpower Information System
NVA	Net Value Added
OAME	Own Account Manufacturing Enterprise
OASIS	Old Age Social and Income Security
OBC	Other Backward Castes
OCB	Overseas Corporate Bodies
OEA	Office of The Economic Adviser
OECD	Organisation for Economic Co-operation and Development
OIC	Oriental Insurance Company Limited
OIL	Oil India Limited
ONGC	Oil & Natural Gas Commission
ONS	Office of National Statistics
OWS	Occupational Wage Surveys
PAN	Permanent Account Number
PAO	Pay and Accounts Office
PC	Personal Computer
PCA	Primary Census Abstract
PDO	Public Debt Office
PEC	Post Enumeration Checks
PF	Provident Fund
PFCE	Private Final Consumption Expenditure

PGOE	Protectorate General of Emigrants
PHC	Primary Health Centre
PIM	Perpetual Inventory Method
PLR	Prime Lending Rate
PMSD	Planning, Monitoring and Statistics Division
PNC	Post-Natal Check up
POSB	Post Office Saving Bank
PPQS	Plant Protection, Quarantine and Storage
PrAO	Principal Accounts Office
PSB	Public Sector Bank
PSU	Public Sector Undertaking
PWD	Public Works Department
QE	Quick Estimate
RBD	Registration of Births and Deaths
RBI	Reserve Bank of India
RCTC	Risk Capital and Technology Finance Corporation
RCTFCL	Risk Capital and Technology Finance Corporation India
RE	Revised Estimate
REER	Real Effective Exchange Rate
repo	Repurchase Agreement
RGI	Registrar General of India
RITES	Railway Infrastructure Technical & Economic Services
RMIS	Rationalisation of Minor Irrigation Statistics
RNBC	Residuary Non-Banking Company
ROC	Registrar of Companies
RPI	Retail Price Index
RRB	Regional Rural Bank
RS	Remote Sensing
RSE	Relative Standard Error
RST	Remote Sensing Technology
RTGS	Real Time Gross Settlement
RTO	Road Transport Office
SAC	Space Application Centre
SAG	Senior Administrative Grade
SASAs	State Agricultural Statistics Authorities
SDDS	Special Data Dissemination Standards
SDI	State Directorate of Industries
SDP	State Domestic Product
SDRD	Survey Design & Research Division
SDRs	Special Drawing Rights
SEB	State Electricity Board
SEBI	Securities and Exchange Board of India
SEEA	System of Integrated Environmental and Economic Accounting
SFC	State Financial Corporation
SFDs	State Forest Departments
SFTIC	Statistics of Foreign Trade in India by Countries
SGL	Subsidiary General Ledger

SHCI	Stock Holding Corporation of India
SHGs	Self-Help Groups
SIA	Secretariat for Industrial Assistance
SIC	Standard Industrial Classification
SIDBI	Small Industries Development Bank of India
SIDC	State Industrial Development Corporation
SIDO	Small Industry Development Organisation
SISI	Small Industries Services Institute
SLCC	State Level Coordination Committee
SLR	Statutory Liquidity Ratio
SNA	System of National Accounts
SNMI	Survey of Non-Manufacturing Industries
SOFTEX	Software Exports
SPCL	Statistics of Prices and Cost of Living
SRA	System of Regional Accounts
SRS	Sample Registration System
SSBs	State Statistical Bureaus
SSMI	Sample Survey of Manufacturing Industries
SSSs	States' Statistical Systems
STC	Securities Trading Corporation
STCI	Securities Trading Corporation of India Limited
STD	Sexually Transmitted Diseases
STS	Senior Time Scale
SWG	Second Working Group on Money Supply
TAC	Tariff Advisory Committee
TAC(SPCL)	Technical Advisory Committee on Statistics of Prices and Cost of Living
TAQ	Trades and Quotes
TB	Tuberculosis
TCD	Technical Committee for Directions
TCS	Tata Consultancy Services
TDICI	Technology Development and Information Company of India Limited
TERI	Tata Energy Research Institute
TFCI	Tourism Finance Corporation of India
TISCO	Tata Iron & Steel Company
TRS	Timely Reporting Scheme
UEE	Universalisation of Elementary Education
UFS	Urban Frame Survey
UGC	University Grants Commission
UIIC	United India Insurance Company
UNCHS	United Nations Centre For Human Settlements
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNME	Urban Non-Manual Employee
UNSD	United Nations Statistics Division
UN-SNA	United Nations System Of National Accounts
UNSO	United Nations Statistical Office

UT	Union Territory
UTI	Unit Trust of India
VAPW	Value Added per Worker
VSAT	Very Small Aperture Terminal
VSI	Village and Small Industries
WB	World Bank
WCA	World Census of Agriculture
WCFIES	Working Class Family Income and Expenditure Survey
WDM	Wholesale Debt Market
WF	Work force
WPI	Wholesale Price Index
WTO	World Trade Organisation

14 INDIAN STATISTICAL SYSTEM

14.1 HISTORICAL PERSPECTIVE

14.1.1 The foundation of the statistical system in India was laid down by the British administration. The Provincial Governments were required to publish the relevant statistics in their annual administration reports. They, in turn, depended upon the district offices. These statistics covered a wide range of subjects. The forms for this information were later made uniform, and the first Statistical Abstract of British India (1840-1865) was based on such information provided by the Provinces. One of the notable contributions was the publication, in the first half of the nineteenth century, of District Gazetteers. Several Commissions and Committees appointed by the Government of India for studies of specific fields also recommended that the Provinces should create institutions to collect statistics in the relevant fields. Thus, the Indian Industrial Commission (1916-1918) recommended that a Department of Industries should be created in the Provinces, with representatives throughout the Province to collect information on industries. Later the Royal Commission on Agriculture in India (1924-1925) pointed out that not only should the Provinces be self-sufficient in the field of statistics, but also that there should be a large Central Organisation. Later, the Famine Enquiry Commission (1945) suggested the appointment of qualified Statistical Officers at Provincial Headquarters to assist the Director of Agriculture.

14.1.2 Statistics in India thus developed in the Provinces expanding in scope to cover the fields of agriculture, industries, civil supplies (during the World War II), education, forestry, labour, cooperation, health and vital statistics. The organisational arrangement for collecting and publishing statistics, logically consistent with the organisation of Government administration and with the consequent delegated responsibilities and functions, has remained the same up to the present.

14.1.3 The first significant development in the pre-independence era was the constitution of a Statistical Committee (1862) for the preparation of forms to collect statistical information on different subject areas. This led to the publication entitled *Statistical Abstract of British India* in 1868. This publication was based on the returns of the local administrations and contained useful statistical information for all the British Provinces, and became an annual feature till 1923.

14.1.4 Following the recommendations of the Indian Famine Commission, Agriculture Departments were opened in 1881 in various provinces *inter alia* for collection of Agricultural Statistics, while the work of coordination in the collection of Agricultural Statistics by the Provinces was vested in the Department of Agriculture. The first publication on the subject, *Agricultural Statistics of British India,* was brought out in 1886.

14.1.5 A Statistical Branch was established in 1862 in the then Finance Department of the Government of India. In 1895, the Statistical Branch was converted into a full-fledged Statistical Bureau embracing subsequently, within its function the task of dissemination of commercial intelligence in 1905. Functions and activities of the Bureau were carried out through two well-defined wings namely, Commercial Intelligence and Statistics putting both under an organisation entitled Department of Commercial Intelligence and Statistics headed by the Director General. The Director General of Commercial Intelligence and Statistics until 1914 was responsible for the compilation and publication of almost all the principal statistical information on demography, crop production and prices, rainfall, industrial production, education, health and hygiene, mining,

roads and communications, and other subject matters. In April 1914, a separate Directorate of Statistics came into being. Subsequently, the Directorate of Statistics and the Commercial Intelligence Department were merged into a single organisation, which was renamed as the Directorate of Commercial Intelligence and Statistics in January 1925.

14.1.6 The first complete Population Census was conducted in 1881 on a uniform basis throughout the country. Since then the census is being conducted regularly after every ten years. For this purpose, a Census Commissioner was appointed by the Government before each census assisted by Provincial Superintendents and District Census Officers. Only in 1948 following a Census Act, a permanent Office of the Registrar General and Census Commissioner was created.

14.1.7 In 1925, the Economic Enquiry Committee was set-up to enquire into 'the question of adequacy of the statistical data available and the desirability and possibility of supplementing it, and of undertaking an economic enquiry'. The Committee recommended that the Central and Provincial Governments should come under the supervision of one central authority that would act as the adviser to the Government in all statistical matters. The Committee supported the placing of the entire statistical organisation on a statutory basis by enacting a Census and Statistics Act.

14.1.8 The development of statistics as an essential part of Government administration compartmentalised the content of statistics in many sectors and fields according to the various Government departments, which dealt with them individually. However, the administrators were fully aware that if all these statistics were viewed as a single body of information, they would create greater and better knowledge about the conditions of life of the Indian people than what they could convey when viewed in isolation. The Indian Economic Enquiry Committee (1925) recommended the establishment of a Central Statistical Bureau, along with similar Provincial Statistical Bureaux, whose "aim was to provide a common purpose and a central thinking office on the subject of Statistics". It also recommended legislation to place the whole Statistical Organisation on a legal basis and thus to ensure or facilitate the collection of current economic data from individuals and firms. The Government of India did not accept these recommendations.

14.1.9 The Committee appointed by the Government of India in 1934 under Messrs. Bowley and Robertson, for facilitating a further study of economic problems in India, was required, by one of its terms of reference, to make recommendation about the organisation of a Central Statistical Department. The two experts were clear that there should be in each major Province a whole time Statistician who would cooperate with the Central Director of Statistics and *who would be as nearly independent of departmental control as administrative requirements permitted*. The creation of the Central Economic Intelligence Organisation, under the Economic Adviser, and the emergence of the Department of Commercial Intelligence and Statistics were the results of these recommendations. Similar developments followed in the Provinces and the United Provinces Government was the first to set up a Department of Economics and Statistics in 1942. The Government of Bombay followed by the establishment of its Bureau of Economics and Statistics in 1946. Only after India became independent did the Government of India establish a Central Statistical Unit (1949), which was later (1951) converted into the Central Statistical Organisation (CSO) and the Department of Statistics, which constitute presently the Statistics Wing of the Ministry of Statistics and Programme Implementation.

14.1.10 The outbreak of the War in 1939 gave a fillip to the development of statistics to meet the requirements of the Government. In 1945, the Government of India set up an Inter-Departmental Committee with the Economic Adviser to the Government of India as Chairman to consider the statistical material available and to make recommendations for filling up of the gaps, and for improvement in the existing organisations. Among the organisational recommendations was a scheme coupled with the formation of a Central Statistical Office for coordination, the

institution of a statistical cadre, establishment of Statistical Bureaus at the Headquarters of State Governments and the preparation of overall statistics for the entire country.

14.1.11 Professor P.C. Mahalanobis, who is regarded as a pioneer in both theoretical and professional statistics, was appointed as the first statistical adviser to the Cabinet, Government of India in January 1949. He was the architect of the statistical system of independent India. Professor P. V. Sukhatme, as Statistical Adviser to the Ministry of Agriculture, was responsible for the development of Agricultural Statistics.

14.1.12 The coming of the era of developmental planning in India, gave significant impetus to the development of statistics. Important phases of this development are enumerated below:

(a) A nucleus statistical unit was set up at the Centre in the Cabinet Secretariat in 1949. This unit was developed later on in 1951 into the Central Statistical Organisation (CSO). The main responsibility assigned to the CSO was to bring about coordination of statistical activities among various statistical agencies in the Central Government and of Statistical Bureaus of State Governments, which was set up for similar coordination of activities of statistical agencies at the State level.

(b) A National Income Committee was appointed in 1949 to work out a system for reliable estimation of national income.

(c) The National Sample Survey (NSS) came into being in 1950 to collect information through sample surveys on a variety of socio-economic aspects.

(d) In 1954, the National Income Unit was transferred from the Ministry of Finance to the CSO and a new Unit for Planning Statistics was set up.

(e) In 1957, the subject of Industrial Statistics was transferred from the Ministry of Commerce and Industry to the CSO.

(f) In April 1961, the Department of Statistics was set up in the Cabinet Secretariat and the CSO became a part of it.

(g) In 1967, a Computer Centre in the then Department of Statistics was set up.

(h) In 1973, the Department of Statistics became a part of the Ministry of Planning.

(i) In February 1999, the Department of Statistics and the Department of Programme Implementation were merged and named as the Department of Statistics and Programme Implementation under Ministry of Planning and Programme Implementation.

(j) In October 1999, the Department of Statistics and Programme Implementation was declared as the Ministry of Statistics and Programme Implementation (MoS&PI).

14.1.13 The Indian Statistical Institute (ISI) was registered on 28 April 1932 at Calcutta as a non-profit-distributing learned society under the Societies Registration Act, 1860, with Professor P.C. Mahalanobis as its founder Director. This was set up to carry out research, teaching, training and project activities, and it gradually became an important part of the statistical system of India, through its pioneering work on large-scale sample surveys, design of agricultural experiments, statistical quality control, planning for national development and use of electronic computers in statistical work. By an Act of Parliament, the Institute was declared as an "Institute of National Importance" in 1959 and the right to hold examinations and award degrees and diplomas in Statistics was conferred on it.

14.2 PRESENT INDIAN STATISTICAL SYSTEM: ORGANISATION

14.2.1 The Indian Statistical System presently functions within the overall administrative framework of the country. The Indian federal structure has influenced the organisation of the statistical system as well. The division of administrative functions between the Government of

India and the State Governments is on the basis of the subject classifications under the Union, State and Concurrent Lists as detailed in the Constitution of India. At the Centre, the responsibilities are further divided amongst the various ministries and departments, according to the Allocation of Business Rules, 1961 that are amended from time to time. The collection of statistics on any subject generally vests in the authority (Central Ministry or Department or State Government Department) that is responsible for that subject according to its status in the Union, State or Concurrent Lists. By and large, the flow of statistical information emanates from the States to the Centre except in cases where the State-level operations are an integral part of Centrally- sponsored schemes or data are collected through national sample surveys.

Statistical System at the Centre

14.2.2 The collection of statistics for different subject-specific areas, like agriculture, labour, commerce, industry, etc. vests with the corresponding administrative ministries. More often than not, the statistical information is collected as a by-product of administration or for monitoring the progress of specific programmes. Some of the ministries, like Agriculture, Water Resources, Health, etc. have full-fledged statistical divisions, while most others have only a nucleus cell. Large-scale statistical operations like the Population Census, Annual Survey of Industries, Economic Census, etc. are generally centralised, and these cater to the needs of other ministries and departments, as well as State Governments. In important ministries, officers of the Indian Statistical Service (ISS) and subordinate statistical staff perform the statistical functions. The Central Statistical Organisation (CSO) in the Ministry of Statistics and Programme Implementation (MoS&PI) is the nodal agency for a planned development of the statistical system in the country and for bringing about coordination in statistical activities among statistical agencies in the Government of India and State Directorates of Economics and Statistics. Further details about the coordinating role of CSO along with its other activities have been given in the Report elsewhere.

Statistical System in the States

14.2.3 The Statistical System in the States is similar to that at the Centre. It is generally decentralised laterally over the Departments of the State Government, with major Departments, such as, agriculture or health, having large statistical divisions for the work of departmental statistics. At the apex level is the Directorate (formerly Bureau) of Economics and Statistics (DES), which is formally responsible for the coordination of statistical activities in the State. The DESs have large organisations at the headquarters, with statistical offices in the districts and, in some cases, in the regions of the State. The statistical activity of the DESs is more or less uniform. They publish statistical abstracts and handbooks of the States, annual economic reviews or surveys, district statistical abstracts, and State budget analysis; work out the estimates of the State Domestic Product and Retail Price Index Numbers and engage in such other statistical activities as is relevant to the State. Most of them participate at least on a matching sample basis in the national Sample Survey Programme, and some of them carry out an Annual Survey of Industries for factories not covered by the ASI of the NSSO. Generally, the States do not have a common statistical cadre.

System Flow

14.2.4 The flow chart given below attempts to depict a simplified version of the present Indian Statistical System, the flow of Administrative Statistics, and the links between different statistical offices and the strength of those links. The unshaded part of the chart shows the system that existed long before the State Directorates of Economics and Statistics and the Central Statistical Organisation (CSO) at the Centre were created, and which exists even now. It is a system built upwards from district offices of formerly Provincial and now State Government departments, to the level of these departments, and from there to the corresponding ministries at

the Centre. This is its true representation: a collection of State-level systems forming a National system. In the current context, making the National system the starting point, from the perspective of an inverted view the system can be described as *laterally* decentralised among the Ministries of the Government of India (GOI), and in every one of them, *vertically* decentralised, between the Centre and the States. The bond between the State departments and the Central Ministries in the field of statistics has always been strong.

14.2.5 The main features of the Indian Statistical System can be thus summarised as:

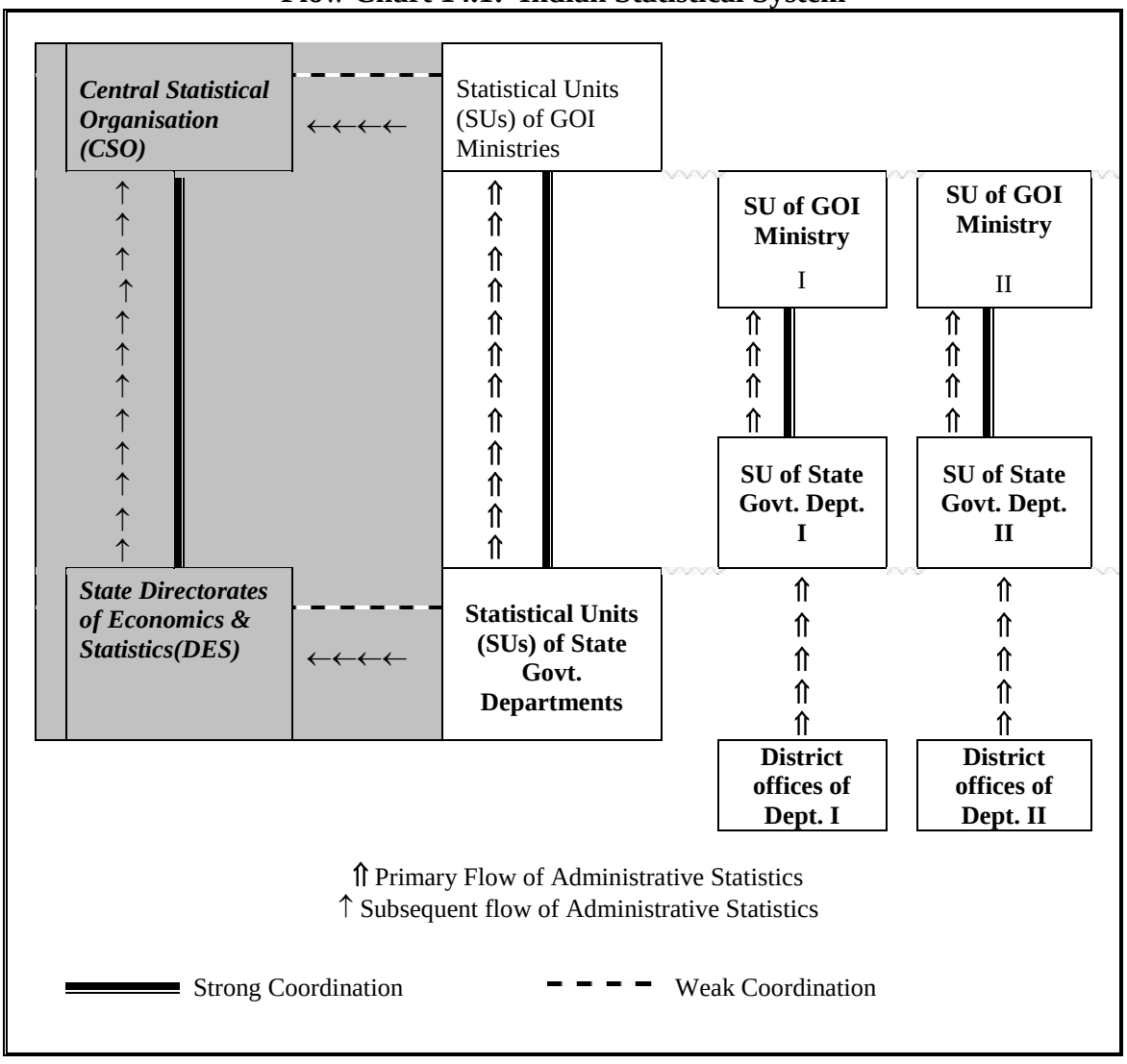
(a) The Administrative Statistics System is its major component;

(b) It is laterally and vertically decentralised;

(c) In it, not only data collection but also compilation, processing and preparation of results are carried out by the States for most of the sectors; and

(d) It is the State-wise results, which flow to the Centre, and statistics at the all-India level are obtained as the aggregates of State-level statistics.

Flow Chart 14.1: Indian Statistical System



14.2.6 The question of lateral coordination, among Ministries at the Centre and among the Departments in the States, was not much of an issue when statistics were compartmentalised. It is a later-day need when, for treating all Government statistics as one subject, Central statistical offices were created at the Centre (the CSO) and in the States (the State Directorates of Economics and Statistics). When a single office was charged with the responsibility of bringing together all statistics relating to the country, and of examining them from the perspectives of quality, timeliness, accuracy and other desirable merits which statistics should possess, a new situation was created which, although it did not make the Ministry strictly answerable or accountable to the CSO for its statistics, required it at least to share information on the methodology and procedures of collecting those statistics with an office outside of itself. This created a new requirement, that of effective lateral coordination between the CSO on the one hand and the ministries on the other, for the system to function satisfactorily. The same situation was created in most States where, as the chart assumes, the system is fully laterally decentralised.

Functions of the Statistics Wing, Ministry of Statistics and Programme Implementation

14.2.7 The Statistics Wing of Ministry of Statistics and Programme Implementation (MoS&PI) consists of the Central Statistical Organisation (CSO), National Sample Survey Organisation (NSSO), and Computer Centre. This is the apex body in the official statistical system of the country. Its responsibilities, as per Allocation of Business Rules, are the following:

(a) Act as the nodal agency for planning an integrated development of the statistical system in the country.

(b) Coordination of statistical work with a view to identifying gaps in data availability or duplication of statistical work in respect of the departments of the Government of India and State Statistical Bureaus (SSBs) and to suggest necessary remedial measures.

(c) Lay down and ensure maintenance of norms and standards, in the field of statistics, involving concepts and definitions, methodology of data collection, processing of data and dissemination of results.

(d) Advise the Departments of the Government of India on statistical analysis of data.

(e) Prepare national and regional accounts as well as publication of annual estimates of national product, Government and private final consumption expenditure, capital formation, saving, estimates of capital stock and consumption of fixed capital, as also State-level gross capital formation of supra-regional sectors and to prepare comparable estimates of State Domestic Product (SDP) at current prices.

(f) Compile and release the Index of Industrial Production (IIP) every month in the form of `quick estimates'; conduct an Annual Survey of Industries (ASI); and provide statistical information to assess and evaluate the changes in the growth, composition and structure of the organised manufacturing (factories) sector.

(g) Organise and conduct periodic all-India Economic Census and Follow-up Enterprise Surveys.

(h) Conduct large scale all-India sample surveys for creating database needed for studying the impact of specific problems for the benefit of different population groups in diverse socio-economic areas such as employment, consumer expenditure, housing conditions and environment, literacy levels, health, nutrition, family welfare, etc.

(i) Examine the survey reports from a technical angle and to evaluate appropriate sampling design including survey feasibility studies in respect of surveys conducted

by the National Sample Survey Organisation (NSSO) and other Central Ministries and Departments.

(j) Provide an in-house facility to process data collected through various socio-economic surveys and Follow-up Enterprise Surveys of the Economic Census conducted by the National Sample Survey Organisation and the Central Statistical Organisation.

(k) Disseminate statistical information on various aspects through a number of regular or ad hoc publications to Government, semi-Government, or private data user and agencies; and dissemination of data, on request, to United Nations Agencies like the United Nations Statistical Organisation, Economic and Social Commission for Asia and the Pacific and International Labour Organisation; and other international agencies.

(l) Give grants-in-aid to registered Non-Governmental Organisations and research institutions of repute for undertaking special studies or surveys, printing of statistical reports, and finance seminars, workshops, or conferences relating to different subject areas of official statistics.

(m) Function as the Cadre Controlling Authority and deal with the centralised aspects of managing the Indian Statistical Service including all matters pertaining to training, career planning and manpower planning.

(n) Ensure the functioning of the Indian Statistical Institute in accordance with the provisions of the Indian Statistical Institute Act, 1959 (57 of 1959).

Central Statistical Organisation

14.2.8 With a view to coordinating statistical activities of the different ministries of the Government of India and the State Governments and the evolving of statistical standards, the CSO was established in May 1951. The responsibilities of CSO include coordinating statistical activities and liaison with the Central Government Departments, State Governments and International Agencies; preparation of national accounts; conducting Annual Survey of Industries, Economic Censuses and their Follow-up Enterprise Surveys; constructing IIP and consumer price indices for urban non-manual employees; compiling Social Sector Statistics; imparting training in official statistics; formulating a Five Year Plan programme relating to development of statistics in the States and Union Territories; disseminating various statistical information including those relating to social and environment statistics; undertaking periodic revision of National Industrial Classification, etc. The CSO is also responsible for periodically conducting the Conference of Central and State Statistical Organisations.

14.2.9 The Director General (post lying vacant since September 1997) heads the CSO, a post that has recently been upgraded to the level of Special Secretary to Government of India. Three Additional Director Generals, four Deputy Director Generals and a team of other officers and supporting staff assist him in his work. The CSO is organised into the following major Divisions: National Accounts Division, Industrial Statistics Division, Economic Census Division, Social and Miscellaneous Statistics Division and Training Division.

14.2.10 Most of the activities of the CSO have been critically discussed and recommendations for improvement given elsewhere. The remaining activities – Coordinating role, Economic Census and Follow-up Enterprise Surveys of Economic Census – are discussed below.

Coordinating role of the CSO

14.2.11 One of the major responsibilities of the CSO is to act as the nodal agency for planned development of the statistical system of the country. The CSO is entrusted with the responsibility not only to coordinate the statistical activities of the Government of India and State Directorates of Economics and Statistics (DESs) but also to lay down and maintain norms and standards in the field of statistics. Though the CSO has no legal authority to enforce standards and coordination, the work is done through institutional arrangements like inter-departmental meetings of Working Groups, Technical Advisory Committee on various subjects, Standing Committee, etc. in the case of Central Ministries. Coordination with States was through appointed liaison officers, meetings with high-level statistical coordination committees of the State Governments and also through a Conference of Central and State Statistical Organisations (COCSSO).

14.2.12 At the suggestion of the Standing Committee of Departmental Statisticians, the first Joint Conference of Central and State Statisticians was held in December 1951. During the period 1951-60, nine such sessions were held. In the year 1961, the Government of India constituted the Central Technical Advisory Council on Statistics to serve as an advisory body for the Department of Statistics constituted during the same year. It was also decided that the Annual Conference of Central and State Statisticians should be designated as the Central Technical Advisory Council on Statistics from its tenth session held in December 1961. During the period 1961-71, this Council had met only twice. In the year 1971, the above Council was renamed as the Conference of Central and State Statistical Organisations (COCSSO) with an objective to hold the COCSSO once in two years. The first meeting of the COCSSO was held in September 1971. During the period September 1971 – January 1992, ten such conferences were held. After a long period of inactivity, during October 2000, the COCSSO was organised with a limited purpose to mostly facilitate the members of the present Commission to interact with the representatives of the States, Union Territories and Central Ministries and Departments for assessing their views on various issues identified by the Commission.

14.2.13 As per the recommendations of the Kripa Narain Committee as early as 1980, a National Advisory Board on Statistics (NABS) was established in 1982. However, this mechanism could not succeed primarily because of official apathy and a lack of legal or constitutional backing, as the decision taken in this forum has no binding on any agency (see Para 14.3.13 for further details).

14.2.14 The COCSSO provided a forum for exchange of views and experiences concerning the development of statistical activities in the country. However, this forum was not used; meetings were not held during February 1992 to September 2000. The other coordination mechanisms had also withered away.

Recommendations on the Coordinating Role of the CSO

14.2.15 The Commission recommends that:

(i) The post of Director General (DG), Central Statistical Organisation (CSO), should be immediately filled up.

(ii) The practice of organising the Conference of Central and State Statistical Organisations once in two years should be revived.

(iii) A unit in the CSO should be created for proper documentation of various papers connected with the meetings of the various technical committees. The CSO should publish periodically technical monographs on different subjects piecing together recommendations relating to various issues.

(iv) The CSO, as a coordinating agency, should maintain a pool of eminent experts in different subject areas. This would be useful for getting comments on various statistical matters quickly and also for constituting various committees and working groups on technical matters.

(v) The CSO should acquire membership of the important national as well as international statistical associations and institutions and participate in the conferences arranged by them so as to develop expertise in the field of official statistics.

(vi) In order to gain exposure to the methodologies adopted by other countries for compiling official statistics, arrangement should be made to get publications, journals and related documents brought out by the US Bureau of Census, Statistics Canada, Australian Bureau of Statistics, etc.

Economic Census and Follow-up Enterprise Surveys

14.2.16 From the early fifties, information about unorganised economic activities is being collected through sample surveys. To improve the frame for such surveys, a periodic census of all enterprises (including those in the organised sector) was considered necessary. Accordingly, a scheme on Economic Census (EC) and Follow-up Enterprise Surveys was launched by the CSO in 1976 with two main objectives namely,

(a) To provide a frame (list) from which samples could be drawn for collecting detailed information;

(b) To provide at regular intervals some basic information on location, type of activity, nature of operation, etc. about the enterprises in the country and number of persons employed by them at the level of villages, and census *enumeration blocks,* i.e. EBs in case of large villages and urban areas (except in the recent EC in which Urban Frame Survey blocks of NSSO were used).

14.2.17 So far four ECs have been conducted during 1977, 1980, 1990 and 1998, respectively. While the First (1977) and the Fourth (1998) ECs were independently conducted by the CSO, the Second (1980) and the Third (1990) were integrated with the house listing operations of the 1981 and 1991 Population Censuses, respectively.

14.2.18 The EC, 1977 covered only non-agricultural *establishments* (i.e. enterprises employing at least one hired worker on a fairly regular basis). On the other hand, each of the other three subsequent ECs covered both agricultural (other than crop production and plantation) and non-agricultural activities and they covered establishments as well as *own account enterprises* (i.e. enterprises employing no hired worker on a fairly regular basis – i.e. run with the help of household members only).

14.2.19 The EC is financed, planned and technically supervised by the MoS&PI but the fieldwork, data entry and preparation of State-wise results are done through the States.

14.2.20 Each of the ECs collected certain basic items of information about the enterprises namely, location of enterprise, nature of operation, description of activity, type of ownership, social group of owner, whether power or fuel used and number of workers in the enterprise. However, there were inclusions of certain additional items in some of these ECs, for example, agency of registration in the First and Fourth ECs and value of annual output or turnover or receipt in the First EC.

14.2.21 Using the EC frame, Follow-up Enterprise Surveys of all non-agricultural enterprises under the following sectors have been conducted at periodic intervals:

(a) Manufacturing,

(b) Mining and quarrying,

(c) Trade,

(d) Hotels and restaurants, transport,

(e) Storage and warehousing,

(f) Other services.

14.2.22 Until recently, the fieldwork for all the Follow-up Enterprise Surveys was carried out by the Field Operations Division of the NSSO under the technical supervision of the CSO (Economic Census Division) except in the case of manufacturing and trade (own account enterprises and non-directory establishments), which had been the responsibility of the NSSO. In 1998-99, a combined survey of all non-agricultural activities barring a few was taken up by the Department of Statistics without the approval of the Governing Council of the NSSO. After 1998-99, the entire survey work for all non-agricultural sectors has been spread over different years and been conducted by the NSSO, with the approval of the Governing Council.

14.2.23 Processing of the data from the Follow-up Enterprise Surveys was the sole responsibility of the Computer Centre till 1993-94. Afterwards, the Data Processing Division of NSSO took over the data processing work of surveys planned by the NSSO.

Deficiencies

14.2.24 The difficulties involved in conducting the Fourth EC have been enumerated in detail in the Report of its Monitoring Group. The difficulties clubbed under four major heads are:

Pre-Field Operations: Lack of statutory backing; failure to launch the scheme in time; inadequate time allowed for pre-field operations; delayed finalisation of rural and urban directories; absence of skeleton staff for undertaking the preliminaries; delay in creation and filling up of the posts sanctioned at the State Directorates of Economics and Statistics (DESs); lengthy schedules and instructions; delayed printing of schedules and instructions in local languages; difficulty in engaging primary enumerators; inadequate honorarium to enumerators and supervisors; inadequate training of enumerators and supervisors; and lack of public awareness and participation.

Field Operations: Non-completion of fieldwork within stipulated time period of one month; inadequate supervision; and difficulty in identification of Urban Frame Survey blocks.

Post-Field Operations: Delay in preparation of provisional results by most of the States; problems faced in the use of uniform software developed by the Computer Centre for data entry and processing; delay in identification and finalisation of data *entry* agency in some of the States; delay in finalisation of detailed results due to discrepancies in the data files and tabulated results received from the States; and difficulties in comparison of lower geographical level results over different Economic Censuses on account of re-alignment of boundaries.

General Administrative Problems: Delay in release of funds to the DESs by the respective State Governments; and lack of facility for quick communication with States and Union Territories.

Recommendations on the Economic Census and Follow up Enterprise Surveys

14.2.25 The Commission recommends that:

(i) In future the operation of EC should be part of house listing operations of the decennial Population Census. For this purpose, the census EBs and UFS blocks have

to be linked in a manner such that each UFS block is made up of a number of complete census EBs. Since this involves close cooperation between the MoS&PI and the Office of the Registrar General and Census Commissioner, the issue should be taken up immediately. If for this purpose, changes are required in the Census Act, they should be made.

(ii) Proper remedial measures should be taken to improve the quality of data in the Follow-up Enterprise Surveys as the existing sampling design and method of data collection have failed to provide satisfactory data. The responsibility of designing all the Follow-up Enterprise Surveys should rest with the NSSO.

Business Register: Recommendations

14.2.26 The Commission recognised the need for conducting a Survey of Non-Manufacturing Industries (SNMI) covering "bigger" units, other than those in the public sector. The "smaller" units are to be covered through Follow-up Enterprise Surveys of the Economic Census. To facilitate the SNMI, it is necessary to develop a list of such units for being used as the frame for sampling. The Commission feels that a beginning in this direction could be made by combining together available lists of such units – like the frame of the Fourth Economic Census, ASI frame, lists maintained by the Department of Company Affairs, Development Commissioner of Small Scale Industries, Municipalities and Sales Tax Departments of State and Union Territory Governments, various Associations or Chambers of Commerce, etc. The list so developed should contain in addition to identification details of the units, other relevant items of information to make it a so-called Business Register.

14.2.27 The methodology for combining the lists, criterion for "bigness", items of information to be included, procedure for updating the list are all complex issues, which should be left to a technical group for examination. To what extent this work can be done with the involvement of State Governments and local agencies should also be examined in consultation with the State DESs.

14.2.28 An approach indicated in the paper (Annexe 14.1), prepared by the Secretariat of the National Statistical Commission, could be used as a starting point by the technical group. The Commission would however like to emphasise that after the project has been formulated, it should be implemented in phases starting with a pilot phase.

National Sample Survey Organisation

14.2.29 The National Sample Survey (NSS), initiated in the year 1950, is a nation-wide, large-scale, continuous survey operation conducted in the form of successive rounds. It was established on the basis of a proposal from Professor P.C. Mahalanobis to fill up data gaps for socio-economic planning and policy-making through sample surveys.

14.2.30 Initially, all aspects relating to the designing of surveys, processing of data and preparation of reports were entrusted to the Indian Statistical Institute (ISI). The then Directorate of NSS in the Government of India had been responsible for carrying out the fieldwork in all areas except the State of West Bengal and Bombay City, where the fieldwork was carried out by the ISI. To get rid of inordinate delay in release of survey results, all aspects of survey work were brought under a single umbrella by setting up the National Sample Survey Organisation (NSSO) under the resolution dated 5th March 1970. However, the delays persisted till the nineties, when with effective use of modern electronic computers the problem was finally resolved. Since its creation, the NSSO has been functioning under the overall direction of a Governing Council with autonomy in the matter of collection, processing and publication of survey data, thus ensuring freedom from political and bureaucratic interference.

Current Status

14.2.31 The NSSO carries out Household and Enterprise Surveys, undertakes the fieldwork for the Annual Survey of Industries, provides technical guidance to the States in respect of the Crop Estimation Surveys besides assessing the quality of primary work done by the State Agencies in area enumeration and yield estimation, prepares the urban frames useful for selection of urban blocks for the surveys and collects price data for rural retail prices as well as selected items consumed by the urban non-manual employees required for the preparation of consumer price indices for agricultural labourers and urban non-manual employees, respectively.

14.2.32 The Director General and Chief Executive Officer (DG&CEO) heads the NSSO. He is responsible for implementing all activities of the organisation. The NSSO has four Divisions namely, the Survey Design and Research Division (SDRD), Field Operations Division (FOD), Data Processing Division (DPD), and Coordination and Publication Division (CPD), with each Division headed by an Additional or Deputy Director General. The headquarters of both the SDRD and the DPD are located at Kolkata. The DPD has Data Processing Centres at Ahmedabad, Bangalore, Delhi, Giridih, Kolkata and Nagpur. While the headquarters for the CPD are located at Delhi, the headquarters for the FOD are located at Delhi and Faridabad with a network of Zonal Offices, Regional Offices and Sub-Regional Offices spread over the country.

14.2.33 The NSS is carried out in the form of successive *rounds*. A unique feature of the NSS is that all the State and Union Territory Governments except the Union Territories of Andaman and Nicobar Islands, Dadra and Nagar Haveli, and Lakshadweep participate in the programme at least on an equal *matching sample* basis. Since its inception in 1950, the NSS has collected data on a large number of subjects of interest. Annexe 14.2 indicates the subjects covered in the NSS during last 10 years.

14.2.34 The NSS has completed its 56th Round of survey in June 2001. The subjects of enquiry were unregistered manufacture, household consumer expenditure and employment-unemployment. The fieldwork of the NSS 57th Round (covering household consumer expenditure, employment-unemployment and most of the non-agricultural economic activities other than manufacturing and trade) is in progress and is likely to be completed by the end of June 2002.

14.2.35 The activities of the NSS have been reviewed by Expert Committees from time to time. The latest one set up in September 1998 was a two-man Expert Committee comprising Professor J. Roy, Research Professor Emeritus, ISI, Kolkata and Shri S. Ramanatha Iyer, formerly Director, FOD, NSSO. The Expert Committee, in its report submitted in March 1999, made a number of recommendations on the functioning of the organisation. The Commission considered the Report of the Expert Committee. Major recommendations of this Committee along with the important views on these recommendations from some experts are summarised in Annexe 14.3. The Commission also forwarded a query to the major data users and producers on the adequacy of the subject coverage and the periodicity of data collection on different subjects in the NSS. The queries raised along with a summary of responses received are placed in Annexe 14.4.

Strength of the NSS

14.2.36 The NSS is the largest repetitive survey operation in the world. It provides important data on various socio-economic characteristics, to meet the needs of planners, policy makers, researchers and other users.

14.2.37 The sample surveys are all scientifically designed so that great attention is paid to control of sampling and non-sampling errors. To account for seasonal variations, the survey

operations (for yearlong surveys) are spread out by conducting the survey over quarterly seasons in the form of four sub-rounds.

14.2.38 The greatest strength of the NSS lies in its complete freedom from administrative and political influence, which is ensured through its autonomous Governing Council (GC) comprising academicians, professional statisticians and users.

14.2.39 Some of the landmark findings of the NSS which greatly influenced administrative decisions are:

(a) Alarming growth of population during early fifties,
(b) Self-sufficiency in food production in late sixties,
(c) Pattern of landholdings,
(d) Number of persons with different kinds of physical handicaps,
(e) Changes in consumption pattern, etc.

14.2.40 Permanent and well-trained investigators carry out fieldwork in the NSS. This ensures maintenance of uniformity in concepts and definitions adopted for data collection. On the other hand, this may also cause occupational boredom, lead to too much familiarity with the subjects and breed complacency.

14.2.41 The NSS provides alternative information to act as a crosscheck on the data generated on population, enterprises, agriculture and livestock through various censuses conducted by the respective agencies.

14.2.42 The Commission is happy to note that through dedicated teamwork, the NSSO released as many as thirty reports covering results of seven NSS Rounds, 48th (January – December 1992) to 54th (January – June 1998) during 1998 and 1999. With a clearing of the backlog of all the earlier survey results, the NSSO could start data processing for the NSS 55th Round (July 1999 – June 2000) almost concurrently with the collection of data and release key results of the NSS 55th Round in the form of four reports by December 2000, i.e. within six months after completion of the fieldwork (see Annexe 14.5 for details). A remarkable achievement indeed!

14.2.43 The reports are now made available to any user in the form of printed publications or on floppy disks. Unit-level data are also available on floppy disks. Both are priced on a marginal cost basis. The demand for the reports is on the rise: the proceeds from sale of reports increased from about Rs. 1.64 lakh in 1998-99 to Rs. 2.19 lakh during 2000-01.

Deficiencies

14.2.44 The scientific approach of problem solving through analytical studies and pilot experiments, for which the NSS was well known in its early days, have been given up under the pressure of day-to-day work. Survey sampling activities at the NSSO have almost been routinised.

14.2.45 Almost from its inception, for most of its sample surveys the NSS has been using a standard sampling design: inter-penetrating, multi-stage, stratified, probability-proportional-to-size, circular systematic. There is no system of carrying out methodological studies for assessing the suitability of the sampling design and bringing about improvements.

14.2.46 Though circular systematic sampling was an excellent innovation in the early fifties, the method has serious disadvantages. Although it allows estimation of the sampling error through inter-penetrating sub-samples, it has no way of relating the error to the sample size. It

does not provide any rational way of determining, for example, the number of households, villages and urban blocks to be sampled.

14.2.47 There is no regular mechanism in the NSSO to analyse the quality of the survey results. Very seldom does the NSSO provide the users an indication of the margin of error of the statistics published by it.

14.2.48 The Governing Council (GC) of the NSSO, as an autonomous body, provides technical guidance on the conduct of the NSS. However, the Commission has noted that the GC has no role in certain activities of the NSSO like the collection of data in the Annual Survey of Industries, price collection and the work relating to compilation of Agricultural Statistics. The Commission also noted that in 1998-99, a survey of major non-agricultural activities was conducted by the Department of Statistics using all the resources of the NSSO but without approval from the GC.

14.2.49 All the resources of the NSSO are at present tied up with the regular survey work. No separate resources are available for quickly conducting an enquiry, the need for which might suddenly arise. There is no resource available to take up methodological studies including trying out innovations in survey practice.

14.2.50 Though the States collect a matching sample, the results from the State and Central samples have seldom been pooled together to provide more reliable estimates at the State level.

14.2.51 The NSSO has not been able to inform and educate the laymen about its activities and explain how these are beneficial to the public and the Government. The result has been the general indifference of the public towards the NSSO activities and consequent lack of cooperation.

14.2.52 Recently, large divergences between NSS estimates and those based on other sources have drawn critical attention of the media. Very seldom have efforts been made by the NSSO to examine the nature of such divergences and offer an explanation. Of late, an Expert Committee to review the divergences in the alternative data sets looked into some of these issues and made useful recommendations.

14.2.53 There are occasions in the recent past when the sampling design or method of data collection followed for a long time has been changed without adequate experimentation and sometimes even in the middle of a round. This has affected the quality and comparability of the survey results. A study carried out by Professor J. Roy on the consumer expenditure data collected by the NSSO in its 51st (July 1994 – June 1995) to 54th (January – June, 1998) Rounds, showed that there was no pattern in the change over time in respect of over 45 per cent of parameters while it is very reasonable to expect an approximately linear growth. This is a serious defect. *Ad h*oc arbitrary procedural changes in these rounds seem to be the reason.

14.2.54 For several rounds of the survey during the nineties, on the plea of economy, the existing practice of constituting technical working groups for the purpose was arbitrarily given up. This brought down the quality of the surveys as the study by Professor J. Roy has shown.

14.2.55 Generally, determination of sample size for various States and Union Territories is solely based on the number of field investigators available. The practice followed has no statistical justification.

14.2.56 Most of the schedules canvassed by the NSS are unduly long causing respondents' fatigue and thereby affecting the quality of the data.

14.2.57 The Commission has observed that, at times, the planning of a round of the survey has been considerably delayed. This affects the overall efficiency of the surveys and should be avoided.

14.2.58 In the past, the NSSO's journal, *Sarvekshana* used to contain many important articles and papers related to NSS. But over the years, the practice has almost stopped. At present, the journal contains mostly the survey reports prepared by the NSSO.

14.2.59 The Commission has also observed that there is an acute stagnation of a large number of staff in the organisation.

Recommendations relating to the functioning of NSSO

14.2.60 The Commission has taken note of the pioneering role played by the NSSO in the field of conducting large-scale sample surveys on various socio-economic characteristics. It has also considered the Report of the Roy-Iyer Review Committee and the comments on it, as also the views of data users on subject coverage and periodicity of data collection in the NSS. The Commission makes recommendations under the following heads: (a) Organisational, (b) Methodological, (c) Survey Programme, and (d) Publicity and Dissemination.

14.2.61 Regarding organisational aspects, the Commission makes the following recommendations:

(i) All activities of the NSSO, presently excluded from the scope of the NSSO Governing Council, such as Annual Survey of Industries, Price Collection, or Agricultural Statistics, should be brought within the scope of the Governing Council.

(ii) Highest priority should be given to develop specialised skills in the methodology of large-scale sample surveys.

(iii) The NSSO through the Government of India should become an institutional member of the International Association of Survey Statisticians.

(iv) The nature of the departmental journal, *Sarvekshana* should be changed to make it a medium of publication of technical papers based on NSS data or related to survey practice.

(v) E-mail facilities should be made available to all offices of the NSSO and video discussion facilities between pairs of important offices.

(vi) Steps should be taken to re-distribute total available resources, particularly investigators, among the States and Union Territories on a rational basis.

(vii) The practice of field visits by officers of the SDRD, FOD and DPD followed up by interactive feedback sessions should be restored.

(viii) Planning for any survey should start well in advance so that necessary requirements could be completed in time.

14.2.62 On methodological issues, the Commission recommends that a Methodological Study Unit should be set up in the NSSO to regularly undertake studies for bringing in improvements in the survey methodologies. The unit should be equipped with library and computer facilities. The requisite number of field and data processing staff should be transferred to this unit. Some topics which can be taken up urgently are listed below:

(a) Pilot studies on the effectiveness of intensive stratification and one-by-one sampling in place of systematic sampling.

(b) Theoretical and empirical studies on the use of time series data and information from sources outside the current survey, and to borrow strength from them to improve the precision of estimates through the technique of small area estimation.

(c) Exploring use of the rotational sampling design for selection of first stage units for repetitive surveys to make comparisons over time more precise and cut down the cost of listing of first stage units.

(d) Developing suitable procedures for data collection pertaining to the Trade and Services Sectors to get better estimates of value added.

(e) Reconciliation of divergence between data from different sources and assessment of their quality.

(f) Ascertaining reasons as to why aggregates are usually underestimated in NSS while there is no such problem with averages and ratios.

(g) Examining the feasibility of reducing the size of schedules canvassed by the NSS without affecting quality.

(h) Extracting useful information from the listing schedule.

14.2.63 On survey programme, the Commission makes the following recommendations:

(i) The present practice of covering various subjects with the existing periodicity should be continued. All the Follow-up Enterprise Surveys of Economic Census currently undertaken should be the responsibility of the NSSO. A ten-year programme indicating the subject coverage should be prepared and released in advance for the benefit of the users.

(ii) There should be flexible arrangements for the inclusion of a few selected items of topical interest to the Government as an additional feature in the normal NSS programme.

(iii) The NSSO may undertake, along with its normal programme, very short duration (monthly) surveys, each devoted to one topic of interest to any GOI Ministry, and produce results in a short period. After trying this on a modest basis, if the experiment shows that the users appreciate the scheme of such supplementary surveys, the scheme should be incorporated on a permanent basis and the necessary additional resources provided to the NSSO.

14.2.64 The Commission makes the following recommendations regarding publicity campaigns and dissemination of data:

(i) The commencement of a new survey and the main results of a concluded survey should be widely publicised through newspapers, magazines, radio and TV. Regular publicity campaigns should be arranged by the Government to apprise the respondents of the role played by the NSS in meeting the data requirements.

(ii) The NSSO should identify two or three important characteristics in every round for quick release.

(iii) All publications of survey results of the NSSO should contain an assessment of the associated errors.

(iv) The NSSO should play an important role in apprising the Government, as early as feasible, of the changes taking place in the structure of the society, with respect to some of the important variables for which data are collected every year, like literacy level, employment-unemployment situation, sex ratio, consumption pattern, etc.

(v) For providing an idea of the soundness of the estimates, the marginal totals of the number of reporting units should be indicated in the tables of the NSS reports for important survey characteristics.

Computer Centre

14.2.65 The Computer Centre was set up in 1967 as an office attached to the then Department of Statistics, Cabinet Secretariat, to cater to the data processing needs of the Department and other Departments in the Government of India. Since then it has effectively performed the task of building up a database for many organisations of the Government of India, and has also played an important role in imparting intensive training in systems analysis and data processing. The Computer Centre is headed by a Deputy Director General.

14.2.66 The Computer Centre has undertaken the responsibility of processing and tabulation of NSS data right from the 27th Round (1972-73) onwards to the 50th Round (1993-94). Further, the Computer Centre undertook the summary and detailed tabulation of data for ASI 1974-75 to ASI 1992-93. The software for processing and tabulation of data of the Economic Census (EC) of 1977, 1980, 1990 and 1998 was also developed by the Computer Centre. The software developed for the Economic Census 1998 was also made available to the States for data entry, validation, processing and tabulation of State-level data. The data of different Follow-up Enterprise Surveys of the CSO have been processed at the Computer Centre. The processing of monthly price data, right from data entry to production of final consumer price index for urban non-manual employees CPI (UNME), is also being carried out at the Computer Centre. The Centre also completed the data processing work of the Time Use Survey, conducted by the CSO in collaboration with six participating States.

14.2.67 As per the 'National Policy on Dissemination of Data', approved by the Cabinet in January 1999, the Computer Centre has been entrusted with the responsibility for the creation and maintenance of the National Data Warehouse of Official Statistics. The Computer Centre has initiated action in this regard. Under the project, the Computer Centre will preserve data generated by various Central Ministries, State Governments and Public Sector Undertakings on electronic media, organise the data in the form of databases and provide remote access facilities to users through a network. A large volume of data, including those pertaining to various NSS rounds and Annual Surveys of Industries (ASI), has already been preserved by the Computer Centre on electronic media. These are now being disseminated to a large number of users. The users would be further benefited in the coming years if the Computer Centre starts functioning as a data-warehousing unit not only of official statistics generated by the MoS&PI but also of those generated by various other Central Ministries, State Governments and Public Sector Undertakings.

14.2.68 With effect from September 1999, the Computer Centre has also been given the responsibility for the creation, design and update of the MoS&PI's website hosted by the National Informatics Centre. Efforts are underway to make the website bi-lingual. The Computer Centre regularly updates the material available in the website. To the extent possible, press releases are also put on the website on the same day.

14.2.69 Apart from processing monthly price data for compilation of CPI (UNME), the Computer Centre is responsible for the generation of all-India tables based on data collected through the Economic Censuses. The Computer Centre also conducts various training courses on IT for officials of Junior Certificate Courses in Statistics, software packages for middle-level Indian Statistical Service officers besides in-house training courses on new topics of IT for its officers and staff.

Deficiencies

14.2.70 For several years in the past, one of the major and regular activities of the Computer Centre had been to tabulate the NSS data, ASI data and the data of periodic Enterprise Surveys planned by the Economic Census Division (ECD) of the CSO. But with the taking over of the

tabulation work of the NSS and ASI data by the respective organisations and with the Centre now assigned the task of storing and dissemination of data, the Centre's future course of activities needs to be properly assessed for effective utilisation of its resources.

14.2.71 Only the post of the chief of the Computer Centre (Deputy Director General) has been encadred in the Indian Statistical Service. Therefore, there is a lack of mobility and promotional avenues for other officers working in the Centre.

Recommendations relating to the Computer Centre

14.2.72 The Government has already decided to reorganise the Computer Centre as the Data Storage and Dissemination Office (DSDO) to act as the central repository of various data collected by the Government. It should be built by making use of modern data warehousing technology. A high-level technical group should be constituted immediately to work out the plan and a budget for setting up and maintaining the DSDO. As this is likely to take some time to be fully operational, the present Computer Centre should continue to take up data processing jobs for the proposed NSO.

14.2.73 Recommendations relating to other uses of Information Technology in general are given in the section on Information Technology.

Role of the Private Sector in Statistics

14.2.74 Arising out of the trend of downsizing the Government, and spurred by considerations of economy in long-term costs and of obviating the problems of staff management, and to avoid possible bias and lack of objectivity in data collected by Government departments a view seems to be gaining ground that Governments may engage the NGOs and other reputed "private" sector organisations as official data collection agencies.

14.2.75 The other side of the argument is that the Government cannot abjure its primary duty to collect data on as many aspects of people's life as possible, there is no guarantee that data collection by private agencies would not be subject to its own biases, that monitoring the quality of such data would be difficult, and finally, that the competence of such agencies may be doubtful.

Recommendations

14.2.76 Since the issue relating to data collection by private agencies is complex and important, the Commission recommends that the proposed NCS would formulate the necessary guidelines in this respect from time to time. Till then a committee of Central and State statisticians and experts outside the Government should go into all aspects of the question, before any data collection work is outsourced by any Government agency in India.

14.3 ADMINISTRATIVE STATISTICAL SYSTEM

14.3.1 The main sources of statistics in India as elsewhere are:

(a) Administrative Statistics – generally collected by State Governments; consisting of statutory administrative returns and data derived as a by-product of general administration; and

(b) Other important sources namely, censuses and sample surveys.

14.3.2 Administrative Statistics are very much needed for effective planning of censuses and sample surveys. The state of the Indian Statistical System thus depends largely on the state of functioning of the Administrative Statistical System. In case of the system of direct data collection through sample surveys, the main failure had been in timely processing of data and

release of results. But, with effective computerisation, the problem of delays in publication of results of sample surveys has, by and large, been resolved.

14.3.3 The major failure is in the Administrative Statistical System. This system came into being as administrative information system whose essential purpose was to aid the Government Departments in the execution of their functions of implementation of different Acts, Rules and Regulations of Governments. Even when such Acts were passed by the Central Government, their implementation was decentralised through the State Government Departments and their district or other sub-offices. The statistics thus had a direct purpose of being not only of interest to but also necessary for the working of the departments. The regularity, quality, and completeness in the collection of these statistics, interwoven with the working of these departments, were thus indirectly ensured. The quality of this system is thus directly related to the interest the administrative departments take in it and the effective use they make of it. It is however a fact that strictness in the administrative functions of several departments of most State Governments is waning, resulting in a virtual neglect of the information system. The main reason for the near collapse of the Administrative Statistical System is this near total failure of the administrative machinery of the Governments. This results in (a) incomplete coverage, (b) delays in availability of information, and (c) unsatisfactory quality of Administrative Statistics. The other reason is the lack of effective coordination between different statistical agencies, especially at the Centre. Though charged with the responsibility of coordination as a nodal agency, the CSO could not effectively carry out this function and influence the other Central Ministries and State Governments to remedy the ills of their Administrative Statistical Systems.

Centralised and Decentralised Systems of Collection of Administrative Statistics

14.3.4 Subjects such as money and finance, international trade, balance of payments, incorporated businesses, have meaning only at the all-India level. There are sectors, which straddle across more than one State and for which statistics are collected directly by Central agencies such as railways, postal services and telecommunications. Statistics on both types of subjects are collected by the Central Administrative Statistical System. All other Administrative Statistics are collected by the State Statistical System.

14.3.5 Administrative statistics provide information that is relevant to the working of the Departments. They serve the major purpose of aiding the Departments in the execution of their administrative functions of implementation and execution of different Acts, Rules and Regulations with which the Departments are charged. Consequently, the concerned Departments have a vital interest in the proper collection of the administrative statistics.

14.3.6 There are other advantages too in the system of collection of statistics through the administrative set up. The collection of data by departmental agencies does not involve special costs. The collection is oriented to definite purposes, and the record and verification of information is part of administration. Departmental agencies and officials have not only good knowledge of the subject, but also of local language and local conditions, especially rural. Information collected is relevant and direct, and the respondents do not have to make calculations before answering a query. It is handled by agencies that have special knowledge of the subject Finally, there is an identifiable purpose in their data collection and they are in the best position to interpret the data. All this has lent a solid foundation to the decentralised administrative statistical system, and in turn, to the Indian Statistical System. An impression is carried by many that data collected by substantive Government departments are likely to suffer from bias. Therefore, they suggest that an independent agency should collect data to ensure *objectivity*. But, ignorance should not pass off as objectivity, making the solution worse than the problem. While the impression might be true for certain departments at certain times, it is easy to overstress the point as a justification for the solution suggested.

14.3.7 As against these advantages of the decentralised Administrative Statistical System, it will be apposite to point out the disadvantages of a centralised system of sample surveys. First, it is simply an unmanageable system for a large country such as India, except when it is a sample survey system of reasonable size. Second, on the very same counts on which a decentralised system possesses advantages, the centralised system fares poorly. Third, the very process of centralisation has a natural tendency to gather momentum.

14.3.8 A variant of this system is the one where a central agency collects data directly from the district offices of the State Government departments. When the State departments have to process the data and produce results, before they transmit them to the Centre, they are *per force* required to pay attention to timeliness in collection of data and their quality, and take corrective actions. But when the reporting units are to send the data directly to the Centre, which is a far distant agency, timeliness and quality of data will be affected adversely. For the States will have no responsibility for either. Worse, the State-level results, in this scheme of things, will become disaggregations of the National totals, and the States will be dependent on the Centre for State-level statistics, which are in fact in their domain.

14.3.9 Centralisation will thus inevitably raise questions about the Centre-State relationship in the field of statistics, about their authority for collection and use of data, and the authenticity and acceptability of such data.

Failure of Administrative Statistical System

14.3.10 But over the years, the Administrative Statistical System has been deteriorating and has now almost collapsed in certain sectors. The deterioration had taken place at its very roots namely, at the very first stage of collection and recording of data, and has been reported so far in four sectors: agriculture, labour, industry and commerce. The foundation on which the entire edifice of Administrative Statistical System was built appears to be crumbling, pulling down the whole system and paralysing a large part of the Indian Statistical System. This indisputably is the major problem facing the Indian Statistical System today.

Weak Lateral Coordination

14.3.11 A similar criticism is that of the weakness of lateral coordination, which has come to be viewed as another major problem. First an explanation of its nature is required because the very perception of this as a problem depends upon the view one takes of the Indian Statistical System. It also needs an analysis mainly because the solution to this is implicitly considered also as a solution to the first major problem. A brief history of the failure of the lateral coordination is presented below.

14.3.12 As stated above, the creation of the CSO brought in the question of lateral coordination in statistics between this and other ministries. The CSO carried out its function of coordination mainly by means of the technical committees or working groups, either appointed by it, generally under the Chairmanship of the CSO Director, or by the Ministries in which case the CSO was generally represented on them. The other mode was the bi-annual Conference of the Central and State Statistical Organisations (COCSSO) organised by the CSO. The COCSSO provided a forum for exchange of views and experiences concerning development of statistical activities in the country.

14.3.13 The success of the CSO in its role as a co-ordinator depended, on the one hand, upon the degree of its initiative and ability to persuade, and on the other hand, on the co-operation of the ministries, and their willingness to participate in this process as a team and to be persuaded to accept the conclusions of the team about their statistical work. However, given the historical background, the statisticians from the ministry had a less flexible mode of thinking, being generally averse to change, and "outside" influence. The unsatisfactory experience in

coordinating with the ministries led the CSO to search for an institution outside of itself and the ministries from which it could derive authority. The idea was concretised by the Committee to Review the National Statistical System (1980), referred to as Kripa Narain Committee hereafter, in its two recommendations. The first required the Government of India to formally declare by *Executive Order* that the Department of Statistics, to which the CSO belonged, was the "Nodal" department (for statistics) for undertaking integration of data required for Government's decision-making, for setting and maintaining standards, and for improvement and development of statistics in all respect. The second was to create a National Advisory Board on Statistics (NABS) with the Deputy Chairman or Member in charge for Statistics of the Planning Commission as the Chairman and the Director General of CSO as the Vice-Chairman. The Government had constituted NABS in 1982 with Member in charge of Statistics and Surveys Division, Planning Commission as Chairman. Later on from 1992, the Minister in charge of Statistics was appointed as the Chairman.

14.3.14 The NABS covered Governmental statistical programmes and systems both at the Centre and in the States and was meant for providing technical guidance for policy issues (regarding statistics), for ensuring effective and better coordination in all matters concerned with statistics. However, the NABS was not effective, primarily because of lack of official, legal or constitutional support.

14.3.15 The cumulative result of different actions by the Department of Statistics was a considerable weakening of the CSO. The available institutional arrangements for coordination in the shape of Technical Working Groups on various subjects or Committees were either not continued or were terminated by the Department of Statistics. The Conference of Central and State Statistical Organisations was not convened for many years till 2000 after the NSC started working. And for long periods the post of the Director General of the CSO was not filled up. A vacuum at the top was thus created. The separate identities of the Department of Statistics, a purely administrative office, and of the CSO, a professional institution, was thus erased. So far, the post of DG, CSO is still vacant, and during the work of the Commission, the views of the DG, CSO have not been represented before the Commission.

Modernisation Project

14.3.16 In the late nineties, the Department of Statistics was designated as the nodal agency for Real Sector data categories of International Monetary Fund's Special Data Dissemination Standards (SDDS). Faced with this responsibility, and the perceived weakness of the statistical system, the DOS came up with a proposal for creating a Statistical Authority to have centralised control over all official statistical agencies. It also put up a project for modernisation of the Indian Statistical System, to be financed through a loan from the World Bank. The main thrust of the project is on three measures: (a) Conduct of additional surveys to cater to the need of SDDS requiring expansion of NSSO to replace the failing Administrative Statistical System, (b) Expanded use of Information Technology, and (c) Creating a Central Training Institute for all levels of statistical personnel. The project has not considered adequately the problem of strengthening of the statistical system in the States.

14.3.17 The first measure, the massive expansion of National Sample Surveys, as a quick means for data collection for GDP estimation needs a re-examination. Also, the employment of these surveys as an alternative system to the failing Administrative Statistical System will divert attention from the solution of the real systemic problem of the decentralised Indian Statistical System.

14.3.18 Without any real effort to improve collection of data or their quality, the second measure of computerisation and application of Information Technology is likely to result in quick processing of data deficient in quality, coverage, timeliness, accuracy or precision. The real

apprehension is that the desirable flow of information *via* the route: Reporting unit ⇒ State Statistical System ⇒ Indian Statistical System will be replaced for the sake of management efficiency by a "fly-over" approach: Reporting unit ⇒ Indian Statistical System.

14.3.19 That there is a great need for training of statistical personnel goes without saying. However, one must distinguish here between two different types of training. The first type of training is at the operational level - on standard or routinised methods of data collection, processing and summarisation. This kind of training is best given at the work site. A large majority of statistical operatives in India are university graduates, and short in-service type of training is all that is needed. It is the second type of training – training on statistical methods to improve the practice of statistics, is much more important and necessary, particularly in the context of almost total lack of use of so called "applicable theoretical techniques" in official statistical work in India today. Centralised training is essential here, but this has to wait till a body of competent trainers is available. The immediate necessity is for training of trainers.

Recommendations relating to the Modernisation Project

14.3.20 It is understood that the project is under review by the MoS&PI. While reviewing and reformulating it, the MoS&PI should consider the recommendations made by this Commission on the various subjects and the components of the project may be modified accordingly, if necessary. For this, the project will have to shift its focus from expansion of sample surveys to improvement of the systemic issues of the Administrative Statistical System. Modernisation may be considered as a means for that purpose. It should also keep in view the essentially decentralised character of the Indian Statistical System and ensure that the States' Statistical Systems are interwoven in the project architecture.

Bringing all technical-cum-supervisory positions under ISS

14.3.21 Statistical units of Central Ministries and Departments can be grouped into three main types:

(a) Those headed by ISS officers;

(b) Those headed by officers from other organised services;

(c) Those headed by officers not belonging to any organised service.

14.3.22 With an organised Indian Statistical Service (ISS) in place, the continued existence of ministries and departments of types (b) and (c) above is a serious anomaly. It appears to be a historical legacy of the birth of the ISS from voluntary offering of posts by different ministries and departments. To bring about uniformity in management and strengthen coordination, the Commission recommends that all technical-cum-supervisory statistical positions in the Central Government should be brought under the umbrella of the ISS. However, this does not preclude Government from appointing in a few senior positions, professional statisticians with proven capability on an appropriate arrangement.

Filling up of Vacancies

14.3.23 The Commission notes that a number of positions at the highest and middle levels of the hierarchy in the ISS have remained vacant for long periods. For the sake of proper functioning of the statistical system, these positions must be filled up immediately.

IMPLEMENTATION OF ABOVE RECOMMENDATIONS

14.3.24 The recommendations made so far apply to problems currently faced by different statistical units of the MoS&PI under its present structure. But they do not address systemic issues. The Commission is of the view that for correcting the systemic problems of the Indian

Statistical System, it is necessary to revamp and restructure the statistical system, starting from the top, by laying down a firm and lasting foundation for the Indian Statistical System. This is taken up later in this report (see paragraphs 14.5.1 to 14.5.27), where the constitution of National Commission on Statistics (NCS) is recommended. However, implementation of the above recommendations should proceed immediately and independently of the creation of the NCS. The existing institutions of National Advisory Board on Statistics (NABS), Governing Council of NSSO, Advisory committee on National Accounts Statistics and other technical Committees and institutional arrangements should also continue till the NCS is created.

SYSTEMIC DEFICIENCIES

14.3.25 The Commission has noted that in recent years certain deficiencies of the statistical system of India have attracted serious media attention. These are:

(a) Existence of gaps in availability of needed information;

(b) Delays in publication of results;

(c) Large and frequent revisions of published results;

(d) Gross discrepancies between official statistics from different sources;

(e) Occasional disagreement between tabulated summary results and publicly available basic data from which the summary has been produced; and

(f) Lack of transparency in statistical operations.

14.3.26 These deficiencies have led to a serious loss of credibility of official statistics. These have been largely due to the following reasons:

(a) There is no policy-making and coordination body with legal authority, independent of the producers of statistics and free from covert or overt political and bureaucratic pressures that can serve as a link between the producers and users of statistics.

(b) There is a lack of a system of assurance of the quality of the statistics that are disseminated by the system.

(c) Over the years, the system of statutory administrative returns, which are the major sources of official statistics, have been seriously weakened.

(d) Time tested means of coordination with various agencies of the decentralised statistical system – technical working groups, advisory committees, conference of State and Central statistical officers, etc. have withered away. The biennial Conference of Central and State statistical organisations was not held from the year 1992 till 2000.

(e) Effectiveness of the Central Statistical Organisation, the nodal agency for coordination and standards, has been seriously affected by not filling up the position of Director General, CSO since 1997.

(f) There is a lack of appropriate legislation to provide a legal basis for collection of statistics, and to penalise official failures.

(g) Absence of a human resource development policy has been responsible for a marked lack of motivation of official statisticians.

(h) There is no spirit of innovation and research, to the extent that sample survey methodology developed in the fifties are still considered the only method to use whenever there is a demand for more information. Failure to adopt methods to "borrow strength from auxiliary information" has made dependence on larger and larger sizes of sample the only method available to cope with ever increasing demands for data. Time Series analysis, Use of statistical models, Classificatory

Techniques, Hot deck methods of imputation, and other "applicable theoretical methods" have never been made use of.

(i) Use of Information Technology has been restricted mainly to processing survey data. It has not been used in any significant way too improve the efficiency of the statistical system at large.

(j) Absence of an explicit Citizen's Charter or Mission Statement without which the expectations of the citizens from the statistical system cannot be formalised.

14.3.27 Before suggesting institutional changes necessary to solve the problems identified above, the Commission reviewed the international guidelines and the creation of apex institutions and supporting systemic arrangements by some statistically developed countries. A brief summary of this review is given below.

14.4 INTERNATIONAL DEVELOPMENTS IN REORGANISATION OF NATIONAL STATISTICAL SYSTEMS

UN Fundamental Principles of Official Statistics

14.4.1 Official statistics are produced by Government for informed debate, decision-making and research both within Government and by the wider community. Objective, reliable, timely, trustworthy and accessible official statistics give people confidence in the integrity of Government and public decision-making. Hence, in producing official statistics it is important that the relevance, reliability and integrity of official statistics is maintained, and is perceived as such. For this purpose, the cooperation from respondents and providers of information has to be maintained, and information given on a confidential basis must remain so. When the Economist, a UK magazine, came out with a ranking of the National Statistical Offices (NSOs), there has been intense debate over the role and responsibility of the NSOs in improving the quality and relevance of the statistical information generated by them and in making the system more responsive to the needs of its varied users.

14.4.2 The debate led to the adoption of the Fundamental Principles of Official Statistics by the United Nations Economic Commission for Europe (UNECE) in its 47th Session at Geneva on 15 April 1992. This was later endorsed in 1994 by the United Nations Statistical Commission with some minor amendments. These principles are now a widely agreed framework for the mission of NSOs and thus also for official statistics.

14.4.3 These Principles are as follows:

(a) Official statistics provide an indispensable element in the information system of a democratic society, serving the Government, the economy and the public with data about the economic, demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honour citizens' entitlement to public information.

(b) To retain trust in official statistics, the statistical agencies need to decide according to strictly professional considerations including scientific principles and professional ethics on the methods and procedures for the collection, processing, storage and presentation of statistical data.

(c) To facilitate a correct interpretation of the data, the statistical agencies are to present information according to scientific standards on the sources, methods and procedures of the statistics.

(d) The statistical agencies are entitled to comment on erroneous interpretation and misuse of statistics.

(e) Data for statistical purposes may be drawn from all types of sources, be they statistical surveys or administrative records. Statistical agencies are to choose the source with regard to quality, timeliness, costs and the burden on respondents.

(f) Individual data collected by statistical agencies for statistical compilation, whether they refer to natural or legal persons, are to be strictly confidential and used exclusively for statistical purposes.

(g) The laws, regulations and measures under which the statistical systems operate are to be made public.

(h) Coordination among statistical agencies within countries is essential to achieve consistency and efficiency in the statistical system.

(i) The use by statistical agencies in each country of international concepts, classifications and methods promotes the consistency and efficiency of statistical systems at all levels.

(j) Bilateral and multilateral cooperation in statistics contributes to the improvement of system of official statistics in all countries.

Experiences of Other Countries

14.4.4 The Commission examined in detail the present status of the statistical systems of several countries. The statistical system of the United Kingdom has recently been entirely restructured: this is described below. The experience of other countries is given in Annexe 14.6.

Reforms in the Statistical System in UK

14.4.5 The following extract from the White Paper: "Open Government" published by Her Majesty's Government, UK, in July 1993 gives the rationale for reforms in its statistical system:

> *Official statistics are collected by government to inform debate, decision-making and research both within government and by the wider community. They provide an objective perspective of the changes taking place in national life and allow comparisons between periods of time and geographical areas.*
>
> *Vital as this is, open access to official statistics provides the citizen with more than a picture of society. If offers a window on the work and performance of government itself, showing the scale of government activity in every area of public policy and allowing the impact of government policies and actions to be assessed.*
>
> *Reliable social and economic statistics are fundamental to the Citizen's Charter and to open government. It is the responsibility of government to provide them and to maintain public confidence in them.*

14.4.6 In April 1996, a new Office for National Statistics (ONS) came into existence seeking to[1]:

(a) Establish and gain commitment to Office of National Statistics (ONS) vision and values;

(b) Link ONS vision to business needs;

(c) Align individual, managerial and work team behaviours to those required by the vision;

[1] Source: The creation of the Office for National Statistics, 1997 by Her Majesty's Government UK.

(d) Identify business needs of the organisation and business units;

(e) State the process and people skills changes, required to meet those business needs;

(f) Promote the development and implementation of action plans to address identified individual and work team skills and competence needs;

(g) Initiate business and work team based activities to develop and progress business and learning outcomes; and

(h) Maintain flexibility in the delivery of skills development and learning activities.

14.4.7 In June 2000, the United Kingdom has appointed a new Statistics Commission[2], an independent, non-executive body, which will provide a check on the integrity and independence of National Statistics. It has a Chairman and seven Members, all of whom are part-time and a full-time Chief Executive. This Commission[3] is independent of both ministers and the producers of National Statistics. It has its own budget and is able to commission its own activity. The Chairman and Members are appointed by the Chancellor, as Minister for National Statistics, in accordance with the Code of practice published by the Commissioner for Public Appointments. The Commission produces an annual report, which is to be laid before Parliament. It publicly advises ministers on issues of statistical integrity related to National Statistics. The role of the Statistics Commission is fundamental to the new arrangements for Government statistics. The Commission is required to:

(a) Consider and comment to Ministers on the programme for National Statistics, drawing on the views of users and suppliers, and will have a role in advising on the scope of National Statistics;

(b) Comment on the quality assurance processes of National Statistics, as well as being able to carry out spot checks on departmental or other audits of National Statistics and to carry out or commission its own audits in areas of concern;

(c) Comment on the application of the code of practice for National Statistics and other procedures designed to promote statistical integrity;

(d) Prepare and lay before Parliament an annual report on National Statistics, incorporating its comments on the report by the National Statistician, and on how the Commission has discharged its functions.

14.5 RECOMMENDATIONS ON RESTRUCTURING THE INDIAN STATISTICAL SYSTEM

14.5.1 In the light of the experience of other countries, especially the UK to meet the problem of coordination and to ensure public trust in statistics, it is necessary to restructure the Indian Statistical System as per suggestions given in the succeeding paragraphs. The creation of a permanent and statutory National Commission on Statistics (NCS) is envisaged as a pre-requisite for improving the System. This is more or less on the lines of the UK except that the Indian NCS would have more authority in certain respects to cope with the federal structure of the Indian polity.

National Commission on Statistics

14.5.2 As official statistics play a major role in assessing the performance of Government, it is important that such statistics are not only accurate, but are also trusted as such by the layman as well as by its principal users. This is ensured if a high-level policy-making body that has commensurate authority and obligations, oversees the statistical system. This is not a new

[2] HM Treasary News Release, June, 2000 www.statistics.gov.uk

[3] Framework for National Statistics, June 2000 by Her Majesty's Government UK

concept. For instance, in the Nehruvian era, Professor P.C. Mahalanobis, an independent non-official was the Honorary Statistical Adviser to the Cabinet, had this kind of authority, but his authority was entirely personal with no formal institutional arrangement. The Governing Council of the NSSO also had complete autonomy in respect of sample surveys conducted by the NSSO. The NABS was intended to be an institutional arrangement for the statistical system as a whole, but it did not succeed because it lacked legal backing. The Commission recommends creation of a permanent and statutory apex body – the National Commission on Statistics (NCS) – independent of the Government and responsible to the Parliament in respect of policy-making, coordination and certification of quality of Core Statistics.

14.5.3 The NCS should be entrusted with functions broadly categorised as follows so as to:

(a) Serve as a nodal and empowered body for all core statistical activities of the country;

(b) Evolve, monitor and enforce statistical priorities and standards;

(c) Ensure strong coordination through a closer linkage between statistical programming and budgeting.

14.5.4 The NCS will be constituted through an Act of Parliament. It will determine the areas of official statistics that are to be considered as core or critical to the functioning of the economy and accordingly prioritise the statistical activities of National Statistical System. The statistics defined under critical areas could be called Core Statistics. The Core Statistics will have the following characteristics:

(a) They should be of national importance;

(b) It will be mandatory for the Governments at all levels to collect and disseminate them;

(c) They should conform to prescribed definitions, concepts and standards laid down by the NCS;

(d) They should be updated periodically, with suitable periodicity to be determined; and

(e) They will be available at both aggregate and disaggregate levels, wherever appropriate.

14.5.5 The Core Statistics will be identified and accessed from all critical areas of the economy including agriculture, socio-economic sector, demographic, industrial, labour and employment, finance. The NCS will ensure that the production of statistics and their release are free from Government influence, by designating appropriate statistical institutions or functionaries to be solely and independently responsible for these functions. In designating the statistical institutions or functionaries for the collection and release of Core Statistics on different subjects, the NCS will adhere to the distribution of subjects in the Union, State, and Concurrent Lists of the Constitution of India. Though the compilation and release of statistics will be the sole responsibility of the agency concerned, the NCS will exercise a statistical audit over the statistical activities to ensure quality and integrity of the statistical products. The Act would empower the NCS to make it binding on all agencies responsible for the Core Statistics to comply with the directives of the NCS. The NCS would be required to submit its Report annually to Parliament regarding its own functioning, and that of other statistical agencies and about the statistical situation in the country.

14.5.6 The directive principle for the NCS will be that it shall work within the framework of a decentralised National Statistical System, both laterally among Central Ministries and vertically among the State Governments. In this context, it would be pertinent to mention that the National-

level Statistics, in most cases, will be merely State -level aggregation of statistics. Particularly, its orientation shall be that:

(a) National statistics would mean entire set of statistics collected officially from administrative returns or through sample surveys.

(b) Statistics at the all-India level are an aggregation of State-level statistics in most cases.

(c) In advising on the collection of Core Statistics, the NCS would keep in view the optimum use of national resources, in context of essentially decentralised character of statistical system. The national resources mean the resources of both Central and State Governments together.

(d) Further, the proposed system shall provide a direct approach by the States to the NCS on any statistical issue, and

(e) The States shall have the opportunity to bring directly to the notice of the NCS, their reservation on any policy decisions taken by the NCS and to request for its consideration.

Mission Statement

14.5.7 The Mission Statement of the Indian Statistical System shall be *to provide, within the decentralised structure of the system, reliable, timely and credible social and economic statistics, to assist decision-making within and outside the Government, stimulate research and promote informed debate relating to conditions affecting people's life.*

Functions of the NCS

14.5.8 Within the framework of the decentralised system, the functions of the NCS would be to:

(a) Evolve and arrange to monitor the nation-wide strategies on: Core Statistics; updating the list of Core Statistics; framing and monitoring the advance release calendar; dissemination of data;

(b) Evolve and arrange to monitor the nation-wide strategies on: Human Resource Development for Official Statistics; Information Technology and Communication needs of the Statistical System;

(c) Improve Public Trust in Statistics by: increasing and promoting public awareness of Official Statistics; monitoring and ensuring reduction of respondent burden; arranging interaction with data users;

(d) Function as Apex Authority on Statistical Coordination: between Central Ministries, departments and other Central agencies; between Central and State Governments;

(e) Ensure Quality Assurance of Statistical Processes; evolve and enforce appropriate statistical standards; declare quality with statistical releases; audit Statistical Activities; determine modality of the release of data;

(f) Constitute Technical Committees or Working Groups to assist the NCS in performing various functions;

(g) Assess legislative requirements periodically.

Constitution of NCS

14.5.9 The NCS will have a Chairman and four Expert Members. Since the NCS would be primarily a policy-making body working through a number of technical committees and should not be involved in routine administration, given the function of the NCS and the time that the

Chairman and members are expected to devote to them, the Chairman and the members should be appointed on a part-time basis. The tenure of both would be 3 years. For administrative purposes, the status of the members should be at least that of Secretary to the Government of India. The Chairman and members will be eminent statisticians or social scientists and represent the following indicative areas of specialisation:

(a) Agriculture and allied areas including, Meteorology and Environment;

(b) Industry, Trade, Finance, National Accounts and Infrastructure;

(c) Population, Health, Education, Level of Living, Labour, Employment and other Socio-economic Sectors;

(d) Survey Design, Analysis and Statistical Modelling;

(e) Statistical Information System and Information Technology;

(f) State Statistical Systems.

14.5.10 The NCS would be assisted by technical committees in the following illustrative list of subject areas:

(a) Agricultural Statistics

(b) Industrial Statistics

(c) Price Statistics

(d) Trade statistics

(e) Social Statistics

(f) Infrastructure Statistics

(g) National Accounts Statistics

(h) Large-scale Sample Surveys

(i) Information Technology.

14.5.11 For budgetary purposes, the NCS would be in the Ministry of Statistics. The Secretary of the NCS would be the head of the National Statistical Organisation (NSO) described below. He will be called the National Statistician and would also be the Secretary to the National Commission on Statistics. He will have the rank of a Secretary to the Government of India. To assist him in the responsibilities, a core secretariat should be established in the NCS. The post of National Statistician will not be reserved for any organised service of the Government of India. Recruitment will be made by open selection from among professional statisticians with long technical and managerial experience in large statistical organisations.

National Statistical Organisation (NSO)

14.5.12 The NCS will operate through the National Statistical Organisation (NSO), which will be the official agency to implement policy decisions of the NCS. The NSO will function as the single full-fledged Department of the Ministry of Statistics of the Central Government headed by the National Statistician, who would be the Secretary of the Department. Essentially, the NSO would be the restructured form of the present Statistics Wing of the MoS&PI. The National Statistician, will be its technical and administrative Head. The National Statistician, would broadly be responsible for the following activities:

(a) To provide leadership to statistical activities by promoting coordination with components of the National Statistical System, particularly with the State Directorates of Economics and Statistics;

(b) Assist in evolving and implementing the National Statistical Strategy;

(c) Assist the NCS to decide and reallocate statistical priorities;

(d) Promote reliability and integrity of statistics;

(e) Formulate and implement plan scheme in statistics (as ex-officio Adviser, Statistics to the Planning Commission).

Functions of the NSO

14.5.13 The envisaged functions of the NSO are enumerated below:

(a) Implement and maintain statistical standards and coordinate statistical activities of Central and State agencies as laid down by the NCS;

(b) Compile National Accounts according to the latest international standards at regular periodic intervals;

(c) Collect or arrange to collect Core Statistics, which have not been collected so far;

(d) Participate in regional, national, and international statistical forums and meetings;

(e) Carry out methodological research and studies;

(f) Publish Core Statistics at regular intervals together with critical analysis regarding the quality of data and implication of the use of data in policy- making and administration;

(g) Arrange in-service training course for statistical personnel, in cooperation with universities and research institutes;

(h) Maintain a "warehouse" for Core Statistics, for dissemination amongst all users in the public and private sectors inside and outside the country and serve as the sole provider of information to foreign Governments, international bodies and United Nations agencies.

Proposed Structure of the NSO

14.5.14 The NSO will comprise the following four offices. The present rank and status of the heads of the first three offices, which now form the Statistics Wing of the MoS&PI, should be maintained. The existing structure of MoS&PI is given at Annexe 14.7.

(a) Central Statistical Office (CSO), to replace the present Central Statistical Organisation;

(b) National Sample Survey Office (NSSO), to replace the present National Sample Survey Organisation;

(c) Data Storage and Dissemination Office (DSDO), to replace the present Computer Centre;

(d) Consultancy Wing (CW), new.

These will be divided into a suitable number of Divisions.

14.5.15 The Central Statistical Office (CSO) will comprise the following Divisions with functions given below the names:

(a) Coordination, Standards and Administration Division

- Formulation and maintenance of statistical standards in coordination with statistical agencies inside and outside the country;
- General Administration and Budget.

(b) Human Resource Development Division

- Cadre Management – to maintain job and personnel database, arrange cadre review, filling up vacancies, transfer and posting;
- Assessing training needs, arrange training programmes.

(c) National Accounts Division

- Compilation of National Accounts, Comparable State Domestic Product, Input Output Transaction Table, Capital formation, etc.

(d) Economic Statistics Division

- Expanded form of the present Industrial Statistics Division to be responsible for Annual Survey of Industries (ASI), Index of Industrial Production, Economic Census, Business Register, etc.

(e) Social Statistics Division

- Social Sector Statistics, Environment Statistics, Index Number of Prices and Cost of Living, etc.

(f) Research and Publications Division

- Methodological Research on applicable theoretical innovations, Empirical research based on statistics collected in different subject areas, Reconciliation of the data generated from different source agencies, Publication of occasional research papers.

National Sample Survey Office

14.5.16 The National Sample Survey Office (NSSO) will comprise the same four Divisions with more or less the same functions as those of present NSSO.

(a) Survey Design and Research Division (SDRD)

- Plan and design sample surveys conducted by the NSO;
- Develop and maintain suitable frames for sample surveys;
- Prepare instructions, validation and tabulation programmes, report generation, etc. for the surveys;
- Undertake studies in survey design and quality aspects of surveys;
- Assess sampling and non-sampling error of survey data.

(b) Field Operations Division (FOD)

- Undertake fieldwork for surveys of the NSO;
- Explore improvements in data collection methodology jointly with SDRD.

(c) Data Processing Division (DPD)

- Transcribe, clean and tabulate survey data;
- Develop related software.

(d) Coordination and Publication Division (CPD)

- Monitor survey activities;
- Publish survey reports and the journal, *Sarvekshana*.

Data Storage and Dissemination Office

14.5.17 The Data Storage and Dissemination Office (DSDO), with no break-up into Divisions, would perform the following functions:

- Acquire from different sources Core Statistics, organise, store and disseminate them on electronic media and serve as a data warehouse;
- Train data users;
- Use excess capacity for data processing.

Consultancy Wing

14.5.18 The Consultancy Wing (CW) would cater to the increasing demand for professional statistical services, especially within the Government. Presently, this demand is being partially catered to by private agencies whose competence could be questionable. It is understood that some Central and State Government departments have been incurring an annual expenditure of the order of a few hundred crores of rupees on account of out-sourced studies, surveys and consultancy work. An indicative list of some such projects assigned by the Government Departments to outside agencies is given in Annexe-14.8. The Consultancy Wing will aim to cater to the increasing demand for investigations and studies of a statistical nature and provide related professional statistical services that cannot be accommodated in the existing arrangements within the Government. This Wing would essentially function as an autonomous body and aim to be the commercial wing for professional statistical activities. In its nascent stage it will be nurtured by the NSO, before it hives off as an independent corporate entity outside the Government.

14.5.19 To start with, it may undertake projects from Governmental and international agencies regarding data collection, processing, analysis and report generation through sample surveys or other means on topics assigned to it. It could also take-up consultancy services relating to statistical problems including methodological studies and model building. It would carry out detailed analytical reporting, consultancy (both national and international) and compete in the consultancy market on commercial terms. Some of the activities include methodological studies, surveys, macro-econometric modelling and forecasting, and consultancy to the State Governments. It will adhere to the appropriate statistical standards and methodology. The Consultancy Wing would be free to hire skilled personnel for project-specific work including officers of the Indian Statistical Service on deputation.

14.5.20 This being a new activity, the Commission recommends that the organisational structure for it should evolve along with the growth of its activities.

Improvement of lateral coordination at the Centre through Statistical Advisers

14.5.21 At present there is no institutional mechanism through which the MoS&PI can effectively coordinate with different ministries at the Centre in statistical matters. The Commission is of the view that heads of the statistical divisions in the ministries and departments should be responsible for the professional integrity in the statistical activities of their departments and improvement of these activities. In discharging their responsibility, they will work closely with the National Statistician as the head of the national statistical system. They will be responsible to the National Statistician for the professional quality of their work. They will collaborate with the National Statistician in their professional responsibilities while remaining in the administrative organisation of their ministries or departments. The heads of the statistical divisions, to be designated as Statistical Advisers, would thus have dual responsibilities – assisting the concerned ministry in matters of statistics and coordinating with the National Statistician in respect of maintenance of quality standards as laid down by the NCS. Considering the high level of responsibility of their posts, the Commission recommends that the Statistical Advisers in the major ministries or departments, such as Agriculture, Industry, Commerce, Finance, Health, Water Resources, etc. would be of rank one step below the National Statistician, while in other ministries and departments, the Statistical Advisers should be of a sufficiently high rank (see Annexe 14.9). The Statistical Adviser would:

(a) Be designated as the ‘Nodal Officer’ with regard to all statistical matters pertaining to the ministry or department;

(b) Assist the Secretary of the administrative ministry or department in all statistical matters;

(c) Be associated closely with the National Statistician in implementing the guidelines outlined by the NCS;

(d) Coordinate flow of information to and from the NSO.

Improvement of coordination with the States by empowering the State Directorate of Economics and Statistics

14.5.22 The close vertical coordination between the Statistical Divisions of the ministries of the Government of India and those of the departments of the State Governments, and between the CSO and the State Directorate of Economics and Statistics (DES), has been the strength of the decentralised Indian Statistical System. The weakness of the lateral coordination so far at the Centre between the CSO and the Government of India ministries had also led to weak lateral coordination in the States (where the statistical system is not fully centralised) between the State's DES and the statistical units of the departments. The system did not formally provide for a review by the DES of the content and methodology of the statistics collected by other State Government departments.

14.5.23 With the creation of the NCS and establishment of an NSO that will have a wider role than that of the present CSO, the lateral coordination at the Centre between the NSO and Central Ministries will greatly improve with a much more cohesive approach to the statistics of the ministries. The new institutional arrangement will not however loosen the present strong ties of vertical coordination between the CSO and Government of India, ministries on the one hand and the DES and State Government departments on the other. On the contrary, it should lead to a strong lateral coordination at the level of the States.

14.5.24 To ensure that this takes place, the existing coordination of the State DES should be widened to cover technical coordination. The Directorates of Economics and Statistics should be formally entrusted with the responsibility for a periodic review of the content, methodology and output of the statistics of all State departments and to make suggestions for the further improvement of these statistics. The Conference of Central and State Statisticians should be held regularly. A similar forum for a meeting of State Departmental Statisticians should be created by the State Governments to review the performance of the statistical system of each State. The report of the review and the suggestions may be forwarded by the DES to NSO and by the departments to the corresponding ministries, for action at the Centre (see next section).

14.5.25 The enhanced role of the DES and the wider technical discussion of the State's Statistics will help State Governments take a holistic view of the State's Statistical system to enhance its utility to the State Governments and indirectly to achieve the same result at the Centre (see next section).

14.5.26 The Commission recommends that a Centrally-sponsored scheme for strengthening the statistical system in the States be drawn up immediately for inclusion in the Tenth Five Year Plan, with the specific objectives of developing a survey and data-processing capability in the States.

14.5.27 The earlier mechanism of setting up working groups in the CSO to formulate the plan schemes in statistics at the all-India and State levels should be revived immediately for the Tenth Five Year Plan.

14.6 THE STATES' STATISTICAL SYSTEMS

Improving the Administrative Statistical System

14.6.1 The Administrative Statistical System (AdSS) is in disarray in three sectors: agriculture, industry and labour, of which the first and the third belong to the States' Statistical

Systems (SSSs). In Agricultural Statistics, the system of regular yearly recording of area under crops has almost ceased to operate. Overburdened with all kinds of other work, the village official, the last point of revenue administration, whose basic function is the maintenance of land records, does not find time for this work. For a different reason, the same is true of the system of Labour Statistics. The Office of the Chief Inspector of Factories (CIF), charged with the implementation of the Factories Act (1948), does not even maintain an up-to-date list of factories, and neglects to collect the half-yearly and annual returns, the basic returns to be filed under the Act, from more than a third of the factories. The situation about education statistics is only a little better. The position about the collection of other Administrative Statistics is equally unsatisfactory. It may appear that the failure of the AdSS is restricted only to a few sectors. But its causes are not specific to these sectors and reflect such systemic degeneration as would be common to all. It is only a question of time before the AdSS collapses in other sectors. Therefore, the ills of these sectors have to be urgently remedied.

14.6.2 The causes of the failure are of two different types. The first is the overburdening of the staff with other work to such an extent that they are left with no time for their normal work. The second failure occurs, without these extenuating circumstances, and consists in the neglect of the normal work by Government offices.

14.6.3 The failure of the first type is a process that has started long ago. On one hand, one notes a constant reference being made to burgeoning bureaucracy; on the other, at the farthest end of the Government system, at the lowest level of village, the Government staff, the *patwaris*, the *gramsevaks* or primary teachers, is loaded with work as if the staff is a kind of infrastructure. Given our penchant for planning by campaigns, and with little thought paid to the consequences, this staff is burdened continually with ever-new assignments forcing it to neglect normal work. Apparently, in spite of their close bonds with the State Government departments, the ministries of the Government of India have not been able to deal with this problem effectively.

14.6.4 It is apposite to mention another factor that affects not the AdSS but other statistical projects of the Indian Statistical System such as the Agricultural Census or the Livestock Census. The planners of these projects also adopt the same approach when they assign the project work to the lowest-level staff of *patwaris*, *gramsevaks* or primary teachers. Further, since the collection of data by these functionaries, costs almost nothing, reducing considerably the cost of the project, village-level staff become an easy choice as field workers. That also induces the ministries of the Government of India to plan censuses of different types rather freely; i.e. without having to consider the cost of fieldwork, and with freedom to choose the census as the means of collecting data, without having to consider alternative ways of collecting data. The result is that the staff have least respect for statistical work in general. They have also become aware of why they get loaded with such projects and are now hesitant to do such work conveying a message that the days of free data-collection are over.

Ebbing Efficiency of Government Administration

14.6.5 The second cause for the failure of AdSS arises out of the ebbing efficiency and effectiveness of Government administration. As stated before, Administrative Statistics are generated indirectly as a part of Government administration from the quantitative information that departments collect in order to implement the Acts, Rules or Regulations, which also empower and require them to collect information from the relevant units in prescribed forms. Collection of information thus becomes a part of their normal function. The soundness of the AdSS thus depended on the assumption that the department carried out its functions satisfactorily. For example, quantitative and other information is collected from factories because it aids the Office of the Chief Inspector of Factories (CIF) to carry out its functions of inspection of factories to see that they satisfy the provisions under the Factories Act and other related Acts. Factories are

required to furnish relevant information to the Office of the CIF in various forms (called factory returns) prescribed under Rules framed under the Acts, and it is the responsibility of the Office of the CIF to ensure that they do so. But when that office carries out its functions without a large proportion of factories having filed their returns, it should be obvious that it is not doing so as satisfactorily as it is expected to do. The growing unsatisfactory condition of factory statistics system is but a reflection of this unsatisfactory working of the Office of the CIF. In general, over the years, the system of Government administration is deteriorating. The failure of the AdSS is but a corollary of this deterioration of the system of Government administration.

14.6.6 Neglect of normal duties by Government functionaries has caused a failure of Government administration in both cases. In the first case, the Government officers or offices responsible for Government statistics are different from those whose officers or staff are responsible for data collection: Agricultural Statistics office and Revenue Department, and State's statistical office and the Office of the CIF, respectively. Since the problem involves different departments, only the highest level of Government administration, the Chief Secretaries of the States, can resolve it. The State Governments should appreciate that the AdSS is the prime responsibility of the State Governments, that the entire structure of the Indian Statistical System is founded on its basis, that the AdSS is presently in a state of collapse in certain sectors, and that the effects of this collapse will not be restricted to particular States but will affect the completeness and quality of national statistics. They have to take urgent steps to remedy the situation by resolving administrative problems in some cases and toning up the administration in others. The States have played a dominant role in building the National Statistical System known for its soundness all these years. Inaction by States about the AdSS will gravely impair the national system. That will necessarily lead to a creation of alternative systems by the Central Government, which will be centralised, and will produce statistics which the States will have to accept in place of those they have failed to generate from their own systems. The States will thus lose power over the field of statistics, which belongs to the Concurrent List of subjects in the Constitution. The Commission therefore highlights the seriousness of the whole issue, and its implication for not only the States but for National Government as well. Without improvement in Government administration and a resolution of the administrative problem of excess burden of work on the staff, attempts at revamping the statistical system of the whole country in isolation can only be partially successful.

14.6.7 The extent to which this central issue is resolved will set measure for the effectiveness of improvements in interconnected aspects of the States' Statistical Systems (SSSs) and in turn of the Indian Statistical System. However, independently of the resolution of this central issue, attempts at improvements in other aspects of the statistical system should have their own positive influence of encouraging the State Government authorities to address the central issue of the AdSS.

14.6.8 Since the subject concerns the States, and further since the situation about the SSSs varies in different States, the Commission is not able to recommend measures for different States. It is also not able to consider the question of resources for implementing its recommendations. In view of this it will restrict itself to suggesting certain main policy guidelines for the improvement of the SSSs. The State Governments may consider setting up commissions or committees to advise them on the manner of implementation of these guidelines and on other issues relating to SSSs. The guidelines that follow have the objective to help State statisticians improve the usefulness of their statistics to the Governments.

Enhancing the Usefulness of the State Statistical System to the State Government

Statistics for Decision-Making

14.6.9 The most common problem of the States' statisticians is that their Governments do not provide them with the necessary resources. But its obverse side is that statistical offices will gain importance only by establishing the usefulness of statistics to the State Government. To succeed in raising his status and that of statistics, a State Statistician's job should, therefore, be that of enhancing both the demand for and the supply of statistics and their analysis. The "mission" of his office should be to improve decision- making of the Government by providing quality statistical service.

14.6.10 Presently, the statistical work programme of the States' DESs has been more or less standardised in the country. Their publications include statistical abstracts and handbooks for the States, annual economic reviews or surveys, budgets-in-brief, economic-cum-functional classification of the budgets, estimates of State Domestic Product, district statistical abstracts, social and economic indicators of development, municipal year books, periodic releases of price index numbers, and reports based on tabulation and analysis of sample survey data including those based on the survey of the NSS matching sample. These publications do make available to the people and the States' administrators considerable useful statistical information about the State and its districts. The timely issue of these publications and maintaining a quality of these statistics in all respects will always be the primary function of the DESs. But experience shows that for the DES to be useful to the Government, much more is required to be done.

14.6.11 Broadly there are two kinds of statistics needed by Governments. One, at the macro-level, of national aggregates, such as national income and accounts, poverty, unemployment or such other macro-level economic variables. The other is statistics at the micro-level for operational planning where disaggregated statistics are more relevant and therefore, important. Broadly again, the two types of statistics are identifiable separately with the concerns of and use by the two main levels of Government; the macro-level for use by the Central Government, given its responsibility of economic policy-making, and the micro-level with the State Governments, for operational planning, that is, for the formulation of specific plans and programmes.

14.6.12 A very important characteristic of the statistical requirements for State Government decision-making is that, of the two main types of statistics, the average or the total and the distribution, it is the latter that is more frequently required. This is because a State Government's decisions about its plans and programmes mostly relate to specific groups of people or units, needing statistical information for such groups defined in a manner relevant to the plans and programmes. Generally, the information is required urgently. The statistician must accept the challenge, for it is only on such occasions that the administrators come in meaningful contact with the statistical system, and these occasions provide an opportunity for establishing the usefulness of the statistical system.

Operational Aspects

14.6.13 In most cases, the State's Statistical System possesses the data. What is needed is the capability to process this on demand and to synthesise the data from different sources. With computerisation now, both processes can be easily carried out. The first will also require a fundamental change in the orientation of production of results, from a "fixed-product" approach of pre-determined tabulation plans to a "demand-determined-product" of tabulation on demand. The second will require a greater effort at coordination, by including a set of common parameters in all data collection projects, so that data from diverse sources can be linked. For this development the State Statistical Systems should be so developed that they can create the following facilities:

(a) Unit-level data of one department would become accessible to other departments;

(b) A central storehouse of unit-level data of all departments should be created in the DES;

(c) A small set of data elements should be identified (such as permanent village codes) that should be included in all forms of data collection of the AdSS.

Computerisation of Administrative Statistics

14.6.14 The entire system of Administrative Statistics is record-based in the offices of the Government, which are empowered and responsible for the administration of different Acts and Rules of the Government. The PC and information technology revolution have prompted many State Governments to declare their intentions to launch programmes to computerise their administration to achieve the goal of e-governance. In this programme, computerisation of the offices administering the Acts and Rules, (Sales Tax Commissioner, Transport Commissioner, Registrar of Stamps and Duties, Chief Inspector of Factories, and the like), which directly deal with units or people, deserves to be accorded a priority. This will lead to three tangible benefits. First, it will facilitate and systematise the routine, essentially clerical, operation of recording, maintaining, updating and processing of administrative records and data, resulting in an increase in the efficiency of the office, and help in enhancing the quality of information. Second, these offices will be able to speedily process the Administrative Statistics collected by them. Technology is available to link the PCs in their sub-offices to the processing PC in the headquarters office and the Directorate of Economics and Statistics for further speeding up of the process. Third, apart from the improvement of Administrative Statistics, computerisation will also act as a strong catalyst in the improvement of the overall working of these offices to the benefit of the concerned units and people, the recipients of the Government services. The focus of computerisation in the States' administration should thus be on these offices.

14.6.15 An apparently minor, but in fact vital, point requires to be brought out. Quite often modernisation is interpreted solely in terms of use of sophisticated computer equipment at the top while easily forgetting the fact that the lowest-level functionary, the *patwari* or *gramsevak*, is not supplied even with a simple calculator. It is on him that the accuracy of the statistical work basically depends, and the computer becomes useful in processing data fast, only if he supplies accurate data. In the age of computers, and with attempts to inject modern technology, it is a paradox that simple inexpensive "technology" is not introduced where it is most needed, and where it will be most effective. Supplying such simple equipment to these functionaries should be the first priority in the modernisation of the Indian Statistical System.

Potential of the NSS Survey Mechanism and Data

14.6.16 It is indeed a sad state of affairs that although most States carry out the field-work of the matching sample of the NSS, most of them do not tabulate the collected data and publish the NSS findings for the State because of a mismatch of resources for data collection and those that should be devoted to the tabulation and analysis of the same. This is a glaring example of wastage of resources and the States should attempt to immediately correct this imbalance, as the NSS data they possess are a mine of information that would prove extremely useful to the State Governments.

14.6.17 Further, the NSS offers two potentially great advantages to the States. Participation in the NSS provides the States with the best representative sample of their States' population and a band of well-trained field staff. If a State Government needs any simple type of data, over and above those already included in the NSS schedules of a round, it can easily and quickly collect them by canvassing a simple additional schedule containing them for the same selected sample.

14.6.18 The second is the wealth of quantitative information that the NSS provides. The DES should perceive the immense utility of these data much beyond the production of a set of tables decided upon by the NSSO. In effect, the DES possesses a data-bank containing sets of voluminous data generated by several rounds of the NSS on many social, economic and demographic variables for large representative samples of a State's households. It is possible to tabulate on demand data on those variables, which are relevant to a particular problem of decision-making, in any manner required. Computerisation will greatly help this process of full exploitation of the potential utility of NSS data.

Strengthening of Sample Survey Capability in DESs

14.6.19 Before their participation on a matching sample basis in the NSS, the DESs of the major States had their own sample survey organisations to conduct surveys of specific interest to them. Subsequently, the States' own survey organisations languished and could not be developed. Since the NSSs cannot meet all the data needs of the States, complete dependence on the NSS is a handicap from which the States now suffer. It is, therefore, important that the States' DESs should build their own sample survey capabilities and organisations.

Computerisation

14.6.20 Undoubtedly, the major step that the DESs have to take is the reduction in time lag between collection of data and their tabulation and release. This requires that the time taken for processing the data should be drastically reduced. Voluminous tabulation plans decided upon in advance are one of the reasons for processing delays. With computerisation and proper software design it is possible to easily tabulate data in any manner required on demand at a later date. In the future plans for statistical development, the DESs should give priority to computerisation and creation of necessary in-house software capability.

Development of Analytical Capabilities

14.6.21 To make use of data for the resolution of a particular problem of decision-making will undoubtedly require the development of analytical statistical expertise. The focus will be on generation, from available data, of statistical "information" relevant to a particular problem, and this will require familiarity with and ingenious use of modern statistical methods and operation research techniques. The DES will have to create a small data-analysis unit of "problem solvers", and man it by one or two statisticians competent in these techniques. In the suggested organisation of the National Statistical Office (NSO), it is proposed that a consultancy wing may be created. The DESs will be able to call upon the statisticians working in this wing, when required. To nurture growth of analytical capabilities for problem solving in all State DESs, it will help if they share their experiences. For this, it would be beneficial if the Conference of Central and State Statisticians devote a technical session for this purpose.

Supportive Institutional Structure

Directorate of Economics and Statistics

14.6.22 Consistent with the expectations that statistics and the director of the DES should be of help to Government in decision-making, certain institutional changes are necessary. The State Government should ensure a working environment in which it is possible to work with professional integrity. The institutional arrangements suggested below derive their rationale from the goal of creating an environment in which a statistical system can provide the best statistical service to the Government and the people.

Independence of DES

14.6.23 A statistical office, as Messrs. Bowley and Robertson averred nearly 70 years ago, should be as nearly independent of department control as administrative requirements permit. If Government statistics are to be seen to be objective and free from the influence of any implementing department, the DES should be independent from the control of any Government department in the matter of its substantive work. For this reason, considering the role that the director of DES is expected to play in the decision-making process of the Government, the Commission is of the view that the DES should be transformed into a separate Department of Statistics with the director of DES as its Secretary to the Government. This will also be consistent with the relative status of the director of DES *vis-à-vis* the Director General of CSO.

A Professional as Director of DES

14.6.24 For the director of a DES to perform the role expected of him satisfactorily, a professional statistician or a professional economist with considerable experience in the field of empirical analysis, should be appointed, in order to provide the requisite guidance and leadership to the State Statistical System.

Director as Adviser to Government

14.6.25 If the director is to perform his role satisfactorily, the State Government on its part should involve him in the decision-making process. This can be done by making him a member of, or a permanent invitee to, committees and groups, formally or informally formed, dealing with plans, programmes and decisions in substantive fields: agriculture, rural development, irrigation, industry, education and the like. (This should be distinguished from the statistics of these subjects.) State Governments should formally order or establish by convention an arrangement by which the director should be free to participate in such groups and the departments should be free to take the benefit of his help.

Role of DES vis-à-vis Statistical Divisions of Other Departments

14.6.26 To be effective in the larger role envisaged for its director, the functions of the DES must encompass the overseeing of the operations of the entire State's Statistical System. Presently, its function is that of "coordination" for which, in some States, the DES is identified as a "nodal agency". Both are rather vague terms and are not of much help in translating them into the operation of the State Statistical System. The role of the DES should be larger and more specific than the two. The DES should be assigned the function of technical coordination for taking a holistic view of the State Statistical System. It should be formally charged with the responsibility of taking an annual technical review of the statistical activities of all Government departments and should submit a report to the Government with its suggestions on the development of statistics in different fields. The DESs should also be asked to make a report to the Government of its comments on and suggestions for these activities. The DESs should also be authorised to convene a biennial conference to take a review of the State Statistical System and its activities. Also, the ministries of the Government of India, which define the statistical work of State Government departments, should give up their compartmentalised approach and recognise that the DES has a leadership role in all fields of statistics at the State level, and should consult the DES in statistical matters relating to those fields. The improvement in lateral coordination at the Centre, implicit in the Commission's recommendations for the top structure of the Indian Statistical System, will also help in the improvement of lateral coordination at the State and between the Central ministries and the DESs.

Common Statistical Cadre

14.6.27 Since statistics is a discipline common to all fields, there is an advantage in having a common cadre of statisticians to which all statistical posts in the State's department should belong. There is a further advantage in the common cadre being under the control of the DES, the largest statistical office in the State. On account of this arrangement, a statistician can get the rewarding experience of working in different fields, and that experience is useful to any department where he is posted. Belonging to a common cadre is also reassuring to the statistician. Due to the very nature of his work, a statistician working in a substantive department is exposed to the risk of being influenced or pressurised by the senior officers of the departments where he is posted. This creates a conflict between loyalty to the statistical discipline and that to the department's interest. As he has a sense of belonging to a larger parent department or service from which he is seconded, he is able to successfully resist such influences of the department that jeopardise his professional integrity. Finally, since the statistical divisions in most departments are too small for career prospects of persons if the departments recruit them independently, posting an officer from a common service or cadre obviates the difficulty of departments in recruiting and retaining good statistical personnel in their statistical divisions.

14.6.28 The next step should be to form a State Statistical Service and statistical posts in all departments, including the DES, should be manned by officers and staff belonging to this service. This will make possible the organisation of a true all-India Indian Statistical Service, so that officers of the States' Statistical Service can be inducted into it, the officers from this service then can be posted in States, those from the States can be posted in Central organisations, and both Indian Statistical System and State Statistical System will benefit from the exchange of experience that will follow.

Statistical Divisions in Departments

14.6.29 The role of a statistical division in a department should be the same as that of the role of DES in the Government. The statisticians heading the division should be involved in the decision-making process of the department in the same manner as suggested for the DES. For facilitating this, the statistical cells should be headed by at least a Group A officer. More importantly, whatever his status relative to that of the second top-level officers of the department, the head of the cell should work directly under the head of the department.

Block Statistical Organisation

14.6.30 The block statistical organisation (BSO) was created nearly fifty years ago for statistics of the community development programme. It was one of the finest organisational arrangements that established statistical units under the supervision of the DESs on the lowest possible rung of the administrative ladder. Since then, after reorganisation under various forms of democratic decentralisation, the organisation in some cases has been transferred to the "local sector". The survey taken by the Commission of the State DESs shows the present situation.

	Major States*	**Other States**	**All**
Total number of State DESs reporting	10	11	21
Number of States that			
Had block statistical organisation in the past	9	7	16
Have block statistical organisation now	9	6	15
Have Block Statistical Assistants on DES cadre	5	6	11
Have DES as their controlling authority	3	6	9

*States with a population of one crore or more

14.6.31 Thus, in many major States, the block statistical assistants (BSAs) are on the local cadre, and in most of them, their work programme is not decided by the DESs. Their work has not remained statistical and the purpose of creating that organisation is not always served in all the States. There had been many administrative difficulties in re-establishing the link between the DSOs of the DESs and the BSAs.

14.6.32 Now, with the 73rd and 74th amendment to the Constitution, there is an opportunity to bring the BSO appropriately within the fold of the State Statistical System. The manner in which this can be done might vary from State to State. But the minimum that requires to be done is to make the DSO the technical head (not the administrative head necessarily) of the BSAs in the district. This will ensure a greater degree of their participation in the statistical work. In deciding upon their work, the DESs should see that the BSAs' work primarily involves local statistics and is relevant for local area planning. The Commission has made recommendations on the development of local areas statistics (see paragraph 9.2.22). The BSO should be made the instruments of this development.

14.6.33 The other manner to bring the BSO in the State Statistical System is to transfer it completely to the State sector. This change will bring life to the languishing BSO and would be generally welcomed by the BSAs whose present career prospects are too discouraging for them to work satisfactorily.

Recommendations

14.6.34 The Commission therefore recommends:

(i) The breakdown of the Administrative Statistical System needs the immediate attention of the highest authorities of State Governments. They are urged to take steps to reduce the burden of the additional work given to lowest-level Government functionaries such as *patwaris* and primary teachers so that they can effectively carry out statistical functions assigned to them.

(ii) The authorities should also instruct the offices implementing different Acts and Rules to be vigilant that all relevant units file with them regularly the statutory statistical returns required by the Acts and Rules, and take necessary action under the Acts against the defaulting units.

(iii) The State Directorates of Economics and Statistics (DESs) should develop capabilities to tabulate data on demand and to analyse data from different sources. For this they should organise all the data that the State's statistical system possesses in an appropriate manner.

(iv) The State Governments should accord priority to computerisation of administrative offices that generate administrative statistics.

(v) The DESs should fully exploit the potential of their participation in the National Sample Survey (NSS) programme by using the survey data as a data bank and by utilising the survey mechanism for *ad hoc* collection of additional simple data required by the Government.

(vi) The State Governments should support the DESs in the creation of sample survey capabilities by creating sample survey divisions in them.

(vii) The State Governments should make the necessary resources available to the DESs for computerisation and development of necessary software to make the DESs self sufficient in this respect. This will help them to undertake tabulation of NSS data, which they are collecting in their matching samples.

(viii) The DESs should develop the necessary analytical capabilities to carry out data-analysis relevant to the problems of decision-making of the Government.

(ix) For strengthening the effectiveness of the statistical system of the Government, the State Governments should create a separate Department of Statistics by elevating the existing DES to the level of a Department and the Director of the existing DESs to the level of Secretary to the Government. The Department of Statistics should have complete freedom in statistical work. The head of the Department of Statistics should be a professional statistician or a professional economist with experience in large-scale data collection and empirical analysis of data.

(x) The State Governments should closely involve the Director of DESs in its decision-making processes by making him a member of or an invitee to committees and groups dealing with plans and programmes in substantive fields.

(xi) The State Governments should strengthen the role of the DESs as coordinators of their statistical activities by empowering them to take a technical review of the statistical activities of all departments every year. The DESs should also be asked to make a report to the Government of its comments on and suggestions for these activities. The DESs should also be authorised to convene a biennial conference to review the State Statistical System and its activities.

(xii) The State Governments should take steps to create a common statistical cadre and State Statistical Service for manning statistical posts in all departments.

(xiii) The heads of the department of the State Governments should closely involve their departmental statisticians in their decision-making process. To give institutional support to his role, the departmental statisticians should be placed directly under the head of the department.

(xiv) In view of the renewed importance of the Block Statistical Organisation in the context of local area planning, the State Governments should bring it directly within the fold of the States' Statistical System by either transferring the organisation to their Directorates of Economics and Statistics, or by making it responsible for its statistical work to the Directorate and bringing it under the Directorate's technical supervision through the district statistical organisation.

(xv) The State Governments may consider setting up commissions or committees to advise them on the manner of implementation of these recommendations and on other issues relating to States' Statistical System.

14.7 INFORMATION TECHNOLOGY IN THE INDIAN STATISTICAL SYSTEM

Historical Background

14.7.1 Before the introduction of electronic computers in India, Unit Record Machines with 80-column Punched Cards as the medium of data-input were extensively in use during the late

forties at the Indian Statistical Institute (ISI) for processing of survey data. The first-ever electronic computer in India - the Hollerith Electronic Computer Model 2M (HEC 2M) from the UK was installed for statistical use at ISI in 1949. Limited input-output capabilities of this and the next computer - the Russian URAL II installed at the ISI made them unsuitable for survey data processing. These were used mainly for complex calculations in other types of statistical applications. Use of computers in the special tabulation work of the NSS began at ISI in 1965 on the more versatile IBM 1401 computer system.

14.7.2 A Computer Centre was created in the Department of Statistics in 1967. The Computer Centre was initially equipped with a Honeywell-400 computer system. It was used for the processing of survey data and for providing computing support to various ministries and departments of the Government of India. Major jobs carried out by the Computer Centre have already been described.

14.7.3 Later, with the growth in demands on the use of Information Technology (IT) tools, the Government of India established the Department of Electronics (DoE) and the National Informatics Centre as part of DoE to cater to the needs of different ministries and departments of the Government. The nodal role of the Computer Centre was changed and this was to cater mainly to the need of Department of Statistics.

14.7.4 It must be admitted, however, that till the late 1990s, the processing of NSS data was not very successful. There were long delays in completing the tabulation of any round of the survey and the backlog went on accumulating. There are good reasons why it happened. Raw data as obtained by enumerators from the field usually have many defects. Before tabulation can start, these have to be subjected to detailed scrutiny and rectification, a process called "data cleaning". This is a very difficult and time-consuming task, and may take up more than 80 per cent of the total computer time. Deep knowledge of the subject of investigation is essential to make an effective plan for data processing and tabulation. Mere software skills are not enough. This lesson was learnt at great cost, when worried by the delays in completion of tabulation at the Computer Centre, the Governing Council of NSSO entrusted the work of processing of the data of the 35th Round of the NSS to the National Infromatics Centre of the Department of Electronics. Not only was the job completely bungled, the entire volume of data were totally lost in the process. Success came only later when it was realised that survey data processing to be successful would have to be done in-house by the statisticians conducting the survey.

14.7.5 Earlier, the DPD procured 108 data entry machines of type D20 and three small computers of model UPTRON S-1650 for data cleaning. The DPD was responsible for data transcription and cleaning on the above equipment – later on the newly-acquired Personal Computers (PCs) – and the final tabulation was done on the mainframe H-400 computer at Computer Centre. This was not much of a success mainly because of problems of communication between the Computer Centre and the DPD located at two distant places. This procedure continued up to 50th Round (survey period: July 1993-June 1994).

Current Status

14.7.6 A new approach was taken for the processing of NSS data from the 51st Round onwards. The entire responsibility was given to the DPD, relieving the Computer Centre of any responsibility in the matter. The Data Preparation Centres of DPD were to transcribe data from schedules in small batches and generate error reports using a set of in-house software developed by the Division. After manual cleaning of the data by the Data Preparation Centres, these were sent to the DPD (Headquarters) located at Kolkata for automated scrutiny and final tabulation. With this new approach of in-house tabulation of data by the DPD, backlog in tabulation and report writing work has now been completely wiped out by the NSSO.

14.7.7 Besides routine data processing, computers are used in sample selection and as a desktop printing device in preparing manuals, presentation of tables, etc.

14.7.8 With the advent of PCs, statistical computation in the Department of Statistics has been largely decentralised. From the reference year 1995-96, summary and detailed tabulation of ASI data are now done at the Industrial Statistics Wing of the CSO at Calcutta. The FOD carries out at Faridabad the processing of agricultural data collected by it under the Timely Reporting Scheme and the Improvement of Crop Statistics Scheme. The National Accounts Division (NAD) has its own system of PCs for compilation of national accounts.

14.7.9 One important step in the process of computerisation of survey data processing in NSSO is the introduction in 1995-96 of Palmtop computers for the collection of data. As an experimental measure, in the 52nd Round of NSS, socio-economic data were collected in Haryana directly on palmtop computers. The basic idea was to download the data collected on palmtop computers directly on to main computers for processing and thereby avoid the intermediate step of data entry. The palmtop computer had just two lines of display of 16 characters each, and a memory of only 64 Kilo Bytes. The FOD used these gadgets subsequently to collect field data under the scheme of Improvement of Crop Statistics (ICS), Middle Class Price Collection (MCPC), etc. These projects were planned in a hurry. Operational problems under difficult conditions in the field were not examined carefully. Limitations of hardware and software were not taken into account. The project was a total failure.

14.7.10 Wrongly diagnosing the problem as mainly one of limited capacity of the equipment, another experimental project was attempted in the 54th Round of the NSS, this time using more efficient Palmtop computers with larger memory. The data were collected from Orissa and Maharashtra using these newer Palmtop computers. However, with the total failure this time again, the project has apparently been shelved. The 700 or so pieces bought at a cost of more than 1.5 crores of rupees are lying unused and may not be even usable any longer. But, there is now a proposal to undertake a pilot study for using even better and much more expensive modern laptop computers with large memory and hard disk capacity for data collection by the field staff!

14.7.11 A great step of forward to meet user requirements was the adoption by the Government in 1999 of a National Policy on Data Dissemination. According to this policy, the Government is committed to supply the user, at marginal cost, unit level data, from all surveys after the expiry of three years from the completion of fieldwork or after the reports based on survey data are released, whichever is earlier. To protect the privacy of information, all identification particulars of the informant would be removed from the data before making these publicly available.

14.7.12 By the above policy, the Computer Centre has been entrusted with the responsibility of creation and maintenance of a National Data Warehouse of Official Statistics. Under this project, the Computer Centre will preserve data generated by various Central and State Government departments and public sector undertakings on electronic media, organise them in the form of databases and provide remote access facilities to end-users through a network. The Computer Centre has already initiated action for the creation of such a Warehouse. The Computer Centre has been preserving a large volume of data generated through various socio-economic surveys conducted by NSSO, Follow-up Enterprises Surveys by the MoS&PI, and Annual Surveys of Industries conducted by the CSO. These data are being disseminated regularly to a large number of national and international users on Floppy and Compact Disk (CD).

14.7.13 The Computer Centre has also been given the responsibility of creating and updating the website of the MoS&PI which is hosted by the National Informatics Centre. The site is being regularly updated.

14.7.14 Computers are being used in almost all the Central ministries, departments and organisations in one-way or other. The Directory of Statistics published by the CSO gives information on computerised databases maintained by various organisations at the Centre as well as the State Directorates of Economics and Statistics.

14.7.15 Several attempts were made by the NSSO to use the National Informatics Centre managed communication network (NICNET) for transmission of Core Items of Monthly Progress Report (MPR) and Middle Class Price Collection (MCPC) data. However it was found that in many cases data transmission through NICNET was not at all satisfactory. As a result, the system of sending filled in schedules to the CSO through the traditional postal service was continued and transmission of Core Items of MPRs and MCPC using NICNET was discontinued. Similarly, an attempt by the FOD to transmit ASI summary data through NICNET had also to be given up because of duplication or loss of data in transmission and failure to install revised versions of software in a number of Centres of National Informatics Centre.

14.7.16 During 1998, a decision was taken to install e-mail in all the 172 field offices of FOD, NSSO, through the network of National Informatics Centre. After a period of two years, the connection could be provided only in 116 offices. Even in the offices connected, the transmission of data was not very successful.

General observations on the use of Information Technology in the Statistical System of India

14.7.17 Statistical data processing involves the following types of work:

(a) Transcription of data from filled in schedules to a computer readable medium. This is labour-intensive error prone work;

(b) Verification of transcription, in which the transcription operation is repeated and the copy is mechanically compared with the original (100 per cent verification is the norm in NSS);

(c) Computerised check of internal consistency of the transcribed data; preparation of list of errors and their rectification by reference to the original document, or even by revisiting the informant;

(d) Consolidation of data files and check of completeness of coverage;

(e) Computerised check for missing or inconsistent data and replacing these by rule-based imputed values;

(f) Calculation of weights;

(g) Preparation and scrutiny of Tables;

(h) Calculation of standard errors of estimates – optional;

(i) Printing the Tables and Survey Report in appropriate lay out.

14.7.18 Currently by and large, in survey data processing, a system of flat files is in use. Imputation of missing or wrong values is done through cold deck methods.

14.7.19 Survey Design involves the following activities:

(a) Preparation and Maintenance of Sampling Frame of First Stage Units;

(b) Selection of First Stage Units according to the sampling design;

(c) Choice of Sampling Design;

(d) Design of Schedule or Questionnaire.

Computers are being or can be used in each of these activities.

14.7.20 At present, a standard sampling design is used – two or three-stage stratified sampling using a circular systematic method of selection with probability of inclusion

proportional to size. The sample size is determined on the basis of availability of field investigators. There is a great scope for imaginative use of computers in improving the sampling design.

14.7.21 A large number of Statistical Software Packages are now available for sophisticated analytical work. Though some of these are available, official statisticians in India seldom use these. As a matter of fact, routine statistical work involves very little of technical computation.

14.7.22 A sound statistical system should ensure speedy transmission of information at different levels: field to the data preparation centres, data preparation centres to the main data processing centre, main data processing centre to the data warehouse and finally to users. At present only a few of the above offices are electronically connected through a communication network, either though the NICNET or through e-mail provided by various Internet Service Providers. Though networking of all important statistical offices is necessary, it need not be a dedicated one at the present.

14.7.23 A number of standard classifications like the National Industrial Classification (NIC), National Classification of Occupations (NCO), Indian Trade Classification based on Harmonised Commodity Description and Coding System {ITC(HS)}, Standard Classification of Diseases, etc. are presently in use. There is a need to develop a computerised system to facilitate searching the appropriate code of any classificatory variable easily with the help of some key words about it. The system needs to be made available on the Internet through website. Such an arrangement would help the potential users of Classification.

Deficiencies

14.7.24 Though the NSSO has been conducting several rounds of surveys year after year, there has been no specific attempt to build up a specialist group for survey data processing – with deep knowledge not only of computer software and hardware but also of the subject matter of the surveys. On the contrary, the group that had worked hard to acquire the required skill and knowledge and was able to remove the long-standing backlog of unfinished tabulation of NSS data, was unceremoniously split up and transferred to areas where the skills acquired by them may not be of much use to the new organisation.

14.7.25 The system of processing State-level data is very weak. Inadequacy of hardware and software and availability of trained manpower is a problem in many of the States.

14.7.26 Acquiring expensive equipment and embarking upon a large-scale experiment without adequate examination of the pros and cons, as in the case of palmtop computers, is counterproductive and wasteful.

14.7.27 The department has often got to arrange consultation with specialists working in different places. This is done by arranging a meeting at a common place, which costs quite a lot in the form of travel expenses and wasted time.

14.7.28 In the past, the Government constituted *ad hoc* technical committees to recommend changes in the IT set up of its department. Delays in implementation usually meant that the recommendations were outdated by the time they were implemented.

14.7.29 According to the National Policy on Data Dissemination, the survey results and unit-level data should be made available to data users in India and abroad after the expiry of three years from the completion of the fieldwork or after reports based on survey data are released, whichever is earlier. Naturally, the unit-level data disseminated would be authentic in the sense that if any re-tabulation is done using these data, the new results would agree exactly with the corresponding published table. The Commission carried out an exercise to examine this. Table I of ASI 1995-96 Report was re-tabulated from the publicly available unit-level data. Large

unexplainable discrepancies were found between the two. This raises serious question, whether the unit-level data supplied, or, the tables published in the report were wrong. This jeopardises the credibility of the statistical system. It brings out the importance of extreme care in as commonplace a task as preparation of statistical tables.

14.7.30 Understandably, the dissemination policy is likely to put the statistical system under considerable strain but in the larger interest of the user community, the Commission would urge the Government to continue it.

Recommendations

14.7.31 The Commission makes the following recommendations:

(i) The Government must develop and nurture expertise and skills in various areas of specialisation - statistical software being one of the most important amongst them. Training and transfer policies must be framed accordingly. Transferring specialist officials to positions, in which their specialised knowledge is of no use, is a waste. A software group consisting of systematically-trained officers in IT tools should be set up in the National Statistical Office, to meet all software requirements of the NSO. When in-house expertise and resources are not available, data processing or software development projects could be given to agencies of proven competence.

(ii) The area of application of computers should be widened to cover statistical modelling, forecasting, simulation, and other sophisticated "applicable" theoretical methods.

(iii) It is essential to establish strong communication links between:

- The National Statistical Organisation (NSO) and all its subordinate offices,
- The NSO and all Central Ministries with substantial statistical output,
- The NSO and all State Directorates of Economics and Statistics (DESs),
- The NSSO and its SDRD, DPD, FOD and CPD,
- Headquarters of FOD, DPD and their respective subordinate offices,
- State DESs and Statistics Divisions of the Departments.

(iv) These offices should be networked through one or more Internet Service Providers, and/or one or more Virtual Private Network. A dedicated computer network is neither necessary nor desirable and would not at all be cost effective.

(v) Urgent steps must be taken to strengthen computer hardware and software systems in the State DESs.

(vi) To cut down travel expenses and waste of time, it would be more economic and convenient to go in for video conferencing facilities, which are comparatively inexpensive when held between a pair of participants**.**

(vii) Before investing in expensive sophisticated equipment, a feasibility study including cost-benefit analysis must be carried out. When the equipment are to be used by primary workers under field conditions, as in the case of palmtop or laptop computers, practical difficulties of maintenance, repair, local availability of consumables and the procedural problems of handing over expensive Government property to primary workers should be carefully examined.

(viii) Specifically in respect of palmtop and laptop computers, the Commission is of the view that these are not needed for collection of data in large-scale sample surveys at present except when information content is small. The large number of palmtop computers already purchased, if they are still serviceable, should be used in surveys with small information content - price data collection, for example.

(ix) However, Methodological studies on Computer Aided Interviews, as a collaborative venture of survey practitioners, software specialists, subject-matter specialists and psychologists is recommended. The first attempt should be to reduce the questionnaire to a reasonable size, which can be honestly answered in less than one hour. The question of development of appropriate software is of second priority. It should be emphasised that software for laptop computers can very well be developed on PCs and no investment on laptop computers would be necessary for this methodological study.

(x) For mobile applications, a few laptops should be available in each large statistical office.

(xi) In the ASI or in the envisaged Survey of Non-Manufacturing Industries, attempts should be made to collect information on electronic media from enterprises, which use computers for accounting purposes.

(xii) The existing practice of publishing survey results in the form of multiple cross-classified tables with, in many cases, a large number of empty cells should be stopped. Only readable reports, with simple tables and their interpretation, should be published. For experts and professionals, the results and unit-level data should be made available in an electronic medium like a Compact or Floppy Disk. Survey results and other important statistical information should be put on the website of the NSO.

(xiii) There should be regular computer training programmes for statistical personnel at all levels.

(xiv) The Commission has noted with serious concern that there are occasions when the unit-level data as well as summary tables computed from them, both disseminated under the National Policy on Data Dissemination, do not match. In order to establish its credibility, the Government should investigate the reasons for the discrepancies and assign institutional responsibility for the failure. A case of immediate concern is the data and results of ASI 1995-96.

(xv) A Standing Technical Committee on IT should be set up in the proposed NCS, to lay down policies and review their implementation.

(xvi) A website of all classifications, concordance tables along with online database query system should be developed for public use. This system should help the user in identifying a code on the basis of part description or key words.

14.7.32 A recommendation relating to conversion of the Computer Centre as the Data Storage and Dissemination Office is given earlier in paragraph 14.5.17.

14.8 LEGAL PROVISIONS FOR THE STATISTICAL SYSTEM

Introduction

14.8.1 In any statistical system, data are collected either directly from individuals and institutions or from administrative records or statutory returns. The success of data collection depends to a large extent, on the cooperation of the respondents. Many countries have found it necessary to put the entire data collection within a legal framework, laying down the obligations and rights of the respondents as well as those of the data collectors.

14.8.2 In our country, there are two such laws: Census Act, 1948 and Collection of Statistics Act, 1953.There is a third set of laws, mainly for administrative purposes, under which statutory returns have to be submitted to specified authorities. These returns are an important source of official statistics. A few of such laws are listed at Annexe 14.10.

14.8.3 Many of these laws are outdated and may require revision. The Government of India had set up in 1998 a Commission to review such laws, but it felt handicapped by the non-availability of rules, and regulations related to this. Comments from different ministries on some of these laws are given at Annexe 14.11.

Collection of Statistics Act, 1953

14.8.4 This Act is to facilitate the collection of statistics of a certain kind relating to industries, trade, and commerce. The Act specifies that the Central or a State Government may appoint a Statistics Authority, who in turn may serve on the owner of an industrial or a commercial concern or an individual, a notice requiring him to furnish certain listed information about the concern. It confers the right of access to relevant records or documents and restricts publication of any information disclosing the identity of the concern. It also provides for certain penalties for wilfully refusing to furnish, or, the furnishing of false information. Details of the Act are given in Annexe 14.12.

14.8.5 However, this law has so far been used for the restricted purpose of conducting an Annual Survey of Industries, to collect information on input, output and employment from a limited segment of the industrial sector. A very large segment of industries remains uncovered and even the penalty clause has not been successful in avoiding non-response. A detailed account of the limitations of this law is given in Annexe 14.13.

Census Act, 1948

14.8.6 The Population Census, which is a Union subject, is conducted under the Census Act, 1948. The Act empowers the Central Government to take a Population Census of the country after duly notifying its intention to do so. It empowers the Central Government to appoint Census Commissioner and State Governments Census officers to take the census. The Census Act is utilised for fixing primary administrative responsibility, for obtaining necessary funds, for determining the general scope and timing of the Census, for placing a legal obligation upon the people to give truthful answers, and for placing a legal obligation upon the enumerator to record the responses faithfully. While the Act makes it obligatory for the public to answer all questions faithfully, simultaneously, it guarantees confidentiality of information in respect of individuals. It provides penalties for (a) census officers if they fail in their official work, and (b) the respondents if they provide wrong information. The Act has been further amended vide the Census (Amendment) Act 1993 (see Annexe 14.14).

Need for Broader Legislation

14.8.7 At present, these two Acts cover only limited areas of data collection: (a) basically demographic information through Population Censuses, and (b) industrial information through Annual Survey of Industries. There is no legal basis for other large-scale data collection efforts through censuses or sample surveys. A common feature of these two Acts is to make it obligatory for the respondent to supply correct information and for the data collector to maintain confidentiality of information from a specific individual. There is provision for penalties for failures on either side, but these have seldom been availed of. It is considered necessary that legislation of a general type is required to provide a legal framework for collection of other Core Statistics.

14.8.8 The Commission has recommended the setting up of a permanent National Commission on Statistics (NCS). Introduction of an entirely new legislation is necessary for creating the proposed Commission, laying down its composition, authority, responsibility and procedure of work.

14.8.9 In the following paragraphs, legislative requirements for the three sets of Acts are discussed separately. Whether these could be incorporated into a single Act is a matter for legal experts to decide.

Legislation in respect of proposed National Commission on Statistics

14.8.10 This being a new arrangement, various aspects of the Commission's functioning, its relationship with different official agencies, other institutions, *etc.* as also the necessary mechanisms required for its effective functioning, have to be examined in detail and appropriate legislation thereof has to be put in place. However, to ensure that the legislation is actually effective in practice and fulfils its objectives it would be desirable, not to draft it in advance but to let it be evolved by the proposed Commission itself, taking into account the ground realities, the emerging requirements, etc. when it starts to function. It is therefore suggested that the NCS be established as early as possible (within six months) with a modicum of authority, through a Government Order. Thereafter, in consultation with the Law Ministry and other appropriate agencies and in the light of its own operational experience, the NCS could evolve within a short period the appropriate legislation. This is in fact the procedure adopted by the National Statistics Commission of the UK, which came into being on 7th June 2000 by a Government Act. The UK Commission is still working on the legislation to define its status.

14.8.11 The proposed NCS, which is envisaged to be a high-level nodal body accountable to the parliament and having a policy-making, standard-setting and co-ordinating role for the statistical system, has to be empowered for the crucial role of framing legislation.

Legislation for the proposed National Commission on Statistics

14.8.12 Legislation for the proposed National Commission on Statistics (NCS) should *inter alia* address the following important issues:

(a) Constitution;

(b) Status, powers and functions;

(c) Terms and conditions of service of Chairman and Members of National Commission on Statistics:

- Procedure for Appointment and Termination,
- Powers of Chairman and Members;

(d) Modalities of functioning of National Commission on Statistics:

- Obligation to parliament,
- Relationship with National Statistician, National Statistical Office, Central and State Ministries and Statistical agencies or institutions,
- Meetings of the Commission,
- Constitution of expert technical committees in different branches of Statistics,
- Provision for hiring Technical Consultant,
- Mechanism of interacting with the User and Producer of Statistics;

(e) Mandate of NCS on Core Statistics:

- Defining the scope of Core Statistics,
- Periodicity and procedure for collection of Core Statistics,
- Delegation of powers to Central and State Ministries and other Statistical offices for collection of Core Statistics;

(f) Budget, Accounts and Audit:

- Implementation aspects of Statistics Act,
- Provision for obligatory transparency in the work of Commission.

Legal Provision for Collection of Statistics

14.8.13 Necessary legal provisions should be made, either by expanding the scope of the present Collection of Statistics Act (1953) or by passing new Act or Acts to:

(a) Cover any topic under Core Statistics, as defined by the proposed NCS;

(b) Make it obligatory on the part of individuals, or enterprises, or State and private agencies to provide the information sought for any survey under the aegis of the NCS;

(c) Provide right of access to records, including the record of Government agencies for statistical purposes;

(d) Ensure the informant's right to privacy by making it illegal to publish the identity of the informant, or by requiring him to furnish sensitive information;

(e) Provide penalties for informants, for their refusal to supply, or for wilfully supplying wrong information;

(f) Make it a penal offence for a statistical officer authorised to collect, process, or disseminate information collected from any survey under the Act, to wilfully distort or manipulate the data.

14.8.14 Though clauses 3(a), (b) and (c) of the Collection of Statistics Act (1953) on the one hand gives the State Governments the right to name a Statistical Authority, it seems to be substantially negated by subsequent provisions of the Act under the same clause. As a matter of fact, though there have been occasional requests from other data-collecting agencies to be named as Statistics Authority under the Act, the Government of India had seldom agreed to such a request. The sole Statistics Authority for the Annual Survey of Industries has always been the Head of the Field Operations Division of the NSSO, while the States have also been engaged in collection of ASI data, without any such Statistics Authority. To strengthen the attempts of the States to collect industrial statistics, particularly through the ASI, the Government of India should delegate to them, as was done earlier, the necessary legal authority.

14.8.15 Though "Statistics" is under the Concurrent List of the Constitution and "Surveys" is only under the Union list, it is more important that the collection of statistics on any subject vests in the authority (Central Ministry or State Government Department) that is responsible for that subject according to its status in the Union, State or Concurrent Lists in the Constitution of India. When the NCS determines certain statistics as Core Statistics, in deciding on the agency that should be responsible for their collection, it will have to do so in consistence with the distribution of subjects in the three Lists. Therefore, when proposing legal measures for Core Statistics, the NCS may have to propose different Acts for different subjects according to the List to which the subject belongs.

Modification of the Census Act

14.8.16 Twice in the past, the Economic Census of India had been carried out as part of the house-listing operation of Population Census. Recently doubts have been raised, whether the Census Act permits this, and consequently the Economic Census has been de-linked from the Population Census. The Commission is of the view that it would be desirable to revert back to the old practice and modify if necessary the Census Act, 1948 and Census (Amendment) Act, 1993 for this purpose.

14.9 STATISTICAL AUDIT

Introduction

14.9.1 One of the terms of reference for the Commission is "to examine the need for instituting statistical audit of the range of services provided by the Government and local bodies and make suitable recommendations thereof". For efficient execution of any such project for providing services to the general public, Statistics are required at every stage – project formulation, execution and evaluation on completion. Apart from the basic information required in setting the targets of the project and assessing resource needs and availability, a benchmark survey is usually carried out to record initial conditions at the start of the project. During the execution of the project, collection of information is also necessary to monitor its progress, while evaluation and audit of the performance conclude the exercise. Since statistical methods used generally vary from project to project depending on their nature, the Commission is not in a position to make any general recommendation, except that the Government should make use of the statistical expertise of the NSO in planning, monitoring and evaluation of large projects of national importance.

14.9.2 Instead, the Commission has examined the more pointed issue of control and certification of quality of statistics and the process of their generation.

14.9.3 Statistical audit is necessary to assure the user not only of the quality of data presented, but also of the soundness of concepts, definitions and of the entire system of collection, processing, summarisation and dissemination of data. Currently, the CSO is responsible for setting up standards in respect of concepts and definitions, but there is no system of certification of either the process of generation, or the generated statistics. It is envisaged that the proposed National Commission on Statistics would be formally responsible for certification of the 'quality' of Core Statistics generated by the official statistical system, including the data collected through administrative records, surveys and censuses and would get this accomplished departmentally through the NSO. Certification of the quality of statistics may be extended to private producers of statistics on a voluntary basis.

Experience in Different Countries

14.9.4 Different countries have different approaches to the assessment of data quality. Since 1988, Statistics Sweden has produced an annual quality report. This report deals with the external factors affecting the quality of the statistical product This provides a basis for the development of the quality in their statistical products. For American Housing Survey, Quality Profiles are produced gathering together into one document, information on all aspects of data quality. The quality profile includes sections on sample design, data collection procedures, non-response error, measurement errors, data processing, weighting, sampling and a comparison of survey data with external data. Canada and Australia have laid down Statistics Quality Guidelines. These guidelines have to be followed before publishing the results. The guidelines require that an assessment of the quality of statistics produced should be published with the results.

Determinants of Quality of Statistics

14.9.5 The three most important determinants of the quality of statistics are validity, reliability and timeliness. Validity is concerned with the relevance of the collected statistics to the subject of the study. Reliability is assessed in terms of the extent to which the data are free from sampling and non-sampling errors. Statistics are timely if they are available when they are needed.

Internal and External Audit

14.9.6 Concurrent audit of statistical activities is necessary for early detection of errors and mistakes during the progress of work, and their rectification in time. This is essentially an internal activity of the data-collecting organisation. Assessment and certification of the quality of the end product are done through an audit - by an external authorised auditor - of the final results embodied in a report and other related records and documents. The most important amongst all the items of information that should be made available for such an audit are listed below.

Recommendations

Items for Audit

14.9.7 A fairly long but not exhaustive list of items, which could be audited is given below:

(a) Theoretical concepts and their modification into operationally feasible definitions, covering individual respondents, population of such respondents, sampling unit and information unit, frame and its adequacy, information to be collected from the respondents, etc.

(b) Methods of data collection and handling: Interview, Direct observation or measurement, copied from records, mail enquiry, etc.; Steps to avoid respondents' or interviewers' bias; Treatment of sensitive questions; Deliberate redundancy to check consistency of information; Data transcription and scrutiny; Classification and coding; Choice of reference period and survey period; Design of questionnaire or schedule; Instruction manual.

(c) In the case of secondary data acquired from administrative records – design of the form for recording and summarising, incomplete coverage and treatment of missing data, definitional consistency, checks on arithmetical errors.

(d) Sampling design: uni-stage or multi-stage, procedure for stratification and selection at very stage; Formula for estimation of parameters.

(e) Procedure for control and assessment of sampling and non-sampling errors; Manual and computerised procedures of scrutiny and editing of data; Methods for imputation of missing or rejected observations.

(f) Data handling errors - Errors in data capture, editing, coding of open-ended textual responses, data processing, etc.

Obligation of Producers of Core Statistics

14.9.8 It will be obligatory for every producer of Core Statistics to supply a copy of their report to the NCS for audit. The producer of the report should certify that all standards set by the NCS have been met, or draw attention to deviations, in case there are any. Their reports must contain information on all the above items for audit. In addition, the report should give its own assessment of the magnitudes of sampling and non-sampling errors associated with the more important statistics produced by them.

Audit Procedure

14.9.9 The NCS may accept the producer’s certificate or carry out an audit of the Report and related documents through the NSO. For the purpose of the audit the NCS may call upon the producer to supply additional records or documents. The result of the audit would be communicated to the producer and would also be included in the annual report of the NCS.

14.10 HUMAN RESOURCE DEVELOPMENT

Staffing Pattern at the Centre

14.10.1 At the Centre, the Ministry of Statistics and Programme Implementation (MoS&PI) is the nodal ministry dealing with various aspects of statistics. Most of the ministries and departments have Statistical Units or Divisions manned by staff meant to deal with statistics related to their department. Statistical staff can broadly be classified as technical-cum-supervisory and subordinate. Officers from the Indian Statistical Service (ISS) carry out technical-cum-supervisory work at various levels in the MoS&PI and some other but not all central ministries.

14.10.2 On the other hand, the subordinate staff, engaged in either the primary work of data collection, manual or computerised processing of data, or in lower level supervision of such primary work, do not belong to any organised service. They work in different ministries and departments and usually all promotions are within the respective ministry or department.

Training aspects

Current Activities

14.10.3 As there is a continual change in, and expansion of areas covered by statistics, and constant change and improvement in the methodology of data collection, analysis, interpretation and dissemination, it is essential for the practitioners of statistics to keep abreast of developments in the discipline, through a properly organised training programme. Training is needed at all levels – at senior levels of management, where the main responsibility is to plan, introduce and manage innovations, at the middle level, where the main job is to carry out ongoing jobs efficiently, and at the operational level, where the operational personnel must be trained in the details of the specific job on hand. To meet this need, presently the MoS&PI has the following arrangements:

Training Arrangements of MoS&PI

14.10.4 The MoS&PI has a Training Division in the CSO, which arranges training programmes not only for the officers and staff of the Ministry but also to statistical personnel working in other Government organisations. In NSSO, the FOD has training centres for training its own field personnel mainly in field operations. The other organisations of NSSO like SDRD and DPD lack such training facilities. However they do provide in-house training informally to their officers and staff. Besides these, various organisations of the ministry, from time to time, organise seminars and talks on important and emerging topics by renowned scholars and experts in the concerned subject fields.

Training Courses organised by the Central Statistical Organisation

14.10.5 The Central Statistical Organisation in the MoS&PI has a Training Division, which is under the charge of an Additional Director General. A Director along with a small team of officers and supporting staff assists him in his task.

14.10.6 A list of regular training courses run by the Training Division, is given below:

(a) Two years Probationary training programme for the direct recruits of Indian Statistical Service (ISS) officers;

(b) Induction Course for the officers promoted to the Indian Statistical Service;

(c) Junior Certificate Course in Statistics for the statistical staff working in Central and State governments and Public Sector Undertakings;

(d) Senior Certificate Course in Statistics for the statistical staff and officers working in Central and State governments and Public Sector Undertakings;

(e) A 4-week Course on "National and International Statistical Systems" for M-Stat students of the Indian Statistical Institute (ISI); and

(f) A 6-week Course on "Official Statistics and Related Methodology" for the participants of the International Statistical Education Centre (ISEC), Kolkata.

14.10.7 Apart from the above regular courses, the Training Division organises occasional Refresher Courses for ISS officers for duration of about one to two weeks. A list of such courses organised during the years 1996-97 onwards is given at Annexe 14.15. Subject-wise break-up of the 22 courses so organised, shows that as many as eight of them were on computers, five on sample survey techniques (of which two were on small area techniques), two on management, and the rest on topics of Decentralised Planning, Gender Statistics, Applied Econometrics, Index Numbers, National Accounts, Database for Population Programmes, and Poverty.

14.10.8 The physical facilities presently available with the Training Division for training purposes are: (a) two class-rooms to accommodate about sixty trainees in all, (b) a few PCs, two LCD projectors, three overhead projectors and an amplifier (sound system), and (c) access to the departmental library. Training arrangements are of three types: One, in the class-rooms of the Training Division, where teaching is done mostly by invited experts; Two, at different Academic, Training and Research Institutes like the Indian Statistical Institute, Indian Agricultural Statistics Research Institute, etc. and at computer organisations like the National Infromatics Centre, Computer Maintenance Corporation, NIIT, etc. and Three, by different departmental statistical officers in their respective offices. The arrangements have a financial component: institutions are paid a course fee, and individuals involved in the training as faculty is financially compensated.

14.10.9 The main responsibility of the Training Division has therefore been of coordination of training activities with the external organisations, statistical offices and individuals. There is no integrated plan of training, no annual calendar, no linkage of training with deployment of personnel. In-service job-linked training is arranged independently by different operating divisions of the National Sample Survey Organisation (NSSO), with which the Training Division is usually not associated.

Training Courses organised by the National Sample Survey Organisation

14.10.10 In-service courses organised by the Field Operations Division (FOD) of the National Sample Survey Organisation (NSSO) at its six Zonal Training Centres are as follows:

(a) Induction courses for the newly recruited Investigators (14 days);

(b) Refresher courses for the Investigators (7 days);

(c) Scheme-Specific courses namely, Socio-Economic Surveys, Industrial Statistics, Agricultural Statistics and Urban Frame Survey for Assistant Superintendents, (7 to 10 days);

(d) Survey Management Courses for Superintendents (10 days);

(e) Special Training Programme covering various subjects connected with field work of NSSO Surveys (8 days);

(f) Training in Computer Operations (7 to 14 days);

(g) Field training programme for ISS probationers - orientation at FOD Headquarters in New Delhi, followed by practical training at different zonal centres and regional and sub-regional offices of the FOD (4 to 8 weeks);

(h) In addition, FOD officials are sent for computer training at the National Informatics Centre, Government of India.

14.10.11 Besides providing in-service training to the officers and staff, the Survey Design and Research Division (SDRD), NSSO participates in the following training activities:

(a) Training of field personnel of FOD, NSSO and State Government personnel on concepts, definitions, coverage, sampling design, etc. relevant to the current round of the NSS;

(b) Annual programme of Training of ISS probationers;

(c) Special programme for ISS officers on computer software by private agencies;

(d) Organising, from time to time, seminar or talks on important, relevant, current and emerging topics by renowned scholars and experts in the concerned subject fields;

(e) Organising the training programmes on "sample surveys and related topics" for students of JCCS and ISEC.

14.10.12 The Data Processing Division (DPD), NSSO organises Workshops on Data Processing at various Data Processing Centres in each NSS Round to train its officials on scrutiny of schedules, data entry, data validation, preparation of 'directory' and 'multiplier' files, etc. Further, the Division imparts in-house training on different relevant topics such as administration, statistics, computers and allied subjects to its officers and staff, besides imparting training on "data processing" to officials of State Governments.

14.10.13 The Computer Centre has been conducting Electronic Data Processing (EDP) courses for various States and Central Government Departments and International agencies. Over a period of time, the Centre has trained a large number of officers in Electronic Data Processing. Besides, it has conducted six "Programmer" level courses and two "Training of Trainers" level courses in EDP for UN-sponsored candidates from the ESCAP region countries under the United Nations Household Survey Capability Programme between 1983 and 1991. Currently, the Centre is conducting courses on Information Technology (IT) for officers under Junior Certificate Courses in Statistics (JCCS), software packages for middle level ISS officers in addition to in-house training courses on new topics of IT for its own officers and staff.

Training arrangements at State Statistical Organisations

14.10.14 State Statistical Organisations have, by and large, very limited and inadequate facilities for organising training programme for their statistical officers and staff. They send their officials usually to take part in Junior and Senior Certificate Courses in Statistics arranged by the CSO.

Deficiencies

14.10.15 The main deficiencies in the present training programmes of MoS&PI are as follows:

(a) There is a marked lack of infra-structural facilities – class rooms, computers, hostel for trainees, and a regular, committed, well equipped and full time faculty and team of trainers.

(b) The main task of the Training Division up till now has been one of coordination of training, rather than imparting actual training. Consequently, there is a scarcity of expertise in teaching hard technical courses.

(c) There is no systematic arrangement for induction training on transfer to a new position that requires new knowledge.

(d) There is no long-term plan of development of the statistical system and consequently no long-term assessment of training needs, particularly in the highly applicable technical areas. Apart from the regular courses run by the Training Division and the in-service courses run by Field Operations Division of NSSO, which have been more or less standardised, there is no organised plan for Refresher Courses for ISS officers.

(e) There is no Advance Training Calendar to help the trainees choose a training programme of their interest.

(f) At present, there is often no linkage between the kind of training received by an officer and his or her assignment. The fact that Statistics, like Medicine, is a vast area where specialisation is absolutely necessary does not seem to be appreciated in the statistics officialdom. That it is a great wastage of manpower resources, if for example, an officer who has long experience of survey data processing is sent for training on time-series analysis and then transferred, on successful completion of training, to work on compilation of national accounts, is not realised.

(g) Methods used in official statistics are of two different kinds: (1) Methods that are subject matter specific, and (2) General analytic methods not restricted to any specific subject matter. Concepts, definitions, summary measures, tabulation plans, etc. are very much subject matter specific, whereas statistical methods used in sampling design, estimation of survey parameters, imputation of missing values, use of auxiliary information, analysis of time series and forecasting, classificatory techniques, statistical modelling, etc. are, by and large, not so. Training on advances in general analytical methods of statistics seems to have received less attention.

(h) Training in basic principles of economics as well as in the development of the skill in communications is a must for every statistical officer. But there is no training in these areas.

Recommendations

14.10.16 The Commission makes the following recommendations for immediate implementation:

(i) A suitable Central Training Facility for Indian Statistical Service officers and senior statistical officers of State Governments, equipped with accommodation, arrangement for food, lecture rooms, computer laboratory, and library should be constructed for trainees and visiting teachers.

(ii) There is an immediate need for extensive arrangements for training of trainers so that when availability of qualified trainers is assured, eventually the Central Training Facility could be transformed into a Training Academy.

(iii) Arrangements for training of subordinate operational staff should be decentralised and separate. The existing in-house training facilities of NSSO should be further strengthened.

(iv) It should be made mandatory for each ISS officer to undergo Refresher Training for a period of at least four weeks every two years. The training could be either in-house at the MoS&PI, or at any other Institute in India or abroad. Training in respect of new practices in official statistics could be arranged in-house or through participation in training programmes arranged by professional agencies like the International Association of Survey Statisticians, the U.S. Bureau of Census, Statistics Canada, etc. For broadening knowledge of 'applicable' statistical theory, training arrangements could be made with universities in India or abroad or with reputed research and training organisations like the Indian Statistical Institute, Indian Agricultural Statistics Research Institute, etc. Study leave with financial support should be provided to promising ISS officers working for doctorate degrees in relevant subjects.

(v) Refresher Training Courses should be arranged in the following illustrative list of areas:

(a) Principles of Economics
(b) Communication skills
(c) System of National Accounts
(d) Time Series Analysis, Forecasting and Modelling
(e) Small Area Estimation
(f) Geographic Information System
(g) Management
(h) Information Technology
(i) Classificatory Analysis
(j) Market Research.

(vi) ISS officers should be eligible for Sabbatical leave for pursuing advanced studies related to their area of specialisation.

(vii) Training and deployment should be linked. The Cadre Management system should be suitably streamlined for this purpose.

(viii) The Annual Training Calendar should be announced in advance.

(ix) The content of the Junior and Senior Certificate Courses in Statistics should be reorganised into smaller modules and offered on a large scale to the supporting statistical personnel (both from the Central and State Governments) who need training at this level. The training also should be decentralised and organised by State Directorates of Economic and Statistics. The MoS&PI should organise Training of Trainers Sessions for this program.

(x) In order to achieve closer collaboration between academicians and professionals, a suitable system should be developed to enable teachers and researchers from academic institutions to work in the Ministry of Statistics and Programme Implementation, Government of India and *vice-versa*.

14.10.17 The Commission further recommends that a high-level committee should be set up by the Government of India to evolve a long-term plan for assessing and effectively meeting the training needs for the Central and State Statistical Systems, consistent with what would be expected from the system. The said committee should also be required to examine in this connection whether a Staff Training Institute is necessary and feasible, or, whether the need could be met through cooperation with existing organisations. Such a Committee could comprise as its members, amongst others, the Director of the Indian Statistical Institute as also the envisaged National Statistician besides eminent statisticians with proven academic and professional credentials.

Career Management

14.10.18 The effectiveness of career planning in an organisation or in a system largely depends upon the extent to which training and development opportunities are made available to the employees to enable them to realise their growth potential and to contribute towards the achievement of the organisational goals and objectives.

14.10.19 The basic information needed for cadre management relates to: (a) goals of the organisation and job requirement to meet the goals, on the one hand, and (b) personnel available and their capacity to carry out the jobs, on the other.

14.10.20 Like medicine, the discipline of statistics is an agglomeration of various areas of specialisation, though there is also need for the general practitioners. The Commission recognises the following broad areas of specialisation in the statistical system:

(a) Applied Statistics – sampling design, time–series analysis and forecasting, statistical modelling and inference, classificatory techniques, etc.;

(b) Computer linked areas – Systems analysis and software development, survey data processing, data bank and data warehouse management, desk top publishing, computer management, etc.;

(c) National Accounts;

(d) Agricultural Statistics;

(e) Industrial and Commercial Statistics;

(f) Population and Socio-economic Statistics;

(g) Field Operations.

14.10.21 The career of each ISS officer should be planned so that he or she can specialise in a number of the above areas, gradually narrowing down the areas of specialization over the years. Concerted efforts of the ISS Cadre Controlling Authority and the Training Division of CSO would be necessary to achieve this.

Recommendations

14.10.22 The Commission makes the following recommendations:

(i) During the first 15 years or so of the career, every ISS officer should work in about four of the following areas: Applied Statistics (sampling design, time–series analysis and forecasting, statistical modelling and inference, classificatory techniques, etc.), Computer-linked areas (Systems analysis and software development, survey data processing, data bank and data warehouse management, desk top publication, computer management etc.), National Accounts, Agricultural Statistics, Industrial and Commercial Statistics, Population and Socio-economic Statistics, and Field Operations.

(ii) Gradually during the next 5 years or so, he or she should be required to narrow down the area of specialisation to only one or two of these areas. The role of the cadre management should be to help harmonise the choice of specialisation by the officer with the goals of the organisation. All transfers and training of an officer should be consistent with the goals of specialisation.

(iii) A computerised database of details of qualifications, job experience and training undergone by every officer must be maintained up-to-date.

Improving Morale of Staff and Officers

14.10.23 The Commission took cognisance of the representations from the ISS officers' Association and a number of subordinate staff associations regarding severe lack of prospects of career advancement in their respective categories. The Commission is convinced that their grievances are genuine and urges the Government to take necessary steps to redress their grievances.

Subordinate Staff

14.10.24 For subordinate staff, the Commission was informed by their representatives that the percentage of officials working at the same post or scale for 13 years or more is about 39 per cent in case of Senior Investigators of the Central Statistical Organisation, 80 per cent for Data Processing Assistants of the Computer Centre, 46 per cent for Data Processing Assistants of the Data Processing Division of the National Sample Survey Organisation, 34 per cent for Investigators and more than 60 per cent for Assistant Superintendents of the of the Field Operations Division of the same organisation. To improve the morale of the staff, the Fifth

Central Pay Commission recommended upgradation of certain posts and the constitution of a Subordinate Statistical Service, bringing under one umbrella two separate categories of staff: field workers and statistical investigators. There was no suggestion to bring the third category namely, data processing staff under the same umbrella. The subordinate service will have two levels of workers to be called Statistical Investigator Grade I and Grade II, respectively. It will offer the subordinate cadre an entry path through promotion to the ISS in the ratio of 40:60 for promotions against direct recruitment. A common seniority list will be maintained for this purpose. However, no such entry path to the ISS is provided for the data processing staff.

14.10.25 The MoS&PI informed the Commission about the progress in the implementation of the Subordinate Statistical Service. Draft recruitment rules governing the Subordinate Statistical Service have been prepared and circulated amongst concerned Ministries and Departments for comments. Information about posts, pay scales, number of incumbents and recruitment procedures in participating Ministries has been collected. Pending constitution of the Subordinate Statistical Service, upgraded replacement scales of pay have been granted with effect from 1 January 1996 to Group B and C statistical functionaries as recommended by the Fifth Central Pay Commission. Abolition of Assistant Superintendent post in the FOD (NSSO) is also under consideration of the Government so that an overall two-tier structure can be adopted in the Service.

14.10.26 The Commission is convinced that there is no need to maintain the present distinctions amongst the subordinate staff: field workers, statistical investigators and data processing staff. Computers are user-friendly now and do not require much of specialisation at lower levels of use. A whole life spent in data collection from the field is monotonous and breeds too much familiarity and a know-all attitude. However, the main purported reason for creating the subordinate service is not unification of functions, but to provide better opportunity of career advancement for lower level statistical personnel working in small or outlying offices. To what extent this can be achieved should be examined.

14.10.27 It appears that to make the Subordinate Statistical Service viable, quite a few ex-cadre positions would have to be created. The Commission would like to point out that the main difficulty in ISS cadre management had arisen out of recruitment or placement of a large number of persons in an *ad hoc* manner in the ISS and subsequent failure to regularise the placements. The affected persons went to the Supreme Court for redressal. According to the dispensation by the court, they had to be absorbed in the cadre with retrospective effect. The base of the service was thereby extensively widened. The number of positions at higher levels has however remained the same reducing the prospects of promotion in the ISS. It does not appear to be a logical proposition to create a number of posts outside a proposed new cadre to make the new cadre viable. Also, since it appears that for the relatively small number of positions in the ISS likely to be available annually, there would be a very large number of aspirants in the subordinate service, the extent of improvements of promotion may have to be examined carefully.

Recommendation

14.10.28 The Commission recommends that:

(i) As the constitution of the Subordinate Statistical Service has been recommended by the Fifth Central Pay Commission and the related issues are under active consideration of the Government, all relevant aspects as mentioned in the body of the report should be considered by the Government while constituting the service.

Indian Statistical Service

14.10.29 The Indian Statistical Service (ISS) was constituted as a Group A Central Service on 1 November 1961 by pooling together statistical posts offered voluntarily by different ministries

and departments of Government of India and en-cadering them. The service was created with the laudable objective of unification of all statistical work, and providing its officers good opportunities of career advancement. But it was born with a congenital defect – a bottom-heavy structure, with very few positions at the top to match career aspirations – as only low-level positions were initially offered for en-cadrement. Recruitment to the ISS and its sister Indian Economic Service (IES) is made on all-India basis through the ISS/IES Examination conducted by the Union Public Service Commission every year.

14.10.30 For ISS officers, the Commission noted with concern that management of the ISS cadre by the Cadre Controlling Authority – MoS&PI – has not been satisfactory. There has been only a solitary cadre review since its creation. Meetings of Departmental Promotion Committees (DPC) have not been held in time to fill up existing vacancies.

14.10.31 Due to the absence of cadre reviews, many important statistical positions, which should normally come under the ISS, have not been brought into the service. Therefore, it has not been possible to change the original bottom-heavy structure of the service. As a result, deserving ISS officers have been denied opportunity of promotions for long periods so much so that some ISS officers have fallen behind their compatriots from sister services by as many as two promotions.

14.10.32 Because meetings of DPC have not been held in time, for the purpose of promotions, annual confidential reports of several batches have been considered together at one time resulting in supercession of officers of a senior batch by their juniors. Had the meetings of the DPC been held regularly, or promotions for different batches been considered separately, there would not have been so many supercessions as they exist in the ISS today. Supercessions have badly affected the morale of the ISS officers.

14.10.33 The Fifth Central Pay Commission (CPC) had recommended regular cadre reviews for all Group A central services to identify and upgrade positions so that ultimately the following model composition of the Service is attained. The following table shows the model composition *vis-à-vis* the actual condition of the ISS. The preponderance of positions at the lower levels is starkly evident from the table.

ISS Cadre Structure *vis-à-vis* the Model Structure Recommended by 5th CPC

Scale or Grade	As recommended by Fifth Central Pay Commission		Percentage of ISS posts in various grades
	Mandatory eligibility for grant of the grade	Percentage of officers	
Senior Time Scale (STS)	5th year	30	57.1
Junior Administrative Grade (JAG)	9th year	30	6.6
Non-Functional Selection Grade (NFSG)	14th year	20	30.8
Senior Administrative Grade (SAG)	17th year	17	4.7
Higher Administrative Grade (HAG)	25th year	3	0.8

14.10.34 In the opinion of the Fifth Central Pay Commission, ideally all Group A officers should reach Senior Time Scale (STS) in the fifth year, Junior Administrative Grade (JAG) in the

ninth year and Non Functional Selection Grade (NFSG) in the fourteen year of their service. However, a study conducted by ISS Association, Kolkata, gives the following gloomy picture of promotion prospects for ISS officers:

Years of Service for Different Promotion in the Present Scenario

Promotion to level	Year of Joining												
	77	79	80	81	82	83	84	85	86	87	90	92	93
STS	5	13	12	12	11	13	12	11	12	11	8	8	8
JAG	16	16	16	17	16	24	28	29	30	30	-	25	25
NFSG	21	23	27	32	33	33	33	34	33	33	-	29	29

14.10.35 Much of the problems could have been solved, had appropriate steps been taken in the past through periodic cadre reviews as per the guidelines of the Department of Personnel and Training (DoPT).

14.10.36 The ISS has suffered a lot because of poor cadre management and is in a pitiable condition. The Commission has learnt that the Fifth Central Pay Commission had recommended a scheme for Assured Career Progression for Government employees in order to mitigate the effects of stagnation. The Government had not accepted the recommendation for the Group A officers in the hope that regular cadre reviews would take care of the problem. However, in the case of the ISS this has not been done.

Recommendations

14.10.37 The Commission therefore recommends that:

(i) As a one-time ameliorative measure, ISS officers should be given the benefit by awarding them the Senior Time Scale, Junior Administrative Grade and Non Functional Selection Grade in the 5th, 9th and 14th year of their service. The Commission is aware that quite a few officers would miss this benefit because the length of their service is only marginally shorter than the specified limits set above. The Commission hopes that the next two recommendations, if implemented promptly and properly, would resolve the problem.

(ii) MoS&PI should immediately carry out a Cadre Review of the ISS and thereafter every five years to assess the statistical needs of different ministries and departments as per the guidelines of the DoPT.

(iii) In addition, all *ad hoc* promotions should be regularised, and vacancies should be filled up immediately. A panel for promotions to fill up vacancies during the following year should be drawn up in advance in the current year itself.

(iv) The ISS cadre should be restructured to narrow down the base so as to achieve the model cadre structure as recommended by the Fifth Central Pay Commission.

(v) The stature of the officer responsible for management of the Cadres of Indian Statistical Service as well as Subordinate Statistical Service should be sufficiently high for better management of the cadres.

Annexe 14. 1

A Paper on Developing the Frame of Bigger Units / Business Register

Introduction

1. At present an up-to-date frame of enterprises at the national level is available only in respect of the units/ factories covered under the Annual Survey of Industries (ASI). The ASI presently covers the relatively bigger units belonging to manufacturing and repair sub-sectors that are registered under sections 2m(i) and 2m(ii) of the Factories Act 1948 or under the *Bidi* & Cigar Workers (Condition of Employment) Act. For the other sub-sectors, no such satisfactory frame of bigger units/ enterprises exists at present. For planning any survey of such units, like the proposed Survey of Non-Manufacturing Industries (SNMI), it would be desirable to develop a frame of bigger units belonging to the respective sub-sectors. The subsequent paragraphs suggest an approach to developing and updating such a frame. It is further suggested that certain additional items of information might also be included in the in-built frame so that it serves the requirements of a Business Register. Ministry of Statistics & PI (MoS&PI) should be given the responsibility to take up the work.

Steps for developing the frame

Initial frame

2. The data of fourth Economic Census (EC-98) may be utilized to prepare first an initial list of *bigger* units/ enterprises (i.e. those employing certain minimum number of workers) in the entire non-agricultural sector including (a) manufacturing and repairing sub-sectors covered under ASI and (b) public sector enterprises[1]. The list at the enterprise level should contain all available identification particulars of the enterprises, activity code of the enterprise, number of workers in the enterprise, type of ownership, agency with which registered, etc. The cut-off point of minimum number of workers in the enterprises to be included in the list may be so decided that the work is kept within a manageable limit. The ultimate objective should be to include all enterprises with at least 10 workers in the suggested frame of units/ enterprises so that it is possible to plan independent surveys of these enterprises by utilizing this list as a frame for sampling. However, this ultimate objective should be achieved in a gradual manner as suggested in the following table.

[1] The main advantage of considering the EC-98 data as a starting point for preparing the initial list of bigger enterprises lies in the fact that EC-98 was a nation-wide operation that was supposed to list all enterprises (agricultural other than crop production & plantation, and non-agricultural) of the country, which were operating on the date of census. Further, relatively *bigger* units having more number of workers have the lesser chance of being missed in the EC.

Stage	Composition of units/ enterprises	All non-agricultural activities		Manufacturing and repairing activities	
		All	Non-government	All	Non-government
1	2	3	4	5	6
1 (to achieve within 1 year)	50 or more workers	87,536	54,183	35,068	34,072
2 (to achieve within 5 years)	20 or more workers	3,01,550	1,90,938	1,07,460	1,05,661
3 (to achieve within 10 years)	10 or more workers	8,20,001	5,73,206	2,88,349	2,85,232

(Number of enterprises figures quoted in the table are as per EC-98)

Pilot study.

3. As the EC'98 data do not have the addresses of the enterprises, it would be worthwhile to take up a pilot project in certain areas for assessing the problems, if any, that are likely to be faced in the actual identification of the enterprises based on the particulars available in the EC'98 data/ initial list. In case there are difficulties in identifying the enterprises with fewer numbers of workers, the work of preparing the initial list of enterprises could be confined to the enterprises with higher number of workers.

Supplementing the initial list.

4. The initial list/ frame so developed should be supplemented by utilizing other lists viz. (i) the ASI frame and (ii) lists maintained by or the information available from the other sources/ agencies like the Chief Inspectors of Factories/ Department of Company Affairs/ Development Commissioner, Small Scale Industriers/ Municipalities and Sales Tax Departments of State and Union Territory Governments/ various Associations or Chambers of Commerce (e.g. FICCI, CII, NASSCOM)/ Tata Yellow Pages/ listing of enterprises based on web sites of business associations and other agencies, etc.

5. The supplemented list/ frame of enterprises so developed by including in it the units with minimum specified number of workers should be extended further to include (i) other enterprises in the emerging areas like e-commerce/ software development/ hardware manufacturing and marketing/ etc. and (ii) the units contributing significantly in terms of annual receipts/ turnover, by foregoing the eligibility criterion of minimum number of workers in each case. This becomes the *final* list/ frame of enterprises as referred to in the proposal.

Unique coding

6. It would be desirable to evolve a unique coding system for all enterprises included in the list/ frame. While devising the unique coding system, it should be ensured that the identity of the enterprises does not get lost while they change their activity, type of ownership, location, etc. Reporting the proposed unique codes by the units should be made mandatory, if necessary by making amendments in the existing laws, for purposes like paying sales tax, excise duty, income tax, license fee, electricity bill, telephone bill, etc. or in getting facilities like bank loans and other incentives from government or other bodies. The prescribed forms by the respective authorities in

this regard should, therefore, include an item where unique code/ identification number of the enterprise could be recorded. The newly created enterprise should approach the authorized central agency (MoS&PI) for getting its unique identification number.

Updating the frame

7. Implementation of the Unique Coding System would not only help in identifying the new units coming into existence but also in understanding whether the already existing units are currently in operation or not. Non-payment of electricity bill/ telephone bill/ sales tax/ etc. for a reasonably long period would give an indication about the non-existence of the enterprise – the fact that may have to checked by corresponding with the enterprise and also by paying visit to it in rare cases. Thus the scheme would be extremely useful for updating the list of enterprises. Further, completeness of the ASI frame or the frame of companies maintained by the Department of Company Affairs could also be crosschecked with the help of this list of bigger units/ enterprises.

8. Regional Offices of the Field Operations Division (FOD), NSSO, should be actively engaged in the work of updating the frame. For this purpose, they should interact with (a) agencies collecting various dues or giving certain facilities to the enterprises like State/ Union Territory Governments, banks, authorities collecting telephone/ electricity bills, etc. and (b) other authorities maintaining different lists of enterprises for their own purpose like the Industrial Statistics Wing of the CSO, Chief Inspectors of Factories (CIFs), Department of Company Affairs, DCSSI, CII, NASSCOM, etc. Further, the MoS&PI should take steps to update the list by identifying eligible enterprises based on the regular enterprise surveys of the NSSO and the periodic Economic Censuses. Additional resource requirements of the MoS&PI for undertaking the work should be met.

Satisfying the requirements of a Business Register

9. The suggestions given above for developing and updating the list/ frame of bigger enterprises are solely from the viewpoint of devising a frame for sampling purposes. However, for further enhancing the utility of this frame certain additional items of information with respect to each enterprise should be added in the built-in list, so that this ultimate document might be described as the Business Register (BR). A technical group should be constituted by the MoS&PI to deliberate on the matter. It is, however, recommended that the contents of the above list/ BR should be finalized such that the following additional benefits are available to various users:

<u>For the Private entrepreneurs</u>

(a) Establishing business profile for a specific area; (b) Reduction in response burden by designing a prescribed format and advising the enterprises to fill up the same so that the number of existing returns can be reduced to a bare minimum; (c) Setting up a ‘single agency system’ for receiving the returns from the enterprises and analyzing and processing the same is a necessity to achieve the purpose; and (d) Analyzing existing potential business markets; and (e) Assessing/ assisting market research.

<u>For the Government</u>

(a) Reducing administrative burden; and (b) Improving efficiency in registration system.

Conclusions

10. It is suggested that:

(i) The work of preparing and regular updating of the frame of bigger/ significant units in the entire non-agricultural sector should be taken up as a task on a priority basis by the MoS&PI.

(ii) Over a period of ten years from now, the ultimate objective to include all enterprises with at least 10 workers in the above frame should be achieved in a gradual manner. Additional resource requirements of the MoS&PI for taking up the work should be met.

(iii) A technical group should be immediately set up by the MoS&PI to finalize the coverage of the frame, its additional item requirements for serving as a Business Register, method of updating the frame, and other operational aspects.

Annexe 14.2

Subjects Covered by the NSSO During the Last 10 Years

Survey period	Round	Subjects covered
(1)	(2)	(3)
July 1991 – December 1991	47	Village facilities, Disability, Developmental milestones of children, Literacy and culture, Consumer expenditure and employment - unemployment [1]
Jan. 1992 – December 1992	48	Land and livestock holdings, Debt and investment, Consumer expenditure and employment – unemployment
January 1993 – June 1993	49	Particulars of slums, Housing condition, Migration, Consumer expenditure and employment – unemployment
July 1993 – June 1994	50	Consumer expenditure and employment – unemployment
July 1994 – June 1995	51	Unregistered manufacture, Consumer expenditure and employment – unemployment
July 1995 – June 1996	52	Health care, Participation in education, Consumer expenditure and employment – unemployment
Jan. 1997 – December 1997	53	Trade: Non-directory establishments & Own account enterprises, Consumer expenditure and employment – unemployment
January 1998 – June 1998	54	Use of common property resources, sanitation & hygiene, services, Consumer expenditure and employment – unemployment
August 1998 – June 1999 [2]	-	Special Enterprise Survey covering 14 broad activity groups
July 1999 – June 2000	55	Consumer expenditure and employment - unemployment, Informal non-agricultural enterprises
July 2000 – June 2001	56	Unregistered manufacture, Consumer expenditure and employment – unemployment

[1] Data on consumer expenditure and employment-unemployment are collected from a sample of 4 households per selected village/ urban block in all the rounds shown in the table except in the 50th and 55th rounds where data are collected from a sample of 10 and 12 households respectively per selected village/ urban block.

[2] The survey, carried out to meet the special data requirements of the National Accounts Division, CSO, was not given any round number as it was launched without the approval of the Governing Council, NSSO.

Annexe 14.3

Major Recommendations of the Expert Committee to Review the Functioning of the NSSO and Important Views/ Comments Received on these Recommendations

The major recommendations of the Expert Committee are as under :

(a) **NSSO to have total responsibility for primary data collection** – It is mentioned that under continuing globalization and liberalization of the Indian economy, and to meet international Special Data Dissemination Standards, the Government of India would need reliable and timely statistical information on a much larger scale than before. And, for this, the NSSO having requisite technical capability and experience should take up the total responsibility for collection of all the required primary data through large-scale sample surveys – including the work of design, data processing and publication.

(b) **Annual program of the NSSO** – The Expert Committee has recommended annual program for the NSSO having three components viz. Standard Annual Program, Special Program and Methodological Studies. It is recommended to allocate resources to the three components in a fixed proportion, say, 60: 25: 15.

- Under *Standard Annual Program*, it is recommended that surveys should be conducted every year on Consumer Expenditure, Employment-Unemployment, Enterprises (organized manufacture, unorganized manufacture, informal sector), Prices, Agriculture (area under crops, crop yield – forecast and post-harvest), Sampling Frame Surveys (urban blocks, large villages) and Register of Large Enterprises (one-time benchmark survey and annual revision).
- Under *Special Program*, surveys at larger intervals on other important topics are recommended. Some suggested topics are: (i) Housing, Slum, Disability, Aged persons, Landholding, Debt and Investment, Social consumption, tribal society, Jhum cultivation, Gender discrimination, Surface transport, etc. – once in ten years; (ii) Environmental pollution, Literacy, Tourism, etc. – once in five years; and (iii) Natural calamity, Other disasters, Surveys for legislative purposes, etc. – at short notice.
- In addition, regular *Methodological Studies* on topics like Sampling Design, Estimation Procedures, Survey practice and Data processing are suggested to resolve practical problems that arise in conducting large-scale sample surveys in India.

(c) **Organisational changes** – To cope up with the massive increase in the work program, radical improvements in the traditional working system of the organisation are recommended. The important recommendations in this regard are listed below. The Expert Committee has suggested that the recommendations must be introduced in a planned manner after careful trials on a pilot scale.

- *Revival of scientific spirit* – Placement of a senior officer, with inclination for applied research, in charge of the SDRD; Creation of an adequately staffed Methodological Studies Unit in the SDRD; Converting the NSSO journal Sarvekshana into a journal of survey research under an independent editorial board; Organising regular seminars on theoretical and applied problems; Establishing close association with professional bodies of statisticians; and Examining pros and cons of formalizing the NSSO/ DOS as a scientific department are recommended.

- *Restructuring the GC* – It is recommended that a body of fifteen survey professionals – including the Chairman and the Member-Secretary – would constitute the Governing Council (GC). The Chairman would be a non-official and an applied statistician of international repute. He would have a five-year term and the other members a shorter term. The DG & CEO, NSSO would be the Member-Secretary of the GC. The composition of the other thirteen members is recommended as: two from the ISI; Two university professors; One each deputed by the RGI and RBI; One survey statistician from socio-economic research organizations; One from a private sector organization specializing in opinion surveys or market research; One from IT organization; Two from State DESs; and Two nominees of the DOS.
- *Data Users' Forum* – A group representing the users – the Planning Commission, CSO, different Central Ministries, State planning Bodies, Academic users and Chambers of Commerce, etc. – would be associated with the GC, would recommend topics of survey under the Special Program and would also offer constructive criticism of survey results.
- *Technical Working Group* – The GC should set up a Working Group (WG) for each survey. The WG would be associated with every phase of the survey.
- *Board of Referees* – Appointing a small Board of Referees with say three members by the GC for critical examination of each draft survey report is suggested.
- *Concentrating on National Level Statistics* – In order to achieve the target set for the NSSO, it is recommended that the NSSO should concentrate on providing reliable and regular time series data on important variables for the country as a whole. State level information obtained as a by-product should be passed to the concerned States. NSSO should provide technical assistance to the States to increase their capability.
- *Setting up new Data Preparation Centres* (DPCs) – In view of large increase in the volume of data, creation of additional DPCs at places like Guwahati, Lucknow, Bhopal, Jaipur, Hyderabad and Chennai is recommended.
- *Setting up NSSO Directorates at State Capitals* – For liaison with the State Goverrnments and control of regional offices (ROs) within the State, it is recommended to set up NSSO Directorates in all the State Headquarters through upgradation of present ROs. The NSSO Directorates would also organize public relation campaigns about the activities of the NSSO and disseminate data and results of the NSS. In due course, the DPCs are proposed to be set up at NSSO Directorates.
- *Executive powers of the DG & CEO* – It is recommended that the DG & CEO be given the ex-officio position of a Special Secretary of the Government of India.
- *Setting up of Functional Units* – For efficiently handling various activities, the Expert Committee has recommended setting up ten functional units within the Headquarters of the three Divisions of the NSSO: four under the SDRD (Methodological Studies Unit, Sampling Design Unit, Schedule Design and Data Analysis Unit – one each for Household Surveys and Non-Household Surveys), two under the DPD (Research and Development Unit, Processing Unit) and four under the FOD (Household Surveys, Non-Household Surveys, Agricultural Surveys, Training).
- *Organisational structure* – The recommendation envisages the following:

(i) Additional DG to head each of the SDRD, FOD and DPD

(ii) DDG to head each of CPD, 10 Functional Units of the Divisions under (i) and Zonal Offices of the FOD

(iii) Director level officer to head each State Directorate of NSSO

(iv) Deputy Director to head each Regional Office

(v) Assistant Director to head each Sub-Regional Office

- *Other recommendations* – Many other recommendations are given by the Expert Committee for improving the functioning of the NSSO. These are on (i) Reducing complexity and length of schedules of enquiry, (ii) Adoption of only one proper reference period for each item in the NSS, (iii) Measures to be taken for improving Sampling Design, (iv) Instituting quality control measures to ensure errors below a tolerable margin, (v) Modernization of data processing system, (vi) Strengthening the activities of the Sub-Regional Offices of the NSSO, (vii) Expanded use of IT, (viii) HRD aspect, (ix) Reorganization of internal divisional structure of the NSSO, (x) Need for publicity campaigns about the activities of the NSSO, (xi) Use of palm-top/ lap-top computers for collection of data, and (xii) Constitution of a Subordinate Statistical Service.

  On (xi) above, it is recommended that palm-top computers already purchased should be used only in surveys where the schedule of enquiry is short and simple, for example – price surveys, monthly survey of industrial production, etc. Regarding use of laptop computers, the Expert Committee feels that they may be tried on an exploratory basis, after development of appropriate software.

  As regards (xii), it is recommended that all field staff in the FOD and subordinate technical staff in the DPD and SDRD – other than those involved solely in routine data entry or computer operations – should be brought under the Subordinate Statistical Service in an appropriate manner. The Expert Committee is not in favour of creating an EDP service in the NSSO.

Important views/ comments on the recommendations

A large number of comments/ views have been received on various recommendations of the Expert Committee. These are summarized below.

(a) The need has been felt for:

- Representation of demographers, sociologists, subject matter specialists and more experts from outside as well as from the Government in the re-constituted GC
- Maintaining the autonomy of the GC; Specifying clearly the extent of autonomy given to the GC; Taking a clear view on the autonomy of the GC and its financial powers
- Appointing the Working Group in each NSS round
- Associating sample survey experts, subject matter specialists, behavioural scientists and data processing experts in the Working Groups constituted by the GC
- Increasing number of posts in the NSSO in a gradual manner and not abruptly (view not agreed upon by the DDG, FOD)
- State and Regional level (for bigger States) estimates from the NSS

- Regular methodological studies and rationalization of the schedule
- Quarterly estimates of certain broad parameters relating to non-agricultural enterprises
- Giving a careful thought to the recommendation on taking over all survey work of the MoS&PI by the NSSO, as the present system is functioning well.

(b) The Committee's recommendation that the NSSO give up the pooling of central and State samples will stop mutual checks on NSS results, prevent building of firmer estimates at the State level and do away with the fail-safe arrangement it provides. The NSSO should in fact take a pro-active role in the matter.

(c) The expansion of the NSSO to meet SDDS requirements is not justified, since yearly consumption expenditure surveys and quarterly employment-unemployment surveys, as recommended by the Expert Committee, are not required to meet SDDS requirements. In fact, launching of such surveys depends upon whether NAD requires them.

(d) Considerable groundwork will need to be done before it is decided that NSS should be entrusted with the work of monitoring socio-economic changes. In fact, key variables should be identified, and how the different organs of the decentralized Indian Statistical System (ISS) will collect the data needs be decided.

(e) The National Sample Surveys should be complementary to rest of Indian Statistical System and they should deal with subjects that do not belong to any sub-system, or that cover more than one sub-system.

(f) Up gradation of senior level posts and creation of Director level ISS posts in State Capitals is not justified. Up gradation of posts must keep parity with CSO posts and all these matters cannot be decided in isolation for the NSSO.

(g) The GC might take a decision on all other recommendations involving technical matters including those having financial implications.

(h) It is useful to create Data users' forum and Technical Working Groups.

(i) Setting up of new Data Processing Centres would depend upon actual expansion.

(j) Creation of State Directorates of NSSO is not justified.

Annexe 14.4

Queries Raised on the Adequacy and the Periodicity of Subject coverage in the NSS and the Summary of Responses Received

A. *Queries raised to the major data users*

(i) Whether the present subject coverage of the NSSO is sufficient? If not, what are the additional subjects/ areas on which the data are to be collected by the NSSO and with what periodicity?

(ii) Is the present periodicity of data collection by the NSSO sufficient for different subjects? If not, what are the changes required?

(iii) Whether collection of data on consumer expenditure and employment-unemployment through thin sample is required to be continued annually? If so, what are the uses of such data?

B. *Summary of responses received*

1. *Department of Agriculture & Cooperation, Ministry of Agriculture*

The NSSO should make available reliable, comprehensive and timely statistics on horticultural crops.

2. *Ministry of Labour*

The estimates as per the quinquennial survey of employment-unemployment are extremely useful. The periodicity of the survey is adequate for their purpose. The annual estimates based on thin sample meet the useful purpose of providing broad indicators of employment and unemployment. The sample size however should be sufficient to provide valid estimates at least at the State level. The annual surveys on consumer expenditure and employment-unemployment fill the data gaps between the quinquennial rounds. It is felt that the surveys are required to be continued annually.

For construction of wage rate indices in respect of different agricultural occupations at all-India and State level, it would be desirable if the NSSO also collects State wise and occupation wise employment data. This will be required for the purpose of derivation of weighting diagram for all the occupations. This may, however, be collected on quinquennial basis.

Further, consumer expenditure data for Rural Informal Sector Workers needs to be collected by the NSSO for derivation of weighting diagram for compilation of CPI for Rural Informal Sector Workers as the Technical Advisory Committee (TAC) on Statistics of Prices and Cost of Living (SPCL) had entrusted the Labour Bureau with the job of conducting pilot study in this regard. The periodicity of this data may, however, be decided in consultation with TAC on SPCL on the basis of the results of the pilot study to be undertaken by the Labour Bureau.

As far as Rural Labour Enquiry (RLE) is concerned, the data are being collected on quinquennial basis. RLE Surveys should be done at lesser interval to ascertain the extent to which the benefits accrue to rural labour. Planners and policy makers also would be able to utilize the same for policy formulation.

3. *Ministry of Health and Family Welfare, Government of India*

NSSO should now focus on covering more subjects particularly on new emerging areas like Environment, Bio-technology, etc. as well as covering new topics in the health system and

prevalence of different diseases like AIDS, TB, Hepatitis B, Infant/ Prenatal/ Antenatal/ Maternal mortality and Indian System of Medicine etc.

4. *Central Bureau of Health Intelligence, Directorate General of Health Services*

Surveys on Social Consumption are proposed at least once in 3 years. The subject coverage of NSSO surveys on health also needs to be enlarged. It is further suggested to have a separate Wing for health surveys in the NSSO and to have representation of an experienced health statistician and public health personnel in the GC. The following additional topics are also suggested for coverage:

- Profile of disability in population induced by diseases
- Profile of mental disability in population
- Prevalence of diseases such as AIDS, cancer, diabetes, thalasemia, hypertension, blindness, Hepatitis B, etc.
- Surveys on availability of health personnel in villages, health condition of workers in hazardous industries, availability of health care facilities in CHC, PHC, etc. and health care facilities in Government Hospitals
- Usage of Indian System of Medicines and Homeopathy treatment

5. *National Accounts Division, CSO*

Quarterly Survey of Establishments

It is suggested to collect limited data on employment, total production/ sales/ receipts, total compensation to employees, value of inventory of goods and capital expenditure or additions to fixed assets from a panel of *establishments* on a quarterly basis for the activities of mining, manufacturing, construction, trade, hotels & restaurants, transport, storage, business services, education, medical & health and other services.

Annual Survey of Enterprises

The annual survey of enterprises (other than registered manufacturing) may also be conducted by the NSSO for non-public establishments.

Surveys on employment-unemployment

For compiling national accounts, and also to meet the SDDS requirements, it is necessary that industry wise data on work force is made available on annual/ quarterly basis by the NSSO, by strengthening the annual surveys.

Surveys on consumption expenditure

For preparing the estimates of private final consumption expenditure, the NSSO should conduct the annual consumer expenditure surveys, separately for households and Non-Profit Institutions Serving Households (NPISHs) with a larger sample – the focus being to generate quarterly consumption expenditure estimates based on the data of quarterly sub-rounds of annual surveys.

6. *Department of Secondary Education & Higher Education, Government of India*

The Department is of the view that the subject coverage at present is sufficient. They have suggested annual data collection of consumer expenditure in respect of educational items. Expenditure on school uniform, transport, tuition/ education fee and books/textbooks are proposed to be collected every year.

7. *Ministry of Road Transport and Highways, Ministry of Shipping*

Both the Ministries have given the following views on the subject coverage and periodicity of the NSS:

In order to monitor yearly trend in the related variables, the need for carrying out annual surveys on consumer expenditure and employment-unemployment is felt. For generating reliable estimates of trend, adoption of rotational sample design for the yearly surveys is suggested.

It is felt that the present subject coverage is diverse and cover important areas of concern. However, as the new millennium is being heralded by a period of unprecedented changes affecting many aspects of national life and the people, some of the areas/ issues emerging into the forefront like reduced participation in civic life, dependence of social security nets, social exclusion and alienation, need to be taken up for coverage in the future.

Though the transport sector is being covered as one of the areas of the Enterprise Survey, the data collected in these surveys are not oriented to meet the requirements of the Ministry. In order to plug this loophole, the NSSO may conduct surveys specifically on Transport sector, collecting data sets on the variables which are of interest to the Ministries (such as number of vessels operated with valid certificates by type, age of the fleet, passengers and freight carried, nature, origin and destination of cargo, income and expenditure, etc. as suggested by the Ministry of Shipping). The NSSO may also arrange to collect the data on expenses incurred by the household on travel expenses and also on transportation as a part of the consumer expenditure survey periodically.

As regards the periodicity of data collection, the NSSO needs to carry out surveys on employment-unemployment, consumer expenditure, social consumption, delivery of public goods, etc. annually. The other subjects may be covered at larger intervals depending upon the requirements as emerging from time to time.

C. *Response received from the NSSO*

A letter was also addressed to the NSSO to inform (i) Plan of covering various subjects in the NSS as per a time cycle, (ii) Main users of such data, (iii) Methodological studies/ ad hoc surveys proposed to be taken up by the NSSO, (iv) Major changes contemplated, if any, in the survey methodology, sample size and periodicity of various subjects to be covered in the proposed surveys in future and (v) Need for such changes and its impact on the organizational structure.

In the response, the NSSO has communicated the 10-year programme by and large followed by them. They have also indicated the subjects covered during the period July 1990 – June 2002. Status of the two methodological surveys recently conducted by the NSSO is given. It is informed that more such studies will be taken up by the NSSO as and when found necessary by the Governing Council. It is further stated that the NSSO also undertakes ad hoc surveys of specific demand from other ministries.

Annexe 14.5

List of NSS Reports Released from January 1998 to December 2000

Sl. No.	Report No.	Title of the Report	Round	Month of Publication
(1)	(2)	(3)	(4)	(5)
1	424	Ownership Of Live-Stock, Cultivation Of Selected As On Consumption Level 1994	50th	Jan 1998
2	419	Household Assets And Liabilities As On 30.6.91	48th	Feb 1998
3	429	Housing Conditions In India	49th	Feb 1998
4	428	Wages And Kind, Exchanges Of Gifts And Expenditure On Ceremonies And Insurance In Indian 1993-94	50th	Feb 1998
5	438	Employment And Unemployment Situation Among Religious Groups In India 1993-94	50th	Jun 1998
6	427	Consumption Of Tobacco In India, 1993-94	50th	Jun 1998
7	421	Indebtedness Of Urban Households As On 30.6.1991	48th	Jul 1998
8	420	Indebtedness Of Rural Households As On 30.6.1991	48th	Jul 1998
9	432 (part-I)	Households Assets And Indebtedness Of Social Group As On 30.6.1991	48th	Aug 1998
10	432 (part-II)	Households Assets And Indebtedness Of Social Group As On 30.6.1991	48th	Aug 1998
11	433	Unorganised Manufacturing Sector In India, Its Size, Employment And Some Key Estimates	51st	Aug 1998
12	434	Unorganised Manufacturing Enterprises In India, Salient Features	51st	Aug 1998
13	435	Assets And Borrowings Of The Unorganised Manufacturing Enterprises In India	51st	Aug 1998
14	436	Household Consumer Expenditure And Employment Situation In India, 1994-95	51st	Aug 1998
15	446	The Aged in India, a Socio-Economic Profile, 1995-96	52nd	Aug 1998
16	431 (part-I)	Household Borrowings And Repayments During 1.7.1991 To 30.6.1992	48th	Sep 1998
17	431 (part-II)	Household Borrowings And Repayments During 1.7.1991 To 30.6.1992	48th	Sep 1998
18	437	Household Capital Expenditure During 1.7.1991 To 30.6.1992	48th	Sep 1998
19	440	Household Consumer Expenditure And Employment Situation In India 1995-96	52nd	Sep 1998

Sl. No.	Report No.	Title of the Report	Round	Month of Publication
(1)	(2)	(3)	(4)	(5)
20	439	Attending An Educational Institution In India Its Level, Nature And Cost	52nd	Oct 1998
21	442	Household Consumer Expenditure And Employment Situation In India 1997	53rd	Oct 1998
22	441	Morbidity And Treatment of Ailments	52nd	Dec 1998
23	444	Small Trading Units In India and Their Basic Characteristics 1997, Vol. 2	53rd	Dec 1998
24	445	Maternity And Child Health Care In India	52nd	Feb 1999
25	443	Small Trading Units In India And Their Basic Characteristics, 1997, Vol. 1	53rd	Feb 1999
26	448	Household Consumer Expenditure And Employment Situation In India	54th	Jun 1999
27	449	Drinking Water Situation And Hygiene In India	54th	Jul 1999
28	450	Travel And Use Of Mass Media And Financial Services By Indian Households	54th	Jul 1999
29	451	Cultivation Practices In India	54th	Aug 1999
30	452	Common Property Resources	54th	Dec 1999
31	447	Choice Of Reference Period For Consumption Data	51st, 52nd, 53rd & 54th	Mar 2000
32	453	Household Consumer Expenditure In India (Jul-Dec 1999)- Key Results	55th	Sep 2000
33	454	Household Consumer Expenditure In India, 1999-2000-Key Results	55th	Dec 2000
34	455	Employment And Unemployment In India 1999-2000-Key Results	55th	Dec 2000
35	456	Non-Agricultural Enterprises In The Informal Sector In India, 1999-2000- Key Results	55th	Dec 2000

Annexe 14.6

Salient Features of the Statistical System Prevalent in other Countries

It is not possible in these short summaries to convey the full extent of centralisation/decentralisation in each country. In most countries, policy-related work for Ministers tends to be decentralised, while most, but by no means all, data collection analysis and publication is centralised. Much of the information has been drawn from the *Handbook of Official Statistics in ECE Member Countries*, published in 1995 by the United Nations Economic Commission for Europe. Netherlands information has been updated to take account of a new Statistics Law passed in 1996. Information supplied for Spain has been taken from the 1989 Statistics Law. Information for Australia and New Zealand has been drawn from their respective 1975 Statistics Acts.

Australia
The system is highly centralised. The Australian Bureau of Statistics (ABS) was established by the Statistics Act (1975). The head of ABS is appointed by the Governor General. ABS constitutes the central statistical authority for the Australian government and provides statistical services for the State governments. There is also a statistics advisory council which coordinates and advises on statistical services provided for public purposes.

Austria
The Central Statistical Office (ÖSTAT), established by the Federal Statistics Act (1965), is highly centralised. It is attached to the Federal Chancellery in personnel and budgetary matters, but independent in the field of statistical methodology. The Central Statistical Commission (CSC) advises on priorities, surveys and acts as a mediator between producers and consumers of statistics.

Belgium
A centralised statistical service was created in 1939 by Royal Decree. A number of separate statistical activities were subsequently created, and in 1985 the National Institute of Statistics (INS) was given a coordinating role for the national statistical system rather than being a centralised office. INS is a department of the Ministry of Economic Affairs. The High Council of Statistics advises the INS on methods of research, and the King in the fields of regulations and obligations governing statistical work.

Canada
A largely centralised system, served by the national statistical office, Statistics Canada, was established by the Statistics Acts (1970-81). Its head is the Chief Statistician of Canada, who acts as deputy to the Minister of Supply and Services. The Statistics Canada budget is authorised by Parliament on the advice of the Treasury. There is also a National Statistical Council to advise on the programmes of Statistics Canada.

Denmark
Most official statistics are produced centrally by the independent Statistics Denmark (DS) whose activities are governed by the 1971 Statistics Act. There are a few exceptions; statistics on fisheries, health, environment and research and development are produced by the ministries concerned in cooperation with DS. The Director General, assisted by the Board of Directors, is responsible for the extent to which DS uses its data collection authority, decides on the work programme and approves the budget before its submission to the Minister of the Economy.

Finland
Statistics Finland (SF) is an independent and relatively centralised government agency set up under the Ministry of Finance following the Act on Statistics Finland (1992). The Director general is appointed by the President of Finland and is a member of the Board, the highest decision-making body. SF is responsible for the compilation of most official statistics, although several other government agencies compile statistics in their fields. SF is independent in its professional activities and may freely decide on the publication of its results and contents of its publications.

France
The French system of official statistics is relatively decentralised, with statistical services in several ministries and many public or semi-public agencies. The central agency, the National Institute of Statistics and Economic Studies (INSEE), set up by Act of Parliament (1946), has a coordinating function. The National Council of Statistical Information (CNIS), chaired by the Minister of Economic Affairs, ensures consultation between producers and users of official statistical information, advises on different aspects of statistical activities and reports on its functions.

Germany
Official statistics in Germany are predominately federal, with statistical work concentrated in the Federal Statistical Office (FSO) and the Land Statistical Offices (LSO). The FSO's authority comes from the Act on Statistics for Federal Purposes (revised 1987). Some statistics are produced by other agencies. The President of the FSO is Chairman of an advisory committee, which advises the FSO on fundamental questions of statistics. The FSO is independent in methodological and scientific matters.

Greece
Following the Statistics Law of 1956, the Greek statistical system is centralised with almost all major government statistical work conducted at the General Secretariat of the National Statistical Service of Greece (NSSG). The NSSG is an independent agency reporting to the Minister of National Economy, who decides on the work programme of the NSSG, either alone or with other ministers. The implementation of the work programme is the responsibility of NSSG.

Ireland
The Central Statistical Office (CSO) is responsible for the collection, compilation, processing and dissemination of most statistics. There is no regional or functional decentralisation. Authority comes from the 1993 Statistics Act. The CSO is attached to the Department of the Taoiseach, but has independence in the statistical methodology and professional statistical standards used, the content of statistical releases and publications and the timing and methods of dissemination used. There is a National Statistics Board, which guides, with the agreement of the Taoiseach, the strategic direction of the Office and in particular establishes priorities.

Italy
The criteria and guiding principles of the Italian statistical service were legally revised in 1988. Official statistics in Italy are largely decentralised. The National Institute of Statistics (ISTAT), has overall coordination of the National Statistical System (SISTAN). The budget of ISTAT is approved by the Cabinet Office, but it is legally and administratively autonomous. The Commission for the Protection of Statistical Information monitors the impartiality and comprehensiveness of statistical work, the quality of statistical methods and data-processing techniques, and compliance with EU and international directives.

Luxembourg
The Central Service for Statistics and Economic Studies (STATEC) was set up by an Act of 1962 as part of the Ministry of Economic Affairs. Under basic law, STATEC is the only body competent to carry out or authorize statistical enquiries, it also has to coordinate from a technical point of view the statistical information provided by other organisations. A High Council of Statistics, established by an Act of 1971, advises on the annual programme of STATEC.

Netherlands
The Dutch system of official statistics is completely centralised at the national level, with nearly all information compiled and published by the Central Bureau of Statistics (CBS). The 1996 Statistics Law, superseding the Royal Decree of 1899, provides the legal basis. The CBS is the responsibility of the Minister for Economic Affairs, but is completely independent in its statistical activities. The Director General prepares a work programme for approval by the Central Commission of Statistics, whose members are appointed by Royal Decree. Implementation of the programme is the sole responsibility of the Director General of the CBS.

New Zealand
The Department of Statistics established by the Statistics Act (1975) is under the direction of the Government Statistician appointed by the Minister of Statistics. The department is responsible for the collection and preparation of official statistics and for the coordination of statistical projects carried out by other departments of State.

Norway
Norway has a centralised system of official statistics run by the Central Bureau of Statistics (CBS) set up by the Statistical Act of 1907, revised in 1989. The Bureau is headed by a Board and a Director General. The Board decides the work programme, draft budget and annual report proposed by the Director-General and places these before the Ministry. The budget is approved by Parliament. There is no Statistical Commission to advise the Director. The CBS is an independent government agency, subordinate to the Ministry of Finance in budgetary matters only.

Portugal
The national statistical system (SEN) consists of the Higher Statistical Council (CSE) and the National Statistical Institute (INE), and was established by the 1989 Statistics Law. The INE has the exclusive responsibility for collecting, processing, coordinating and disseminating statistical data, however it may delegate these functions to other public organisations. The INE belongs to the Ministry of Equipment, Planning and Territorial Administration, but constitutes an autonomous body. The Minister approves the work programme in accordance with general guidelines issued by the CSE.

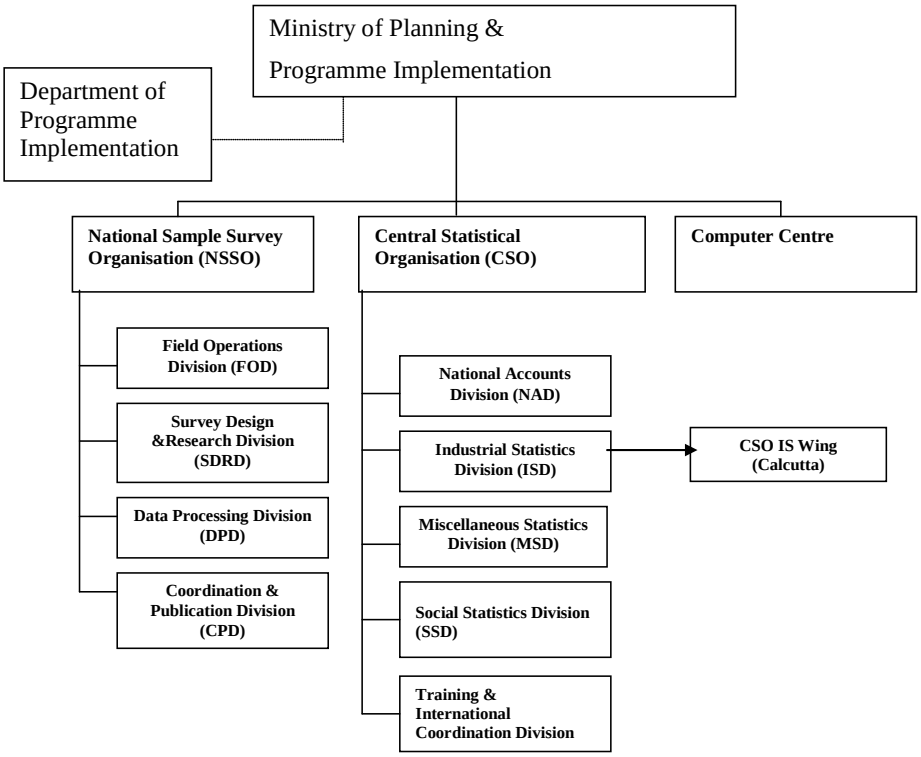
Spain
The Spanish system of official statistics is underpinned by the 1989 Statistics Law. The National Institute for Statistics (INE) is at the heart of the system, coordinating activities with the statistics departments of individual ministries and regional authorities. It is an autonomous agency attached to the Ministry of Economy and Finance. INE formulates, in cooperation with decentralised parts of the system, the draft National Statistical Plan. The Higher Statistical Council, chaired by the Minister and comprising a representative range of users and suppliers, gives a binding opinion on the draft plan.

Sweden

Swedish official statistics are decentralised, with each government agency having responsibility for statistics relating to its area of interest. The central agency, Statistics Sweden (SCB) has a coordinating role. Production of official statistics is regulated by a general statistics act from 1992. The Scientific Council has a consultative function for SCB and is responsible for certain projects and there are other committees specific to particular areas.

Annexe 14.7

Existing Structure of Ministry of Statistics and Programme Implementation



Annexe 14.8

An Indicative List of Studies/ Surveys Assigned by Government / International Organizations to Outside Agencies

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	2	3	4
1.	Concurrent Evaluation of Oilseeds Production Programme (Survey in 12-14 States)	Ministry of Agriculture, GOI	Ongoing since 1988 on a seasonal basis
2.	Concurrent Evaluation of National Pulses Development Project (Survey in 12-14 States)	Ministry of Agriculture, GOI	Ongoing since 1988 on a seasonal basis every year.
3.	Concurrent Evaluation of Integrated Cereals Development Programme in Coarse Cereals and Minikit Distribution Programme (Survey in 6 States)	Ministry of Agriculture, GOI	1996 and 1997
4.	Concurrent Evaluation of Special Rice Production Programme (Survey in 6 Eastern States)	Ministry of Agriculture, GOI	1988-91
5.	Concurrent Evaluation of Oilpalm Development Programme (Survey in 6 Eastern States)	Ministry of Agriculture, GOI	Ongoing since 1994 on an annual basis.
6.	Concurrent Evaluation of Anti Poverty programmes of IRDP, JRY, TRYSEM	Ministry of Rural Development, GOI	Since 1985 in one or more States of the country.
7.	Monitoring & Evaluation of Activities of Scheduled Castes Development Corporations (Surveys in 14 States)	Ministry of Home Affairs, GOI	Every year on an annual basis from 1982 to 1990
8.	Study of Handloom Sector outside Cooperative Fold for creation of National Handloom Credit Fund (13 States)	Department Of Handlooms, Ministry of Textiles, GOI	1998-99
9.	Monitoring & Evaluation of Rural Women's Development & Empowerment Project	Department Of Women & Child Development, Ministry of Human Resources, GOI	Ongoing since 1998-99

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	2	3	4
10.	Monitoring & Evaluation of Social Forestry Programme (9-10 States)	NAEB, Ministry of Environment & Forests, GOI	Ongoing since 1988-89
11.	Socio-economic Bench Mark Survey and Re-habilitation and Resettlement Plan for Pagladiya Dam Project	Brahmaputra Board, GOI	1998
12.	Evaluation Study of Soil Conservation Works in Catchments of Damodar, barkar, Kangsbati and Roopnarayan Commands	Department Of Soil Conservation, GOI	1992
13.	Role & Effectiveness of Lending Institutions in India under Review of Rural Credit in India (Survey in 19 States)	Reserve Bank of India	1987/88
14.	Dimensions of problems in rural drinking water supply (Survey in Orissa)	Ministry of Science and Technology, OGI	
15	Review of Area Development Programme (Survey in Orissa)	Ministry of Health, GOI	14 PHCs, 140 Sub centers, 1400 households
16	Revalidation Survey of NC Habitations (Survey in Orissa)	Ministry of Rural Development, GOI	8000 habitations
17	Micro-level planning for wastelands development (Survey in Orissa)	Ministry of Environment and Forests, GOI	5000 households (75 villages)
18.	Beneficiary Survey of Centrally sponsored Scheme for Rural Employment & Public Distribution System for all India review (Survey All India)	Comptroller & Auditor General India	2.5 lakh households, 141 districts, 2500 villages
19.	Baseline Survey of Control Group Families under IFAD Assisted Maharashtra Rural Credit Project	NABARD	Phase-1: 1996 Phase-II: 1999
20.	Study on Production Oriented System of Lending for Agriculture (Survey in 16 States)	NABARD	1993-94

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	**2**	**3**	**4**
21.	Family Planning Practices in Indian First All India Survey (!970)	Ministry of Health and Family Welfare All India	704 villages 254 towns 25,330 couples
22.	Family Planning Practices in India Second All India Survey (1980) (Survey All India)	Ministry of Health and Family Welfare	805 villages 238 towns 34,831 couples
23.	Family Planning Practices in India Third All India Survey (1980) (Survey All India)	Ministry of Health and Family Welfare	1271 villages 205 towns 44,918 couples
24.	Indian Readership Survey (1995-96) (Survey All India)		1,80,000
25.	Evaluation of India Population project II in Uttar Pradesh (Survey in Uttar Pradesh)	Ministry of Health and Family Welfare	3 districts 3000 beneficiaries
26	National Readership Survey (1989-90) (Survey All India)	Syndicated	85000
27.	Evaluation of Jana Shikshan Nilayams JNSs (1994) (Survey in 9 States)	Ministry of Human Resource Development	5817
28.	Study on consumer needs and preferences for textile (Survey All India)	Ministry of Textile, GOI	38,000 retailers and 60,000 households.
29.	Baseline Survey in Gujarat (Survey in Gujarat)	Ministry of Health and Family Welfare	2500 households
30	India Readership Survey – I to assess readers preferences for magazines (Survey All India)	Market Research Users Council	1,67,000
31.	Evaluation studies of Soil Conservation Works in RVP of Nizamgar, Ukai Kakrapar and Matatila	Ministry of Agriculture, GOI	1988-99
32.	Baseline Survey of Control Group Families under IFAD Assisted Maharashtra Rural Credit Project	NABARD	Phase-1: 1996 Phase-II: 1999

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	**2**	**3**	**4**
33.	Baseline Survey of users of natural/Traditional Family Planning who do not want additional children Survey was conducted in (UP, Jammu & Kashmir, West Bengal, Gujarat, Tamil Nadu)	Indian Council of Medical Research	9000 couples
34	Study on Cropping Pattern Changes in the Irrigated Command Areas of 12 Major Irrigation Projects, India	Ministry of Agriculture and Rural Development, GOI	
35	Study of cropping pattern changes in the twelve major irrigated command areas in different states	Ministry of Agricultural and Rural Development, GOI	
36	Study on Pre and Post Harvest Management, System, Infrastructure Packaging for Promotion of Chickoo Exports from Gujarat and Maharashtra	ARPU, Planning Commission	
37	Techno-Economic Feasibility Studies for Development of Horticulture in Kerala	National Horticulture Board, GOI	
38	Studies for Development of Horticulture in identified Agro-climatic Regions, Konkan, Maharashtra.	Planning Commission	
39	Integrated Horticulture Development Plan for Konkan Region	Agro-climatic Regional Planning Unit, Planning Commission	
40	Techno-Economic Feasibility Studies on Development of Food Processing Industry in Dhenkanal District of Orissa	Ministry of Food Processing, GOI	
41	Cropping Pattern Changes – A case Study of Chitradurga District, Karnataka	Agro-climatic Regional Planning unit, Planning Commission	
42	Agricultural Practices in Koraput District, Orissa	DANIDA, New Delhi	
43	Study on Marketing and accessibility of Horticulture Crops, Uttar Pradesh	ARPU, Planning Commission	

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	**2**	**3**	**4**
44	Study on Marketing and Accessibility of Horticulture Crops in Eastern Himalayan Region	ARPU, Planning Commission	
45	Assessment of Export Potential of Fresh and Processed Fruits and Vegetables from West Bengal	APEDA	
46	Study on Market Trends and Marketing – Infrastructure for Agricultural Commodities – All India	ARPU, Planning Commission	
47	Employment Potential in Agro-processing Industries	ARPU, Planning Commission	
48	Central Sector Scheme for Evaluation of CADA Projects and Recommendations for Improving quality, Content and Environment of CADA Programme	Ministry of Water Resources, GOI	
49	Surface Water Hydrology Project, Rajasthan	Ministry of Water Resources, GOI	
50	Central Sector Scheme for conducting evaluation studies on water rates for recovery of water charges and its rationalization	Ministry of Water Resources, GOI	
51	Carrying capacity study of Tapi Estuary Region to optimize use of natural resources for sustainable development	Ministry of Environment, GOI	
52	Natural Resource Accounting in Yamuna River sub basin for promotion Sustainable Development of the Region	Ministry of Environment, GOI	
53	Evaluation study on performance of Minor Irrigation Projects in Rajasthan State	Minor Irrigation Division, Ministry of Water Resources	
54	Assessment of Export Potential of Fresh and Processed Fruits and Vegetables from West Bengal	APEDA	9000 couples.
55	Study on Market Trends and Marketing – Infrastructure for Agricultural Commodities – All India	ARPU, Planning Commission	7 districts, 8,500 households, 580 villages
56	Employment Potential in Agro-processing Industries	ARPU, Planning Commission	1983-85

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	**2**	**3**	**4**
57	Area Development Project in Orissa	Ministry of Health and Welfare, GOI	
58	District Energy Plan for Wardha, Maharashtra	Ministry of Non-Conventional Energy Sources, GOI	
59	Impact of Rural Electrification Programme on Employment	Rural Electrification Corporation of India Ltd. New Delhi	
60	Evaluation of the Functioning of Family Biogas Programme in Maharashtra, Orissa and Goa, Daman & Diu	Department of non-Conventional Energy Source, New Delhi.	
61	Evaluation of Various Energy Conservation Programme in Agriculture Sector	Energy Management Centre, New Delhi	
62	Evaluation of Family Biogas Plant	DNES, Ministry of Energy, GOI	
63	Evaluation of Kundam Rural Integrated Project – A case study on the Behavioural Dynamics of Community Participation	Family Planning Association of India, New Delhi.	2,01,000
64	Consumer Response to Rural Electrification	Rural Electrification Corporation, New Delhi	
65	Social Soundness Analysis of Rural Electrification Projects in the Three States	Rural Electrification Corporation of India Ltd. New Delhi	
66	Evaluation of Kutir Jyoti Programme in selected States in India (on going)	Rural Electrification Corporation, New Delhi	
67	Dimensions of Problems in Rural Drinking Water Supply	Department of Science & Technology, GOI	

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	**2**	**3**	**4**
68	Data base development for watershed management project in Maharashtra	Danish International Development Agency (DANIDA), New Delhi	
69	Study on Harnessing of Surface Water Resources for Domestic Use in Delang Block of Puri District	Danish International Development Agency (DANIDA), New Delhi	
70	Feasibility study for providing drinking water for Saurashtra Region considering River Narmada and Mahi as source	Danish International Development Agency (DANIDA), New Delhi	
71	Study on Operational efficiency of Warabandi System for irrigation water distribution	The World Bank	
72	A long Range Perspective of India Aiming at the Study of Existing Status and Projections for Population, Consumption, Agriculture Produce, Water Resources etc.	Resources for Future, USAID	
73	Impact of Agricultural Development on Demographic Behaviour	The World Bank	
74	Study on flow of forestry resources in villages participating in social forestry – A comparative study in Orissa	United States Agency for International Aid.	
75	Social forestry – village studies in Puri District (Orissa)	Swedish International Development Agency.	
76	Social forestry – village studies in Ganjam District (Orissa)	Swedish International Development Agency	416 villages 70,000 households
77	Evaluation Non-Government Organisations in Wastelands Development Programme in Orissa	NAEB, New Delhi	1400 Schools 6000 Teachers 9000 students
78	Database for watershed management project	Danish International Development Agency (DANIDA), New Delhi	850 Clusters 31000 Respondents
79	Consequences and Determinants of Rural Electrification in India	Resources for the Future Inc. USA	

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	2	3	4
80	Price Escalation Study for Nattika Firka Rural Water Supply Project (Kerala)	Royal Netherlands Embassy	
81	Progress Evaluation of Santalpur Regional Water Supply Scheme	Royal Netherlands Embassy	
82	Orissa Drinking Water Project, Survey of Problem villages in the saline belt	Danish International Development Agency (DANIDA), New Delhi	
83	Survey on the performance of India Mark-II Deepwell Handpumps-Maintenance, Repair System and Costs	UNICEF	
84	Baseline Survey in Regional Rural Water Supply Scheme	Royal Netherlands Embassy	
85	Tracer Study of UNICEF Inputs in the Water and Sanitation Sector	UNICEF	
86	Final Evaluation of Santalpur Regional Water Supply Scheme	Royal Netherlands Embassy	
87	Input Formulation for New Projects Proposed for Indo-Dutch Bilateral Assistance	Review and Support Mission Government of Netherlands Embassy	
88	Evaluation of Hand Pumps in rural area of Orissa, Tamil Nadu, Madhya Pradesh and Rajasthan	UNICEF	
89	Population socialization among Indian Teenagers Survey is conducted in (Rajasthan, Haryana, Delhi)	Family Planning Foundation of India	1700 households, year 1991
90	Orissa Drinking Water Project Survey of problem villages in saline belt (Survey is conducted in Orissa)	DANIDA	2200 households (1437 villages)
91	Rajasthan State Highways Project (Survey is conducted in Rajasthan)	PCC for RSHP Louis Berger inc.	3500 households
92	Socio Economic Survey of project affected persons of Upper Krishna Project (Survey is conducted in Karnataka)	UKP	18,000 persons
93	National Programme for Nutrition support to primary education (survey in 10 States)	UNICEF	70,000 households, 460 villages

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	2	3	4
94	Monitoring & Evaluation of EEC Assisted Gujarat Watershed Management Project	Government of Gujarat	1994
95	Evaluation of Construction of Field Channels under RLEGP in 7 districts of Madhya Pradesh	Government of MP	1989
96	Evaluation of Gandak, Sone and KBC Command Area Development Projects in	Department of Irrigation Government	1985, 1988 and 1990
97	Population socialization among Indian Teenagers (1991) Survey being conducted in (Rajasthan, Haryana, Delhi.)	Family Planning Foundation of India	1700 households, Year 1991
98	Zero Unemployment Planning for Kalahandi district (Survey conducted in Orissa)	Government of Orissa	2500 households
99	Rural energy survey and preparation of Integrated Rural Energy Plan (Survey conducted in Orissa)	Orissa Renewable Energy Development Agency, Government of Orissa	2400 households (75 villages)
100	Evaluation of Horticulture Development Programme in ITDP Areas of Andhra Pradesh	Department of Horticulture, Government of Andhra Pradesh	1993
101	Socio-economic Survey of Project Affected Persons (PAPs) of Sri Ramsagar irrigation Project	Department of Irrigation, Government of Andhra Pradesh	1995
102	Socio-economic Survey in 6 locations of Assam	State Land Use Board, Government of Assam	1997
103	Bench Mark Survey, Implementation Monitoring & Socio-economic Impact Assessment of EEC Assisted Alkaline Land Reclamation Project in Selected Districts of UP	UP Bhumi Sudhar Nigam	1995 to ongoing
104	Evaluation of Training & Visit System of Agricultural Extension in Bihar	Department of Agriculture, Government of Bihar	1985
105	Evaluation of NWDPRAs in Karnataka	Department of Agriculture, Government of Karnataka	1995
106	Evaluation of Water-Harvesting Structures in Roper District of Punjab		1994

Sl. No.	Survey Title	Sponsoring Agency	Year / Sample Size
1	**2**	**3**	**4**
107	Evaluation study on Horticulture Programme in ITDAs of Orissa	Government of Orissa	1994
108	Development of tribals through afforestation (survey in Orissa State)	NABARD	9000 households

Annexe 14.9

Ministries and Departments Requiring Statistical Advisers at HAG level

Ministries	Departments
Ministry of Agriculture	Department of Agriculture and Cooperation
Ministry of Commerce and Industry	Department of Commerce Department of Industrial Policy and Promotion
Ministry of Health and Family Welfare	Department of Health Department of Family Welfare #
Ministry of Finance	Department of Revenue
Ministry of Labour	Ministry of Labour
Ministry of Law, Justice and Company Affairs	Department of Company Affairs
Ministry of Water Resources	Ministry of Water Resources (CWC) #
Planning Commission	Adviser, Statistics

Ministries and Departments Requiring Statistical Advisers at SAG level

Ministries	Departments
Ministry of Agriculture	Department of Animal Husbandry and Dairying *
Ministry of Small Scale Industries, Agro and Rural Industries	Ministry of Small Scale Industries, Agro and Rural Industries
Ministry of Civil Aviation	Ministry of Civil Aviation including Director General Civil Aviation
Ministry of Tourism and Culture	(i) Department of Tourism (ii) Department of Culture including Anthropological Survey of India
Ministry of Textiles	Ministry of Textiles including Office of the Textile Commissioner
Ministry of Chemicals and Fertilizers	Department of Chemicals and Petrochemicals Department of Fertilizers
Ministry of Social Justice and Empowerment	Ministry of Social Justice and Empowerment
Ministry of Tribal Affairs	Ministry of Tribal Affairs
Ministry of Defense	Ministry of Defense (Combined for Army, Navy & Air Force)
Ministry of Environment and Forest	Ministry of Environment and Forest
Ministry of Urban Development & Poverty Alleviation	Department of Urban Development including National Building Organisation
Ministry of Home Affairs	Registrar General of India
Ministry of Finance	Department of Economic Affairs
Ministry of Road Transport and Highways, and Ministry of Shipping	Ministry of Road Transport and Highways including for Shipping
Ministry of Human Resource Development	Combined for Departments of Elementary Education & Literacy, and of Secondary Education & Higher Education (ii) Department of Woman and Child Development
Ministry of Mines	Ministry of Mines (including Indian Bureau of Mines)
Ministry of Rural Development	Department of Rural Development

Note: * Posts are existing at SAG of ISS; # Posts may be upgraded

Annexe 14.10

List of some Administrative Laws under which Statutory Returns are Submitted

There are a number of administrative laws, and information collected under these laws becomes Statistical Information. Some of these laws are:

- The Indian Railways Act, 1890
- The Workmen's Compensation Act, 1923
- The Trade Unions Act, 1926
- The Payment of Wages Act, 1936
- The Industrial Employment (Standing Orders) Act, 1946
- The Industrial Disputes Act, 1947
- The Section-4 of Electricity (Supply) Act, 1948.
- The Factories Act, 1948
- The Dock Workers' (Regulation of Employment) Act, 1948
- The Minimum Wages Act, 1948
- The Employees' State Insurance Act, 1948
- The Plantations Labour Act, 1951
- The Mines Act, 1952
- The Employees' Provident Funds & Miscellaneous Provisions Act, 1952
- The Companies Act, 1956
- The Merchant Shipping Act, 1958
- The Motor Transport Workers' Act, 1961
- Income Tax Act, 1961
- The Maternity Benefit Act, 1961
- The Payment of Bonus Act, 1965
- The Shops & Commercial Establishments Act (Central & State Acts)
- The Limestone and Dolomite Mines Labour Welfare Found Act, 1972
- The Employees' Family Pension Scheme, 1971

Annexe 14.11

Views of Different Ministries on the Deficiencies of the Existing Laws

Ministry of Law, Justice & Company Affairs, Department of Company Affairs

"The corporate sector statistics maintained in the Department of Company Affairs is an offshoot of the Administration of the Companies Act, 1956. There is no regular or ad-hoc survey conducted by this Department to collect corporate sector data. However, Section 615 of the Companies Act, 1956 enables the Central Government to direct companies coming within the scope of Companies Act, 1956 to furnish information and statistics and to impose penalties for default. The Section applies to every company and every foreign body corporate, which has an office in India and carries on business in India. Information relating to constitution or working of the companies fall within the ambit of this section.

In exercise of the powers conferred by the above Section of the Act, the Central Government through its Notification No. S.O. 368(E), dated 6th April 1988 and S.O. 464(E) dated 2.5.1988 directed certain categories of companies to furnish information in specified formats regarding pattern of production etc.

It is difficult to invoke section 615 to get information from a large number of companies, which has already reached 5.44 lakh. This section requires issuing notifications and service of the notice individually on companies as per Section 51 of the Companies Act, 1956. This Section has been sparingly used in the past in the context of certain information about dominance etc. required for the purpose of the MRTP Act.

Since the provision of collection of statistics extends both in Companies Act and in Collection of Statistics Act, a mechanism should be created for coordination between the Department of Statistics and the Department of Company Affairs in the matter of collection of various items of statistics. Both the Departments should decide the suitability of collection of statistics under each of the two Acts and co-operate with each other in collecting the statistics."

Ministry of Finance, Department of Revenue

"As such there are no legal bindings on the assesses to provide statistics though producing Income Tax laws. The collection of Statistics Act may be extended to cover Income Tax assesses also and make it mandatory for them to submit returns (a copy of it) to the Statistics Wing of the Department. Timely availability of these returns will improve the quality and timeliness of the data and estimates. The Article 243G of the 73rd amendment relating to Panchayati Raj which empowers Panchayati to collect statistics may be utilised for this end.

Though collection of taxes and other operations incidental it are carried out under the statutory provisions of Income Tax Act, 1961, the statistics which are compiled in this wing emanates a bye product of tax administrative. No Central Act like census or Collection of Statistics Act, 1953 or Collection of Statistics (Central) Rules 1959 has been brought into force while collecting or compiling income tax statistics."

Department of Telecommunication

"So far as legal status for the collection of statistics is concerned, there is no such provision as yet basically because the service providers were mainly in the government sector and the information/data needed were obtained without any problem. However, with the opening up of telecom services for private service providers since 1994, the telecom services (both basic and value added) are being provided by these private sector companies. However, the data on their activities and performance are scanty. Therefore, it is essential to make suitable legal provisions so that the required information/data are collected/sent by the various private operators on regular basis and the reliable database is created, maintained and constantly updated. Needless to emphasis that complete data on the sector as a whole would provide the required input back up to assess its role and contribution in the Indian Economy."

Ministry of Commerce

"A Task Force has been formed which includes Economic Advisor, Ministry of Commerce, Joint Secretary, Customs, DG, DGCI&S, DGFT for harmonisation of codes of Customs, Excise, ITC(HS) and DGFT codes at 8 digit level. The work is under progress."

Ministry of Power

"The Section-4 of Electricity (Supply) Act, 1948 provides that "It shall be the duty of each Electricity Board, Generating Co., State Government Electricity Department or other licensee or persons supply electricity for public or private purposes or generating electricity for its or his own use or consuming electricity to furnish to the Authority such accounts, Statistics, returns or other information relating to the generation, supply and use of electricity as may require at such times and in such forms and manner as it may direct."

Under the above provisions, all the concerned Electricity Generating Agencies are furnishing generation Statistical data to CEA and at present no problem has been experienced."

Office of the Development Commissioner, Small Scale Industries

"Entrepreneurs simply do not like to part with data unless there is "something" in it for them. Invariably, the expectations are for different types of incentives, subsidies and marketing help. Without getting into a debate on how this culture and mentality got created, we may note that the ground situation today is substantially away from the past approaches with most of such concessions gradually withdrawn. Another reason for not parting with data has been the fear of the information getting passed on to the tax authorities. Under the circumstances, a legal backing for collection of data under the "Collection of Statistics Scheme" of SSI is asked for. At present even registration with SDI/DIC is voluntary. The Department of Statistics also feels the need for providing a legal tooth for statistical data collection through appropriate amendment of the Collection of Statistics Act, 1953. They also suggest penal action if data is not provided within a stipulated time as in advanced countries. The "Collection of Statistics Scheme" of SSIs has not even been coming under this Act with the result that there is no legal authority even to ask for data from the SSI units. Thus a legal provision to back collection of data from SSI units would certainly be welcome. However, the use of penalty clause may not be as easy in out context as in advanced countries (given their number and hence the practicability of invoking it), spread (and

our federal nature of states), diversity and our politics. Also, even if data is obtained, the quality will be highly suspect. We have already noted that almost 50% to 60% of production is not reported. Under the circumstances, a legal backing, assuring that the statistics given by them can't be used by any other authority (a la VDIS) only may help. Admittedly, this will not solve the problem of black economy nor is it the intention here. However, this assurance may substantially improve the quality of statistics and the national income estimates. Also, while legally no action can be taken on individual units, a more realistic picture of National Income at the macro level will certainly help in evolving policies to tackle the black economy problem from the macro level on the one hand and in identifying potential areas of resource mobilisation on the other."

Ministry of Chemicals & Fertilizers, Department of Chemicals & Petrochemicals

Pharmaceutical sector:

"It is essential to develop a data base for pharmaceutical sector containing vital information like (a) number of licensed manufacturers for bulk drugs and formulations: (b) production (quantity and value) of bulk drugs and formulations item-wise, in the organized as well as small scale sectors; (c) details of imports and exports of bulk drugs and formulations item-wise etc. It is essential to develop a system enabling collection of such data. This will help the Department in the review of performance of pharmaceutical/Drug policy of the Government.

Chemicals and petrochemicals sectors:

"As a result of liberalization of industrial economy of the country free from compulsory licensing, the companies do not respond favourably and the supply of the information is also delayed. At times, there is a time lag of even 1 to 3 months in the supply of monthly information and the coverage of data is about 85% to 90%. Moreover, the information regarding the products manufactured by the various small scale industries is also not covered by the Department. Since the medium and small enterprises contribute substantially to production of chemicals (about 30%) is incomplete to that extent."

Ministry of Rural Development, Department of Rural Development

"The Ministry does not have any legal backing for collection of the data mentioned herein."

Ministry of Urban Affairs & Employment, National Building Organisation (NBO)

"Filing of the returns are not made mandatory and are not obligatory under any law."

Animal Husbandry Statistics, Department of Animal Husbandry Dairying

"Animal Husbandry, Dairying and Fisheries are State subjects. At present there are no legal provisions for data collection in these sectors. It is suggested that a comprehensive act on collection of statistical data including these sectors will go in a long way in improving the quality, timeliness and accuracy of these data."

Annexe 14.12

Collection of Statistics Act, 1953

(Act No. XXXII of 1953 as Amended by Act 4 of 1906)
(18th September, 1953)

CONTENTS

Sections

An Act to facilitate the collection of statistics of certain kinds relating to industries, trade and commerce

Be it enacted by Parliament as follows :

1. Short title, extent and commencement –

(a) This Act may be called the Collection of Statistics Act, 1953.
(b) It extends to the whole of India except the State of Jammu and Kashmir.
(c) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint.

2. Definitions - In this Act, unless the context otherwise requires -

(a). "Appropriate Government" means -

- The Central Government, in relation to the collection of statistics under a direction issued by it under Section 3, and
- The State Government in relation to the collection of statistics under a direction issued by it under that section;

(b). "Commercial concern" means a public limited company or a co-operative society or a firm or any other person or body of persons engaged in trade or commerce, and includes -

- A concern engaged in banking or insurance;
- A financial corporation;

- A concern engaged in shipping and navigation;
- A concern engaged in the business of brokers dealing in shares, stocks and securities and commodities;
- A concern engaged in the business of advertising consultants;
- A light railway;
- A concern engaged in road transport service;
- A concern engaged in air transport service;
- A rubber, tea, coffee or cinchona plantation;
- A concern engaged in the business of forwarding and cleaning agents;
- Any other concern which, in the opinion of the Central Government, is a commercial concern and is declared to be such by that Government by notification in the Official Gazette, but does not include an industrial concern;

(c). "factory" means a factory as defined in clause (m) of Section 2 of the Factories Act,1948(LXIII of 1948);

(d). "industrial concern" means a public limited company or a co-operative society or a firm or any other person or body of persons engaged in the manufacture, assembling, packing, preservation or processing of goods or in mining or in the generation or distribution of electricity or any other form of power;

(e). "owner" in relation to a commercial or an industrial concern, means the person who, or the authority which has the ultimate control over the affairs of the concern and where the said affairs are entrusted to a manager, managing director or managing agent, such manager, managing director or managing agent shall be deemed to be the owner of the concern;

(f). "prescribed" means prescribed by rules made under this Act or in any form laid down by such rules.

3. Collection of statistics - The appropriate Government may, by notification in the Official Gazette, direct that statistics shall be collected relating to any of the following matters, namely :-

(a) Any matter relating to any industry or class of industries;

(b) Any matter relating to any commercial or industrial concern or class of commercial or industrial concerns, and, in particular any matter relating to factories;

(c) Any of the following matters so far as they relate to welfare of labour and conditions of labour, namely:-

- price of commodities;
- attendance;
- living conditions including housing, water-supply and sanitation;
- indebtedness;
- rents of dwelling houses;
- wages and other earnings;
- provident and other funds provided for labour;
- benefits and amenities provided for labour;
- hours of work;
- employment and unemployment
- industrial and labour disputes;
- Labour turnover;
- trade unions;

And thereupon the provisions of this Act shall apply in relation to those statistics:

Provided that –

(a) Nothing contained in this section shall be deemed to authorise a State Government to issue any direction under this Act with respect to the collection of statistics relating to any matter falling under any of the entries specified in List I in the Seventh Schedule to the Constitution; or
(b) Where the Central Government has issued any direction under this section for the collection of statistics relating to any matter, no State Government shall, except with the previous approval of the Central Government, issue any similar direction for so long as the collection of statistics by the Central Government remains to be completed; or
(c) Where a State Government has issued a direction under this section for the collection of statistics relating to any matter, the Central Government shall not issue any similar direction for so long as the collection of statistics by the State Government remains to be completed, except in cases where statistics have to be collected with reference to two or more States.

4. Appointment of statistics authority - The appropriate Government may appoint an officer to be statistics authority for the purpose of collecting any statistics directed by it to be collected.

5. Power of statistics authority to call for information or returns –

1) The statistics authority may serve or cause to be served on the owner of an industrial or commercial concern or on any other person a notice requiring him to furnish such information or returns as may be prescribed relating to any matter in respect of which statistics are to be collected.
2) The form in which, and the person to whom or the authorities to which, such information or returns should be furnished, the particulars which they should contain and the intervals within which such information or returns should be furnished shall be such as may be prescribed.
3) The notice referred to in sub-section (l) may be served by post.

6. Right of access to records or documents - The statistics authority, or any person authorised by him in writing in this behalf shall, for the purposes of the collection of any statistics under this Act, have access to any relevant record or document in the possession of any person required to furnish any information or return under this Act any may enter at any reasonable time any premises where he believes such record or document to be and may inspect or take copies of relevant records or documents or ask any question necessary for obtaining any information required to be furnished under this Act.

7. Restriction on the publication of information and returns-

1) No information, no individual return and no part of an individual return with respect to any particular industrial or commercial concern, given for the purposes of this Act shall, without the previous consent in writing of the owner for the time bieng of the industrial or commercial concern in relation to which the information or return was given or made or his authorised agent be published in such manner as would enable any particulars to be identified as referring to a particular concern.
2) Except for the purposes of a prosecution under this Act or under the Indian Penal Code(Act XLV of 1860), no person who is not engaged in the collection of statistics under this Act shall be permitted to see any information or individual return referred to in sub-section (l).

8. Penalties – If any person –

(a) Required to furnish any information or return –
- wilfully refuses or without lawful excuse neglects to furnish such information or return as may be required under this Act; or
- wilfully furnishes or causes to be furnished any information or return which he knows to be false; or
- refuses to answer or wilfully gives a false answer to any question necessary for obtaining any information required to be furnished under this Act; or

(a) Impedes the right of access to relevant records or documents or the right of entry conferred by Section 6;

He shall for each offence be punishable with fine which may extend to five hundred rupees and in the case of a continuing offence to a further fine which may extend to two hundred rupees for each day after the first during which the offence continues.

9. Offences by companies –

1) If the person guilty of an offence under Section 8 is a company, every person who at the time the offence was committed was in charge of, and was responsible to, the company for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly:
Provided that nothing contained in this sub-section shall render any such person liable to any punishment provided in this Act, if he proves that the offence was committed without his knowledge or that he exercised all due diligence to prevent the commission of such offence.
2) Notwithstanding anything contained in sub-section (l) where an offence under this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of or is attributable to any neglect on the part of any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation – For the purposes of this section –

(a) "Company" means any body corporate and includes a firm or other association of individuals; and
(b) "Director" in relation to a firm means a partner in the firm.

10. Penalty for improper disclosure of information or returns

If any person engaged in connection with the collection of statistics under this Act willfully discloses any information or the contents of any return given or made under this Act otherwise than in the execution of his duties under this Act or for the purposes of the prosecution of an offence under this Act or under the Indian Penal Code (Act XLV of 1860), he shall be punishable for such offence with imprisonment for a term which may extend to six months, or with fine which may extend to ***one thousand rupees*** or with both.

11. Cognisance of offences – No prosecution for an offence under Section 8 shall be instituted except by or with the sanction of the statistics authority and no prosecution for an offence under Section 10 shall be instituted except by or with the consent of the appropriate Government.

12. Power of Central Government to give directions – The Central Government may give directions to State Government as to the carrying into execution of this Act in the State.

13. Protection of action taken in good faith – No suit or other legal proceeding shall lie against the appropriate Government, the statistics authority, or any other person acting under the authority of the appropriate Government or of the statistics authority in respect of anything which is in good faith done or intended to be done in pursuance of this Act or of any rules or directions issued thereunder.

14. Power to make rules – The appropriate Government may, subject to the condition of previous publication by notification in the Official Gazette, make rules for the purposes of this Act.

Without prejudice to the generality of the foregoing power, rules may be made under this section for all or any of the following namely :-

(a) the form and manner in which the information and returns may be furnished, the particulars which they should contain, intervals within which and the authority to which such information and the returns may be furnished;
(b) the manner in which the right of access to documents and the right of entry conferred by Section 6 may be exercised; and
(c) any other matter which is to be or may be prescribed under this Act.

Every rule made by the Central Government under this section shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree that the rule should not be made, the rule shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule.

Every rule made by the State Government, under this section shall be laid, as soon as it is made, before the State Legislature.

15. Repeal – The Industrial Statistics Act,1942 (XIX of 1942), and the Hyderabad Collection of Statistics Act (No.17 of 1357) are hereby repealed.

Annexe 14.13

Limitations of the Collection of Statistics Act 1953

(i) The Collection of Statistics Act, 1953 has been serving at present only the limited purpose of ASI, which covers a part of the whole industrial sector. There are a large number of industries in the small-scale sector, which are excluded from the scope of ASI. Similarly, there is also a large industrial activity in the unregistered informal or household sector which is out of ASI purview though it plays a highly significant role by way of feeding the larger units as well as producing value added goods for non-industrial consumers. Although there is a scope under Section 2(b) of the Act. To cover all "commercial concerns", but this is not being done so far. Moreover, it is important to reiterate the emerging trend of realities, for example, taking account of High-tech sectors such as IT, bio-technology, food processing as well as to accommodate services sector whose share in the economy is rapidly growing. For catalyzing the development in these industries and related sectors, the data obligations must flow out of the provisions of Act.

(ii) Even where an Act such as Collection of Statistics Act, 1953 exists with provision for prosecution, there are non-response cases. This is largely due to meager penalty of a maximum fine of Rs.500/-, which though theoretically extends to cause a fine of Rs.200/- per day on default beyond a certain period but that has almost never been imposed. So the Act in such cases hardly serves the purpose and becomes counter-productive. This is despite the fact that the factories covered under ASI are statutorily obliged to furnish the required data in the prescribed format.

Annexe 14.14

THE CENSUS ACT, 1948

(Act No.37 of 1948)

(3rd September, 1948)

An Act to provide for certain matters in connection with taking of census.

WHEREAS it is expedient to provide for the taking of census in [1]India or any part thereof whenever necessary or desirable and to provide for certain matters in connection with the taking of such census;

It is hereby enacted as follow:-

Short title and extent.

1 (1) This Act may be called the Census Act, 1948.

[2][(2) It extends to the whole of India[3] ****]

Rule of construction respecting enactments not extending to Jammu and Kashmir.

[4][**2.** Any reference in this Act to the Indian Penal Code or the Indian Evidence Act, 1872, shall, in relation to the State of Jammu and Kashmir, be construed as a reference to the corresponding enactment in force in that State.]*(45 to 1860, 1 of 1872)*

Central Government to take census.

3. The Central Government may, by notification in the official Gazette, declare its intention of taking a census in the whole or any part of the territories to which this Act extends, whenever it may consider it necessary or desirable so to do and thereupon the census shall be taken

Appointment of census staff.

4. (1) The Central Government may appoint a Census Commissioner to supervise the taking of the census throughout the area in which the census is intended to be taken, and [5][Directors of Census Operations] to supervise the taking of the census within the several States.

(2) The State Government may appoint persons as census-officers to take, or aid in, or supervise the taking of, the census within any specified local area and such persons, when so appointed, shall be bound to serve accordingly.

(3) A declaration in writing, signed by any authority authorized by the State Government in this behalf, that any person has been duly appointed a census-officer for any local area shall be conclusive proof of such appointment.

(4) The State Government may delegate to such authority as it thinks fit the power of appointing census-officers conferred by sub-section (2).

Status of census authorities as public servant

5. The Census Commissioner, all [Directors of Census Operations] and all census-officers shall be deemed to be public servants within the meaning of Indian Penal Code.

Discharge of duties

6. (1) Where the District Magistrate, or such authority as the State

[1] The words "the Provinces and Acceding States of" rep. By A.O. 1950
[2] Subs. For the former sub-section
[3] The words "except the State of Jammu and Kashmir" omitted by Act 22 of 1959, s.2.
[4] Ins. By s. 3, ibid, The original s.2 was omitted by Act 36 of 1957 , s.2 and Sch.
[5] subs. By Act 56 of 1974, s.3 and Sch. II.

of census-officers in certain cases.

Government may appoint in this behalf, by a written order so directs-

(a) every officer in command of any body of men belonging to the naval, military or air forces, or of any vessel of war, of India.

(b) Every person (except a pilot or harbour master) having charge or control of a vessel,

(c) Every person in charge of a lunatic asylum, hospital, workhouse, prison, reformatory or lock-up or of any public, charitable, religious or educational institution,

(d) Every keeper, secretary or manager of any sarai, hotel, boarding-house lodging house, emigration depot or club,

(e) Every manager or officer of a railway or any commercial or industrial establishment, and

(f) Every occupant of immovable property wherein at the time of the taking of the census persons are living,

Shall perform such of the duties of a census-officer in relation to the persons who at the time of the taking of the census are under his command or charge, or are inmates of his house, or are present on or in such immovable property or are employed under him as may be specified in the order.

(2) All the provisions of this Act relating to census-officers shall apply, so far as may be, to all persons while performing such duties under this section, and any person refusing or neglecting to perform nay duty which under this section he is directed to perform shall be deemed to have committed an offence under section 187 of the Indian Penal Code.

(45 of 1860)

Power to call upon certain persons to give assistance.

7. The District Magistrate, or such authority as the State Government may appoint in this behalf for any local area, may, by written order which shall have effect throughout the extend of his district or of such local area, as the case may be, call upon-

(a) all owners and occupiers of land, tenure-holders, and farmers and assignees of land revenue, or their agents,

(b) all members of the district, municipal, panchayat and other local authorities and officers and servants of such authorities, and

(c) all officers and members of staff of any factory, firm or establishment, to give assistance as shall be specified in the order towards the taking of a census of the persons who, at the time of the taking of the census, on the lands of such owners, occupiers, tenure-holders, farmers and assignees, or in the premises of factories, firms and other establishments, or within the areas for which such local authorities are established, as the case may be, and the persons to whom an order under this section is directed shall be bound to obey it and shall, while acting in pursuance of such order, be deemed to be public servants within the meaning of the Indian Penal Code. *(45 of 1860)*

Asking of questions

8. (1) A census-officer may ask all such questions of all persons

and obligation to answer.

within the limits of the local area for which he is appointed as, by instructions issued in this behalf by the State Government and published in the Official Gazette, he may be directed to ask.

(2) Every person of whom any question is asked under sub-section (1) shall be legally bound to answer such question to the best of his knowledge or belief:

Provided that no person shall be bound to state the name of any female member of his household, and no woman shall be bound to state the name of her husband or deceased husband or of any other person whose name she is forbidden by custom to mention.

Occupier to permit access and affixing of numbers.

9. Every person occupying any house, enclosure, vessel or other place shall allow census-officer such access thereto as they may require for the purposes of the census and as, having regard to the customs of the country, may be reasonable, and shall allow them to paint on, or affix to, the place such letters, marks or numbers as may be necessary for the purpose of the census.

Occupier or manager to fill up schedule.

10. (1) Subject to such orders as the State Government may issue in this behalf a census-officer may, within the local area for which he is appointed, leave or cause to be left a schedule at any dwelling-house or with the manager or any officer of any commercial or industrial establishment, for the purpose of its being filled up by the occupier of such house or of any specified part thereof or by such manager or officer with such particulars the State Government may direct regarding the inmates of such house or part thereof, or the persons employed under such manager or officer, as the case may be, at the time of the taking of the census.

(2) When such schedule has been so left, the said occupier, manager or officer, as the case may be, shall fill it up or cause it to be filled up to the best of his knowledge or belief so far as regards the inmates of such house or part thereof or the persons employed under him, as the case may be, at the time aforesaid, and shall sign his name thereto and, when so required, shall deliver the schedule so filled up and signed to the census-officer or to such person as the census-officer may direct.

Penalties.

11. (1) (a) Any census-officer or any person lawfully required to give assistance towards the taking of a census who refuses or neglects to use reasonable diligence in performing any duty imposed upon him or in obeying any order issued to him in accordance with this Act or any rule made thereunder, or any person who hinders or obstructs another person in performing any such duty or in obeying any such order or

(b) any census-officer who intentionally puts any offensive or improper question or knowingly makes any false return or, without the previous sanction of the Central Government or the State Government, discloses any

information which he has received by means of, or for the purposes of, a census return, or

(c) any sorter, compiler or other member of the census staff who removes, secretes, damages or destroys any census document or deals with any census document in a manner likely to falsify or impair the tabulations of census results, or

(d) any person who intentionally gives a false answer to, or refuses to answer to the best of his knowledge or belief, any question asked of him by a census-officer which he is legally bound by section 8 to answer , or

(e) any person occupying any house, enclosure, vessel or other place who refuses to allow a census-officer such reasonable access thereto as he is required by section 9 to allow, or

(f) any person who removes, obliterates, alters, or damages any letters, marks or numbers which have been painted or affixed for the purposes of the census, or

(g) any person who, having been required under section 10 to fill up a schedule, knowingly and without sufficient cause fails to comply with the provisions of that section, or makes any false return thereunder, or

(h) any person who trespassed into a census office, shall be punishable with fine which may extend to one thousand rupees and in case of a conviction under part (b) or (c) shall also be punishable with imprisonment which may extend to six months.

(2) Whoever abets any offence under sub-section (1) shall be punishable with fine which may extend to one thousand rupees.

Sanction required for prosecutions.

12. No prosecution under this Act shall be instituted except with the previous sanction of the State Government or of an authority authorized in this behalf by the State Government.

Operation of other laws not barred

13. Nothing in this Act shall be deemed to prevent any person from being prosecuted under any other law for any act or omission which constitutes an offence under this Act :

Provided that no such prosecution shall be instituted except with the previous sanction referred to in section 12.

Jurisdiction.

14. No Court inferior to that of a Presidency Magistrate or a Magistrate of the second class, [1]* * * shall try, whether under this Act or under any other law, any act or omission which constitutes an offence under this Act.

Records of census not upon to inspection nor admissible in evidence.

15. No person shall have a right to inspect any book, register or record made by a census-officer in the discharge of his duty as such, or any schedule delivered under section 10, and notwithstanding anything to the contrary in the Indian Evidence Act, 1872, no entry in any such book, register, record or

[1] The words or in a Part B State a Magistrate corresponding to a Magistrate of the second class ins. By Act 51 of 1950, 4 omitted by the Adaptation of Laws (No. 3) order, 1956

schedule shall be admissible as evidence in any civil proceeding whatsoever or in any criminal proceeding other than a prosecution under this Act or any other law for any act or omission which constitutes an offence under this Act. *(1 of 1872)*

Temporary suspension of other laws as to mode of taking census in municipalities

16. Notwithstanding anything in any enactment or rule with respect to the mode in which a census is to be taken in any municipality, the municipal authority, in consultation with the [2][Director of Census Operations] or with such other authority as the State Government may authorize in this behalf, shall, at the time appointed for the taking of any census cause the census of the municipality to be taken wholly or in part by any method authorized by or under this Act.

Grant of statistical abstracts.

17. The Census Commissioner or any [Director of Census Operations] or such person as the State Government may authorize in this behalf may, if he so thinks fit, at the request and cost to be determined by him of any local authority or person, cause abstracts to be prepared and supplied containing any such statistical information as can be derived from the census returns for [3][India or any State] as the case may be, being information which is not contained in any published report and which in his opinion it is reasonable for that authority or person to require.

Power to make rules

18. (1) The Central Government may make rules by notification in the Official Gazette for carrying out the purposes of this Act.

Comment [RS1]: foot note to be added

(2) In particular, and without prejudice to the generality of the foregoing power, the Central Government may make rules providing for the appointment of census-officers and of persons to perform any of the duties of census-officers or to give assistance towards the taking of a census, and for the general instructions to be issued to such officers and persons.

(3) Every rule made under this Section shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session, for a total period of 30 days, which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree that the rule should not be made, the rules shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule.

[2] Subs. By Act 56 of 1974s. 3 and Sch. II

[3] Subs. by the A.O. 1950, for the provinces of India or the Province.

The Census (Amendment) Act, 1993
No. 11 of 1994

14th January, 1994

An Act further to amend the Census Act, 1948.

Be it enacted by Parliament in the Forty-fourth Year of the Republic of India as follows:-

Short title

1. This Act may be called the Census (Amendment) Act, 1993.

Substitution of new sections for section 2.

2. For section 2 of the Census Act, 1948 (hereinafter referred to as the principal Act), the following sections shall be substituted, namely:-

(37 of 1948)

Definition

'2. In this Act, unless the context otherwise require ---

(a) "premises" means any land, building or part of a building and includes a hut, shed or other structure or any part thereof;
(b) "prescribed" means prescribed by rules made under this Act;
(c) "vehicle" means any vehicle used or capable of being used for the purpose of road transport, whether propelled by mechanical power or otherwise.

Rule of construction respecting enactments not extending to Jammu & Kashmir

2A Any reference in this Act to the Indian Penal Code, the Indian Evidence Act, 1872 or the Code of Criminal Procedure, 1973, shall, in relation to the State of Jammu and Kashmir, be construed as a reference to the corresponding enactment in force in that State.'.

(45 of 1860, 1 of 1872, 2 of 1974)

Amendment of section 4

3. In section 4 of the principal Act, in sub-section (2), after the word "census-officers", the words "with such designations as that Government may deem necessary" shall be inserted.

Insertion of new section 4A
Staff of every local authority to be made available for taking census

4. After section 4 of the principal Act, the following section shall be inserted, namely:-

"4A. Every local authority in a State shall, when so directed by a written order by the Central Government or by an authority appointed by that Government in this behalf, make available to any Director of Census Operations such staff as may be necessary for the performance of any duties in connection with the taking of census".

Insertion of new sections 7A

5. After section 7 of the principal Act, the following sections shall be inserted, namely:-

Requisitioning Premises, of vehicles, etc., for taking of a census.

'7A (1) If it appears to the Central Government that, in connection with taking of a census,--

a. any premises are needed or are likely to be needed, or
b. any vehicle, vessel or animal is needed or is likely to be needed,

that Government may by order in writing requisition such premises, or vehicle, vessel or animal, as the case may be, and make such further orders as may appear to it to be necessary or expedient in connection with the requisitioning.

(2) The requisition shall be effected by an order in writing addressed to the person deemed by the Central Government to be the owner or person in possession of the property, and such order shall be served in the prescribed manner on the person to whom it is addressed.

(3) Whenever any property is requisitioned under sub-section (1), the period of such requisition shall not extend beyond the period for which such property is required for any of the purposes mentioned in that sub-section.

Payment of compensation

7B. (1) Whenever in pursuance of section 7A the Central Government requisitions any premises, there shall be paid to the persons interested compensation the amount of which shall be determined by taking into consideration the following, namely: -

(i) the rent payable in respect of the premises or if no rent is so payable, the rent payable for similar premises in the locality;

(ii) if in consequence of the requisition of the premises the person interested is compelled to change his residence or place of business, the reasonable expenses (if any) incidental to such change:

Provided that where any person interested being aggrieved by the amount of compensation so determined makes an application within the prescribed time to the Central Government to an arbitrator, the amount of compensation to be paid shall be such as the arbitrator appointed in this behalf by the Central Government may determine:

Provided further that where there is any dispute as to the title to receive the compensation or as to the apportionment of the amount of compensation, it shall be referred by the Central Government to an arbitrator appointed in this behalf by that Government for determination, and shall be determined in accordance with the decision of such arbitrator.

Explanation—In this sub-section, the expression "person interested" means the person who was in actual possession of the premises requisitioned under section 7A immediately before the requisition, or where no person was in such actual possession, the owner of such premises

(2) Whenever in pursuance of section 7A the Central Government requisitions any vehicle, vessel or animal, there shall be paid to the owner thereof compensation the amount of which shall be determined by the Central Government on the basis of the fares or rates prevailing in the locality for the hire of such vehicle, vessel or animal:

Provided that where the owner of such vehicle, vessel or animal being aggrieved by the amount of compensation so determined makes an application within the prescribed time to the Central Government for referring the matter to an arbitrator, the amount of compensation to be paid shall be such as the arbitrator appointed in this behalf by the Central Government may determine:

Provided further that where immediately before the requisitioning the vehicle or vessel was by virtue of a hire-purchase agreement in the possession of a person other than the owner, the amount determined under this sub-section as the total compensation payable in respect of the requisition shall be apportioned between that person and the owner in such manner as they may agree upon, and in default of agreement, in such manner as an arbitrator appointed by the Central Government in this behalf may decide.

Power to obtain information.

7C. The Central Government may, with a view to requisitioning any property under section 7A or determining the compensation payable under section 7B, by order, require any person to furnish to such authority as may be specified in the order such information in his possession relating to such property as may be so specified.

Power of entry into and inspection of premises, etc.

7D. Any person authorized in this behalf by the Central Government may enter into any premises and inspect such premises and nay vehicle, vessel or animal therein for the purpose of determining whether, and if so in what manner, an order under section 7A should be made in

relation to such premises, vehicle, vessel or animal, or with a view to securing compliance with any order made under that section.

Eviction from requisitioned premises.

7E. (1) Any person remaining in possession of any requisitioned premises in contravention of any order made under section 7A may be summarily evicted from the premises by any officer empowered by the Central Government in this behalf.

(2) Any officer so empowered may, after giving to any woman not appearing in public reasonable warning and facility to withdraw, remove or open any lock or bolt or break open any door of any building or do any other act necessary for effecting such eviction.

Release of premises from requisition.

7F. (1) When any premises requisitioned under section 7A are to be released from requisition, the possession thereof shall be delivered to the person from whom possession was taken at the time when the premises were requisitioned, or if there were no such person, to the person deemed by the Central Government to be the owner of such premises, and such delivery of possession shall be a full discharge of the Central Government from all liabilities in respect of such delivery, but shall not prejudice any rights in respect of the premises which any other person may be entitled by due process of law to enforce against the person to whom possession of the premises is so delivered.

(2) Where the person to whom possession of any premises requisitioned under section 7A is to be given under sub-section (1) cannot be found or is not readily ascertainable or has no agent or any other person empowered to accept delivery on his behalf, the Central Government shall cause a notice declaring that such premises are released from requisition to be affixed on some conspicuous part of such premises and publish the notice in the Official Gazette.

(3) When a notice referred to in sub-section (2) is published in the Official Gazette, the premises specified in such notice shall cease to be subject to requisition on and from the date of such publication and be deemed to have been delivered to the person entitled to possession thereof, and the Central Government shall not be liable for any compensation or other claim in respect of such premises for any period after the said date.

Delegation of functions of the Central Government with regard to requisitioning.

7G. The Central Government may, by notification in the Official Gazette, direct that any powers conferred or any duty imposed on that Government by any of the provisions of section 7A to 7F shall, under such conditions, if any, as may be specified in the direction, be exercised or discharged by such officer as may be specified.

Penalty for contravention of any order regarding requisition.

7H. If any person contravenes any order made under section 7A or section 7C, he shall be punishable with imprisonment for a term which may extend to one year or with fine or with both.

Amendment of section 8.

6. In section 8 of the principal Act, in sub-section (1) for the words “State Government”, the words “Central Government” shall be substituted.

Amendment of section 10.

7. In section 10 of the principal Act, in sub-section (1) for the words “State Government” at both the places where they occur, the words “Census Commissioner” shall be substituted.

Amendment of section 11.

8. In section 11 of the Principal Act, in sub-section (1)—

(i) for part (a), the following parts shall be substituted, namely:-

“(a) any census-officer or any person lawfully required to give assistance towards the taking of census who refuses to perform any duty imposed upon him by this Act or any rule made thereunder, or any person who hinders or obstructs another person in performing any

such duty, or

(aa) any census-officer or any person lawfully required to give assistance towards the taking of a census who neglects to use reasonable diligence in performing any duty imposed upon him or in obeying any order issued to him in accordance with this Act or any rule made thereunder, or any person who hinders or obstructs another person in performing any such duty or obeying any such order, or";

(ii) after part (c), the following part shall be inserted, namely:-

"(ca) any local authority which fails to comply with an order made under Section 4A, or";

(iii) for the brackets, letters and words "(b) or (c) shall also be punishable with imprisonment which may extend to six months", the brackets, letters and words "(a), (b) or (c) shall also be punishable with imprisonment which may extend to three years" shall be substituted

Substitution of new section for section 12

9. For section 12 of the principal Act, the following section shall be substituted, namely:-

Sanction required for prosecutions

"12. Without prejudice to the provisions of section 197 of the Code of Criminal Procedure, 1973, no prosecution under this Act shall be instituted except with the previous sanction,-- *(2 of 1974)*

(a) in the case of a person who is employed or was at the time of commission of the alleged offence employed—

(i) in a company, as defined in section 3 of the Companies Act, 1956, in which not less than fifty-one per cent of the paid-up capital is held by the Central Government or any company which is a subsidiary thereof within the meaning of that Act, or *(1 of 1956)*

(ii) by a corporation or a local authority established by or under a Central Act which is owned or controlled by the Central Government, of the of the Central Government of an authority authorized in this behalf by that Government; an

(b) in the case of a person other than referred to in clause (a) of the State Government.".

Insertion of new section 13A.

10. After section 13 of the principal Act, the following section shall be inserted, namely:-

Certain offences to be cognizable and triable summarily

"13A. (1) Notwithstanding anything contained in the Code of Criminal Procedure, 1973, no police officer or court shall take cognizance of any offence under part (a), (b) or (c) of sub-section 91) of section 11, except upon information received from or on a complaint made by, as the case may be, the Director of Census Operations or any officer authorized by him in this behalf. *(2 of 1974)*

(2) Notwithstanding anything contained in the Code of Criminal Procedure, 1973, every offence punishable under part (a), (b) or (c) of sub-section (1) of section 11 may be tried summarily." *(2 of 1974)*

Amendment of section 14

11. In section 14 of the principal Act, for the words "Presidency Magistrate or a Magistrate of the second class", the words "Metropolitan Magistrate or a Judicial Magistrate of the first class" shall be substituted.

Insertion of new sections 15A and 15B.

12. After section 15 of the principal Act, the following sections shall be inserted, namely:-

Protection of service

"15A No member of the census staff shall suffer any disability in service by reason of his being on census duty and the period spent by him on such census duty shall be deemed to be the duty under his lending employer and any duty performed under this Act shall not in any

interests of members of census staff.

manner affect the right of promotion or other advancement in his original service.

Protection of action taken in good faith.

15.B No suit, prosecution or other legal proceeding shall lie against the Census Commissioner or any Director of Census Operations or any census-officer or any member of the census staff for anything which is in good faith done or intended to be done under this Act or the rules made thereunder."

Amendment of section 17.

13. In section 17 of the principal Act, for the opening portion beginning with the words "The Census Commissioner" and ending with the words "authorize in this behalf" , the words "Subject in the provisions of section 15, the Census Commissioner or any Director of Census Operations" shall be substituted.

Insertion of new section 17A.

14. After section 17 of the principal Act, the following section shall be inserted, namely:-

Power to extend the provisions of Act to other operations.

"17 A The Central Government may, by notification in the Official Gazette, extend the provisions of this Act, with such restrictions and modifications as it things fit, to pre-tests, pilot studies, census of houses which precede the population count and post enumeration check and evaluation studies or statistical surveys or any other operation as may be deemed necessary for the purpose of census."

Amendment of section 18.

15. In section 18 of the principal Act, in sub-section (2) the words "and providing for the manner of service of orders regarding requisitioning of premises, or vehicle; vessel or animal and the time within which the application may be made to it by any interested person aggrieved by the amount of compensation determined under section 7B for referring the matter to an arbitrator" shall be added at the end.

K.L. MOHANPURIA (Secy to the Govt of India.)

LIST OF AMENDING ACTS AND ADAPTATION ORDERS

1. The Repealing and Amending Act, 1949 (40 of 1949)
2. The Census (Amendment) Act, 1950 (51 of 1950)
3. The Adaptation Laws Order, 1950
4. The Adaptation of Laws (No.3) Order, 1956
5. The Census (Amendment) Act, 1959 (22 of 1959)
6. The Repealing and Amending Act, 1974 (56 of 1974)

Annexe 14.15

Courses Organised by the Training Division (CSO) : 1996-97 Onwards

Sl. No	Courses	Duration	Level of officers (Participants)
1.	Software Packages at Computer Centre M/S&PI, R.K. Puram, New Delhi.	2 weeks (8-19 April, 1996)	Middle level (14)
2.	FOXPRO 2.6 at CMC, New Delhi	1 week (19-23 August, 1996)	Officers of Computer Centre(3)
3.	Computer Appreciation at National Informatics Centre, CGO Complex, New Delhi	2 days (9-10 September 1996)	Directors Senior Jt. Directors of CSO(22)
4.	Trainers Training at NIC, New Delhi	2 weeks (September 9-20, 1996)	DDs/ADs of NSSO and Computer Centre(25)
5.	System Design and Application of Software Tools at NIC, New Delhi.	One week (September 23-27, 1996)	JDs/DDs of D/o Statistics(15)
6.	Statistical methods for decentralized planning at National Institute for Rural Development, Hyderabad	One week (November18-23, 1996)	Senior/middle level ISS officers(14)
7.	Small Area Statistics at Indian Statistical Institute, Calcutta	One week (December 9-13, 1996)	-do-(18)
8.	Management Techniques at Uttar Pradesh Academy of Administration, Nainital	One week (December 16-21, 1996)	Senior level (15)
9.	Software Packages at Computer Centre, M/S&PI	Two weeks (June 30 – July 11, 1997)	Middle level officers of ISS(14)
10.	Modern sampling techniques at Indian Agricultural Statistics Research Institute (IASRI), New Delhi.	One week (October 13 – 17, 1997)	Middle level officers of ISS(14)
11.	Software Packages at Computer Centre, M/S&PI	One week (June 29 –10 July 1998)	ADs/DDs(14)
12.	Use of internet at CSO, New Delhi	One day 17th February 1999	Senior/middle level officers of DOS, New Delhi(14)
13.	Methodological Aspects of sample surveys at IASRI, New Delhi.	One week (March, 08-13, 1999)	Senior/middle level ISS officers(17)
14.	Small area Estimation: Theory and Applications at IASRI, New Delhi	One week (March 22-27, 1999)	Senior/middle level ISS officers(15)
15.	Gender Statistics at CSO, New Delhi	One week (July 19-23, 1999)	Senior/middle level ISS officers(25)
16.	Qualitative aspects in collection and analysis of Survey Data at IASRI, New Delhi	One week (August 9-14, 1999)	Senior/middle level ISS officers(20)

Sl. No	Courses	Duration	Level of officers (Participants)
17.	Applied Econometrics at Centre for Development Economics at Delhi School of Economics, New Delhi	One week (October 4-9, 1999)	Senior/middle level ISS officers(13)
18.	Index numbers at CSO, New Delhi	One week (November15-19, 2000)	Senior/middle level ISS officers (13)
19.	Management Development Programme at Institute of Management in Government, Thiruvananthapuram	One week (January 3-7, 2000)	Senior level ISS Officers(15)
20.	National Accounts at CSO, New Delhi	One week (May 1-6, 2000)	Senior/middle level ISS officers(12)
21.	Creation of data base for evaluation of population programme: Recent Developments at International Institute for Population Sciences, Mumbai	One week (June 5-9, 2000)	Senior/middle level ISS officers(15)
22.	Estimation of Poverty & Evaluation of Poverty Alleviation Programmes at NIRD, Hyderabad	One Week (December 18-23, 2000)	Senior/Middle level ISS Officers(20)