Appraisal Document of Twelfth Five Year Plan 2012-17

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Foreword

The exercise of appraisal of the Twelfth Five Year Plan (2012-17) was undertaken as a follow up of the decisions taken at the first meeting of the Governing Council of NITI Aayog on 8th February 2015.This Appraisal assesses the performance during the first four years of the plan and spells out policy-or implementation-related changes aimed at furthering the development agenda of the nation. It broadly covers physical and financial achievements during the first four years of the Plan (2012-13 to 2015-16) *vis-à-vis* the targets. Where appropriate, it also discusses Budget Estimates for the terminal financial year (2016-17).

In a significant departure from the past, this appraisal does not take a chapter-by-chapter approach. Instead, it selects nine major thematic areas encompassing the economy and elaborates upon them. The emphasis is on gleaning lessons and chartering the way forward.

The opening Theme Chapter titled 'The Economy & Policies: An Overview' assesses the performance of the economy against the targets at the aggregate level and discusses the policy initiatives of the present government in the context of the overall objective of poverty alleviation. The Theme Chapter on 'Macro Economic Factors' offers the overall background and Plan financing, while the chapter on 'Governance' discusses a variety of measures aimed at improving the efficiency of the economy. Issues related to growth with inter-generational equity are addressed in the chapter devoted to the study of 'Environmental Sustainability'. The development of human capital, which cuts across all sectors of the economy, is spread over two chapters: 'Employment & Skill Development' and 'Human Resource Development'. The former chapter focuses on skill creation, vocational education and labour-market issues while the latter concentrates on education, health and woman and child development. The all-important issues of infrastructure including those relating to energy are taken up in the chapter entitled 'Physical Infrastructure'. Two remaining chapters are devoted to overall 'Agriculture and Rural Transformation' and 'Urban Transformation'.

To revive growth and overcome structural constraints in the economy, key policy reforms have been undertaken by the Government, while many more like the Goods and Services Tax (GST) are in the pipeline. In the spirit of cooperative federalism, States and the Central Government have joined hands in taking the reform process forward in the important area of labour, which is in the Concurrent List of the Constitution. Rajasthan, Madhya Pradesh, Andhra Pradesh and Gujarat have introduced far-reaching reforms in this area that the central government has approved. These reforms and initiatives would give further push to the economy, which is already on a higher growth path, inspite of two consecutive droughts.

The current financial year (2016-17) is the terminal year of the Twelfth Five-year Plan.When the present Government took charge, it was tentatively decided that the remaining period of the current Five Year Plan would serve as a transition period. At the time, it was felt that a call on the question of what ought to replace Five Year Plans may be taken later. This call has now been taken and NITI Aayog has been tasked with preparing the following documents:

(i) A vision document keeping in view the social goals set and/or proposed for a period of 15years;

(ii) A 7-year strategy document spanning 2017-18 to 2023-24 to convert the longer-term vision into implementable policy and action as a part of a "National Development Agenda"; and

(iii) A 3-year Action document for 2017-18 to 2019-20 aligned to the predictability of financial resources during the 14^{th} Finance Commission Award period. This is also to help translate into actions the goals of the government to be achieved by 2019.

To carry out formulation of these documents NITI Aayog has initiated consultations with the Union Miniseries, State Governments and experts from all walks of life.

The decision to discontinue Five Year Plans has also meant that the distinction between plan and non-plan expenditures conventionally made will no longer be made in the future Budgets beginning 2017-18. This is a suggestion that has long been made by economists. The principal distinction will now be between revenue and capital expenditures.

A document such as this requires a massive effort and is the result of efforts of many. The bulk of the work on it was done when Smt. Sindhushree Khullar was the CEO, NITI Aayog. Her guidance and hard work were critical to the completion of the document. The document also benefited greatly from guidance and comments provided at various stages by NITI Aayog Members Shri Bibek Debroy, Dr. V.K Saraswat and Prof. Ramesh Chand. Shri Amitabh Kant, CEO, NITI Aayog, who joined the NITI Aayog as the CEO in January 2016, has been a constant source of encouragement and guidance to the team in the course of updating and finalizing the document. My sincere thanks are also due to our two very able Additional Secretaries, all the nodal advisers, group advisers and their teams for preparation of their theme chapters and their valuable support in completing the exercise. Special thanks go to Dr. P.K Anand, Senior Consultant, for coordinating the work on the document and Shri B.B. Sharma, Director and Shri R.B.Tyagi, Research Associate for assisting Dr. Anand from beginning to end. Finally, I wish to acknowledge the contribution of staff of all the Verticals/Divisions, NITI Aayog.

(Arvind Panagariya)

Contents

Chapters

Figures

Tables

Boxes

Acronyms

AAI	Airports Authority of India
AAY	Antyodaya Anna Yojana
ABL	Activity-Based Learning
ACA	Additional Central Assistance
ACQ	Annual Contracted Quantity
ACRA	Accounting and Corporate Regulatory Authority
ACS	Average Cost of Supply
AD	Accelerated Depreciation
AE	Advance Estimates
AEGR	Annual Exponential Growth Rate
AePS	Aadhaar-enabled Payment System
AGs	Accountant Generals
AIATSL	Air India Air Transport Services Ltd
AIBP	Accelerated Irrigation Benefits Programme
AICTE	All India Council for Technical Education
AIESL	Air India Engineering Services Ltd.
AIIMS	All India Institute of Medical Sciences
AIM	Atal Innovation Mission
AISHE	All India Survey on Higher Education
AMRUT	Atal Mission of Rejuvenation and Urban Transformation
AMS	Aggregate Measure of Support
ANC	Ante Natal Care
ANM	Auxiliary Nurse & Midwife
ANSCI	Air Navigation Services Corporation of India
AP	Andhra Pradesh
AP	Annual Plan
APB	Aadhaar Payment Bridge
APMC	Agricultural Produce Marketing Committee
APY	Atal Pension Yojana
ARC	Administrative Reforms Commission
ASA	Authentication Service Agencies
ASER	Annual Status of Education Report
ASHA	Accredited Social Health Activist
ASU&H	Ayurveda, Siddha, Unani and Homoeopathy

AT&C	Aggregate Technical & Commercial
ATFC	Agriculture Technology Forecast Centre
ATIs	Advanced Training Institutes
ATIF	Agritech Infrastructure Fund
AUA	Authentication User Agencies
AWCs	Anganwadi Centres
AWW	Anganwadi Workers
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy
B.Sc (Nursing)	Bachelor of Nursing Science
BCC	Behavior Change Communication.
BCM	Billion Cubic Metre
BCR	Balance from Current Revenues
BE	Budget Estimates
BGREI	Bringing Green Revolution to Eastern India
BOT	Build–operate–transfer
BPL	Below Poverty Line
BPO	Business Process Outsourcing
BRC	Block Resource Centre
BRGF	Backward Region Grant Funds
BSI	Botanical Survey of India
BSNL	Bharat Sanchar Nigam Limited
BSR	Basic Science Research
BSUP	Basic Services to the Urban Poor
BU	Billion Units
CAA	Constitution Amendment Act
CABE	Central Advisory Board of Education
CAD	Command Area Development
CAD	Current Account Deficit
CAGR	Compound Annual Growth Rate
CAL	Computer Aided Learning
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
CAPEX	Capital Expenditure
CAS	Central Assistance to States
CASP	Central Assistance to State & UT Plans
CBD	Convention on Biological Diversity
CBDM	Community Based Disaster Management
CBDT	Central Board of Direct Taxes
CBHI	Central Bureau of Health Intelligence
CBS	Core Banking Solution
CCEA	Cabinet Committee on Economic Affairs
CCTNS	Crime & Criminal Tracking Network and Systems
C-DAP	Comprehensive District Agricultural Plan
CDB	Coconut Development Board
CDSCO	Central Drugs Standard Control Organization
CEA	Central Electricity Authority
CELC	Child Enrolment Lite Client
CETP	Common Effluent Treatment Plant
CEZ	Coastal Economic Zone
CFPI	Consumer Food Price Indices
CFSD	Credit Framework for Skill Development
CGA	Controller General of Accounts
CGHS	Central Government Health Scheme
CGSSD	Credit Guarantee Fund Scheme for Skill Development

CHC	Custom Hiring Centre
CHC	Community Health Centre
CHP	City HRIDAY Plans
CIDR	Central Identity Repository
CIL	Coal India Limited
CIS	Changes in Stock
CITS	Craftsman Instructor Training Scheme
CSR	Child Sex Ratio
CSW	Civil Society Window
CMP	Comprehensive Mobility Plan
CNG	Compressed Natural Gas
COBSE	Council of Boards of School Education
CoE	Centre of Excellence
CoP	Conference of the Parties
COS	Committee of Secretaries
CPE	Colleges with Potential for Excellence
CPEPA	Centre with Potential for Excellence in Particular Area
CPGRAMS	Centralised Public Grievance Redressal and Monitoring System
CPHEEO	Central Public Health & Environmental Engineering Organisation
CPI	Consumer Price Index
CPI-AL	Consumer Price Index- Agricultural Labourers
CPI-IW	Consumer Price Index- Industrial Workers
CPMU	Central Project Monitoring Unit
CPSE	Central Public Sector Enterprise
CPSMS	Central Plan Scheme Monitoring System
CRC	Cluster Resource Centre
CRF	Central Road Fund
CRS	Civil Registration System
CRZ	Coastal Regulation Zone
CSC	Common Service Centre
CSO	Central Statistics Office
CSR	Corporate Social Responsibility
CSS	Centrally Sponsored Schemes
CSU	Central Surveillance Unit
CTET	Central Teacher Eligibility Test
CTSA	Central Tibetan Schools Administration
CWCs	Child Welfare Committees
CWIP	Cumulative Work in Progress
CWSN	Children With Special Needs
DAE	Department of Atomic Energy
DBFOT	Design Build Finance Operate Transfer
DBT	Direct Benefit Transfer
DBTL	Direct Benefit Transfer of LPG
DCPUs	District Child Protection Units
DDSVP	Demographic Data Standards and Verification Committee Report
DDUGJY	Deendayal Upadhyaya Gram Jyoti Yojna
DDU-GKY	Deen Dayal Upadhyaya Grameen Kaushalya Yojana
DEA	Department of Economic Affairs
DEC	Distance Education Council
DeitY	Department of Electronics, Information & Technology
DFC	Dedicated Freight Corridor
DFPD	Department of Food and Public Distribution
DGET	Directorate General of Employment & Training
DGHS	Directorate General of Health Services

DGMS	Directorate General of Mines Safety
DGT	Directorate General of Training
DIPP	Department of Industrial Policy and Promotion
DH	District Hospital
DHR	Department of Health Research
DIET	District Institute of Education and Training
DISE	District Information System of Education
DLHS	District Level Health Survey
DLVMC	District Level Vigilance and Monitoring System
DMEO	Development Monitoring Evaluation Office
DMIC	Delhi-Mumbai Industrial Corridor
DMRC	Delhi Metro Rail Corporation
DoE	Department of Expenditure
DoT	Department of Telecommunications
DOTS	Directly Observed Treatment – Short Course
DPMUs	District Project Monitoring Units
DPR	Detailed Project Report
DRDA	District Rural Development Agency
DSS	Decision Support System
DSU	District Surveillance Unit
DTCK	Direct Transfer of Cash Subsidy on PDS Kerosene
DU	Dwelling Units
EAG	Empowered Action Group
EBB	Educationally Backward Blocks
EC	Economic Census / Environmental Clearance
ECCE	Early Childhood Care and Education
EDFC	Eastern Dedicated Freight Corridor
EDL	Essential Drug List
EDS	Electronic Delivery of Services
EFC	Expenditure Finance Committee
e-FMS	Electronic Fund Management System
EID	Enrolment Identity
EMP	Environment Management Plan
e-MR	Electronic Muster Roll
EMR	Electronic Medical Record
EPC	Engineering Procurement and Construction
EPF	Employees' Provident Fund
EPFO	Employees' Provident Fund Organisation
EPS	Employees' Pension Scheme
ERM	Extension, Renovation and Modernization
ESI	Employees' State Insurance
ESIC	Employees' State Insurance Corporation
ESSO	Earth System Science Organization
EST&P	Employment through Skills Training & Placement
EWS	Economically Weaker Sections
FAO	Food and Agriculture Organization
FAR	Floor Area Ratio
FC	Forest Clearance
FC	Finance Commission
FCI	Food Corporation of India
FDI	Foreign Direct Investment
FFC	Fourteenth Finance Commission

FICCI	Federation of Indian Chambers of Commerce & Industry
FII	Foreign Institutional Investment
FIPB	Foreign Investment Promotion Board
FPI	Foreign Portfolio Investment
FPOs	Farmer Producer Organisations
FPS	Fair Price Shop
FR	Feasibility Report
FRBM	Fiscal Responsibility and Budget Management
FRP	Financial Restructuring Plan
FRU	First Referral Unit
FSA	Fuel Supply Agreement
FSI	Floor Space Index
FSSAI	Food Safety and Standards Authority of India
FTA	Foreign Tourist Arrivals
FTAs	Free Trade Agreements
FY	Financial Year
GAD	General Arrangement Drawings
GAK	Gram Aarogya Kendra
GBS	Gross Budgetary Support
GCA	Gross Cropped Area
GCF	Gross Capital Formation
GDP	Gross Domestic Product
GDPfc	Gross Domestic Product at Factor Cost
GDPmp	Gross Domestic Product at Market Prices
GER	Gross Enrolment Ratio
GFCF	Gross Fixed Capital Formation
GIM	National Mission for a Green India

GIS	Geographical Information System
GMO	Genetically Modified Organism
GOI	Government of India
GP	Gram Panchayat
GPR	Government Process Re-engineering
GPS	Global Positioning System
GPs	Gram Pachayats
GSDP	Gross State Domestic Product
GSI	Geological Survey of India
GST	Goods and Services Tax
GVA	Gross Value Added
HBNC	Home Based New Born Care
HEFA	Higher Education Financing Agency
HEMM	Heavy Earth Moving Machinery
HELP	Hydrocarbon Exploration and Licensing Policy
HIS	Health Information System
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
HLC	High Level Committee
HLEC	High Level Expert Committee
HMIS	Health Management Information System
HNEC	HRIDAY National Empowered Committee
HP	Himachal Pradesh
HPEC	High Powered Expert Committee
HR	Human Resource
HRD	Human Resource Development
HRIDAY	National Heritage City Development and Augmentation Yojana
HSD	High-Speed Diesel

HSRT	Hunar Se Rozgar Tak
HW (F)	Health Worker (Female)
IAP	Integrated Action Plan
IARI	Indian Agricultural Research Institute
IAY	Indira Awaas Yojana
IBA	Indian Banks Association
IBM	Indian Bureau of Mines
ICAR	Indian Council of Agricultural Research
ICDS	Integrated Child Development Services
ICMR	Indian Council of Medical Research
ICOR	Incremental Capital Output Ratio
ICPS	Integrated Child Protection Services
ICRIER	Indian Council for Research on International Economic Relations
ICT	Information and Communication Technology
IDSP	Integrated Disease Surveillance Programme
IEBR	Internal and Extra Budgetary Resources
IEC	Information, Education and Communication
IEM	Industrial Entrepreneur Memorandum
IFMR	Institute for Financial Management and Research
IGMSY	Indira Gandhi Matritva Sahyog Yojana
IGNDPS	Indira Gandhi National Disabled Pension Scheme
IGNOAPS	Indira Gandhi National Old Age Pension Scheme
IGNWPS	Indira Gandhi National Widow Pension Scheme
IGRUA	Indira Gandhi Rashtriya Uran Akademi
IHHL	Individual Household Latrines
IHM	Institute of Hotel Management
IHSDP	Integrated Housing & Slum Development Programme
IIAN	Indian Institute of Advanced Nursing
IIFCL	India Infrastructure Finance Company Ltd.
IIIT	Indian Institute of Information Technology
IIM	Indian Institute of Management
IISC	Indian Institute of Science
IISER	Indian Institute of Science Education and Research
IIT	Indian Institute of Technology
IL	Industrial License
ILO	International Labour Organization
IMC	Inter Ministerial Committee
IMF	International Monetary Fund
IMR	Infant Mortality Rate
INAP	India Newborn Action Plan
INIs	Institutions of National Importance
INSTAL	Identification and Nurturing of Sporting Talent
INVIT	Infrastructure Investment Trust
IOR	International Offshore Rule
IPC	Irrigation Potential Created / Inter Personal Communication / Internal Planning Commission
IPDS	Integrated Power Development Scheme
IPHS	Indian Public Health Standard
IPU	Irrigation Potential Utilized
IREDA	Indian Renewable Energy Development Agency Ltd.

IRDA	Insurance Regulatory and Development Authority
IRFC	Indian Railway Finance Corporation
ISM	Indian System of Medicines
ISPs	Internet Service Providers
ISSNIP	ICDS Systems Strengthening & Nutrition Improvement Project
ISWP	Integrated State Water Plan
IT	Information technology
ITCS	Information Technology and Communication Services
ITES	Information Technology Enabled Services
ITI	Industrial Training Institutes
ITR	Income Tax Return
IUCD	Intra Uterine Contraceptive Device
IVRS	Interactive Voice Response System
IWAI	Inland Waterways Authority of India
IWMP	Integrated Watershed Management Programme
IWT	Inland Water Transport
JAM	Jan-dhan, Aadhaar and Mobile numbers
JDY	Jan Dhan Yojana
JFMC	Joint Forest Management Committees
JIPMER	Jawaharlal Institute of Post Graduate Medical Education and Research
JJBs	Juvenile Justice Boards
JMC	Joint Management Committee
JNPT	Jawaharlal Nehru Port Trust
JNNSM	Jawaharlal Nehru National Solar Mission
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
JNV	Jawahar Navodaya Vidyalaya
JPMC	Joint Programme Management Committee
JVC	Joint Venture Company
KGBV	Kasturba Gandhi BalikaVidyalaya
Km	Kilometer
KMC	Kangaroo Mother Care
KSA	e-KYC Service Agency
KVA	e-KYC User Agency
KVKs	Krishi Vigyan Kendras
KVS	Kendriya Vidyalaya Sangathan
KYC	Know Your Customer
LAN	Local Area Net Work
LBFL	Local Bodies Finance List
LCC	Low-Cost Carriers
LE	Latest Estimates
LFPR	Labour Force Participation Rate
LHVs	Lady Health Visitors
LIGs	Low Income Group
LIN	Labour Identification Number
LMIS	Labour Market Information System
LNG	Liquid Natural Gas
LPCD	Litres Per Capita Per Day
LPG	Liquefied Petroleum Gas
LR	Land Readjustment
LRT	Light Metro Rail
LWE	Left Wing Extremism
MA	Mukhyamantri Amrutam
MANAS	Maulana Azad National Academy for Skills
MBBS	Bachelor of Medicine, Bachelor of Surgery

MC	Mentor Councils
MCA	Model Concession Agreement
MCCs	Model Career Centres
MCDR	Mineral Conservation and Development Rules
MCI	Medical Council of India
MCR	Miscellaneous Capital Receipts
MCTS	Mother and Child Tracking System
MDG	Millennium Development Goal
MDM	Mid-Day Meal
MDMS	Mid-Day Meals in Schools
MDWS	Ministry of Drinking Water and Sanitation
MEA	Ministry of External Affairs
MEP	Minimum Export Price
MES	Modular Employable Scheme
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
Mha	Million hectare
MHRD	Ministry of Human Resources Development
MIDH	Mission for Integrated Development of Horticulture
MIS	Management Information System
MIS	Market Intervention Scheme
MKSP	MahilaKisanSashaktikaranPariyojana
MLA	Members of Legislative Assembly
MLD	Million Litres per Day
MMDR	Mines and Minerals (Development & Regulation)
MMI	Major & Medium Irrigation
MMP	Mission Mode Project
MMR	Maternal Mortality Ratio
MMS	Mid-day Meal Scheme
MMSCMD	Million Metric Standard Cubic Meter Per Day
MMTPA	Million Metric Tonnes Per Annum
MoCA	Ministry of Civil Aviation
MoDWS	Ministry of Drinking Water Supply
MoEF&CC	Ministry of Environment, Forest & Climate Change
MoH&FW	Ministry of Health and Family Welfare
MoHUPA	Ministry of Housing and Urban Poverty Alleviation
MoLEM	Ministry of Labour and Employment
MOOC	Massive Open Online Course
MoPR	Ministry of Panchayati Raj
MoRD	Ministry of Rural Development
MoRTH	Ministry of Road Transport and Highways
MOSPI	Ministry of Statistics & Programme Implementation
MoU	Memorandum of Understanding
MoUD	Ministry of Urban Development
MoWR	Ministry of Water Resources
MoWR, RD&GR	Ministry of Water Resources, River Development and Ganga Rejuvenation
MP	Madhya Pradesh / Member of Parliament
MPLADS	Member of Parliament Local Area Development Scheme
MRO	Maintenance, Repair & Overhaul
MRP	Maximum Retail Price

MRTS	Metro Rail Transit System
MS	Mahila Samakhya
MSDE	Ministry of Skill Development and Entrepreneurship
MSI	Multi-Skill Institutes
MSG	Mission Steering Group
MSME	Micro Small & Medium Enterprises
MSPs	Minimum Support Prices
MT	Million Tonne
MTNL	Mahanagar Telephone Nigam Limited
MTPA	Million Tonne Per Annum
MTS	Mining Tenement System
MUDRA	Micro Units Development Refinance Agency
MVA	Microsoft Virtual Academy
MW	Megawatts
MW	Mega Watt
MWCD	Ministry of Women and Child Development
MYS	Mean Year of Schooling
NAAC	National Assessment & Accreditation Council
NABARD	National Bank for Agricuture and Rural Development
NAM	National Agriculture Market
NAMP	National Air Quality Monitoring Programme
NAPCC	National Action Plan on Climate Change
NASSCOM	National Association of Software and Services Companies
NBA	Nirmal Bharat Abhiyan
NBCC	Newborn Care Corner
NBS	Nutrient-Based Subsidy
NBSU	Newborn Stabilisation Unit
NCAP	National Civil Aviation Policy
NCC	Nagarjuna Construction Company
NCDC	National Centre for Disease Control
NCDHR	National Campaign on Dalit Human Rights
NCEF	National Clean Energy Fund
NCERT	National Council of Educational Research & Training
NCEUS	National Commission for Enterprises in the Unorganized Sector
NCIIPC	National Critical Information Infrastructure Protection Centre
NCGTC	National Credit Guarantee Trustee Company
NCHER	National Commission for Higher Education and Research
NCHMCT	National Council for Hotel Management and Catering Technology
NCR	National Capital Region
NCS	National Career Service
NCSL	National Centre for School Leadership
NCSP	National Career Service Project
NCTE	National Council of Teacher Education
NCVT	National Council of Vocational Training
NDA	National Democratic Alliance
NDMA	National Disaster Management Authority
NEAMA	National Environment Assessment and Monitoring Authority
NEFC	National Environment and Forestry Council

NeGAP	National e-Governance Action Plan
NeGP	National e-Governance Plan
NELP	New Exploration Licensing Policy
NER	North Eastern Region
NERF	National Environment Restoration Fund
NERIST	North Eastern Regional Institute of Science & Technology
NFBS	National Family Benefit Scheme
NFDB	National Fisheries Development Board
NFHS	National Family Health Survey
NFS	Network For Spectrum
NFSA	National Food Security Act
NFSM	National Food Security Mission
NGIS	National Geographical Information System
NGO	Non-Government Organisation
NGOs	Non-Governmental Organisations
NHAI	National Highways Authority of India
NHB	National Housing Bank
NHB	National Horticulture Board
NHIDC	National Highway Infrastructure Development Corporation
NHDP	National Highways Development Project
NHM	National Health Mission
NHM	National Horticulture Mission
NIC	National Informatics Centre
NICRA	National Initiatives on Climate Resilient Agriculture
NIHI	National Institute of Health Intelligence
NII	National Information Infrastructure
NIIF	National Investment and Infrastructure Fund
NIOS	National Institute of Open Schooling
NIP	National Institute of Paramedics
NIPFP	National Institute of Public Finance and Policy
NIPS	National Institute of Paramedical Sciences
NIT	National Institute of Technology
NITI	National Institution for Transforming India
NITSER	National Institutes of Technology, Science Education and Research
NIUA	National Institute of Urban Affairs
NKN	National Knowledge Network
NLCP	National Lake Conservation Plan
NLCPR	Non-Lapsable Central Pool of Resoures
NLM	National Livelihood Mission
NLRMP	National Land Records Modernization Programme
NMAET	National Mission for Agricultural Extension & Technology
NMCG	National Mission on Clean Ganga
NMEICT	National Mission on Education through ICT
NME-ICT	National Mission on Education through Information and Communication Technology
NMEW	National Mission for Empowerment of Women
NMF-W	National Mission for Empowerment of Women
NMOOP	National Mission for Oilseeds and Oil Palm
NMPB	National Medicine Plant Board

NMSA	National Mission for Sustainable Agriculture
NMT	Non-Motorised Transport
NNCC	NRHM-NACP Coordination Committee
NNM	National Nutrition Mission
NOC	National Oil Companies
NOFN	National Optical Fibre Network Project
NOS	National Occupational Standards
NPA	Non-Performing Assets
NPBBDD	National Programme for Bovine Breeding and Dairy Development
NPCA	National Plan for Conservation of Aquatic Eco-Systems
NPCDCS	National Programme for the Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
NPHCE	National Programme for Health Care
NPISHs	Non-Profit Institutions Serving Households
NPR	National Population Register
NPS	New Pension Scheme
NPSD	New Policy on Seed Development
NPTEL	National Programme on Technology Enhanced Learning
NQRI	National Quality Renaissance Initiative
NRCP	National River Conservation Plan
NRDWP	National Rural Drinking Water Programme
NRHM	National Rural Health Mission
NRLM	National Rural Livelihoods Mission
NRSC	National Remote Sensing Centre
NRSTMB	National Road Safety Transport Management Board
NSAP	National Social Assistance Programme
NSDA	National Skill Development Agency
NSDC	National Skill Development Corporation
NSDCB	National Skill Development Coordination Board
NSDF	National Skill Development Fund
NSQC	National Skills Qualification Committee
NSQF	National Skill Qualification Framework
NSTSS	National Sport Talent Search Scheme
NSS	National Sample Survey
NSSO	National Sample Survey Organisation
NTDPC	National Transport Development Policy Committee
NTFP	Non-Timber Forest Produce
NTKM	Net Tonne Kilometer
NTP-2012	National Telecom Policy-2012
NTPC	National Thermal Power Corporation Ltd.
NUEPA	National University of Educational Planning and Administration
NUHM	National Urban Health Mission
NULM	National Urban Livelihood Mission
NV	NavodayaVidyalaya
NVBDCP	National Vector Borne Disease Control Programme
NVEQF	National Vocational Education Qualification Framework
NVS	NavodayaVidyalayaSamiti
NVVN	NTPC Vidyut Vyapar Nigam Ltd.
NWCP	National Wetland Conservation Programme
NWDA	National Water Development Agency
NWRs	Negotiable Warehouse Receipts

NYLP	National Young Leader Programme
NYK	Nehru Yuva Kendras
NYKS	National Youth Corps
O&M	Operation & Maintenance
OBCs	Other Backward Castes
OCBIS	Online Core Business Integrated System
OECD	Organisation for Economic Cooperation and Development
OFC	Optical Fiber Cable
OMS	Output per Man Shift
OMSS	Open Market Sales Scheme
OMT	Operate, Maintain and Transfer
ONGC	Oil and Natural Gas Commission
OIL	Oil India Ltd.
OoSC	Out of School Children
OROP	One Rank One Pension
OSS	Open Source Software
OTACA	Additional Central Assistance for Other Projects
PAB	Project Appraisal Board
PAN	Permanent Account Number
PBL	Project-Based Learning
PCC	Peripheral Cancer Centre
PCI	Per Capita Income
PCPNDT	Pre Conception, Pre Natal Diagnostic Act
PDI	Panchayat Devolution Index
PDS	Public Distribution System
PE	Provisional Estimates
PE	Permanent Establishment
PECs	Permanent Enrolment Centres
PEO	Programme Evaluation Organisation
PFMS	Project Financial Management System
PFMS	Public Finance Management System
PG	Postgraduate
PGIMER	Post Graduate Institute of Medical Education and Research
PHCs	Primary Health Centres
PhD	Doctor of Philosophy
PHPDT	Peak Hour Per Direction Traffic
PIB	Public Investment Board
PINDICS	Performance Indicators for Elementary School Teachers
PIP	Participatory Identification of Poor
PIP	Programme Implementation Plan
PIU	Project Implementation Units
PKM	Passenger Kilometer
PLB	Permanently Lubricated
PLF	Plant Load Factor
PMAY	Pradhan Mantri Awaas Yojana
PMDT	Programmatic Management of Drug-resistant Tuberculosis
PMFBY	Pradhan Mantri Fasal Bima Yojana
PMG	Project Monitoring Group
PMGSY	Pradhan Mantri Gram Sadak Yojana
PMJDY	Prime Minister's Jan Dhan Yojana
PMJDY	Pradhan Mantri Jan-DhanYojna
PMJJBY	Pradhan Mantri Jeevan Jyoti Bima Yojana
PMKSY	Pradhan Mantri Krishi Sinchayee Yojana
PMKSY	Pradhan Mantri Krishi Sichai Yojana
PMKVY	Pradhan Mantri Kaushal Vikas Yojana

PMMMNMTT	Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching
PMO	Prime Minister Office
PMRDF	Prime Minister's Rural Development Fellows
PMSBY	Pradhan Mantri Suraksha Bima Yojana
PMSSY	Pradhan Mantri Swasthya Suraksha Yojana
PNG	Piped Netural Gas
POA	Proof of Address
POI	Proof of Identity
POL	Petroleum, Oil and Lubricant
PoS	Point of Sale
PPP	Public Private Partnership
PRAGATI	Pro-Active Governance and Timely Implementation
PRASAD	Pilgrimage Rejuvenation and Spiritual Augmentation Drive
PRI	Panchayati Raj Institutions
PRIA	Participatory Research in Asia
PS	Primary School
PSEs	Public Sector Enterprises
PSF	Price Stabilization Fund
PSK	Passport Sewa Kendra
PSU	Public Sector Undertaking
PSUs	Public Sector Undertakings
PTR	Pupil Teacher Ratio
PURA	Provision of Urban Amenities in Rural Areas
PV	Photovoltaics
PwD	Person with Disability
PYKKA	Panchayat Yuva Krida Aur Khel Abhiyan
QCI	Quality Council of India
QP	Qualification Packs
R&D	Research & Development
R&R	Resettlement & Rehabilitation
RAA	Rashtriya Aavishkar Abhiyan
RAHI	Roads and Highways Information System
R-APDRP	Restructured Accelerated power Development Scheme
RAY	Rajiv Awas Yojana
RBI	Reserve Bank of India
RBSK	Rashtriya Bal Swasthya Karyakram
RCH	Reproductive and Child Health
RDA	Rail Development Authority
RDG	Route Dispersal Guidelines
RE	Revised Estimates
RETT	Regional Education Technology Team / Revewable Energy Task Team
RFCTLAR&R	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement
RFD	Result Framework Documents
RGGVY	Rajiv Gandhi Grameen Vidyutikaran Yojana
RGI	Registrar General of India
RGKA	Rajiv Gandhi Khel Abhiyan
RGPSA	Rajiv Gandhi PanchayatSashaktikaran Abhiyan
RIDF	Rural Infrastructure Development Fund
RIP	Regional Institute of Paramedics

RIPS	Regional Institute of Paramedical Sciences
RKS	Rogi Kalyan Samitis
RKVY	RashtriyaKrishiVikas Yojana
RLNG	Re-gasified Liquefied Natural Gas
RMK	Rashtriya Mahila Kosh
RMNCH+A	Reproductive, Maternal Newborn, Child Health plus Adolescent
RMSA	Rashtriya Madhyamik Shiksha Abhiyan
RNTCB	Revised National Tuberculosis Control Programme
ROB	Robotic Operating Buddy / Road Over Bridges
RoR	Record of Rights
ROU	Right of Use
ROW	Rest of the World
RPL	Recognition of Prior Learning
RPO	Renewable Purchase Obligations
RRB	Regional Rural Bank
RRR	Repair, Renovation and Restoration
RS	Remote Sensing
Rs	Rupees
RSBY	Rashtriya Swasthya Bima Yojana
RSETI	Rural Self-Employment Training Institute
RTA	Rail Tariff Authority
RTAs	Regional Trade Agreements
RTE	Right to Education
RTPV	Rooftop Photo voltaic
RUBs	Road Under Bridges
RUSA	Rashtriya Uchhatar Siksha Abhiyan
RVTI	Regional Vocational Training Institute
SAAP	State Annual Action plans
SAARC	South Asian Association for Regional Cooperation
SAGY	Sansad Aadarsh Gram Yojana
SAMVAY	Skill Assessment Matrix for Vocational Advancement of Youth
SAP	State Agricultural Plan
SAPCC	State Action Plan on Climate Change
SARDPNE	Special Accelerated Road Development Programme in the North East
SAUs	State Agricultural Universities
SBA	Skilled Birth Attendants
SBM	Swachh Bharat Mission
SBM (G)	Swachh Bharat Mission (Gramin)
SC	Schedule Caste
SC	Scheduled Caste
SCA	Special Central Assistance
SCADA	Supervisory Control And Data Acquisition
SCCL	Singareni Colleries Company Ltd.
SCPS	State Child Protection Societies
SCR	Student Classroom Ratio
SCs	Sub Centres
SDC	State Data Centre
SDG	Sustainable Development Goal
SDH	Sub Divisional Hospital
SECC	Socio Economic Caste Census
SECI	Solar Energy Corporation of India
SEFC	State Environment and Forestry Council
SEIAA	State Environment Impact Assessment Authority

SERC	State Electricity Regulatory Commission
SETU	Self-Employment and Talent Utilization
SEZ	Special Economic Zone
SFAC	Small Farmers Agri-business Consortium
SFC	State Finance Commission
SGSY	Swarnajayanti Grameen Swarozgar Yojana
SHEPs	State Higher Education Plans
SHGs	Self Help Groups
SIDBI	Small Industries Development Bank of India
SIFTI	Scheme for Financing Viable Infrastructure Projects
SIM	Subscriber Identity Module
SJSRY	Swarna Jayanti Shahari Rozgar Yojana
SKO	Superior Kerosene
SLWM	Solid and Liquid Waste Management
SLNAs	State Level Nodal Agencies
SMA	State Mission Authority
SMIS	Store Management Information System
SN	Staff Nurse
SNCU	Special NewBorn Care Units
SPCA	Society for Prevention of Cruelty to Animals
SPCB	State Pollution Control Board
SPMUs	State Project Monitoring Units
SPV	Special Purpose Vehicle
sq km	Squre Kilometer
SRCWs	State Resources Centres for Women
SRR	Seed Replacement Rate
SRS	Sample Registration System
SSA	Sarva Shiksha Abhiyan
SSC	Sector Skill Council
SSC	State Skill Corporations
SSDMs	State Skill Development Missions
SSM	State Skill Missions
SSUP	Self Service Update Portal
SSU	State Surveillance Unit
ST	Schedule Tribes
STG	Standard Treatment Guidelines
STP	Sewarage Treatment Plant
SWAN	State Wide Area Network
SWAYAM	Study Webs of Active Learning for Young Aspiring Minds
SWM	Solid Waste Management
SWOT	Strengths, Weaknesses, Opportunities and Threats
T&D	Transmission and Distribution
TAMP	Tariff Authority for Major Ports
TAP	Turn Around Plan
TB	Tuberculosis
TBOs	Tree Borne Oilseeds
TDET	Technology Development Extension and Training
TEQIP	Technical Education Quality Improvement Programme
TFR	Total Fertility Rate
TISS	Tata Institute of Social Sciences
TOD	Transit Oriented Development
ToT	Transfer of Technology
TPC	Total Project Cost

TPDS	Targeted Public Distribution System
TSDSI	Telecommunications Standards Development Society, India
TSPs	Telecom Service Providers
TRAI	Telecom Regulatory Authority of India
UA	Urban Agglomerations
UEE	Universalization of Elementary Education
UEN	Unique Entity Number
UG	Under Graduate
UGC	University Grants Commission
UDAY	Ujwal Discom Assurance Yojana
U-DISE	Unified-District Information System for Education
UID	Unique Identification
UIDAI	Unique Identification Authority of India
UIDSSMT	Urban Infrastructure Development for Small & Medium Towns
UIG	Urban Infrastructure and Governance
ULBs	Urban Local Bodies
ULCRA	Urban Land Ceiling Restriction Act
UMPP	Ultra Mega Power Projects
UN	United Nations
UNICEF	United Nations Children's Fund
UP	Uttar Pradesh
UPE	University with Potential for Excellence
UPS	Upper Primary School
UPSS	Usual Principal and Subsidiary Status
URM	Urban Rejuvenation Mission
USHA	Urban Statistics for HR and Assessments
USOF	Universal Service Obligation Fund
USTTAD	Upgrading the Skills and Training in Traditional Arts/ Crafts for Development
USV	Support to Urban Street Vendors
UTs	Union Territories
VAT	Value Added Tax
VDP	Village Development Plan
VGF	Viability Gap Funding
VHSNC	Village Health Sanitation & Nutrition Committee
VOs	Voluntary Organizations
VTP	Vocational Training Programes
WB	World Bank
WCD	Women Child Development
WDFC	Western Dedicated Freight Corridor
WEO	World Economic Outlook
WNTA	Wada Na Todo Abhiyan
WPI	Wholesale Price Index
WRA	Water Regulatory Authority
WTO	World Trade Organisation
WWH	Working Women Hostel
ZSI	Zoological Survey of India

Annexure

1

The Economy & Policies: An Overview

1.1 The Strategy for Inclusive Growth

1.1.1 Rather than project a single average growth rate over the five-year period, the Twelfth Five Year Plan (2012-17) envisaged three scenarios termed as "strong inclusive growth", "insufficient action" and "policy logjam". The Plan pegged the average annual growth rate of the Gross Domestic Product (GDP) under the three scenarios at 8 per cent, 6 to 6.5 per cent and 5 to 5.5 per cent, respectively.[1] More than four years into the Plan, where do we stand?

1.1.2 Answer to this question requires spelling out first some key revisions to the methodology of estimating the GDP that the Central Statistical Office (CSO) has recently introduced. Revisions have been made along three dimensions:[2] (a) The base year has been changed from 2004-05 to 2011-12; (b) For the corporate sector, financial corporations and local bodies and autonomous institutions, more reliable sources of data have replaced those previously used; and (c) In conformity with the international practice, the GDP is now measured at market prices (broadly equivalent to consumer prices) instead of factor costs (broadly equivalent to producer prices). **Table 1.1** shows the performance of the economy during the first four years of the Twelfth Plan according to the revised series.

1.1.3 Methodologically, the new series represents substantial improvement over the previous series. But the shift also means that the GDP growth rates in Table 1 are not comparable to the GDP growth rates calculated using the old methodology. Had it been the simple question of changing the base year from 2004-05 to 2011-12 or switching from factor cost to market prices, appropriate adjustments could have been made to achieve comparability across the two series. Unfortunately, the change described in (b) above represents a switch in the sources of data that are not readily available for years preceding 2011-12. Because the GDP had been estimated under the old methodology only up to the year 2013-14, we have the growth rates associated with both the old and new methodology for years 2012-13 and 2013-14 only. When measured at factor cost, the real GDP growth under the old methodology turns out to be 4.5 per cent in 2012-13 and 4.7 per cent in 2013-14.[3]

1.1.4 Because the Twelfth Plan projections were based on the old series, it may be reasonably concluded that at least in 2012-13 and 2013-14, India has performed worse than the "policy logjam" scenario. The argument that this is because of deterioration of the global economy is at best partially valid. The major shock to the global economy dates back to September 2008 after which the Indian economy had recovered handsomely. But even ignoring this fact, the projections are presumed to factor the expected changes in the global economy. It is nobody's case that India will not benefit from a turnaround in the global economy. But it is indeed the case that

[1]Twelfth Five Year Plan, 2012-2017, Faster, More Inclusive and Sustainable Growth, Planning Commission, Government of India, 2013.

[2] See, Changes in Methodology and Data Sources in the New Series of National Accounts, Base Year 2011-12, Ministry of Statistics and Programme Implementation, http://mospi.nic.in/Mospi_New/upload/Methodology_NABase11_12_11mar15.pdf, for a detailed explanation of how the methodology has changed.

[3]Growth rates at market pricesare marginally higher at 4.7 per cent and 5.0 per cent respectively.

there is plenty of internal slack to allow transition from the policy logjam state to the strong inclusive growth state. With the policy changes and governance improvements introduced by the new government since taking charge and those contemplated, acceleration to 7 to 7.75 per cent in 2016-17, the last year of the Twelfth Plan, under the new GDP series, as envisaged in the Economic Survey 2015-16, is well within reach.[4]

conditions for sustained rapid growth that is also employment friendly. Second, using the ever-rising revenues made possible by growth, we must design and implement social programmes that yield the largest bang for the buck in terms of addressing different dimensions of poverty. Each of these challenges is worthwhile to consider in the context of the current Indian economic scenario.

Table 1.1: Growth Rates of Gross Value Added (GVA) and GDP at Market Prices (constant 2011-12 prices)

	2012-13	2013-14	2014-15	2015-16*
(GVA) or GDP at producer prices	5.4	6.3	7.1	7.3
GDP at market prices	5.6	6.6	7.2	7.6

*:Advance Estimates as on 08.02.2016

1.1.5 Of course, growth for its own sake has never been the objective of Indian planners. It has been sought, instead, as the instrument to combat poverty in all its aspects and eventually bring prosperity to all. Growth helps achieve this objective through two channels. First, a fast-growing economy directly pulls the poor into gainful employment, thus, improving their ability to access not just food, clothing and shelter but also privately available education and health. For this channel to work effectively, growth must raise the wages of and create large volume of good jobs for workers. Second, growth yields ever-rising revenues that allow the government to finance large-scale anti-poverty programmes, education and health. It was on the strength of such growth-generated revenues that India was able to introduce the Mahatma Gandhi National Rural Employment Guarantee Scheme, massively expand the Public Distribution System (PDS) under the Food Security Act, 2013 and greatly enhance the expenditures on education.

1.1.6 Therefore, in the broadest terms, the challenge of development is twofold. First we must create

1.2 Accelerated, Employment-friendly Growth Empowering the Citizens

1.2.1 With poverty removal the objective, any discussion of growth in the Indian context must begin with agriculture. In 2011-12, the latest year for which we have such data, agriculture employed 49 per cent of the workforce but produced just 17.9 per cent of India's GDP at current prices. This means that an extremely large proportion of the poor is employed in agriculture so that increases in agricultural productivity and incomes can produce a favourable impact on a large number of the poor. By the same token, an adverse outcome in agriculture puts a large number of poor under stress.

1.2.2 Unfortunately, after growing at 4 per cent per annum during the 11th Five Year Plan (2007-12), agriculture has come under heavy stress lately. At constant 2011-12 prices, growth rate in agriculture fell to 1.6 per cent during the first four years of the 12th Plan. For the year 2015-16, untimely rains and hailstorms in February and March 2015 caused serious damage to Rabi crops in 14 States with Rajasthan, Uttar Pradesh and Haryana in that order experiencing the most damage.

[4]Economic Survey 2015-16, Department of Economic Affairs, Ministry of Finance.

The government responded by bringing quick relief to the affected farmers through the State Disaster Response Fund and the National Disaster Response Fund.

1.2.3 Apart from this immediate stress, agriculture also faces a long-term challenge. Over the last several decades, irrigation has been expanded primarily through greater and greater extraction of ground water. The result has been a significant erosion of water tables. Additionally, prolonged overuse of urea has also had adverse impact on the health of soil in many states particularly in north-western region. Finally, productivity in agriculture has not seen significant rise in most of the crops.

1.2.4 Going forward, India needs to take several steps to revive and sustain growth in agriculture. The recent Occasional Paper based on the work by the NITI Aayog Task Force on Agricultural Development provides a detailed roadmap for rejuvenation of this important sector. Here we touch on a few selected measures.

1.2.5 First, to address the issue of declining water tables, we must promote economy in the use of this scarce water resource. Expansion of micro irrigation emphasized by the Prime Minister is one part of the solution. But given that rice is highly water intensive and it is overwhelmingly grown in Punjab where water tables have declined the most, rice production must move to the eastern part of India where water is plentiful and soil is conducive to rice production.

1.2.6 We also need to take fuller advantage of incomplete major, medium and minor irrigation schemes. The total irrigation potential created through these schemes had increased from 22.6 million hectares during pre-plan period to 113 million hectares at the end of the 11th Plan. India's ultimate irrigation potential being estimated at 140 million hectares, there is at best limited remaining scope for further expansion of irrigation infrastructure. Therefore, priority must be given to improving the irrigation potential utilized (IPU) of the irrigation potential created (IPC). Currently, IPU is approximately 77 per cent (87 million hectares) of the IPC (113 million hectares). The underutilization of IPC is due to the slow pace of the Command Area Development Programme, depletion of professional staff in state irrigation agencies and paucity of non-plan funds available to irrigation departments. This necessitates Command Area Development and review and restructuring of the underlying institutional setup.

1.2.7 Second, we need a shift towards high value commodities such as horticulture, fisheries and livestock. For its size, India still does not produce enough fruits and vegetables. Correspondingly, food-processing industry in the country remains in infancy. Contract farming could be the link that could solve the twin problems. Likewise, steps need to be taken to facilitate growth of fisheries and livestock. This shift will help reduce the dependence on conventional crops that tend to show greater volatility.

1.2.8 Third, with many small and marginal farmers seeking non-farm employment, fallow land has shown the tendency to rise. Under the current land leasing laws, these farmers fear risking leasing their land to other farmers. Reforming land leasing laws to allow legal contracts will help reduce the volume of fallow land as well as consolidate land holdings. NITI Aayog had constituted an Expert Group to prepare a model land leasing act to enable the States to enact their own leasing Acts. The expert Group has submitted its report, which contains a model land-leasing act.

1.2.9 Fourth, the Agricultural Produce Marketing Committees (APMC) Act reform needs to be deepened to ensure that the farmer gets a higher proportion of the price paid by the consumer. This requires freeing up entirely the purchase and sales of all agricultural commodities. This will create competition at both the buyer and the seller end. Currently, intermediaries take away the lion's share of the price paid by the consumer. A complementary step in this direction is the development of supply chain with good storage facilities.

1.2.10 Finally, we also need to take advantage of our own past experience. The key to the Green Revolution was the high-yielding varieties of seeds. It is time for us to return to that lesson and allow massive research into improving seed varieties including genetically modified ones. Elsewhere in the world, most notably the United States, GMO seeds have been in use for over two decades with no adverse effects on either other crops or those consuming the products of those seeds. China has been far ahead of us in this regard. Our own experience with BT Cotton seeds has been a success.

1.3 Sustained Rapid and Employment-intensive Growth

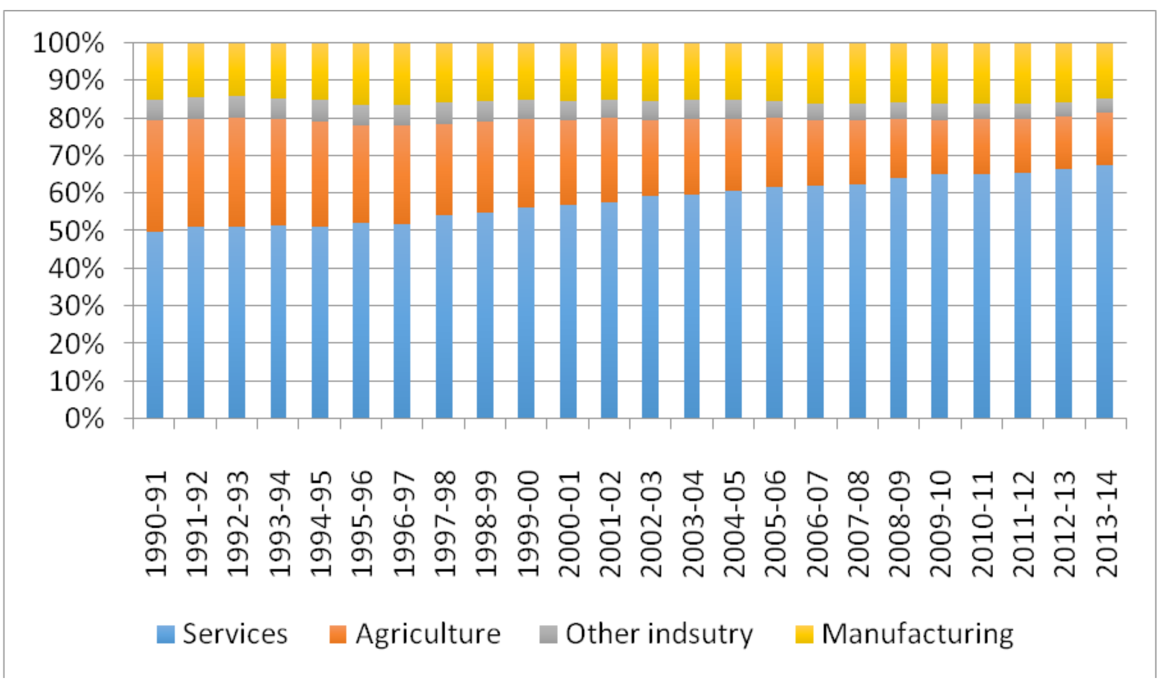
1.3.1 A key lacuna in the Indian growth story has been slow growth of manufactures in general and labour-intensive manufacturing in particular. In the following, we touch on some of these issues.

1.3.2 In every country that has achieved rapid transformation from traditional, rural to modern, urban structure, manufacturing has led the way. In Taiwan and South Korea in the 1960s and 1970s and in China in the 1980s, 1990s and 2000s, manufactures grew at rates approaching or exceeding 15 per cent, with labour-intensive manufactures growing especially rapidly. The accompanying increase in incomes led to increased demand for and hence accelerated growth in services as well. In turn, workers in agriculture migrated to these sectors to take advantage of the employment opportunities so created. Within a matter of two to three decades, this process led to the countries transforming from primarily agrarian and rural character to modern urban ones.

1.3.3 India has not experienced similar rapid growth in manufactures. The latter have grown approximately at the same rate as the aggregate GDP with their share in the GDP remaining nearly constant over the last 25 years. This is shown in **Figure 1.1**, which tracks the shares of agriculture, manufactures, other industry and services in the GDP from 1990-91 to 2013-14 at constant 2004-05 prices. Although the share of agriculture in the GDP has declined steadily, that of manufactures has remained unchanged with almost all the gain in the share going to services.

1.3.4 A closely related feature of India's growth has been its concentration in capital- and skilled-labour-

Figure 1.1: Shares of Manufacturing, other Industry, Agriculture and Services in the GDP at constant (base 2004-05) prices



Source: Based on the CSO data.

intensive sectors. The fast growing sectors have been auto and auto parts, two wheelers, machinery, chemicals, petroleum refining, telecommunications, software and pharmaceuticals. None of these sectors employs low-skilled workers in large numbers. As a result, the vast majority of Indian workers remain concentrated in agriculture, unorganized industry or low-paying services. The movement of workers out of agriculture into industry and services jobs has been especially slow. In turn, this means that despite 65 years of development efforts, a little less than half of Indian workers still remain in agriculture. As noted earlier, in 2011-12, 49 per cent of the workforce was in agriculture (including allied activities), which contributed only 17.9 per cent of the GDP at current prices. Raising productivity in agriculture is the immediate means to bring relief to the vast number of poor. But bringing genuine prosperity to them in the long run would require the creation of good jobs in industry and services.

1.3.5 A particularly striking example is offered by the clothing industry. With 12 million workers joining the workforce annually and the total number of workers fast approaching 500 million, one would expect India to do well in this highly labour-intensive industry. Yet, India has performed rather poorly in this sector. This is brought out dramatically by **Figure 1.2**, which depicts the evolution of exports of clothing and accessories by China and India from 1997 to 2013. Exports from India started at a lower level in 1997 and also grew at a significantly slower pace. By 2013, these exports from China had risen to $177 billion while those from India amounted to just $17 billion. Unfortunately, more than China's exceptional performance, this comparison testifies to generally poor performance of Indian exports of labour-intensive products. Today, India's exports of clothing and accessories in absolute terms fall short of not just Bangladesh but also Vietnam whose population is 90 million. The story is similar in other labour-intensive items such as leather products, food processing and electronic assembly.

Figure 1.2: Exports of Clothing and Accessories by China and India, 1997 to 2013

Source: Based on United Nations Commodity Trade Data.

1.3.6 Therefore, India's challenge is not just rapid growth in manufactures in general but also ensuring healthy growth in labour-intensive sectors such as clothing, leather manufactures, food processing and electronic assembly. Growth in these latter sectors would help create good jobs for workers with limited skills thereby allowing workers in agriculture and informal sector manufacturing and services to migrate to the formal sector. Simultaneously, with migration of workers out of agriculture, land area per worker in the sector would rise, raising output per worker.

1.3.7 It is in this context that the "Make in India" campaign launched by the Prime Minister assumes special significance. From the perspective of good jobs, there is acute need to jumpstart manufacturing production. The government's policy initiatives that would help make a success of the Make in India campaign include skill development, greater ease of doing business, a modern bankruptcy law, the Goods and Services Tax (GST), improved infrastructure, development of industrial corridors and building smart cities. Each of these instruments would make critical contribution to the growth of manufactures.

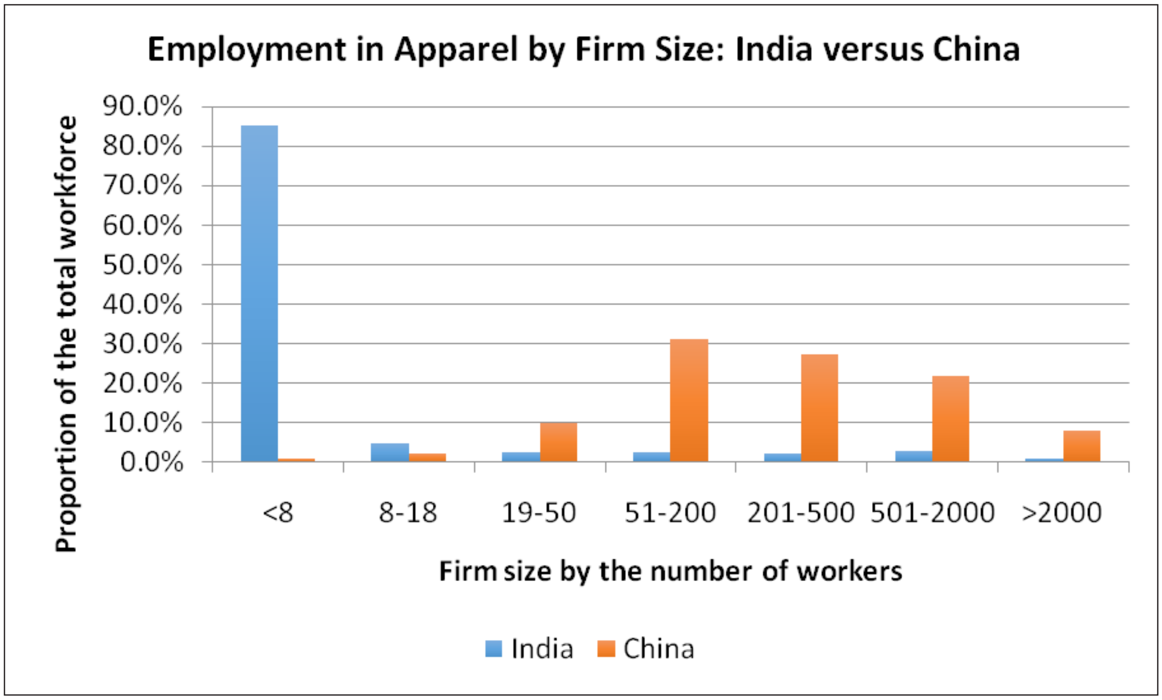
1.3.8 Currently, the "Make in India" initiative is focused on sectors such as automobiles, automobile components, aviation, biotechnology, chemicals, defence manufacturing, electrical machinery, electronics, food processing, leather, pharmaceuticals and textiles and garments. The majority of these sectors are those in which India already exhibits strength. Sectors in which India lags behind are electronics, food processing, leather, and textiles and garments. These are all labour-intensive sectors and policies that impede their growth deserve special attention in the reform programme of the government.

1.3.9 Labour-market rigidities arising from wide-ranging and complex laws and regulations have been identified as perhaps the most important impediment to the rapid growth of these sectors. Labour being a concurrent subject, the Central as well as State Governments can legislate on it. Both have done so with the result that there are more than 40 Central and many more State labour laws. Broadly speaking, stringency of labour laws rises as the number of workers employed by a firm rises. The Trade Union Act becomes operative at seven workers. A firm with 10 workers if using power or with 20 workers if not using power comes under the purview of the Factories Act, 1948. A firm with 50 or more finds it very difficult to assign a worker from one task to the other. A firm with 100 workers or more is not allowed to lay off workers under any circumstances.

1.3.10 Profit margins per worker in labour-intensive industries are small relative to those in capital-intensive industries. As a result, progressively more stringent labour laws as firm size increases work asymmetrically against large firms in the former set of industries. This encourages firms in the labour-intensive sectors to remain small. But since small firms typically lack the incentive to look for and develop export markets, they end up operating in the localized markets. Research shows that firms in apparel sector in India are unusually small on average when compared to other countries. **Figure 1.3** which shows the firm size distributions of workers in apparel sector in India and China in 2005, forcefully makes this point. Virtually all employment in India in apparel is in small firms consisting of tailor shops with the number of employees in the single-digit. The picture is exactly the opposite for China. The small size of firms is perhaps the most important reason for the muted performance of Indian apparel industry in the export market.

1.3.11 In this context, a welcome development under the present government has been its commitment to cooperative, competitive federalism. As a part of this commitment, the Central Government has encouraged the States to reform the central laws on the Concurrent List of the Constitution as per local needs. The Government of Rajasthan took lead in using this flexibility and amended four important labour laws: Industrial Disputes Act, Contract Labour Act, Factories Act and Apprenticeship Act. These reforms go some distance toward giving firms greater flexibility in matters relating to hiring of workers. Other states have followed suit with Madhya Pradesh, Andhra Pradesh and Gujarat introducing similar reforms.

Figure 1.3: Employment in Apparel by Firm Size- India v/s China



Source: Hasan, Rana and Karl Jandoc, "Labor Regulations and Firm Size Distribution in Indian Manufacturing". In Bhagwati, Jagdish, and Arvind Panagariya, editors, *Reforms and Economic Transformation in India*. New York: Oxford University Press, 2012, pp. 15–48

1.3.12 The Central Government has also introduced several reforms that are especially aimed at improving the business environment for small firms. It has launched the web portal "Shram Suvidha" that allows a single window for compliance of 16 central labour laws. The portal is also intended to act as a platform for timely redressal of grievances by the industry. Computer generated lottery now directs labour inspections at factories. Once the inspection is complete, the inspector must file a report within 72 hours.

1.3.13 The Central Government has also introduced changes to three labour laws: the Factories Act, 1948, the Labour Laws Act, 1988 and the Apprenticeship Act, 1961. The amendment to the Factories Act provides for doubling overtime from 50 hours a quarter to 100. The amendment to Labour Law Act, 1988 raises the maximum size of companies that are exempt from filing of returns on various aspects from 19 workers to 40 workers. Reform of the Apprenticeship Act removes a provision that calls for the imprisonment of company directors who fail to implement the provisions of the Act.

1.3.14 The 2015-16 Budget promised further reforms that would help expand organized sector manufacturing. The benefits regime in India is such that nearly half of the wages of low-end workers in the organized sector are deducted at source as contributions to insurance and provident funds and other similar items. That leaves insufficient wages in the hands of the worker to comfortably live. Because such deductions do not normally take place in the unorganized sector, organized sector employment is discouraged. The 2015-16 Budget rectified this situation by making the employee contributions to the provident fund optional. In order to incentivize employers to recruit new employees, the Budget 2016-17 proposed that the government will pay employers' share of 8.33 per cent in the employee provident fund for all such employees for first three years.

1.3.15 For long, India has lacked a modern bankruptcy law. This has made winding up a firm an arduous task. The process takes a long time, sometimes extending to two decades or longer. This makes exit out of a business a very costly affair. In turn, this discourages firms to enter the business in the first place. Risks considered normal in other parts of the world turn high in India because in case of failure, exit is very difficult. Economists have argued for long that a modern bankruptcy law can go a long way toward alleviating this problem and encouraging investment in the organized sector. Recognizing this fact, the government has recently enacted the Insolvency and Bankruptcy Code, 2016.

1.3.16 Tax uncertainty has served as another important brake on the growth of manufactures. A series of highly visible cases of retrospective taxation have damaged the reputation of the country as the destination for direct foreign investment. The case of a major manufacturer in electronics sector best illustrates the problem. Established in 2006, the factory quickly became one of the largest producers of the product worldwide. But a large tax liability assessed in 2013 on transactions going back several years sealed its fate. 12,000 workers working in the factory and an even larger number working in firms supplying components to it lost their jobs. Above all, the episode was highly damaging to the reputation of India as an investment destination. The commitment of the present government to initiate no new inquiries into retrospective tax liability is a very welcome move toward restoring India's reputation. But much more is needed in terms of spelling out clearly tax laws so that future investors can assess their tax liabilities with reasonable certainty. Simplification of the tax code will certainly help in this task. But even given the current complexity, it is important to spell out clearly the regulations thereby minimizing discretion on the part of the tax officials. China has firms such as Foxconn that employs 1.3 million workers and pays wages averaging $3 per hour. India cannot afford to miss out on the good jobs that such firms promise.

1.3.17 Yet another important area in need of urgent attention from the perspective of Make in India is the simplification of regulatory cum administrative procedures or what has come to be popularly referred to as the ease of doing business. Firms must deal with a variety of regulations applying to starting a business, obtaining construction permits, getting electricity, registering property, paying taxes, trading across borders, enforcing contracts and insolvency. The rules governing these activities as well as administrative procedures implementing those rules can be cumbersome and, thus, deter many potential investors from entering business in the first place. For those who do enter, the returns may turn low on account of meeting the costs of these regulations and procedures. Focusing principally on small and medium firms, the World Bank annually carries out surveys and ranks the countries around the world along doing business parameters. India does rather poorly in these rankings. In 2015, it ranked 142nd out of 189 countries in terms of overall doing-business environment which later revised to 134 owing to change in methodology. India did especially poorly in construction permits and enforcing contracts categories. In the World Bank's Ease of Doing Business report 2016, India's position has improved to 130. There is clearly considerably scope for India to make improvements in this area. The Department of Industrial Policy and Promotion (DIPP) and the NITI are engaged in a collaborative effort to bring the best practices to the Indian cities and States in many of the doing business areas. This should bear fruit in the next year or two in improving the image of India as an investment destination as well as bringing the cost of doing business down.

1.3.18 Skill development is yet another important area in which India has lagged behind. Successful Indian firms frequently complain that they are unable to find skilled workers and that when they train them they quickly lose them to other firms. Recognizing the problem, the government has launched an all-out effort on skill development, even establishing a separate Skill Development Ministry. The key problem India faces here is that of scale. Even taking a liberal count, the number of individuals being imparted skill is no more than four million a year currently. With a stock of about 470 million workers and additional twelve million joining each year, this figure remains well below what India needs. We need a multi-prong strategy to make up for the past complacency. The laws governing apprenticeship need to be friendlier to scaling up of apprenticeships, regular schools must consider introducing a vocational stream for those not planning to go to college, more schools offering vocational training must be opened, and there needs to be greater cooperation between firms and educational institutions to train students and workers.

1.3.19 It is expected that the implementation of GST will also help manufactures grow faster. Under the current system, excise duties apply to most goods but service tax does not apply to all services. By itself, this fact introduces a bias against manufactures. In addition, the tax on machinery is not rebated so that it gets taxed multiple times at subsequent stages of production. In turn, this discourages investment. The GST will remove this cascading of tax on machinery and help stimulate investment in general and in manufacturing in particular since the latter is the heavier user of machinery relative to services.

1.3.20 Infrastructure in India is under great pressure. Rapid growth during 2003-04 to 2011-12 accompanied by a major slowdown in infrastructure development has resulted in major bottlenecks in all modes of transportation. Bottlenecks have also developed in the movement of traffic due to unnecessary regulation and poor management of traffic flow at toll booths. This causes delays in the movement of goods and passengers imposing heavy cost on manufacturers. Clogged transport arteries also mean that firms must maintain a much larger inventory of inputs than would be necessary otherwise. In today's world of just-in-time delivery, the ability to deliver products on time determines the difference between winning and losing export contracts. The push by the government to revamp transport infrastructure in the recent budget is a welcome development. Likewise, the ambitious plans in the railway budget to expand and improve service are laudable. But much more effort and investment are required to unclog the transport arteries of the nation.

1.3.21 Power sector has also been an important bottleneck. For labour-intensive manufactures, who operate on low profit margins, high electricity costs can be a make or break issue. On the one hand, India needs to expand generation capacity and the supply of coal and gas necessary to convert that capacity into electricity and, on the other, it needs to carry out reforms essential to restoring the health of distribution companies. Introduction of transparent auctions of coal mines and related measures have gone some distance towards relieving the supply of coal. As for distribution companies, the recent initiative under Ujwal Discom Assurance Yojana (UDAY) goes a long way towards clearing up their debts. We will need to be vigilant to see these reforms through as we go forward.

1.3.22 An extremely critical reform concerns the Land Acquisition Act of 2013. This Act makes any land acquisition by the government a very time-consuming activity. It is estimated that even if all steps in the acquisition process go smoothly with no bureaucratic delays at any stage, no protests and no court challenges, land acquisition for private public partnership (PPP) projects under this Act would take a little under five years. It is no surprise that according to all available accounts, few new acquisitions were initiated under the 2013 Act. In view of the decision by the government not to renew the Ordinance that had temporarily amended some of the provisions of the original act, States must now take the lead in introducing reforms as per local needs. Tamil Nadu has already adopted one such amendment, which introduces a State-specific schedule in the 2013 Act listing State legislations that are exempt from the latter.

1.3.23 Two major initiatives aimed at transformation of the economy relate to industrial corridors and smart cities. Thus we have the Delhi-Mumbai Industrial Corridor (DMIC) and the Dedicated Freight Corridor (DFC) initiatives. Other industrial corridors are still at the stage of conceptualization. These latter include Bengaluru-Mumbai, Amritsar-Kolkata, Chennai-Bengaluru and Chennai-Vizag corridors. There is now also explicit recognition that urbanization is correlated with economic development and there is the Smart Cities initiative, which splices a new initiative for 100 new smart cities and 500 habitations with the JNNURM programme.[5] The initiative has green-field, brown-field and green-field components in existing cities, particularly targeting cities in the less than 4 million range and satellite green-field cities as adjuncts to existing cities.

1.3.24 In sum, there are reasons to be optimistic about the prospects of above 7 per cent growth in 2016-17. The large number of reforms initiated by the government during its first two years, briefly described above, lay down a strong foundation for such growth. The caution, however, is essential as well since the reforms in many areas such as skill development, infrastructure, labour laws and the Land Acquisition Act of 2013 are far from complete.

1.4 Anti-poverty Programmes for a Direct Assault on Poverty

1.4.1 Sustained rapid and employment-friendly growth is only one leg on which the economy must travel to conquer poverty. Generous anti-poverty programs, made possible by enhanced revenues that rapid growth makes possible, constitute the other leg. Before turning to the discussion of these programmes, it is useful to say a few words about the definition of poverty.

1.4.2 Under the most common definition, poverty is measured as the proportion of the population living below certain threshold level of income referred to as the poverty line. Poverty line itself represents the minimum income necessary to purchase a given basket of goods and services considered essential. Because there is no general agreement on what the "essential" basket of goods and services is and the definition in any case may vary according to the social and economic context, poverty lines and the associated measures of poverty have generated much controversy around the world, especially in India.

1.4.3 It is generally agreed that poverty is a multi-dimensional phenomenon so that a single indicator such as the poverty ratio may not be an adequate guide to policy. It is perhaps in this spirit that the government has accelerated the move towards directly addressing the conditions frequently associated with poverty. In this spirit, the 2015-16-budget speech of the Finance Minister defined the fight against poverty in terms of a set of specific indicators. To quote from the budget speech, "The vision of what the Prime Minister has called 'Team India', led by the States and guided by the Central Government, should include:

(i) A roof for each family in India. The call given for 'Housing for all' by 2022 would require Team India to complete 2 crore houses in urban areas and 4 crore houses in rural areas.

(ii) Each house in the country should have basic facilities of 24-hour power supply, clean drinking water, a toilet, and be connected to a road.

(iii) At least one member from each family should have access to the means for livelihood and, employment or economic opportunity, to improve his or her lot.

(iv) Substantial reduction of poverty. All our schemes should focus on and centre around the poor. Each of us has to commit ourselves to this task of eliminating absolute poverty.

(v) Electrification, by 2020, of the remaining 20,000 villages in the country, including by off-grid solar power generation. Connecting each of the 1,78,000 unconnected habitations by all-weather roads. This will require completing 1,00,000 km of roads currently under construction plus sanctioning and building another 1,00,000 km of road.

(vii) Good health is a necessity for both quality of life, and a person's productivity and ability to support his or her family. Providing medical services in each village and city is absolutely essential.

[5]The Concept Note is available at **http://indiansmartcities.in/downloads/CONCEPT_NOTE_-3.12.2014__REVISED_AND_LATEST_.pdf**

(viii) Educating and skilling our youth to enable them to get employment is the altar before which we must all bow.

1.4.4 This vision of poverty elimination is multidimensional and it aims to directly attack the conditions associated with poverty. One advantage of thinking of the fight against poverty in this manner is that it sidesteps the issue of the poverty line. For purposes of the allocation of central expenditures on specific schemes across States two possibilities exist. First, if the scheme is universal such as the Sarva Shiksha Abhiyan (SSA), all are covered and the issue of allocation is moot. Second, if the scheme does not cover all in a given year, allocation of expenditures across States can be based on a comparison of relative shortfalls along the specific dimension of poverty. For example, the allocation of expenditures on housing to a state in any given year can be based on the proportion of nationwide households without housing residing in the state.

1.4.5 Among the important anti-poverty programmes currently in existence is the scheme based on Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). It guarantees 100 days of employment to one adult in each rural household each year. Within rural areas, the scheme is universal so that it does not require the identification of beneficiaries. The 2016-17 Budget allocates Rs. 38,500 crore to MGNREGA.

1.4.6 The scheme provides an assured source of income to the households. There is also evidence that it has contributed to a rise in rural wages. But the scheme has a substantial downside as well. It has a relatively poor track record of asset creation. Moreover, the legislation mandates that employment be for unskilled work. As a result, workers do not acquire any skills on the job.

1.4.7 Until recently, each Panchayat was required to spend at least 60 per cent of the funds provided under the scheme on wages. A maximum of 40 per cent of the funds could be spent on material. This restriction precluded many good projects such as building schools and hospitals because they require a higher than 40 per cent of the total expenditures to be allocated to materials. In a welcome move, the government has recently relaxed this constraint by stipulating that the requirement that a minimum of 60 per cent of the expenditure be incurred on wages may be satisfied at the level of the district. This would allow a specific Panchayat to spend more than 40 per cent of the expenditure on material provided other Panchayats within the same district make up for the difference.

1.4.8 To make the scheme further effective, it is desirable that employment that helps workers acquire skills is permitted. A big advantage of this latter approach is that it will encourage workers to voluntarily exit MGNREGA employment. Once they acquire skills, they would be more inclined to seek employment that uses their skills and pays better wages. Finally, to eliminate leakages, it is important that the system of wage payments through Aadhaar seeded bank accounts is rapidly extended to all wage payments under the scheme.

1.4.9 The second major programme specifically aimed at ensuring access to food falls within the purview of the Food Security Act, 2013. Under the programme, a vast system of procurement of food grains and Public Distribution System (PDS) to deliver the grain to beneficiaries is maintained. It promises 75 per cent of rural population and 50 per cent of urban population wheat and rice at highly subsidized prices. In monetary terms, this is the largest single social programme of the government. The 2016-17 Budget allocates Rs. 1,34,834 crore to it.

1.4.10 It is widely recognized that the programme is subject to substantial leakages and there is urgent need to look into avenues to eliminating them. The use of Aadhaar platform is one such avenue. It can help eliminate multiple ration cards held by the same households and also weed out ghost ration cards. This instrumentality has been deployed with great success recently but it needs to be extended rapidly to all beneficiaries. In the longer run, an even more effective instrument would be to give households the option to choose between subsidized purchases and equivalent cash. Such an approach would give the beneficiaries the option to buy their grain from private shops thereby putting competitive pressure on public distribution shops. Some recent pilot projects along these lines have produced encouraging results. A key element in the success of this approach, however, is to ensure access to banking. Beneficiaries receiving cash transfers in their bank accounts have to be able to withdraw that cash to effectively use it. Rapidly evolving technology in this field needs to be better exploited to give beneficiaries access to basic deposit and withdrawal facilities.

1.4.11 An important initiative of the present government in this context is the Jan Dhan Yojana, which provides each household a bank account. The account is an important instrument in itself from the viewpoint of financial inclusion and is being also used now to bring modest insurance and pension schemes to the citizens. Additionally, when combined with the Aadhaar, the bank account is a powerful tool for cutting leakages under many entitlement schemes. Already, it is being used to replace the Liquid Petroleum Gas (LPG) subsidy by direct benefit transfer (DBT). Instead of dealers selling LPG cylinders at subsidized prices, the government has now largely shifted to the dealers selling the cylinders at the market price with the subsidy deposited directly to the Aadhaar linked bank account of the beneficiary. This change eliminates the possibility of the dealer selling any cylinders not bought by the beneficiary in the black market.

1.4.12 Sarva Shiksha Abhiyan (SSA), in conjunction with the Right to Education (RTE) Act of 2009, aims to provide primary education to all children aged 6 to 14 years. According to surveys by the Non-Government Organization (NGO) Pratham, India is now close to universal enrolment in school in this age group. Its ASER 2014 report places the proportion of children aged 6-14 years enrolled in school in rural areas above 96 per cent for each of the past six years. The real problem is the quality of education as measured by student achievements. The ASER report finds that more than 50 per cent of the fifth graders cannot read standard II level text. Even more disconcertingly, the trend between 2010 and 2014 has been towards worsening instead of improving performance.

1.4.13 The RTE Act stipulates that no child can be held back in a grade regardless of his performance all the way up to the eighth grade. A child is entitled to the eighth grade diploma even if he cannot recognize a single letter or number as long as he spends the eight years in school. The purpose behind this provision is to minimize the dropout rate since demoralization resulting from failing a class leads children to withdraw from school altogether. But despite this good intention, the provision has a detrimental effect on learning outcomes since it takes away the pressure to learn and to compete. The RTE Act needs to be revisited.

1.4.14 A critical initiative bearing on health outcomes launched recently by the government is Swachh Bharat Mission. A key component of the mission is open-defecation free India by 2nd October 2019, the 150th birth anniversary of Mahatma Gandhi. But in its broader conception, it may include access to piped water; well-functioning drainage, sewage and solid waste management in all cities and villages; elimination of ponds in which stagnant water collects and serves as host to bacteria and mosquitoes; and instilling greater sense of personal hygiene and cleanliness in all its aspects among the masses. If the mission can be carried to its logical conclusion, it can be a game changer in terms of preventive health care. But it requires significantly larger volume of resources than the current level of revenues would permit.

1.4.15 There are several other additional social schemes that aim to promote specific social goals. These include but are not limited to the Integrated Child Development Services (ICDS) programme, mid-day meals scheme, Janani Suraksha Yojana, National Health Mission and *beti bachao, beti padhao* campaign. The schemes also require a closer scrutiny so that they can be made more effective.

1.4.16 Against the backdrop of the developments and continuing need for further policy initiatives described above, the following Chapters set out the achievements and shortfalls in various sectors during the first four years of the 12th Plan in greater detail. But more important is the present government's vision of a development template, providing an enabling environment for growth and development, addressing market failures, financing the provision of collective goods and services and targeting BPL populations efficiently for subsidies. That is how minimum government maximum governance needs to be interpreted.

2

Macroeconomic Factors

2.1 Twelfth Five Year Plan

2.1.1 The Twelfth Five Year Plan (2012-13 to 2016-17) was launched amidst a slowdown of the economy on account of several domestic and global factors. The major issues and challenges included a high Current Account Deficit (CAD) and a fall in the domestic savings rate, coupled with a high fiscal deficit. This not only acted as a constraint on further government spending but also crowded out private investment and fueled inflation. During the initial years of the Twelfth Plan, tight monetary policy to tackle higher level of inflation coupled with a downturn in the business environment hampered growth. The fiscal consolidation measures by curtailing government expenditure also dragged growth down as it was not compensated for by higher levels of private investment. The conditions are improving now, with the Indian economy advancing towards an upswing – although multiple challenges continue to still exist.

2.1.2 In spite of the CAD being brought under control, there are still risks associated with India's external environment and the dynamics of the global economy. In the wake of the earlier, high levels of the CAD, the importance of non-debt foreign capital inflows – especially Foreign Direct Investments or FDI – has been reinforced. Recently, there have been improvements on the fiscal front with the calibrated reduction in the fiscal deficit of the Central Government. Headline inflation has also shown reduction; but the upside risks still exist, and a continued challenge is to stabilize the inflation rate to reasonable levels. However, higher growth ultimately depends on sound policy reforms in promoting domestic and foreign investment, creating employment, improving food security, raising India's standards of education and skill development, building new infrastructure, and increasing the country's overall competitiveness, particularly in the manufacturing sector.

2.1.3 Earlier, at the start of the Eleventh Five Year Plan in 2007-08, the macro balances of the economy were good. In 2007-08 the economy grew at 9.3 per cent, held the CAD at 1.3 per cent of GDP and restricted wholesale price inflation (WPI) to a comfortable level, 4.7 per cent. The enabling savings and investment rates were as high as 36.8 per cent and 38.1 per cent of GDP respectively. The fiscal deficit and revenue deficit were within 4 per cent and 0.2 per cent of GDP respectively. However, by 2011-12 – i.e., the last year of the Eleventh Plan – there was a gradual deterioration in India's macro indicators, resulting in lower growth. In the year 2011-12, the growth rate of GDP slipped to 6.7 per cent; the savings rate and investment rate declined to 31.3 per cent and 35.5 per cent respectively. The higher amount of foreign savings was reflected in a large CAD, of 4.2 as a percentage of GDP. Also, a higher inflation rate, of 8.9 per cent, forced the Reserve Bank of India (RBI) to take a hard stand on interest rates – which did not facilitate investment, and thus further eroded economic growth. Moreover, lower growth in spite of a reasonably high investment rate indicated a worsening of the Incremental Capital Output Ratio (ICOR) – further hampering future growth prospects.

2.1.4 The major reasons for these developments can be divided into two categories, namely international and domestic. The period between 2007-08 and 2011-12 witnessed two major international crises, the first being the global financial crisis in 2008-09 and second the sovereign debt crisis in the Eurozone in 2011-12. On the domestic front, deterioration in business environment, supply-side constraints resulting in high inflation and consequent tight monetary policy followed by the RBI, as well as the withdrawal of the post-financial crisis stimulus package, adversely affected macro indicators. The combined effect of these factors hampered the growth rate. Alongside, the domestic economy had to bear the brunt of another set of problems peculiar to India. Many projects were stalled or delayed because of disputes in the acquisition of land, non-availability of raw material like coal, gas, retrospective amendment of tax laws, the inability of the Government to allocate natural resources in a transparent manner leading to legal cases and so on. These factors all created negative sentiments in the minds of investors, leading to an overall climate of pessimism. Despite these setbacks and the deterioration in growth towards the later part of the Eleventh Plan, the annual average growth rate of 8 per cent achieved during the Eleventh Plan, against the target of 9 per cent, was quite impressive.

2.1.5 In view of the above developments, it is fairly clear that there was a marked difference in the initial conditions at the start of the Twelfth Plan vis-à-vis the Eleventh Plan. As a result, the targeted annual average growth rate of the economy was revised downwards from 9 per cent per annum, as envisaged in the Approach to the Twelfth Five Year Plan, to 8 per cent per annum in the finally approved Twelfth Plan document.

2.2 Growth Performance

2.2.1 The Twelfth Plan document stated that the objective of 8 per cent annual average growth of GDP can be achieved provided policies that take care of weaknesses in the system are put in place. To emphasize the role of policies, alternative scenarios were presented in the Plan. Scenario one is called "Strong Inclusive Growth" and presents what is possible if well-designed strategy is implemented, intervening at key leverage points through the numerous policy actions outlined in the Plan. It envisages taking appropriate steps to deal with implementation and governance issues to make the wheels of governance move more smoothly at all levels. Scenario two, called "Insufficient action", describes a state of partial action on policies, and with weak implementation. The virtuous cycles that reinforce growth in Scenario-I will not kick in, and growth can easily slow down to 6 to 6.5 per cent and inclusiveness also suffer. This is where the economy will end up if there are slippages in implementation and only half-hearted efforts are made. Scenario three, called "Policy logjam", reflects a situation where for one reason or another most of the policies needed to achieve Scenario 1 are not taken. If this scenario continues for any length of time, vicious cycles begin to set in and growth could drift down to 5.0 to 5.5 per cent per year, with very poor outcomes on inclusion.

2.2.2 In a major national income accounting-related Press Note, *New Series Estimates of National Income, Consumption Expenditure, Saving and Capital Formation (Base Year 2011-12)*, released on 30th January 2015 by the Ministry of Statistics & Programme Implementation (MOSPI), sector-wise estimates were presented as the Gross Value Added (GVA) at basic prices and the use of Gross Domestic Product (GDP) growth rates at Factor Cost ($GDP_{fc)}$ was discontinued. Now GDP at Market Prices ($GDP_{mp)}$ is referred to as GDP. **Table 2.1** provides yearly growth rates of GDPfc and GDPmp (with 2004-05 as a base) over the last seven years, along with growth rates of GDP and GVA at 2011-12 prices for the last four years.

2.2.3 As per the New Series estimates of national income, the growth rate of Gross Value Added (GVA) at constant (2011-12) basic prices increased from 5.4 per cent in 2012-13 to 6.3 per cent in 2013-14 and further to 7.1 per cent in 2014-15. GVA at basic prices is obtained by adding production taxes net of subsidies to GDP at factor cost. According to the Press Note on *Advance Estimates of National Income 2015-16 and Quarterly Estimates of Gross Domestic Product for the*

Third Quarter (Q3) of 2015-16, released on 08th February 2016 by the Central Statistics Office (CSO), the growth rate of GVA at basic prices is expected to be at 7.2 per cent in 2015-16 (Provisional Estimates (PE)) .

Table 2.1: Growth Rates of GDP and GVA

(per cent)

	At 2004-05 prices		At 2011-12 prices	
Financial Year	GDP $_{fc}$	GDP $_{mp}$	GDP	GVA at basic prices
2007-08	9.3	9.8	—	—
2008-09	6.7	3.9	—	—
2009-10	8.6	8.5	—	—
2010-11	8.9	10.3	—	—
2011-12	6.7	6.6	—	—
2012-13	4.5	4.7	5.6	5.4
2013-14	4.7	5.0	6.6	6.3
2014-15	—	—	7.2	7.1
2015-16	—	—	7.6	7.2

Source: Central Statistics Office

Notes: 1. At 2004-05 prices: figures for 2013-14 are Provisional Estimates (PE)

2. At 2011-12 prices: figures for 2012-13 and 2013-14 are Second Revised Estimates; 2014-15 are First Revised Estimates and 2015-16 are Provisional Estimates as on 31.05.2016

3. The two series, at 2004-05 prices and at 2011-12 prices, are not strictly comparable.

2.2.4 GDP growth rates for agriculture, industry and services sectors realized during the Eleventh Plan period were estimated at 4.1 per cent, 7.7 per cent and 9.4 per cent against the growth targets of 4 per cent, 10-11 per cent and 9-11 per cent respectively. The Twelfth Plan targets growth rates of 4.0 per cent for agriculture, 7.6 per cent for industry and 9.0 per cent for services, thereby aiming at 8.0 per cent growth in overall GDP. The annual growth rates of GVA by economic activity at constant (2011-12) basic prices for 2012-13, 2013-14, 2014-15 and 2015-16(PE) are given in **Table 2.2**. While the growth in industrial sector improved significantly over the years, the rate of growth of GVA in Agriculture, forestry & fishing and Services showed mixed trends. The growth rate in agriculture rose from 1.5 per cent in 2012-13 to 4.2 per cent in 2013-14 but had a steep fall to (-) 0.2 per cent in 2014-15 and is expected to grow at 1.2 per cent in 2015-16. The decline in agricultural growth is largely explained by the two consecutive years of suboptimal monsoon in 2014-15 and 2015-16.

Table 2.2: Annual Growth Rate of GVA by Economic Activity at constant (2011-12) Basic Prices

(per cent)

Sl. No.	Item	2012-13	2013-14	2014-15	2015-16@
1	Agriculture, forestry & fishing	1.5	4.2	-0.2	1.2
2	Mining & quarrying	-0.5	3.0	10.8	7.4
3	Manufacturing	6.0	5.6	5.5	9.3
4	Electricity, gas & water supply, & other utility services	2.8	4.7	8.0	6.6
5	Construction	0.6	4.6	4.4	3.9
6	Trade, hotels, transport, communication and services related to broadcasting	9.7	7.8	9.8	9.0
7	Financial services, real estate, ownership of dwellings & professional services	9.5	10.1	10.6	10.3
8	Public administration & defence & other services	4.1	4.5	10.7	6.6
	Total GVA at Basic Prices	**5.4**	**6.3**	**7.1**	**7.2**
	Industry (2-5)	**3.6**	**5.0**	**5.9**	**7.4**
	Services (6-8)	**8.1**	**7.8**	**10.3**	**8.9**

Source: Central Statistics Office (CSO).

Note: @Provisional Estimates as on 31.05.2016

2.2.5 The sectoral contribution of GVA given in **Table 2.3** indicates that the share of agriculture and industry has been declining over the Twelfth plan period, whereas, the share of services has steadily increased. The share of agriculture in GVA is expected to drop to 17.0 per cent and that of industry to 29.7 per cent in 2015-16 (PE). However, the share of services is expected to touch 53.2 per cent in 2015-16 (PE). Such a large share for services in total output at a relatively early stage of development is not typical and a matter of concern as, in India, the structural shift from agriculture to services is actually bypassing the industrial sector.

Table 2.3: Sectoral Contribution to GVA at Current Prices

(per cent)

Item/Year	2012-13	2013-14	2014-15	2015-16@
Agriculture, forestry & fishing	18.2	18.3	17.4	17.0
Industry of which	31.7	30.8	30.0	29.7
Manufacturing	17.1	16.5	16.1	16.2
Services	50.0	50.9	52.6	53.2
Total GVA at Basic Prices	**100.0**	**100.0**	**100.0**	**100**

Source: Central Statistics Office (CSO)

Note: @Provisional Estimates as on 31.05.2016.

2.2.6 It is important to note that the share of the manufacturing sector in GVA has been falling in the first three years of the Twelfth Plan and is further expected to decline to 16.2 per cent in 2015-16 (PE). In order to lead the economy to a high-growth trajectory, it is highly essential to harness the potential of the industrial sector – especially manufacturing – thereby boosting overall growth. With the aim of making India the manufacturing hub of the world, the Government has initiated programmes such as ‘Skill India’ and ‘Make in India’. The country presently faces a dual challenge: a severe paucity of highly-trained, quality labour, as well as the non-employability of large sections of the workforce which, while educated, possess little or no job skills. The National Policy for Skill Development and Entrepreneurship 2015 supersedes the policy of 2009. The primary objective of the new policy is to meet the challenge of skilling at scale with speed, standard (quality) and sustainability. The policy links skills development to improved employability and productivity to pave the way to inclusive growth in India. The ‘Make in India’ program includes major new initiatives designed to facilitate investment, foster innovation, protect intellectual property, and build best-in-class manufacturing infrastructure. One of the most comprehensive and significant policy initiatives taken by the Government in this regard is the National Manufacturing Policy. The policy is the first of its kind for the manufacturing sector; it addresses regulations, infrastructure, skill development, technology, the availability of finance, exit mechanisms and other pertinent factors that determine the sector’s growth. The focus sectors identified include employment-intensive industries like textiles & garments, leather & footwear, gems & jewellery and food processing; capital goods industries like machine tools, heavy electrical equipment, earthmoving & mining equipment, and heavy transport; industries with strategic significance like aerospace, shipping, IT hardware & electronics, telecommunication equipment, defence equipment and solar energy; and industries in which India enjoys a competitive advantage such as automobiles, pharmaceuticals, medical equipment.

2.2.7 To revive growth and overcome structural constraints in the economy, key policy reforms have been undertaken by the Government. The needs of short-term economic management, in particular taming inflation and reducing imbalances in the external sector, along with a medium to long term vision for sustainable development, are addressed in the policy changes.The new reform measures include: Deregulating diesel prices, paving the way for new investments in the sector; Raising gas prices and linking pricing to international prices to provide incentives for greater gas supply and relieving the power sector bottlenecks; Taxing energy products resulting in increased revenue collections and having positive environmental consequences; Replacing the cooking gas subsidy by direct transfers on a national scale; Passing an ordinance to reform the coal sector via auctions; Securing the political agreement on the Goods and Services Tax (GST) that will allow legislative passage of the constitutional amendment bill; Increasing FDI caps in defence and insurance; Eliminating the quantitative restrictions on gold; Passing an ordinance to make land acquisition less onerous, thereby easing the cost of doing business, while ensuring that farmers get fair compensation; Facilitating Presidential Assent for labour reforms in Rajasthan and consolidating and making transparent a number of labour laws; Commencing a program of disinvestments under which 10 percent of the government's stake in Coal India was offered to the public; Passing the Mines and Minerals (Development and Regulation) (MMDR) Amendment Act, 2015, a significant step in revival of the hitherto stagnant mining sector in the country. These reform measures are expected to have a significant cumulative impact in the economy.

2.2.8 Several initiatives have been taken in the Union Budget 2016-17 which aim at ensuring macro-economic stability and prudent fiscal management, boosting domestic demand and continuing with the pace of economic reforms and policy initiatives to change the lives of people for the better. Some of these include approval of a new policy for management of Government investment in Public Sector Enterprises, including disinvestment and strategic sale; Steps to re-vitalise Public-Private Partnerships (PPPs) including introduction of Public Utility (Resolution of Disputes) Bill during 2016-17; issuance of Guidelines for renegotiation of PPP Concession Agreements and introduction of New credit rating system for infrastructure projects. As noted, the 'Make in India' campaign has already been launched, to revive manufacturing growth and investment and thus create jobs. The major step taken in this regard include changes in customs and excise duty rates on certain inputs to reduce costs and improve competitiveness of domestic industry in sectors like Information technology hardware, capital goods, defence production, textiles, mineral fuels & mineral oils, chemicals & petrochemicals, paper, paperboard & newsprint, Maintenance repair and overhauling (MRO) of aircrafts and ship repair. Further, there are initiatives for the agriculture sector, which include implementation of 'Pradhan Mantri Krishi Sinchai Yojana' in mission mode; creating a dedicated Long Term Irrigation Fund in NABARD; Programme for sustainable management of ground water resources; promoting organic farming through 'Parmparagat Krishi Vikas Yojana' and 'Organic Value Chain Development in North East Region' and Unified Agricultural Marketing e-Platform to provide a common e-market platform for wholesale market. The Union Budget 2016-17 has also announced various tax proposals – including relief to small tax payers, measures to boost growth and employment generation, incentivizing domestic value addition to help Make in India, additional resource mobilization for agriculture, rural economy and clean environment– to provide better infrastructure, rural revival and social well-being. These measures are expected to revive the Indian economy and instill an impetus towards a high-growth trajectory.

2.2.9 **Growth scenarios at state level:** The economy's aggregate growth rate is characterized by regional variations across states, with some distinguishable overall trend. The economic slowdown witnessed in the initial year of the Twelfth Plan period is reflected in lower growth rates for many states when compared to their Eleventh Plan growth rates in the year 2012-13. However the situation improved in 2013-14 for most states. **Table 2.4** provides state-wise growth performance during the Eleventh Plan along with Twelfth Plan expectations, as well as their various growth rates in the first three years of the Twelfth Plan. In 2012-13, Tripura, Bihar, Chhattisgarh and Madhya Pradesh reported the highest growth rates of GSDP, whereas Arunachal Pradesh, Tamil Nadu, Odisha and Meghalaya had the lowest. In 2013-14 Meghalaya, Madhya Pradesh, Tripura and Bihar had the highest average growth rates of GSDP whereas Odisha, Telangana, Rajasthan, Chhattisgarh and Uttar Pradesh had the lowest.

Table 2.4: Growth Rates of State Domestic Product at 2004-05 Prices

(per cent)

S.No.	States	11th Plan Average	12th Plan Expectation	2012-13	2013-14	2014-15
1	Andhra Pradesh	7.1	8.3	4.0	7.2	7.2
2	Arunachal Pradesh	7.9	8.5	-1.6	8.9	7.0
3	Assam	5.9	7.0	5.1	7.5	6.4
4	Bihar	10.2	10.0	10.7	9.1	9.4
5	Chhattisgarh	7.3	8.0	8.8	5.0	5.9
6	Goa	12.6	8.5	4.2	7.7	-*
7	Gujarat	9.1	9.2	6.1	8.8	-
8	Haryana	8.8	9.0	5.5	7.0	7.8
9	Himachal Pradesh	8.0	8.0	6.1	6.2	-
10	Jammu & Kashmir	6.1	6.5	5.3	5.6	-1.6
11	Jharkhand	9.9	8.5	7.4	8.9	8.5
12	Karnataka	7.0	7.5	6.1	7.2	7.0
13	Kerala	7.3	8.0	5.9	6.3	-
14	Madhya Pradesh	8.3	8.8	8.7	9.5	10.2
15	Maharashtra	7.8	8.6	7.8	7.3	5.7
16	Manipur	5.7	6.5	7.0	6.2	-
17	Meghalaya	9.0	8.0	3.8	9.8	9.1
18	Mizoram	10.3	9.0	7.2	7.8	-
19	Nagaland	7.6	7.0	6.5	6.5	6.8
20	Odisha	7.0	8.0	3.8	1.8	8.1
21	Punjab	6.8	6.5	4.6	5.7	5.3
22	Rajasthan	8.7	7.2	6.4	4.8	5.7
23	Sikkim	23.4	8.5	7.6	7.9	-
24	Tamil Nadu	8.6	7.7	3.4	7.3	7.2
25	Telangana	10.4	-	4.1	4.8	5.3
26	Tripura	8.6	8.2	11.2	9.2	-
27	Uttar Pradesh	6.9	7.2	5.8	5.0	6.0
28	Uttarakhand	13.7	9.5	7.4	8.4	9.3
29	West Bengal	6.2	7.0	7.5	6.9	7.2
	All India	8.0	8.0	4.5	4.7	-

Source: Central Statistics Office (CSO); Twelfth Five Year Plan Document

Note: 12th Plan Expectation from Table 11.11 in Section 'Regional Equality' of Twelfth Five Year Plan Document

* A '–' indicates not available.

2.2.10 The GSDP growth rates of low-income states during the Eleventh Plan and the first two years of the Twelfth Plan are given in **Table 2.5.** Bihar, Uttar Pradesh, Assam, Madhya Pradesh, Manipur, Jharkhand, Odisha, Chhattisgarh, Rajasthan and Jammu & Kashmir had the lowest per capita income (PCI) in the Eleventh Plan, and continue to have the lowest PCI in the first two years of the Twelfth Plan. However, except for Odisha, all these states have an average annual growth rate of GSDP that is higher than the national average. Among certain selected low-income states (Bihar, Jharkhand, Madhya Pradesh, Rajasthan and Uttar Pradesh), the performance of Madhya Pradesh and Jharkhand in the initial years of the current Plan period has been quite encouraging, with growth rates that are significantly higher than the national average. Though Bihar's GSDP growth rate fell in 2013-14, it picked up in 2014-15 and is well above the national average in each of the Twelfth Plan's three initial years. Uttar Pradesh and Rajasthan exhibited GSDP growth rates higher than the national average in 2012-13 and 2013-14, though lower than in the Eleventh Plan. The upward trend in the growth performance of low-income states presents the optimistic possibility that regional disparity will decrease in the coming years.

Table 2.5: Comparative Growth Rates in GSDP for Selected Low-Income States

(per cent)

Eleventh Plan	2012-13	2013-14
Bihar (10.2)	Bihar (10.7)	Bihar (9.1)
Uttar Pradesh (6.9)	Uttar Pradesh (5.8)	Uttar Pradesh (5.0)
Assam (5.9)	Assam (5.1)	Assam (7.5)
Madhya Pradesh (8.3)	Manipur (7.0)	Manipur (6.2)
Manipur (5.7)	Madhya Pradesh (8.7)	Odisha (1.8)
Jharkhand (9.9)	Odisha (3.8)	Madhya Pradesh (9.5)
Odisha (7.0)	Jharkhand (7.4)	Chhattisgarh (5.0)
Chhattisgarh (7.3)	Chhattisgarh (8.8)	Jharkhand (8.9)
Rajasthan (8.7)	Jammu & Kashmir (5.3)	Jammu & Kashmir (5.6)
Jammu & Kashmir (6.1)	Rajasthan (6.4)	Rajasthan (4.8)

Source: Central Statistics Office.
Note: Figures in parenthesis show growth rate in GSDP at constant (2004-05) prices.

2.2.11 **Table 2.6** provides states' sectoral growth performance in the first three years of Twelfth Plan. Farm sector (agriculture and allied activities) output often witnesses significant year-on-year volatility due to variations in rainfall and other weather-related phenomena. The magnitude of this volatility at state level is much higher than at the all-India level. The overall average annual growth rate of the farm sector at 2004-05 prices was 1.4 per cent in the first year of the Twelfth Plan, and it rose to 4.7 per cent in 2013-14. Farm sector growth increased for most States during the first two years of the Twelfth Plan; in Bihar, Kerala, Odisha and Uttarakhand, however, farm sector output declined in 2013-14, resulting in negative growth rates. The states which showed the fastest growth in farm sector GSDP during 2012-13 were Madhya Pradesh, Chhattisgarh, Telangana and Odisha; the states with the lowest, or even negative growth, were Tamil Nadu, Gujarat and Goa. The trend somewhat reversed in 2013-14, with Gujarat, Madhya Pradesh, Goa and Himachal Pradesh posting high farm sector growth rates, and Odisha, Bihar and Uttarakhand recording the lowest rates.

2.2.12 Although the average annual all-India growth rate of the industrial sector declined from 1 per cent in 2012-13 to 0.4 per cent in 2013-14, only 12 out of the 29 states reported showed a decline in industry growth rate during 2012-13 and 2013-14. The highest growth rates in industrial sector GSDP during 2012-13 were in West Bengal, Tripura and Uttarakhand, whereas the lowest, or even negative, growth was reported by Arunachal Pradesh, Goa and Andhra Pradesh. However, in 2013-14 Arunachal Pradesh topped in terms of industrial sector growth with a growth rate of 19.6 per cent followed by Uttarakhand and Bihar. States such as Telangana, Kerala and Andhra Pradesh were the bottom industrial-sector performers in 2013-14.

2.2.13 The average annual all-India growth rate of the services sector declined marginally between 2012-13 and 2013-14, from 7 per cent to 6.8 per cent. Bihar, Tripura and Jharkhand showed the highest average annual growth rate in this sector in 2012-13, whereas Arunachal Pradesh, Odisha and Meghalaya had the lowest. In 2013-14, Bihar topped the sectoral growth-

Table 2.6: Sectoral Growth Rates of State Domestic Product at 2004-05 Prices

(per cent)

S.No	States	Agriculture, forestry & fishing			Industry			Services		
		2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15
1	Andhra Pradesh	7.5	7.9	5.9	-4.4	1.0	5.3	6.2	9.2	8.5
2	Arunachal Pradesh	1.8	4.1	3.1	-10.0	19.6	9.5	2.1	5.5	8.2
3	Assam	3.2	4.3	3.5	7.2	5.5	7.4	5.1	9.6	7.1
4	Bihar	8.2	-6.2	4.4	0.9	11.9	9.1	15.1	14.3	11.2
5	Chhattisgarh	12.5	1.4	2.7	5.6	5.2	4.7	10.6	6.7	8.7
6	Goa	-4.5	13.8	-*	-4.7	5.4	-	10.3	8.6	-
7	Gujarat	-9.0	28.3	-	5.9	3.6	-	10.6	8.5	-
8	Haryana	-0.6	3.1	-0.1	4.4	4.4	4.6	7.9	9.4	11.4
9	Himachal Pradesh	9.5	13.4	-	3.4	2.4	-	7.4	6.8	-
10	Jammu & Kashmir	-1.4	5.1	-14.9	8.0	7.1	1.5	6.9	5.2	2.0
11	Jharkhand	6.1	8.3	8.5	3.6	6.0	4.5	11.5	11.6	11.8
12	Karnataka	2.4	9.4	4.5	-0.3	4.2	4.4	10.5	8.0	8.9
13	Kerala	1.4	-1.4	-	2.3	1.0	-	7.8	8.9	-
14	Madhya Pradesh	18.2	20.4	18.8	2.4	2.5	4.4	7.9	7.6	8.1
15	Maharashtra	0.5	7.7	-8.5	9.2	4.5	4.0	8.1	8.6	8.1
16	Manipur	9.8	3.1	-	2.0	2.1	-	8.7	9.5	-
17	Meghalaya	9.2	6.8	6.5	-0.2	10.0	3.6	4.7	10.5	13.2
18	Mizoram	0.0	0.1	-	2.1	3.1	-	11.1	11.3	-
19	Nagaland	3.9	4.0	4.0	8.5	7.7	7.8	7.1	7.3	7.7
20	Odisha	11.0	-9.8	2.1	-0.8	2.9	9.3	4.4	5.4	9.2
21	Punjab	0.5	3.2	-0.5	2.1	2.1	2.0	8.2	9.0	9.6
22	Rajasthan	-0.3	5.1	2.8	5.6	1.1	3.0	10.1	7.2	8.8
23	Sikkim	2.2	3.4	-	8.7	9.4	-	7.4	6.4	-
24	Tamil Nadu	-11.1	7.3	4.9	2.1	3.1	3.6	6.0	9.3	9.2
25	Telangana	11.5	8.4	-10.3	-4.1	0.1	4.1	6.3	5.9	9.7
26	Tripura	4.8	7.5	-	9.5	8.5	-	14.8	10.3	-
27	Uttar Pradesh	4.7	1.2	4.2	2.1	2.0	1.9	7.8	7.7	8.3
28	Uttarakhand	8.8	-2.5	5.1	9.3	12.6	12.3	5.8	7.6	7.9
29	West Bengal	3.3	3.0	3.3	10.6	6.1	5.1	7.8	8.2	8.7
	All India	1.4	4.7	-	1.0	0.4	-	7.0	6.8	-

Source: Central Statistics Office (CSO)

* A '–' indicates not available.

rate tables again – followed by Jharkhand and Mizoram. Jammu & Kashmir, Odisha and Arunachal Pradesh had the lowest annual growth rates of services.

2.3 Savings and Investment

2.3.1 The Twelfth Plan Document recognizes that higher levels of investment – supported by high domestic saving – are required to push the economy to a higher growth trajectory. However, investment rates have declined in the first three years of the Twelfth Plan with saving rate falling in the first two years **(Table 2.7).** Based on the New Series estimates, the savings rate (Gross Savings as percentage of GDP) is estimated at 33.8 per cent in 2012-13, it declined to 33.0 per cent in 2013-14 and remained the same in 2014-15. Similarly, the investment rate (Gross Capital Formation as percentage of GDP), estimated at 38.6 per cent in 2012-13, declined to 34.7 per cent in 2013-14 and further to 34.2 per cent in 2014-15. Notably, the investment rate in the years 2011-12 to 2014-15 has been higher than the savings rate because of net capital inflows from the rest of the world (ROW).

Table 2.7: The savings and investment Rates at Current Prices

(As a percentage of GDP at current prices)

Financial Year	Savings Rate	Investment Rate
2012-13*	33.8	38.6
2013-14*	33.0	34.7
2014-15@	33.0	34.2

Source: Central Statistics Office (CSO).
Note: *: Second Revised Estimates (New Series); @: First Revised Estimates as on 29.01.2016.

2.3.2 Investment is measured by Gross Capital Formation (GCF), which comprises Gross Fixed Capital Formation (GFCF), Changes in Stock (CIS) and valuables. GFCF refers to creation physical assets and hence captures the productive capacity of the economy, whereas Changes in Stock primarily measures inventories – i.e., working capital. It is GFCF which is important for measuring the potential growth of the economy as it accounts for 90 per cent of GCF. The rate of fixed investment (GFCF) at current prices came down from 33.4 per cent in 2012-13 to 30.8 per cent in 2014-15. It is expected to further come down to 29.3 per cent in 2015-16 (PE). This can be attributed mainly to reduction in household sector fixed investment from 14.6 per cent in 2012-13 to 11.0 per cent in 2014-15 **(Table 2.8).**

Table 2.8: Composition of Fixed Investment

	2012-13*	2013-14*	2014-15@
As per cent of GDP at current prices			
Public non-financial corporations	3.5	3.4	3.2
Private non-financial corporations	11.5	11.5	12.1
Public financial Corporations	0.1	0.1	0.1
Private financial corporations	0.2	0.2	0.2
General government	3.4	3.6	4.2
Household sector	14.6	12.9	11.0
GFCF	33.4	31.6	30.8
Share in GFCF			
Public non-financial corporations	10.5	10.7	10.4
Private non-financial corporations	34.5	36.3	39.3
Public financial Corporations	0.3	0.3	0.4
Private financial corporations	0.7	0.7	0.7
General government	10.2	11.2	13.6
Household sector	43.8	40.7	35.6
GFCF	100.0	100.0	100.0

Source: Central Statistics Office (CSO)
Note: *: Second Revised Estimates (New Series); @: First Revised Estimates as on 29.01.2016.

2.3.3 The decline in gross savings is attributable to the decline in household sector savings and public corporations' (financial and non-financial) savings in 2012-13 to 2014-15 **(Table 2.9).** However, there has been a slight increase in the share of private corporations' gross savings during the period.

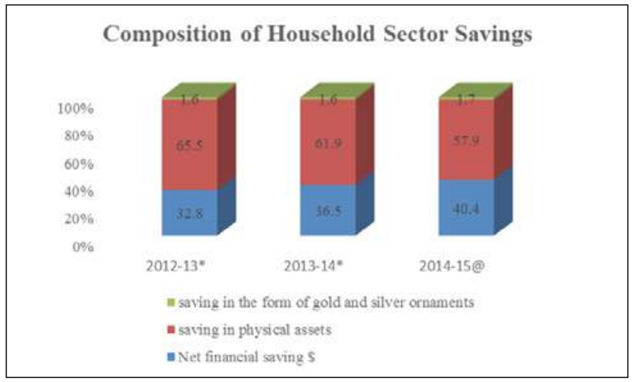
2.3.4 Around 60 per cent of the gross savings in the economy is contributed by the household including NPISHs, followed by private non-financial corporations. However, the share of the household sector in gross savings declined from 66.4 per cent in 2012-13 to 57.8 per cent in 2014-15. This decline can be attributed to the decline in household savings in physical assets **(Figure 2.1).** The share of private corporations in gross savings, especially private non-financial corporations increased during the period, while the share of public corporations decreased. The dis-saving of general government has reduced from 4.8 per cent in 2012-13 to 3.2 per cent in 2014-15.

Table 2.9: Composition of Savings

	2012-13*	2013-14*	2014-15@
As per cent of GDP at current prices			
Public non-financial corporations	1.2	1.2	0.9
Private non-financial corporations	8.7	9.6	11.3
Public financial Corporations	1.8	1.4	1.3
Private financial corporations	1.3	1.2	1.4
General government	-1.6	-1.3	-1.1
Households including NPISH	22.4	20.9	19.1
Gross Savings	33.8	33.0	33.0
Share in Gross Savings			
Public non-financial corporations	3.7	3.5	2.9
Private non-financial corporations	25.7	29.2	34.4
Public financial Corporations	5.2	4.4	4.0
Private financial corporations	3.7	3.5	4.1
General government	-4.8	-4.0	-3.2
Households including NPISH	66.4	63.4	57.8
Gross Savings	100.0	100.0	100.0

Source: Central Statistics Office (CSO)
Note: *: Second Revised Estimates (New Series); @: First Revised Estimates as on 29.01.2016.
NPISH: Non-profit institutions serving households

Figure 2.1



Source: Central Statistics Office (CSO).
Note: 1. $Financial liabilities have been deducted from Gross Financial savings of the household sector.
2. *: Second Revised Estimates (New Series); @: First Revised Estimates as on 29.01.2016.
3. Gross financial savings & liabilities for household sector includes gross financial savings & liabilities for quasi corporate sector.

2.3.5 The *Report of the Working-Group on Estimation of Investment, its Composition and Trend for the Twelfth Five Year Plan (2012-13 to 2016-17)* states that the Incremental Capital Output Ratio (ICOR) in the Tenth and Eleventh Plan period was 3.7 and 4.4 respectively. It estimates the ICOR for the Twelfth Plan as 4.04. However, the growth rate of GDP in the initial years of the Twelfth Plan had been hovering around 5 per cent (2004-05 prices) despite a robust investment rate (GFCF) of around 30 per cent, indicating a worsening of the ICOR – which does not augur well for the economy. One possible reason for this worsening of the ICOR could be the huge amount of investment trapped in stalled or incomplete projects. Some of these projects in which large investments have been made are not in a position to produce anything for want of raw materials – for example, completed gas-based power stations that are not generating any power. Similarly, many projects which are at the verge of completion, are caught up in disputes of various kinds and remain unproductive. Therefore, the economy is in a situation where many past investments remain idle, failing to contribute anything to GDP – resulting in a deterioration of the ICOR.

2.3.6 For India to return to its potential growth path, an improvement in the efficiency of investment is warranted. This requires unshackling stalled or incomplete projects, and creating a conducive business environment. For this, transparent, unequivocal and stable policies are needed that can reduce the scope for corruption and uncertainty, and help the corporate sector in effectively planning its investments over the long term without unduly worrying about the risks associated with changes in government policies that could adversely impact those investments. The government has already set up the Prime Minister's Project Monitoring Group (PMG) to track stalled mega investment schemes, both in the public and the private sectors, and to remove bottlenecks in the implementation of these projects.

2.3.7 In order to improve business sentiment and spur domestic as well as foreign investment in the country, easier regulations and a simpler and stable tax regime is required. The government's recent pronouncement that the corporate tax rate would be gradually reduced from 30 per cent to 25 per cent over four years, with a corresponding rationalisation of various tax exemptions, is significant in this regard. While encouraging private investment, this step also signals a break from an exemption-based regime. The highlights of the final plan of phasing out exemptions as given in Union Budget 2016-17 includes (a) The accelerated depreciation provided under IT Act will be limited to maximum 40 per cent from 1.4.2017; (b) The benefit of deductions for Research would be limited to 150 per cent from 1.4.2017 and 100 per cent from 1.4.2020; (c) The benefit of section 10AA to new SEZ units will be available to those units which commence activity before 31.3.2020 and (d) The weighted deduction under section 35CCD for skill development will continue up to 1.4.2020. Also, with the launch of "Pradhan Mantri Jan Dhan Yojana" in 2014-15, it is expected that financial inclusion will increase, and household financial savings would be better mobilized. Further, higher public savings are sought to be achieved, *inter-alia*, through efforts towards fiscal consolidation.

2.4 Fiscal Performance

2.4.1 The government has adopted a revised roadmap for fiscal consolidation following an amendment to the Fiscal Responsibility and Budget Management Act in 2012. The strategy for reducing the fiscal deficit has been designed with a judicious mix of, first, a reduction in total Central government expenditure as a percentage of GDP and, second, an improvement in tax revenue as a percentage of GDP. The strategy adopted has started showing positive results since 2012 **(Table 2.10).** The total expenditure of the Central government was reduced from 15.8 per cent of GDP in 2009-10 to 14.9 per cent in 2011-12 and further to 13.3 per cent in 2014-15. In 2015-16 (RE) the total expenditure of the government had only a marginal reduction to 13.2 per cent and to 13.1 per cent in 2016-17 (BE).This is on account of the fact that the Government have increased Plan expenditure at the RE stage in 2015-16 in contrast to the usual practice of reducing it. The gross tax revenue of Central government remained almost around 10.0 per cent of GDP from 2010-11 to 2014-15. However, it improved slightly to 10.8 per cent during 2015-16 and 2016-17 indicative of the improved tax buoyancy in the country. As a result, the fiscal deficit of the Centre fell from 5.9 per cent of GDP in 2011-12 to 3.9 per cent in 2015-16 (RE) and further to 3.5 per cent in 2016-17 (BE). The revenue deficit of the Centre declined from 4.5 per cent of GDP in 2011-12 to 2.3 per cent of GDP in 2016-17 (BE). The primary deficit of the Centre also declined in the same period, indicating that the economy is on track to fiscal consolidation. It is also proposed in the Union Budget 2016-17 to constitute a Committee to review the implementation of the FRBM Act in the context of increased uncertainty and volatility in the global economy and give its recommendations on the way forward.

Table 2.10: Fiscal Position of Centre

(As a percentage of GDP)

Year	Total Expen-diture	Gross Tax Re-venue	Non-tax Re-venue	Fiscal Deficit	Re-venue Deficit	Pri-mary Deficit
2007-08	14.3	11.9	2.1	2.5	1.1	-0.9
2008-09	15.7	10.8	1.7	6.0	4.5	2.6
2009-10	15.8	9.6	1.8	6.5	5.2	3.2
2010-11	15.4	10.2	2.8	4.8	3.2	1.8
2011-12	14.9	10.2	1.4	5.9	4.5	2.8
2012-13	14.2	10.4	1.4	4.9	3.7	1.8
2013-14	13.8	10.1	1.8	4.5	3.2	1.1
2014-15	13.3	10.0	1.6	4.1	2.9	0.9
2015-16 (RE)	13.2	10.8	1.9	3.9	2.5	0.7
2016-17 (BE)	13.1	10.8	2.1	3.5	2.3	0.3

Source: Union Budget Documents, Central Statistics Office.
Note: (-) sign indicates surplus
RE: Revised Estimates; BE: Budget Estimates
From 2011-12 onwards GDP (New series) has been used.

2.4.2 Around 73 per cent of total expenditure is non-Plan expenditure, of which around 93 per cent is revenue expenditure in 2015-16. The non-Plan revenue expenditure comprises of items such as interest payments, defence services, subsidies, pensions etc. The share of non-Plan capital expenditure – which includes defence capital, other non-Plan outlay, loans to States/UTs and so on – in total expenditure continues to be less than 7 per cent in the same year. Central Plan and Central Assistance for States/UTs form sub-categories under both revenue and capital heads of Plan expenditure. Plan revenue expenditure is about 70 per cent of total Plan expenditure in 2015-16.

2.4.3 Revenue expenditures (both Plan and Non-plan) have a larger share of total expenditure (around 87 per cent in 2015-16) than Capital expenditure. The ratio of capital expenditure to total expenditure in India remained at around 12 to 13 per cent in the last few years.

2.4.4 The details of the fiscal position of the state governments from 2007-08 onwards is given in **Table 2.11.** The fiscal deficit of all states taken together has been around 2 per cent of GDP during the period – except for 2009-10, when it was 2.9 per cent of GDP. The states have shown more or less a revenue surplus during the Eleventh Plan period. This is largely due to higher tax collections and reductions in non-Plan revenue expenditure by the States. This trend is continuing in the Twelfth Five Year Plan.

Table 2.11: Fiscal position of the State Governments

(As a percentage of GDP)

Year	Total Expen-diture	Tax Re-venue	Non-tax Re-venue	Fiscal Deficit	Re-venue Deficit	Pri-mary Deficit
2007-08	15.1	8.8	3.7	1.5	-0.9	-0.5
2008-09	15.7	8.6	3.8	2.4	-0.2	0.6
2009-10	15.7	8.2	3.7	2.9	0.5	1.2
2010-11	14.9	8.7	3.3	2.1	0.0	0.5
2011-12	15.0	9.0	3.2	1.9	-0.3	0.4
2012-13	16.5	9.5	3.8	2.0	-0.2	0.5
2013-14	16.5	9.8	3.7	2.2	0.1	0.7
2014-15(RE)	-	-	-	2.9	0.1	1.3
2015-16 (BE)	-	-	-	2.3	-0.4	0.8

Source: Annual Report 2014-15, Reserve Bank of India.
Note: RE: Revised Estimates; BE: Budget Estimates.

2.4.5 The total liabilities of the Central Government as a share of GDP are showing a declining trend over the years. They declined from 58.9 per cent of GDP in 2007-08 to 51.7 per cent in 2013-14. This reduction was despite the three successive stimulus packages provided to counter the effect of the global slowdown on the Indian economy. During 2014-15 (RE), the Central government's outstanding liabilities remained the same, at 51.7 per cent of GDP, and it is estimated to be at 50.3 per cent in 2015-16 (BE). The total liabilities of the states are also showing a similar downward trend **(Table 2.12).**

Table 2.12: Total Liabilities of the Central and State Governments

(As a percentage of GDP)

Year	Total Liabilities^	
	Centre	States
2007-08	58.9	26.6
2008-09	58.6	26.1
2009-10	56.3	25.5
2010-11	52.1	23.5
2011-12	52.9	22.6
2012-13	52.3	22.1
2013-14	51.7	21.6
2014-15	51.7	21.9
2015-16	50.3	—

Source: Real Time Handbook of Statistics on the Indian Economy, Reserve Bank of India.

Notes: 1. ^ Includes external liabilities of the Centre calculated at current exchange rates.
2. Centre's data for 2014-15 are Revised Estimates and for 2015-16 are Budget Estimates.
3. States' data for 2012-13 and 2013-14 are Revised Estimates and Budget Estimates, respectively.

2.4.6 The fiscal deficit's impact on growth depends upon how it is utilized. A higher fiscal deficit that is incurred for public sector investment in physical infrastructure (highways, airports, mass transit etc.) and social infrastructure (health and education) helps to stimulate growth in the private sector, leading to higher economic growth. But if fiscal expansion is instead used for financing the revenue deficit (through current consumption), it can lead to crowding out of private investment. Increased borrowing by the government to finance its expenditure generally results in high interest rates through increased demand for money, and discourages private investment in businesses and other productive activities. A high debt-to-GDP ratio can hamper the government's ability to spend more on social sectors (health and education, for example) due to high debt servicing.

2.4.7 The government has constituted an Expenditure Management Commission to look into the requirements for expenditure reforms and to suggest ways that allocative efficiency could be improved. The government is planning to adopt a comprehensive approach for efficient management of Government investment in Central Public Sector Enterprises (CPSEs) by addressing issues such as capital restructuring, dividend, bonus shares, etc. The Department of Disinvestment is being re-named as the "Department of Investment and Public Asset Management (DIPAM)". The need for increased public investment to revive growth can be met in the short run by maintaining fiscal discipline. For this process, expenditure control and switching expenditure – through reducing subsidies – away from consumption towards investment, both in the short and in the medium term, should be undertaken. The reduction of the fiscal deficit to 3.5 per cent of GDP in 2016-17 has been planned very prudently by the government, striking a balance between making gradual reductions in the deficit and investing in infrastructure and key sectors.

2.5 Inflation

2.5.1 Following the global financial crisis, there was a strong worldwide tendency to go in for massive fiscal stimulus; India was no exception to this phenomenon. Large doses of monetary and fiscal stimulus, primarily in the form of tax cuts and cheap credit, were infused into the economy to counter the effects of the global slowdown. But, instead of increasing public investment to address growing supply-side constraints, consumer demand was stimulated through a higher revenue deficit in 2008-09. As a result, final consumption grew at an average of over 8 per cent between 2009-10 and 2011-12. Further, the withdrawal of the stimulus package was delayed – even after domestic demand revived partially. Consequently, strong inflationary pressure built up in the economy. However, this inflationary pressure declined over the years. The steep decline of international crude oil prices, combined with the tight monetary policy of the Reserve Bank of India (RBI) and the government's commitment to fiscal prudence, might have helped decline in inflation.

2.5.2 Wholesale Price Index-based inflation (the WPI 2004-05 series), which was at a peak level of 9.6 per cent in 2010-11, moderated slightly to 8.9 per cent in 2011-12, further to 7.4 per cent in 2012-13, and then to 6.0 per cent in 2013-14. However, it subsequently fell steeply to 2.0 per cent in 2014-15 and to (-) 2.7 per cent in 2015-16 (April 2015 to February 2016) **(Table 2.13).** Monthly reviews from the Office of the Economic Adviser, Ministry of Commerce and Industry, reveal that inflation has been in the "comfort zone" since June 2014. As per the WPI review for the month of February 2016, the annual rate of inflation, based on monthly WPI, stood at (-) 0.91 per cent (provisionally) for the month of February, 2016 (over February 2015) as compared to (-) 0.90 per cent (provisional) for the previous month and (-) 2.17 per cent during the corresponding month of the previous year. The index has seen negative year-on-year growth since November 2014.

2.5.3 Since 2008-09, Consumer Price Index (CPI) inflation remained at or close to double digits. However, on average, the New CPI inflation (combined) during 2014-15 (Base 2012=100) was 5.9 per cent which is significantly lower than the 9.5 per cent and 10.2 per cent (Base 2010=100) witnessed during 2012-13 and 2013-14. It is estimated at 4.9 per cent in 2015-16 (April-February 2015-16) **(Table 2.14).** This moderation was largely driven by changes in food prices, a favourable base effect and benign global crude oil prices. Following the continuing easing of inflationary pressure, the RBI cut its benchmark policy repo rate by 125 basis points during January 2015, to 6.75 per cent in September 2015. However, in view of the slow global growth and weak domestic demand, CPI rose for the five consecutive months since September 2015 and RBI remained on an "accommodative" path by keeping the policy repo rate unchanged during December 2015 and February 2016.

Table 2.13: Wholesale Price Index, Annual Variation (Base 2004-05 =100; per cent change)

Item /Year	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**	**2015-16***
All Commodities	**3.8**	**9.6**	**8.9**	**7.4**	**6.0**	**2.0**	**-2.7**
Primary Articles	12.7	17.7	9.8	9.8	9.8	3.0	0.1
of which :							
Food Articles	15.3	15.6	7.3	9.9	12.8	6.1	3.3
Non-food Articles	5.5	22.3	9.6	10.5	5.6	-0.5	2.9
Fuel and Power	-2.1	12.3	14.0	10.3	10.2	-0.9	-11.8
Manufactured Products	2.2	5.7	7.3	5.4	3.0	2.4	-1.2
of which :							
Food Products	13.5	3.7	7.1	8.1	3.2	2.4	0.3
Non-food Products	0.2	6.1	7.3	4.9	2.9	2.4	-1.5

Source: Office of the Economic Adviser.

Note: *: April- February 2015-16.

Table 2.14: Consumer Price Index, Annual Variation (per cent Change)

Item/Year	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Consumer Price Index (CPI) (Average per cent Change)							
a) CPI- Industrial Workers (IW) (Base 2001=100)	12.4	10.4	8.4	10.4	9.7	6.3	5.7#
of which : CPI- IW Food	15.2	9.9	6.3	11.9	12.3	6.5	6.1#
b) CPI- Agricultural Labourers (Base 1986-87=100)	13.9	10	8.2	10	11.6	6.6	4.3#
New Consumer Price Index (CPI) (Average per cent Change)							
Rural				10.1	9.6	6.2	5.5*
Urban				10.4	9.4	5.7	4.1*
Combined				10.2	9.5	5.9	4.9*

Source: Labour Bureau and Ministry of Statistics & Programme Implementation.
Note: 1. New CPI for 2012-13 and 2013-14 calculated with base 2010=100; for 2014-15 and 2015-16, base 2012=100.
2. #: April- January 2015-16.
3. *: April- February 2015-16.

2.5.4 The government is committed to ensuring price stability, as it is an essential prerequisite for macroeconomic stability and inclusive growth. It is therefore closely monitoring the situation, and taking measures on an ongoing basis to control inflation. In particular, the government has initiated several measures to improve the supply of essential commodities, such as facilitating the import of various items of mass consumption at zero or concessional import duties together with restrictions on their export; prescribing stock-holding limits under the Essential Commodities Act in respect of onions and potatoes, pulses, edible oil, and edible oilseeds; fixing a Minimum Export Price (MEP) for potatoes and onions; advising states to allow free movement of fruits and vegetables by delisting them from the Agricultural Produce Market Committee (APMC) Act; and so on.

2.5.5 Inflation measured by the new CPI was well within the ceiling – of 8 per cent in January 2015 and 6 per cent in January 2016 – set by the Reserve Bank of India in its monetary policy stance. With weakening of unfavourable base effects and benign prices of fruits and vegetables and crude oil, the CPI for January 2016 (5.7 per cent) was well within the target of 6 per cent. As per the press release regarding the New CPI on Base 2012=100 issued by the Ministry of Statistics and Programme Implementation and dated 14th March 2016, inflation rate on a point-to-point basis dropped to 5.2 per cent in February 2016 over the previous month. The overall food inflation (the Consumer Food Price Index or CFPI) also went down to 5.3 per cent from 6.9 per cent during the same period. As per the Sixth Bi-monthly Monetary Policy Statement, 2015-16 released on February 2016, inflation is expected to be inertial and would be around 5 per cent by the end of fiscal 2016-17 under the assumption of a normal monsoon and the current level of international crude oil prices and exchange rates. It is further expected that structural reforms under taken in the Union Budget 2016-17 that boost growth while controlling spending would create more space for monetary policy to support growth, while also ensuring that inflation remains on the projected path of 5 per cent by the end of 2016-17.

2.5.6 Further, it is also important that fiscal policy and monetary policy should work concurrently to achieve growth with price stability. Towards the latter half of the Eleventh Five Year Plan it was observed that, while the RBI was following a tight monetary policy to tackle inflation, the fiscal deficit of the Central Government worsened because of increasing subsidies. Because of the fiscal profligacy of the Central Government, tight monetary policy was not able to effectively manage inflation but instead dragged growth down. Of late, the fiscal deficit of the Central Government has decreased and it seems that both monetary policy and fiscal policy are working in tandem to manage inflation. However, the real challenge lies in stabilizing the inflation rate below 5-6 per cent in the medium to long term.

2.6 External Sector Performance

2.6.1 Exports had increased at an average of around 20.3 per cent per year in US$ terms during the Eleventh Plan. The Twelfth Plan, taking into account the performance of exports during the Eleventh Plan and the prospect that the global economy would gradually recover, expected exports to be over US$ 570 billion by 2016-17. In the first year of the Twelfth Plan (2012-13), the value of exports stood at US $ 300.4 billion, a decline of 1.8 per cent over the previous year. The situation improved during 2013-14, with exports valued at US$ 314.4 billion – an annual growth rate of 4.7 per cent. However, in 2014-15 the annual growth rate of exports declined to 1.3 per cent, with exports valued at US $ 310.3 billion (RBI, Real Time Handbook of Statistics on the Indian Economy).

2.6.2 India has taken key strategic initiatives under its Foreign Trade Policy to boost exports. Major steps include the diversification of export markets and the export product basket; strengthening export-related infrastructure; enhancing credit flows fosr exports at lower cost; reducing transaction costs; building a brand image for India; and extending protection to sensitive domestic sectors.

2.6.3 For robust export growth, policy initiatives on both the global and the domestic front need considerable impetus. On the global side, apart from strengthening efforts on the Focus Market and Focus Product schemes and on the branding of India, the identification of sectors for Free Trade Agreements (FTAs) or Regional Trade Agreements (RTAs) must be on the basis of comparative advantage. Similarly, the inverted duty structure in sectors like electronics, textiles and chemicals must be addressed, as must the artificial duty structure caused by some FTAs and RTAs. On the other hand, export-related policies on the domestic side can include the cluster-based SEZ approach, with government support in infrastructure and IT. Labour-intensive export segments may be provided with preferential treatment; this would help in addressing unemployment and aid the manufacturing sector. To promote the export of hi-tech products and to remain globally competitive in the long run, investment in R&D, innovation and skill development is necessary. Another important initiative that needs a further push is the simplification of procedures and documentation to reduce delays and costs to exporters. In this regard, the improvement in transport infrastructure, especially port infrastructure, demands attention.

2.6.4 Imports increased at an average rate of 22.3 per cent during the Eleventh Plan period. The value of imports in the beginning of the Twelfth Plan (2012-13) was recorded at US$ 490.7 billion, showing a growth of 0.3 per cent. However, imports declined by 8.3 per cent during 2013-14 to US$ 450.2 billion, largely reflecting a fall in non-oil imports by 12.6 per cent. The decline in the annual growth rate of imports eased to 0.5 per cent in 2014-15, with the value of imports showing at US$ 448.0 billion (RBI, Real Time Handbook of Statistics on the Indian Economy). Top five commodities exported from and imported to India are given in **Table 2.15**.

Table 2.15: Top Five Commodities Exported and Imported (April 2015–January 2016)

(per cent)

Rank	Export	Growth Rate	Share
1	Petroleum Products	-46.1	11.9
2	Pearl, Precious, Semi-precious Stones	-6.0	8.3
3	Drug Formulations, Biologicals	20.4	4.9
4	Gold And Other Precious Metal Jewellery	-19.3	4.0
5	RMG Cotton incl Accessories	4.0	3.4
	Total (all commodities)	**-12.0**	**100.0**
Rank	**Import**	**Growth Rate**	**Share**
1	Petroleum: Crude	-41.0	18.0
2	Gold	14.4	9.1
3	Pearl, Precious, Semi-precious Stones	-9.3	5.0
4	Petroleum Products	-18.2	4.6
5	Telecom Instruments.	12.7	4.0
	Total (all commodities)	**-9.9**	**100.0**

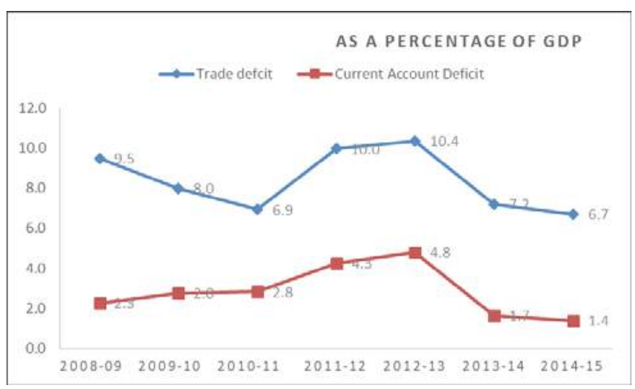
Source: Directorate General of Foreign Trade, Ministry of Commerce and Industry

2.6.5 The major items of India's imports are petroleum-related and quite price-inelastic. Thus there is little scope for a reduction in imports in the short to medium term. In the long term, with global integration, it could be more efficient to promote competitiveness of Indian industry by specializing in the export of goods where we have a comparative advantage, rather than curbing imports through restrictions that protect domestic producers. This could provide India with niche areas where it could use its indigenous advantages to capture its due share of the global market and thereby ensure its exports reach their potential share of world trade. The improved export earnings would then balance out the large import expenditure. Further, there is a need to develop alternative fuels, like corn-based ethanol and so on, in order to reduce India's dependence on imported petroleum products.

2.6.6 India's trade deficit was increasing for many of the last few years. It was at US $ 109.6 billion in 2009-10, increased to US$ 118.6 billion in 2010-11, and further to a much higher US$ 183.4 billion in 2011-12. The first year (2012-13) of the Twelfth Plan witnessed a trade deficit of US$ 190.3 billion. While exports improved during 2013-14, imports declined – leading to a narrowing of the trade deficit to US$ 135.8 billion. However, in 2014-15, both exports and imports declined leading to a slight increase in the trade deficit, to US $ 137.7 billion (RBI, Real Time Handbook of Statistics on the Indian Economy). The trade deficit as a percentage of GDP declined from 10.4 per cent in 2012-13 to 7.2 per cent in 2013-14, and further to 6.7 per cent in 2014-15 **(Figure 2.2).**

2.6.7 India's current account deficit (CAD) widened in absolute terms as well as a proportion of GDP from 2010-11 to 2012-13, reflecting a widening trade deficit – on account of moderate external demand, relatively inelastic imports of petroleum, oil and lubricant (POL) and higher imports of gold & silver. The CAD in 2011-12 was 4.3 per cent of GDP as compared to 2.8 per cent in 2010-11. It increased to 4.8 per cent in 2012-13, the first year of the Twelfth Plan **(Table 2.16).** However, the CAD narrowed to 1.7 per cent in 2013-14, primarily on account of the decline in the trade deficit. It further fell to 1.4 per cent of GDP in 2014-15 (April-March 2014-15 Preliminary) largely backed by a contraction in trade deficit and marginal improvements in the net invisible earnings **(Figure 2.2)**.

Figure 2.2: India's Trade Deficit and Current Account Deficit



Source: Handbook of Statistics on Indian Economy 2014-15, RBI; CSO
Note: From 2011-12, New series of GDP estimates has been used.

2.6.8 A number of measures taken by the government to contain the CAD are having their desired impact. These measures include: compression in import of gold and silver (since withdrawn) and non-essential items; the introduction of Inflation-Indexed Bonds to wean investors away from gold to other savings instruments and thus moderate gold demand; various export promotion schemes; the widening of Interest Subvention Scheme and raising the rate of subvention from 2 per cent to 3 per cent; broadening the scope of the Focus Market and Focus Product Schemes as well as the Incremental Export Incentivisation Scheme; and others.

2.6.9 On the capital account, there has been a steady surplus since 2004-05 – more than the amount by which the current account has been in deficit. This has meant that there has been a net accretion to India's foreign exchange reserves. The major items on the capital account are Foreign Direct Investment or FDI (a more stable form of foreign capital), Foreign Portfolio Investment (FPI), loans and banking capital **(Table 2.16).**

2.6.10 Net inflows of Foreign Direct Investment (FDI) to India declined from US$ 22 billion in 2011-12 to US $ 19.8 billion in 2012-13. However, FDI net inflow improved to US$ 21.6 billion in 2013-14 and further to US$ 32.6 billion in 2014-15. The net inflows of Portfolio Investments rose from US$ 17.2 billion in 2011-12 to US$ 26.9 billion in 2012-13 – but sharply declined to US $ 4.8 billion in 2013-14. However, net inflows of FPI increased to US$ 40.9 billion in 2014-15 (RBI, Real Time Handbook of Statistics on the Indian Economy).

Table 2.16: External Payments – Current and Capital Account

(As a percentage of GDPmp at Current Prices)

Item/Year	11th Plan period	12th Plan period						
	Average	Projected	Actual	Projected	Actual	Projected	Actual	Projected Average
	2007-12	2012-13	2012-13	2013-14	2013-14	2014-15	2014-15	2012-17
Merchandise Exports	14.9	15.7	16.8	16.0	17.1	16.1	15.5	16.0
Merchandise Imports	23.6	26.5	27.5	25.8	25.0	25.1	22.6	25.2
Merchandise Trade Balance	-8.8	–10.8	-10.7	–9.7	-7.8	-9.0	-7.1	–9.2
Net Service Export	3.2	3.5	3.5	3.5	3.9	3.5	3.7	3.5
Total of X, M and Net Services Export	41.7	45.7	47.8	45.3	46.0	44.7	41.8	44.6
Net Private Transfers	3.4	3.6	3.5	3.6	3.5	3.5	3.2	3.4
Net Investment Income	-0.7	-1.2	-1.2	-1.1	-1.3	-1.1	-1.3	-1.1
Current Account Balance	-2.9	-4.8	-4.8	-3.8	-1.7	-3.0	-1.4	-3.4
FDI Net	1.2	1.4	1.1	1.4	1.2	1.3	1.6	1.3
FDI Inward	2.8	2.0	2.2	1.9	2.3	1.8	2.5	1.8
FDI Outward	1.6	0.5	1.1	0.5	1.2	0.5	0.9	0.5
Portfolio equity	1.3	1.3	1.5	1.2	0.3	0.9	2.0	0.9
Loans	1.4	1.3	1.7	1.3	0.4	1.1	0.2	1.1
Banking Capital	0.4	1.3	0.9	1.1	1.3	0.9	0.6	0.9
Other Capital	-0.4	-0.3	-0.3	-0.2	-0.6	-0.2	0.1	-0.2
Capital Account Balance	3.9	4.9	4.9	4.8	2.6	3.9	4.4	3.9

Source: Handbook of Statistics on Indian Economy 2014-15, RBI; Twelfth Plan Projections from Twelfth Five Year Plan Document.
Note: From 2012-13, New Series of GDP estimates has been used.

2.6.11 India has been ranked among the top three attractive destinations for inbound investments. Since 1991, the regulatory environment in terms of foreign investment has been consistently eased to make it investor-friendly. The policy measures adopted in the Union Budget 2016-17 in this regard include:Reforms in FDI policy in the areas of Insurance and Pension, Asset Reconstruction Companies, Stock Exchanges; 100 per cent FDI to be allowed through FIPB route in marketing of food products produced and manufactured in India.

2.6.12 India's external debt has been increasing over the years from US$ 317.9 billion in end-March 2011 to US$ 360.8 billion in end-March 2012, US$ 409.4 billion in end-March 2013, US$ 446.3 billion in end-March 2014 and US$ 475.2 billion in end-March 2015. Out of the total external debt as of end-March 2015, the long-term debt at US$ 389.7 billion and short-term debt at US$ 85.5 billion accounted for 82.0 per cent and 18.0 per cent, respectively (RBI, Real Time Handbook of Statistics on the Indian Economy). The total external debt-to-GDP ratio also increased from 18.2 per cent in end-March 2010 to 22.3 per cent in end-March 2013, 23.6 per cent in end-March 2014 and further to 23.7 per cent in end-March 2015 (Partially Revised). The rise in external debt during the period was due to long-term external debt – particularly commercial borrowings and NRI deposits.

2.6.13 With the commencement of the Twelfth Plan in 2012-13, the value of India's foreign exchange reserves (including foreign currency assets, gold, reserve tranche and SDRs) stood at US$ 294.4 billion by the end of March 2012. It declined marginally to US $ 292 billion by end of March 2013, but increased to US$ 304.2 billion at end-March 2014. It has further increased to US$ 341.6 billion at the end of March 2015(RBI, Real Time Handbook of Statistics on the Indian Economy) and reached an all-time peak of US$ 355.5 billion as on June 19, 2015 and is at US$ 350.4 billion as on February 19, 2016 (RBI Bulletin). The lower trade and current account deficits and abundant financial flows, mainly portfolio flows into domestic debt and equity markets and foreign direct investment, resulted in increased foreign exchange reserves.

2.7 Global Economic Environment

2.7.1 The ability of the domestic economy to bounce back to a higher growth trajectory towards the latter half of the Twelfth Plan will depend, besides domestic factors, on the way the global economy grows, especially the GDP growth rate in advanced economies. As per World Economic Outlook (WEO) Update, January 2016, the growth forecast for the world economy, estimated at 3.1 per cent in 2015, is projected at 3.4 per cent in 2016 and 3.6 percent in 2017. According to the report, risks to the global growth remain downwardly skewed with the continuing adjustments in the global economy viz. a generalized slowdown in emerging market economies, China's rebalancing, lower commodity prices, and the gradual exit from extraordinarily accommodative monetary conditions in the United States. In advanced economies, a modest and uneven recovery is expected to continue, with the growth rate slowly improving from 1.8 per cent in 2014 to 1.9 per cent in 2015 and projected growth rate of 2.1 per cent for 2016 and 2017. For emerging markets and developing economies, the situation is diverse but in many cases challenging. It is expected that the slowdown and rebalancing of the Chinese economy, lower commodity prices, and strains in some large emerging market economies will continue to stress growth prospects for emerging market and developing economies in 2016–17. However their growth rate is projected to increase from 4.3 per cent in 2016 to 4.7 per cent in 2017. The projected pickup in growth in the next two years mainly reflects forecasts of a gradual improvement of growth rates in countries currently in economic distress, notably Brazil, Russia, and some countries in the Middle East. Growth in China is expected to remain sluggish to 6.3 per cent in 2016 and 6.0 per cent in 2017, indicating weaker investment growth as the economy continues to rebalance. India and the rest of emerging Asia are generally projected to continue growing at a robust pace, although with some countries suffering important implications from China's economic rebalancing and global manufacturing weakness. Notably, the Indian economy is projected to grow at a faster pace than the advanced economies and most of the emerging market and developing economies, with a growth forecast of 7.5 per cent in 2016 and 2017. However, the ability to use diverse global developments to boost its domestic growth will depend largely on India's capacity to successfully tackle domestic problems and improve business sentiment within the country. According to the IMF, India's economic growth would benefit from recent policy reforms, a consequent pickup in investment, and lower commodity prices.

2.8 Financing the Twelfth Plan

2.8.1 The Twelfth Plan had estimated the total resources available for financing the Plan at Rs.80.50 lakh crore (at current prices), from the Centre and States put together. This translated to a figure of 11.8 per cent of expected GDP over the five-year period. In the first three years of the Twelfth Plan, for the Centre and the States combined, it is estimated that the total available financial resources for the Twelfth Plan were Rs. 35.61 lakh crore (at current prices), amounting to 10.5 per cent of GDP. It is not feasible to expect that the entirety of the balance, about 56 per cent of the originally estimated total Plan resources, would be available in the remaining two years of the Twelfth Plan.

2.8.2 The Twelfth Plan had visualized a 0.83 percentage point of GDP increase in Plan resources from the level of 10.97 per cent in the Eleventh Plan realization to 11.80 per cent in the Twelfth Plan projection. Of this, the Centre's resources were expected to increase by 0.39 percentage points of GDP while that of the States to go up by 0.44 percentage points.

2.8.3 It is, however, to be noted that the increase in total Plan resources amounting to 0.83 percentage points of GDP (were to be more than financed out of a higher Balance from Current Revenues - BCR), was expected to reach 1.88 percentage points of GDP in the Twelfth Plan compared to the Eleventh Plan realization (-0.61 percentage to GDP). It needs to be noted that the Eleventh Plan had a slightly positive BCR amounting to 0.41 per cent of GDP. This was visualized to improve to 3.29 per cent of GDP in the Twelfth Plan. Of the total of 3.29 percentage points of GDP flowing out of BCR, 1.88 percentage points was expected from the Centre while 1.41 percentage points from the States. In other words, the objective was not only to raise the rate of economic growth in an inclusive fashion by increasing the size of the Plan with respect to GDP, but also to do so in a fashion that did not depend on the issuance of more government debt, and in fact was consistent with a reduction in the extent of deficit financing to fund expenditure, including Plan expenditure.

2.8.4 However, slippages on the revenue account of the Centre began to surface from the very beginning year of the Twelfth Plan, that is, 2012–13. Thus, as against the Twelfth Plan estimate of the Centre's BCR at 1.88 per cent of GDP, the figures for 2012-13 to 2015-16 RE are negative and ranges between (-) 0.04 and (-) 0.35 per cent of GDP were undoubtedly much lower than the target. However, it showed some improvement at 0.33 percent in 2016-17 (BE). Improvement in the BCR would depend on higher growth momentum in the Indian economy consistent with stability in the world economy. In case of the States, it is observed a reverse situation. As against an estimated BCR of 1.4 per cent of GDP in the Twelfth Plan, the actual for 2012–13, 2013-14 and 2014-15 (BE) were above the target. Therefore, it is likely that the target for the Twelfth Plan for States would be realized.

2.8.5 The resources of the Centre flowing from BCR, that is the primary source of non-debt funds available to the government, has fallen so sharply, it follows that the ability to persist with Plan expenditures has been restricted from the financing side. This is notwithstanding the higher borrowings. The borrowings of Centre were projected at 3.35 per cent of GDP in the Twelfth Plan. However, Centre's borrowings [including net Miscellaneous Capital Receipts (MCR)] increased over the plan period above the projected, to average around 3.84 percent of GDP (including 2016-17 BE).

2.8.6 While the pressure from a weaker BCR at the Centre has reduced the pool of resources for financing the Twelfth Plan, Central Assistance to the States has risen by a greater amount than what was originally projected. During the Plan period, the amount of Central Plan Assistance provided to the States and Union Territories (UTs) aggregated to 111 per cent of the Plan projections at current prices, as against the Gross Budgetary Support (GBS) available for the Central Plan, being only 52 per cent of the targeted amount. From 2014-15, Central Assistance to State Plans also includes Centrally Sponsored Schemes (CSS). The re-structuring of Centrally Sponsored Schemes (CSS) and bringing them to the umbrella of Central Assistance to the States & UT Plans is the major reason behind this increase. However, as the Fourteenth Finance Commission's recommendation for increase in net tax devolution from 32 percent to 42 percent has been accepted by the Union Government which has provided additional unconditional resources to States in 2015-16 & 2016-17(BE). The Central Assistance to State Plans (CASP) has been resized to account for this while, the GBS to Central Plan is slated to rise by a hefty 36 and 18 per cent in 2015-16 (RE) and 2016-17 (BE), respectively. Thus it indicates overall rise in resource allocation for plan schemes.

2.8.7 Resources from Public Sector Enterprises (Centre) including Internal and Extra Budgetary Resources (IEBR) amounted to 87 per cent of the targeted amount during the plan.

2.8.8 **Table 2.17** shows the projected and actual resources position of the Centre as a proportion of GDP. The table shows the average realization of the Plan as 4.53 per cent of GDP as against projection of 6.35 per cent. During this period, BCR as well as the GBS to Central Plan are less than the projected level. Higher devolution of taxes to States from 32 to 42 percent during 2015-16 RE & 2016-17 BE as recommended by the 14th Finance Commission has resulted in less availability of resources under BCR. Less GBS to Central Plan is mainly due to restructuring of CSS from FY 2014-15 whereby it has shifted from GBS to Central Plan to CASP.

Table 2.17: Twelfth Plan Projection and Realization of Resources of the Centre

(per cent of GDP)

Sl.No.	Source of Funding	11th Plan Realization (2007-12)	Twelfth Plan Projection (2012-17)	2012-13 (Actual)	2013-14 (Actual)	2014-15 (Actual)*	2015-16 (RE)	2016-17 (BE)	Average Realization (2012-17)
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*
1	Balance from Current Revenues (BCR)	-0.61	1.88	-0.35	-0.04	-0.06	-0.05	0.33	-0.03
2	Borrowings including net Miscellaneous Capital Receipts (MCR)	5.06	3.35	4.49	4.03	3.77	3.57	3.32	3.84
3	Gross Budgetary Support (GBS) to Plan (1+2)	4.69	5.23	4.14	4.00	3.70	3.52	3.65	3.80
4	Central Assistance to States and UTs	1.26	1.26	1.09	0.99	2.17	1.59	1.61	1.49
5	Gross Budgetary Support for Central Plan (3-4)	3.43	3.97	3.05	3.00	1.54	1.92	2.05	2.31
6	Resources of Public Sector Enterprises	2.53	2.38	1.94	2.32	1.83	2.37	2.64	2.22
7	Resources for Central Plan (5+6)	5.96	6.35	4.99	5.32	3.37	4.29	4.69	4.53

Source: Twelfth Plan Document & Union Budgets
*Central Assistance to the State and UT Plans includes the Centrally Sponsored Schemes w.e.f. 2014-15.
Note: RE – Revised Estimates, BE – Budget Estimates.

2.8.9 It is pertinent to note that the borrowings of the Centre during the plan is higher than the projected level (3.35 per cent) which means that the objective of funding a larger Plan size through the generation of non-borrowed resources has not materialized. Some of the shortfall in non-borrowed resources has been offset by larger than envisaged borrowings, in order to maintain GBS at a level that was higher than could have been supported from the realized BCR, supplemented by disinvestment proceeds.

2.8.10 **Table 2.18** shows the absolute numbers for the Twelfth Plan as originally projected and as realized during the Plan computed at current prices. In this framework, the order of shortfall in resource generation is significantly larger than when it is viewed as a proportion of the size of the economy. The estimates that have been made here suggest that the GBS for the Central Plan for the duration of the Twelfth Plan at current prices may be around 76 per cent of Gross Budgetary Support (GBS). While share of BCR and Borrowings in GBS in the Twelfth plan were projected at 39 per cent and 61 per cent respectively, due to lower growth momentum, the realization are estimated at (-)0.18 per cent and 100.18 per cent.

Table 2.18 : Twelfth Plan Projection and Realization of Resources of the Centre

(Rs. crore at current prices)

Sl.No.	Source of Funding	Twelfth Plan Projection (2012-17)	2012-13 (Actual)	2013-14 (Actual)	2014-15 (Actual)*	2015-16 (RE)*	2016-17 (RE)*	Realization (2012-17)	Realization Relative to Plan Target in per cent (2012-17)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Balance from Current Revenues (BCR)	1387371	-35074	-4316	-7921	-6585	49614	-4282	-0.31
2	Borrowings including net Miscellaneous Capital Receipts (MCR)	2181255	448699	457643	470565	483782	500396	2361084	108.24
3	Gross Budgetary Support (GBS) to Plan (1+2)	3568626	413625	453327	462644	477197	550010	2356802	66.04
4	Central Assistance to States and UTs	857786	108886	112849	270829	216108	241900	950572	110.82
5	Gross Budgetary Support for Central Plan (3-4)	2710840	304739	340478	191814	261089	308110	1406230	51.87
6	Resources of Public Sector Enterprises	1622899	193737	263095	229067	321618	398139	1405656	86.61
7	Resources for Central Plan (5+6)	4333739	498476	603573	420882	582707	706248	2811886	64.88

Source: Twelfth Plan Document & Union Budgets

*Central Assistance to the State and UT Plans includes the Centrally Sponsored Schemes w.e.f. 2014-15.

Note: RE – Revised Estimates, BE – Budget Estimates.

2.8.11 The position of State Resources projected and actual, expressed as a proportion of GDP is given in **Table 2.19**. The States Resources have also been compressed during 2012-13, but by a smaller amount. Thus, the resources available from BCR, which were projected at 1.41 per cent of GDP for the Twelfth Plan were actually larger in 2012-13, 2013-14 and in 2014-15 AP. The average for the three year period 2012–2015 is estimated at 1.63 per cent of GDP, which is higher than what was projected. The resources from PSEs are estimated to be marginally lower, while Central Assistance is significantly higher in 2014-15 BE than the projected level. This is also due to reclassification of Centrally Sponsored Schemes as Central Assistance to State plan. It was a major decision of the Union Government to re-structure and re-classify the Centrally Sponsored Schemes to transfer the resources to States Government through their consolidated fund which ultimately gives a higher responsibility to States to utilize these funds in a more transparent way. Borrowings by State Governments in 2012–13 were slightly lower, but higher in 2013-14 LE and 2014-15 BE. However, for the first three years as a whole, borrowings by State Governments were around 2.15 per cent of GDP, which is marginally lower than the 2.22 per cent projected in the Twelfth Plan.

2.8.12 The States' resource position in absolute terms (at current prices) is given in **Table 2.20**. Thus, for the first three years of the Plan, the aggregate resources available for States and Union Territories (with legislature) amounted to 5.91 per cent of the GDP as against the projected figure of 5.45 per cent. However, in financial terms, and at current prices, the sum of aggregate Plan resources available to the States in the first three years of the Plan stood at 54.7 per cent of the Twelfth Plan total. It would be possible to achieve the twelfth plan projection, if there is significant improvement in balance from current revenue and availability of higher GBS due to higher growth in the economy during 2015-16 and 2016-17. However, it needs to be recognized that the extent of the shortfall at the level of the States would be somewhat less than the likely shortfall for the Centre.

2.8.13 The principal reason for the differential movement in financial resources, available to the Centre and in the States, flows from several factors. First, the burden for Assistance for Natural Calamities in States was borne largely by the Centre and thus was felt on the Centre's finances. Second, the large increase, above the anticipated subsidies, particularly in fertilizer, fuel, as well as food, was also borne by the Centre. Third, the Centre's revenue streams were more variable depending

Table 2.19: Twelfth Plan Projection and Realization of Resources of the States (Including Delhi & Puducherry)

(per cent of GDP)

Sl. No.	Source of Funding	Twelfth Plan Projection (2012-17)	2012-13 Actual	2013-14 LE	2014-15 AP	Average (2012-15)
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
1.	Balance from Current Revenues (BCR)	1.41	1.78	1.47	1.63	1.63
2.	Resources of PSEs*	0.56	0.38	0.56	0.49	0.48
3.	Borrowings including Miscellaneous Capital Receipts (MCR)	2.22	1.83	2.29	2.31	2.15
4.	State's Own Resources (1+2+3)	4.19	4.00	4.32	4.43	4.25
5.	Central Assistance (grant)	1.26	1.14	1.23	2.59	1.65
6.	Aggregate Plan Resources (4+5)	5.45	5.13	5.56	7.03	5.91

*Includes resources of local bodies. Note : LE – Latest Estimates, AP – Annual Plan.
Source: Twelfth Plan Document, Book of Estimates of State for Annual Plan 2014-15 & Scheme of Financing of States for 2014-15.

more on underlying economic conditions and to that extent it took a larger hit because of the deterioration in these economic conditions on account of the global crisis.

(ii) In horizontal devolution formula recommended by the FFC, they have incorporated two new variables, the 2011 population and forest cover but excluded fiscal discipline. The parameters and their weights in devolution formula of FFC are Population-17.5 per cent, Demographic Change (2011 Population) - 10 per cent, Income Distance - 50 per cent Area - 15 per cent, and Forest Cover - 7.5 per cent.

Table 2.20: Twelfth Plan Projection and Realization of Resources of the States (Including Delhi & Puducherry)

(Rs. crore at current prices)

Sl.No.	Source of Funding	Twelfth Plan Projection	2012-13 Actual	2013-14 LE	2014-15 AP	Realization (2012-17)	Realization (2012-15) relative to Plan Target (per cent)
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
1.	Balance from Current Revenues (BCR)	959979	177862	166871	206528	551261	57.42
2.	Resources of PSEs*	380319	38276	63492	61925	163693	43.04
3.	Borrowings including Miscellaneous Capital Receipts (MCR)	1518301	182990	182990	292688	735948	48.47
4.	**State's Own Resources (1+2+3)**	**2858599**	**399129**	**490633**	**561141**	**1450903**	**50.76**
5.	Central Assistance (grant)	857786	113782	139799	327993	581574	67.80
6.	**Aggregate Plan Resources (4+5)**	**3716385**	**512911**	**630432**	**889134**	**2032477**	**54.69**

*Includes resources of local bodies. **Note:** LE – Latest Estimates, AP – Annual Plan.
Source: Twelfth Plan Document, Book of Estimates of State for Annual Plan 2014-15 & Scheme of Financing of States for 2014-15.

2.9 Fourteenth Finance Commission (FFC)

2.9.1 The Fourteenth Finance Commission (FFC) was constituted on 2nd January, 2013 to give recommendations on specified aspects of Centre State fiscal relations for 2015-20. The Commission submitted its Report on 15th December, 2014 which has been accepted by the Government in principle on 24th February, 2015. Its major recommendations are as follows:

(i) FFC has enhanced the net proceeds of taxes of the Union between the Union and the States (commonly referred to as vertical devolution) from 32 percent recommended by the 13th Finance Commission to 42 per cent.

(iii) FFC has taken a comprehensive approach to the assessment of expenditure needs by taking both Plan and non-Plan expenditure in the revenue account and recommended grants to cover the entire post-devolution revenue deficit.

(iv) Grants-in-Aid have been recommended for (a) revenue deficit, (b) local bodies and (c) disaster management under Article 275 of the Constitution. **Table 2.21** summarizes these grants for the period 2015-20.

Table 2.21: Summary of the Grants-in-Aid to the States for 2015-20

Sl. No.	Grants	Amount (Rs. crore)
1	Local Government	2,87,436
2	Disaster Management	55,097
3	Post-devolution Revenue Deficit	1,94,821
	Total	**5,37,354**

Source: Report of Fourteenth Finance Commission

2.9.2 The compositional shift recommended by the FFC would substantially impact Central Assistance. For arriving at the greater devolution of 42 per cent to the States, FFC included expenditure incurred on State Plans and State's contribution to CSS for the assessment of Plan revenue expenditure of States. This excludes Union expenditure on CSS, Central Plan schemes and North Eastern Council Plan schemes and externally aided projects financed through grants from the Union. Based on the above, some Centrally Sponsored Schemes have been identified which ought to have been transferred to the States because expenditure on them has already been taken into account as State expenditure, in arriving at the greater devolution of 42 per cent to the States. However, keeping in mind that many of these schemes are national priorities, and some are legal obligations (such as MGNREGA) and in order to underline the Central Government's continued support to national priorities, especially with regard to schemes meant for the poor, Government of India decided in the Union Budget 2015-16 to continue 31 existing Schemes like MGNREGA, SSA, MDM, NNM etc. with full support by Union Government while 24 other existing schemes like RKVY, National Health Mission, NRLM etc. will also continue with change in the sharing pattern. Certain other major schemes, have been either discontinued and become a part of devolution to the States or have been restructured and amalgamated with certain other schemes. These schemes have been further restructured in Union Budget 2016-17 as core of the core schemes, core schemes and optional schemes.

2.10 Monitoring of Plan Expenditure - Public Finance Management System (PFMS):

2.10.1 While discussing the recommendations of the High Level Expert Committee on Efficient Management of Public Expenditure that was constituted by the Planning Commission under the Chairmanship of Dr. C. Rangarajan (para 3.60 of 12th Plan Document), the 12th Five Year Plan Document refers to the expansion of the ongoing CPSMS (now PFMS) to facilitate better tracking and utilisation of funds.

2.10.2 Central Plan Scheme Monitoring System a Central Sector Scheme of the then Planning Commission was started in April 2008. It aims at establishing a suitable on-line Management Information System (MIS) and Decision Support System (DSS) for fund management of the Schemes of the Government of India. The system is envisaged to track fund disbursement from Government of India under Schemes and ultimately report utilization under these Schemes at different levels of implementation in States/ UTs on a real time basis. PFMS through its interface with banking networks, better facilitates end-to-end beneficiary management and electronic payment system to the bank accounts/ Aadhar linked bank accounts of the beneficiaries and provides an online-real time MIS to various stakeholders.

2.10.3 In December, 2013, the Cabinet approved a total plan outlay of Rs. 1,080 crore for roll out of PFMS over a period of 4 years (2013-14 to 2016-17) during the Twelfth Five Year Plan. A four tier dedicated organizational structure has been approved comprising Project Implementation Committee, Central Project Monitoring Unit (CPMU), State Project Monitoring Units (SPMUs) in all States and District Project Monitoring Units (DPMUs). The project cost includes the design, development and maintenance of IT infrastructure and solution, manpower, training, capacity building, change management and operation and maintenance. Phasing of Budget/Expenditure as approved by Cabinet is as follows:

Table 2.22: Phasing of Budget/Expenditure

(Rs. crore)

Year	Amount
2013-14	116.21
2014-15	369.38
2015-16	295.20
2016-17	299.21
Total	**1080.00**

2.10.4 A summary of Budget and expenditure of Public Financial Management System, O/o CGA for the Twelfth Five Year Plan is given below:

Table 2.23: Summary of Budget and Expenditure of PFMS for the 12th Five Year Plan

(Rs. crore)

Year	BE	RE	Final Expenditure
2012-13	180.00	40.60	24.20
2013-14	253.99	74.00	60.32
2014-15	369.57	80.00	64.49 (upto 31st March 2015)

2.10.5 PFMS has been fully implemented at Central level in respect of all 98 Ministries/Departments. Sanction generation, bill generation and transfer of funds are through PFMS only. Complete MIS of sanctions, releases and allocations from Centre to States/UTs, implementing agencies and other recipients is available on PFMS.

2.10.6 The application is integrated with COMPACT and e-Lekha, the core accounting applications and e-payment gateway of CGA, thereby linking the financial and accounting data for comprehensive MIS and DSS. It has developed an interface with Core Banking Solution (CBS) of 103 banks, including India Post, thereby bank balances/float and transactions details of implementing agencies receiving grants from Government is available on a real-time basis.

2.10.7 For monitoring the funds devolved to Consolidated Fund of States (and UTs with legislature) and obtaining real time expenditure information for schemes for which funds are transferred from the Central Ministries, an interface for sharing data with State Treasuries and State AGs has also been developed in PFMS.

2.10.8 The work on linking of State Treasuries with the PFMS is complete in respect of 6 States where transactions level data is being captured. The process has been initiated in other 18 States/UTs.

2.10.9 As a decision of Union Government, the PFMS has now been transferred to Department of Expenditure vide OM No. 21/03/2015 dated 7th July, 2015 along with the budget head.

2.11 High Level Expert Committee on Efficient Management on Public Expenditure constituted by Planning Commission under the Chairmanship of Dr. C. Rangarajan

2.11.1 The HLEC made recommendations on abolition of Plan and non-Plan distinction in the Budget for a comprehensive view of expenditure accompanied by redefinition of roles of Ministry of Finance, Planning Commission, Administrative Ministries at the Centre and State; phase out of direct mode of transfer of Central Plan Funds to societies / agencies; aggregate control for FRBM compliance through adjusted revenue deficit and medium term expenditure framework; scope of public sector plan to include investment outlays funded by IEBR of PSEs, resources of local bodies and annuity commitments or VGF should be a part of the Plan; expansion of the ongoing CPSMS through interfaces with State treasuries and core banking solution to facilitate real time tracking and utilisation of funds transfer to States and their agencies. Many of these recommendations have been accepted. The major recommendation of the HLEC relating to abolition of plan and non-plan distinction has drawn a lot of attention from the 14th FC, Administrative Reforms Commission, Expenditure Management Commission and due to pending Parliament Assurances.

2.11.2 In the meeting of the Internal Planning Commission (IPC), held on March 6, 2014 there was near consensus that present distinction between Plan and non-plan expenditure is leading to distortions. A suggestion also emerged that a more useful distinction should have been between developmental and other expenditure. In the present system, essential expenditures like operation and maintenance and committed liabilities are not adequately provided for. It was observed that in all such cases where O&M expenditures are not financed by 'user charges', budgetary provision would be required, otherwise capital asset created through Plan expenditure are not optimally utilized. However, once this distinction is abolished, new institutional arrangement would be required for making allocation as so far Plan expenditure was allocated by the Planning Commission and non-plan expenditure was provided by the Ministry of Finance.

2.11.3 Meanwhile, as in the Budget Speech 2016-17 BE, Government has decided that the Plan-Non-Plan classification will be done away with from fiscal 2017-18. The Finance Ministry will closely work with the State Finance Departments to align Central and State Budgets in this matter.

2.12 Union Budget 2016-17

2.12.1 In view of higher devolution by Fourteenth Finance Commission and enlarged fiscal space available to the States, the Block Grants and schemes *per se* which were earlier allocated by erstwhile Planning Commission to the States/UTs have been discontinued from such direct support w.e.f. FY 2015-16 . These schemes are -

1. Backward Regions Grants Fund (State Component)
2. Normal Central Assistance
3. Additional Central Assistance for Other Projects (OTACA)
4. Special Central Assistance
5. Special Central Assistance Hill Areas/ Western Ghats
6. Special Plan Assistance
7. ACA for Left Wing Extremist (LWE)

2.12.2 As recommended by the sub-group on rationalization of CSS, the classification of schemes defined as core of the core, core schemes and optional schemes has been done in the Union Budget 2016-17. Regarding funding pattern - the existing funding pattern of schemes defined as 'core of the core' (6 nos.) have been retained, the 'core schemes' (20 nos.) will be shared 60:40 between Centre and the States (90:10 for the 8 North Eastern States and 3 Himalayan States) and the 'optional schemes' (2 nos.) will be optional for the State Government and their fund sharing pattern will be 50:50 between the Centre and the States (80:20 for the 8 North Eastern States and 3 Himalayan States).

2.12.3 Thus schemes under CSS have been restructured to 28 major schemes in Union Budget 2016-17 against 66 in 2014-15.

2.12.4 A Table showing the composition of Plan and Non Plan Expenditure during the plan period is shown in the **Table 2.24**. The expenditure on GBS for Central Plan is estimated to increase by 18 per cent in 2016-17 BE over 2015-16 RE and CASP to increase by 12 per cent, the net effect on Plan expenditure is thereby a projected increase of 15.3 per cent. However, the reduction of CASP has already been counterbalanced by increasing the tax devolution to States from 32 per cent to 42 per cent.

Table 2.24: Composition of Plan and Non-Plan Expenditure

(Rs. crore)

Item/year		2012-13 (Actual)	2013-14 (Actual)	2014-15 (Actual)	2015-16 (RE)	2016-17 (BE)
1. Non- Plan Expenditure		996,747	1,106,119	1,201,029	1,308,194	1,428,050
2. Plan Expenditure		413,625	453,327	462,643	477,197	550,010
Of Which	2.1.Budget Support for Central Plan	304,739	340,479	191,814	261,089	308,110
	2.2 Central Assistance for State & UTs	108,886	112,849	270,829	216,108	241,900
3. Total Expenditure		1,410,372	1,559,447	1,663,673	1,785,391	1,978,060

Source: Union Budget 2016-17

2.12.5 In the Union Budget 2016-17, it is targeted to achieve fiscal deficit of within 3 per cent of GDP in three years. Fiscal deficit for the current fiscal (2015-16) has been estimated at 3.9 per cent. The fiscal deficit targets are 3.5 per cent and 3 per cent for FY 2016-17 and 2017-18, respectively taking into account the reduced fiscal phase uncertainty that implementation of GST will create and the likely burden from the implementation of the 7th Pay Commission and One Rank One Pension (OROP). Efforts are envisaged on direct tax side so that it has internationally competitive rates, and is without exemptions and incentivises savings and investments.

2.13 Economic Survey 2015 -16

2.13.1 The Survey outlines a medium-term strategy to create buffers for future economic downturns, which are to reduce fiscal deficit over the medium term to the established target of 3 per cent of GDP, move towards the golden rule of eliminating the revenue deficit, ensure thereby that borrowing over the cycle is only for capital formation, maintain a firm control on expenditures, improve quality of public expenditure and shift away from public consumption (by reducing subsidies) towards investment.

2.13.2 The implementation of Fourteenth Finance Commission recommendations on transfer of resources would entail the Centre having to pay an additional cost. Balancing the enhanced fiscal autonomy of the States with preserving fiscal space of the Centre entails resizing of CAS Transfers. The FFC has not made any recommendations concerning State Specific Grants. The recommendation of quantum of devolution during award period of 14th FC is Rs.39,48,188 crore as against Rs.14,55,430 crore for 13th FC award period. As higher devolution is made to States, the CASP provision made in 2015-16 RE and 2016-17 BE are Rs.216,108 crore and Rs.241,900 crore respectively, as against Rs.270,829 crore in 2014-15 Actual.

2.13.3 The Survey took cognizance of Fourteenth Finance Commission and contemplate that the far-reaching recommendations of the FFC, along with the creation of the NITI Aayog, will further the government's vision of cooperative and competitive federalism. The next policy challenge would be to embrace the Cities and Local bodies into its fold and NITI resolution further emphasises the need to develop mechanism to formulate credible village level Plan and aggregate these progressively at higher levels of government. The Pradhan Mantri Jan Dhan Yojana is expected to provide a big push to the Direct Benefit Transfer Scheme and change the subsidy regime. Further, the implementation of 7th Pay Commission recommendations and One Rank One Pension (OROP) scheme will put additional burden on expenditure and thereby affect the Twelfth Five Year Plan performance.

2.14 The way forward

2.14.1 While the achievements of the Eleventh Plan indicate the strengths of India's economy, attaining the average annual growth target of 8.0 per cent envisaged in the Twelfth Plan does seem challenging – especially in the context of the continuing effects of the twin global crises. The expected annual average growth rate of GDP to be realized during the first four years of the Twelfth Plan is estimated to be 6.8 per cent; hence, the economy would have to grow in double digits during the remaining one year of the Plan period in order to achieve the targeted growth rate of 8 per cent. National and international agencies have projected that India is in fact likely to grow in the range of 7.0 to 8.0 per cent in the years 2015-16 and 2016-17. Therefore the likely achievement of GDP growth during the Twelfth Five Year Plan period would be around 7 per cent. In order to lead the economy to a higher growth trajectory, the focus should essentially be on maintaining macro-economic stability, while implementing the measures aimed at removing structural constraints and reviving stalled and stuck projects so that production and investment activity gather momentum.

2.14.2 A high-growth, high-investment strategy requires financing the current account deficit (CAD) mainly through Foreign Institutional Investment (FII) and Foreign Direct Investment (FDI) flows, so that reliance on external debt is limited. Though the CAD is expected to be within safe parameters and inflation is moderating, interest rates are still high enough to crowd out private investment. Further, as the economy returns to a higher growth path, the industrial sector is expected to resume a higher level of imports. Therefore, pressure on the CAD is likely to be felt again – and so exports and remittances will also have to grow to keep the CAD within reasonable levels. The fiscal deficit must also be brought down over the medium term to release domestic resources for productive deployment in the economy. Therefore, a balanced growth path, which places equal emphasis on strengthening the various determinants of growth such as physical capital, human capital and productivity, is sensible and sustainable, and needed for the economy to achieve its true growth potential. For this, intense, dedicated efforts in terms of appropriate policy interventions in a time-bound manner will be required; and these policy interventions must be focused on the key drivers of growth: boosting investment, skill formation and creating the appropriate external environment.

2.14.3 It is important to mention that business sentiments play a vital role in determining investments, particularly in the current economic scenario. Therefore prime importance should be given to boosting sentiments positively so as to reap the benefits of high foreign investment of a long-term and stable nature. India was ranked low in terms of the 'Ease of Doing Business' (rank 134, 2015) and its component the 'Ease of Starting a Business' (rank 164, 2015) in the World Bank's Doing Business Report which provides a measure of business regulations and their enforcement across 189 economies. The Government of India initiated a number of measures to improve Ease of Doing Business giving emphasis on simplification and rationalization of the existing rules and introduction of information technology for good and effective governance. The major steps include: limiting the number of documents required for export and import to three; making online the process of applying for Industrial License (IL) and Industrial Entrepreneur Memorandum (IEM); removal of requirements of minimum paid-up capital for companies; increasing the initial validity period of IL from two years to three years etc. Accordingly, India's Doing Business rank improved to 130 and Starting Business rank to 155 in 2016 (the rankings are benchmarked to June 2015). The improvement in rankings is due to significant improvements in parameters like ease of starting a new business and getting electricity. Still the ease of doing business in India is far from the desired level as stated in the World Bank Report that India continues to have low rank of 183 when it comes to dealing with construction permits and enforcing contracts (Rank 178). In comparison to the relatively complex and cumbersome regulatory process in India, the Accounting and Corporate Regulatory Authority (ACRA) in Singapore (which ranks number 1 in Ease of Doing Business) keeps regulatory procedures simple. ACRA uses innovative methods like providing a single "unique entity number" and delivers services through mobile phones. Such innovations need to be introduced in India. The prudent use of technology is essential to make the process of starting a business simpler, faster, more transparent and corruption-free.

2.14.4 Yet another important area for immediate action is to speed up the implementation of infrastructure projects. This is critical for removing the supply bottlenecks that constrain growth in most sectors, and also for boosting investor sentiments. The Investment Tracking System, monitoring of large PSU investments, and the speeding up of security and other clearances are all part of the de-bottlenecking effort. Many problems require the Centre to work in closer co-operation with State Governments.

2.14.5 Apart from the fundamental economic factors, social and political factors need to be taken into account, as they strongly affect the economy through the confidence and sentiments of citizens and investors. In fact, insufficient action along these lines so far, while the global environment soured, has affected India's growth more than it should have. Hence, reforms of government and policymaking institutions require immediate action. The need of the hour is to ensure complete transparency in the functioning of the government and its policies. Laws, rules and regulations should be unequivocal, thereby leaving no scope for discretion and should also be written in simple language, with single-window provisioning. Then, these can be easily understood and complied with by all concerned, thereby avoiding red-tapism and delays in granting approvals.

2.14.6 Issues such as corruption, lack of transparency, delays in clearing projects, ill-routed subsidies and so on had rendered governance less effective and was hindering growth. Poor institutions, uncertainty of contracts, a poor law-and-order situation and high corruption not only increase investment costs, but also make FDI with its high sunk costs unattractive. Hence there arises an urgent need for institutional reform to enhance the Indian system's ability to implement programmes and projects more rapidly and effectively; to augment citizens' confidence in the delivery capability of institutions; and to make policymaking processes more transparent and more inclusive. For this an empowered coordination process, with the ability to discipline actors within the government and private sector to ensure timely delivery, is essential.

2.14.7 Inflation management is a crucial area, and greater focus should be placed on management of price levels. If the objective is to have a higher investment rate supported by high levels of domestic savings, the very first target should be to manage the inflation rate at a level which provides enough headroom for RBI to cut rates. Further, management of inflation is also important for the external sector. A high inflation differential vis-à-vis other countries eventually weakens the currency, thereby adversely affecting the confidence of investors. A paradigm shift towards fiscal consolidation is imperative for taming inflation as well as providing an impetus to growth.

2.14.8 The Goods and Service Tax (GST) Constitutional Amendment Bill was introduced in Parliament in 2015. The proposed GST is a single national uniform tax to be levied across India on all goods and services by integrating various Central and state taxes. The GST, being a destination-based consumption tax centered on value-added tax principles, would greatly help in removing economic distortions caused by the present complex tax structure, and would also aid the development of a common national market. The GST is likely to improve tax collections and boost India's economic development by breaking tax barriers between states. Implementation of the GST will make the taxation system transparent and predictable, which will not only boost investor confidence but also invite new trade prospects nationally and internationally as exports will be zero-rated and imports will face the same taxes as domestic goods and services adhering to the destination principle. It is also expected that, under the GST system, prices may fall in the long term as dealers might pass on the benefits of the reduced tax to consumers.

2.14.9 Competitiveness and business confidence have also improved distinctly in the country owing to the perception of political stability at the Centre. It is expected that the government's initiatives aimed at investment revival, strengthening macro-economic stability and boosting infrastructure will return India to a high-growth trajectory.

2.14.10 Indications of positive change are beginning to be visible. The growth rate of gross value added (GVA) at basic prices was estimated at 7.2 per cent, 7.5 per cent and 7.1 per cent during the first, second, and third quarter of 2015-16 as against 7.4 per cent, 8.1 per cent and 6.7 per cent in the corresponding quarters of the previous year i.e. 2014-15 (according to the press release of the Central Statistics Office dated 8th February, 2016). Various steps towards fiscal consolidation have shown positive results. Inflation has moderated since June 2014 and is expected to be contained around 5 per cent through a judicious mix of policy measures. This may give some headroom to the RBI to cut interest rates, which would significantly help the growth recovery. Containing the Centre's fiscal deficit at 3.5 per cent of gross domestic product (GDP) for the current financial year, 2016-17, seems difficult but achievable. According to the Economic Survey 2015-16, the rate of growth of the economy can be expected to be in the range of 7.0 to 7.75 per cent during the year 2016-17.

2.14.11 Although the domestic factors influencing India's return to a high-growth trajectory seem now to be under control, international factors are still uncertain. While the global recovery continues at a moderate rate, the outlook is uneven across regions. The global outlook has been exacerbated by declining commodity prices especially reduction in crude oil prices, uncertain financial markets and volatile exchange rates, signalling extreme risk-aversion of global investors and adversely affecting commodities exporting economies. Despite these uncertainties, India's growth recovered largely on account of domestic absorption, and has exhibited a steady and sound economic growth during 2014-15 and 2015-16. Moreover, India's macroeconomic indicators like inflation, fiscal deficit and current account balance have registered significant improvement over the years. With the government's commitment towards continuing with the pace of economic reforms and policy initiatives, strengthened by the fundamental macroeconomic stability, India has already begun its stride to a high-growth trajectory ensuring faster, more inclusive and sustainable growth.

2.15 Summary of Learnings

2.15.1 In order to lead the economy to a higher growth trajectory, the focus should essentially be on maintaining macro-economic stability. Low levels of savings and investment rates are still a cause of concern. Thus, intense and dedicated efforts in terms of appropriate policy interventions in a time-bound manner are required to boost savings and investment in the economy.

2.15.2 In order to achieve the true growth potential of the economy, a balanced growth path, which places equal emphasis on strengthening the various determinants of growth such as physical capital, human capital, technology, institutions and productivity, is needed. The policy interventions must be focused on the key drivers of growth: boosting investment, skill formation and creating the appropriate environment.

2.15.3 A stable and predictable tax regime is a precondition for sustained high levels of Investment. Therefore, prime importance should be given to boosting investors' sentiments positively so as to reap the benefits of high foreign investment of a long-term and stable nature.

2.15.4 Another game changing reform in the field of taxation is introduction of the Goods and Services Tax (GST). It will help in increased compliance, boost tax revenues, reduce the tax outflow in the hands of the consumers and make exports competitive. The tax structure is expected to be much simpler and easier to understand. It is expected that the implementation of GST will push up GDP by 1-2 per cent.

2.15.5 India has improved its ranking in the 'Ease of Doing Business Index' by 12 ranks in the latest ranking compiled by the World Bank. However, further improvements are required through prudent use of technology, setting up milestones and time targets to improve the ease of doing business in the country and help in economic revival. This will make the process of starting up a business simpler, faster and more transparent.

2.15.6 Another important area of focus is unbundling of stalled projects. The absence of long-term financing instruments is a major impediment in developing infrastructure projects in India, leading to stalling of projects and lack of enough developers. So, it is imperative to implement measures aimed at removing structural constraints and reviving stalled and stuck projects so that production and investment activity gather momentum.

2.15.7 Apart from the fundamental economic factors, social and political factors need to be taken into account, as they strongly affect the economy through the confidence and sentiments of citizens and investors. The need of the hour is to ensure complete transparency in the functioning of the government and its policies. Laws, rules and regulations should be unequivocal, thereby leaving no scope for discretion. They should be written in a simple language with single-window provisioning, thereby avoiding red-tapism and delays in granting approvals.

2.15.8 There arises an urgent need for institutional reform to enhance the Indian system's ability to implement programmes and projects more rapidly and effectively; to augment citizens' confidence in the delivery capability of institutions; and to make policymaking processes more transparent and more inclusive.

2.15.9 Inflation management is another crucial area to accelerate growth. A greater focus should be placed on management of price levels. There should be effective coordination of monetary and fiscal policy if overall economic performance is to be optimized and maintained in the long term.

2.15.10 Since, Indian economy is deeply integrated with the world economy, it is essential to be wary of global economic developments. In order to attain the sustained high growth, we should take lessons and learnings from global economy while simultaneously working on the domestic factors affecting the growth.

3

Employment and Skill Development

3.1 Introduction

3.1.1 The Twelfth Five Year Plan's objective of faster, more inclusive and sustainable growth hinges on enhancing the employability of India's rapidly expanding population in the working age group and ensuring their access to decent employment opportunities. The Twelfth Plan envisages creation of 50 million work opportunities in the non-farm sector and skilling and certifying an equivalent number of persons[1]. The employment strategy outlined to achieve the target was creation of an efficient and fair labour market by simplifying the regulatory framework, focusing on labour intensive manufacturing and expanding employment in the organized sector. Skill development is also crucial for achieving the employment target by ensuring participation of a skilled labour force in the labour market.

3.1.2 The Twelfth Plan had identified the manufacturing sector as a genuine engine of economic growth which could generate 100 million work opportunities by 2022 and the service sectors like information technology, finance and banking, tourism, trade and transport as the major generators of employment[2].

3.1.3 On the skill development front, the target is to fill in the existing gaps in terms of quantity, quality, outreach and mobility. Its success lies in ensuring that apart from the labour force receiving adequate skill training, there should be linkages between skills imparted and the realities of the job market. This calls for systemic reforms to the national skill qualifications framework, the labour market information system and to the various assessment and certifying bodies.

3.1.4 This chapter covers the progress made in job creation and related areas of labour reforms, social security and skill development during the course of the Twelfth Plan.

3.2 The Labour Market Scenario

3.2.1 The labour force and workforce, as a proportion of population, declined from 43 per cent in 2004-05 to 39.5 per cent in 2011-12 and from 42 per cent to 38.6 per cent respectively[3]. The unemployment rate witnessed a marginal decline from 2.3 per cent to 2.2 per cent during this period.

3.2.2 The decline in the labour force participation is accounted for by the decline in the female labour force participation rate. In absolute terms the number of females in the labour force declined from 152.6 million in 2004-05 to 132.4 million in 2011-12, while the number of males in the labour force increased from 316.4 million

[1] *Twelfth Five Year Plan 2012-17*, Vol. III, Chapter-22, Employment and Skill Development, pp 141.
[2] Ibid pp 138.
[3] *Key Indicators of Employment and Unemployment in India*, NSSO, 2011-12 and 2009-10
[4] The activity status on which a person spent a relatively long time during the 365 days preceding the date of survey is considered his or her usual principal activity status. A person in the usual principal status may also have pursued another economic activity for 30 days or more, which is referred to as the subsidiary economic activity. For more details refer *Twelfth Five Year Plan 2012-17*, Vol. III, Chapter 22, Employment and Skill Development, Page 127, Box 22.1.

to 351.3 million during this period (**Table 3.1**). A similar trend is also visible among the workforce. This decline in female labour force participation was attributed to an increase in school enrolment of females in the age group 5-14 years and an increase in family incomes that led to withdrawal of women from the labour force.

Table 3.1: Labour Market Scenario

(as per UPSS estimates[4])

(in millions)

All India	**2004-05**	**2009-10**	**2011-12**
Population	1092.9	1174.1	1227.4
Labour Force	469	468.8	483.7
Work Force	457.9	459	472.9
Unemployment Rate	2.3	2.0	2.2
No. of Unemployed	11.1	9.8	10.8
Male	**2004-05**	**2009-10**	**2011-12**
Population	565.5	612	631.5
Labour Force	316.4	338.4	351.3
Work Force	309.3	331.7	343.8
Unemployment Rate	2.2	2.0	2.1
No. of Unemployed	7.1	6.7	7.5
Female	**2004-05**	**2009-10**	**2011-12**
Population	527.4	576	595.9
Labour Force	152.6	130.4	132.4
Work Force	148.6	127.3	129.1
Unemployment Rate	2.6	2.3	2.4
No. of Unemployed	4.0	3.1	3.3

Source: NSSO, *Key Indicators of Employment and Unemployment in India*, 2004-05 & 2011-12,
Ministry of Statistics & Programme Implementation

3.2.3 Further, the increasing proportion of women in working age confining to National Sample Survey Office (NSSO) activity code 92[5] and 93[6] and their willingness to work within the vicinity of their homes indicate that, with the structural transformation of the economy and the consequent loss of women-oriented jobs in the agricultural sector, social compulsions to stay at home and lack of jobs closer to their homes have led to the withdrawal of females from the labour market[7]. The decline in female labour force participation was more in rural areas than in urban areas. In rural areas the female labour force participation rate declined by nearly 7 percentage points, from 33 per cent in 2004-05 to 25.3 per cent in 2011-12 as compared to 2.3 percentage point decline among urban females during this period (**Table 3.2**). In the Union Budget 2016-17 to reduce the drudgery of women in the time spent in collecting firewood and inhaling the fumes, it has been decided to provide on a mission mode LPG connection to women members of BPL households. It is proposed to cover 5 crore BPL households over a period of three years. This move would reduce the time spent in domestic activities and encourage more women to join the labour force.

Table 3.2: Female Labour Force Participation Rate per 1000

(as per UPSS estimate)

NSSO Rounds	1993-94	1999-2000	2004-05	2009-10	2011-12
Rural	330	302	333	265	253
Urban	165	147	178	146	155

Source : NSSO Reports, various rounds

3.2.4 The Twelfth Plan visualizes the manufacturing sector growing at 10-12 per cent per annum in the medium term, creating 100 million job opportunities by 2025. Agriculture, on the other hand, is not expected to create more jobs even though it is targeted to grow at 4 per cent per annum. As per Central Statistical Office (CSO) estimates, agriculture growth at constant prices (2011-12 prices) was 1.5 per cent in 2012-13, 4.2 per cent in 2013-14, -0.2 per cent in 2014-15[8] and 0.8 percent

[5] Activity code 92: attended to domestic duties only
[6] Activity code 93: attended to domestic duties and was also engaged in free collection of goods (vegetables, roots, firewood, cattle feed, etc.), sewing, tailoring, weaving, etc. for household use
[7] Vikalpa, 'Decline in Rural Female Labour Force Participation in India – A Relook into the Causes', *The Journal of Decision Makers*, IIM Ahmedabad, Vol.40, Issue -3 , July-September,2015).

in 2015-16. Manufacturing sector growth was 6.0 percent, 5.6 per cent, 5.5 per cent and 10.6 percent respectively during these years. The GVA of agriculture is expected to be 4.4 percent in 2016-17 while manufacturing growth is expected to be 7.7 percent[9].

3.2.5 To examine sectoral employment trends, the change in sectoral employment over the last three NSSO quinquennial Employment-Unemployment Surveys is tabulated in **Table 3.3**. It emerges that agriculture has witnessed a decline in employment, which is in keeping with the structural transformation of the economy. However, the decline in agriculture employment was absorbed largely in the construction sector, followed by the tertiary sector. On the other hand, the manufacturing sector registered a decline in employment between 2004-05 and 2009-10 by 3.2 million, though it did register an increase in employment by 9.15 million in 2011-12 as compared to 2009-10. The overall increase in manufacturing sector employment during the period from 2004-05 to 2011-12 was 5.91 million.

Table 3.3: Net Increase in Employment over the NSSO Rounds (as per UPSS estimate)

(in millions)

Industry	2004-05 to 2009-10	2009-10 to 2011-12	2004-05 to 2011-12
Agriculture	-23.71	-12.94	-36.65
Mining & quarrying	0.16	-0.20	-0.04
Manufacturing	-3.23	9.15	5.91
Electricity, gas & water supply	0.15	1.07	1.22
Construction	18.61	6.07	24.68
Trade, hotels and restaurants	2.70	2.25	4.96
Transport, storage, communication	2.20	3.12	5.32
Finance, insurance, real estate and other business services	2.55	1.29	3.85
Community, social and personal services	2.19	3.72	5.91
Total	**1.61**	**13.54**	**15.15**

Source: Computed from various rounds of the NSSO Employment-Unemployment Survey using unit level data

3.2.6 The broad sectoral distribution of employment as per the Annual Employment-Unemployment Survey conducted by the Labour Bureau shows that the share of employment in the primary sector declined from 50.8 per cent in 2012-13 to 48.3 per cent in 2013-14, while the share of the secondary and tertiary sector increased from 20.8 per cent and 28.4 per cent to 22.4 per cent and 29.3 per cent respectively during this period (**Table 3.4**).

Table 3.4 Sector-wise Distribution of Employed Persons (as per UPSS estimate)

(in per cent)

	Primary	Secondary	Tertiary
2012-13	50.8	20.8	28.4
2013-14	48.3	22.4	29.3

Source: Labour Bureau, *Report on Employment-Unemployment Survey 2012-13 & 2013-14*

3.3 Trends in Formal and Informal Employment

3.3.1 Employment is spread across two sectors: organized (formal), and unorganized (informal). The National Commission for Enterprises in the Unorganized Sector (NCEUS) has defined the informal or unorganized sector as all unincorporated private enterprises owned by individuals or households engaged in the sale and production of goods and services operated on a proprietary or partnership basis and with less than ten workers. Informal workers being both in the organized and unorganized sector, the NCEUS also provided a definition of informal workers: "Informal workers consist of those working in the informal sector or households, excluding regular workers with social security benefits provided by the employers and the workers in the formal sector without any employment and social security benefits provided by the employers". The NCEUS definition was applied to the NSSO unit level data to extract the number of persons employed in the organized and unorganized sector as well as the number of formal and informal workers.

[8] Press Note on First Revised Estimates of National Income, Consumption Expenditure, Saving and Capital Formation 2014-15, 29th January,2016, CSO, MOSPI.

Table 3.5 Formal and Informal Employment Across Organized and Unorganized Sectors (in millions)			
2004-05			
	Organized	**Unorganized**	**Total**
Formal	32.06(52)	1.35(0.3)	33.41(7.3)
Informal	29.54(48)	396.66(99.7)	426.20(92.7)
Total	**61.61(13)**	**398.01(87)**	**459.61(100)**
2011-12			
	Organized	**Unorganized**	**Total**
Formal	37.18(45.4)	1.39(0.4)	38.56(8.1)
Informal	44.74(54.6)	390.92(99.6)	435.66(91.9)
Total	**81.92(17.3)**	**392.31(82.7)**	**474.23(100)**

Source: Computed using unit level data of NSSO Employment-Unemployment Survey 2004-05 & 2011-12
Note: Population projected for year 2004-05 and 2011-12 using decadal population growth rate between Census 2001 and 2011. Figures in brackets indicate percentage share.

3.3.2 The distribution of employment between the organized and unorganized sector was in the proportion 13:87 in 2004-05 and 17:83 in 2011-12 (**Table 3.5**) indicating an increase in organised sector employment from 13 per cent in 2004-05 to 17 per cent in 2011-12. But this increase in organized sector employment was informal in nature (48 per cent in 2004-05 increased to 55 per cent in 2011-12) while the share of organized formal employment decreased (52 per cent in 2004-05 decreased to 45 per cent in 2011-12). But in the unorganized sector the share of formal employment marginally increased from 0.3 to 0.4 per cent and that of informal employment declined marginally from 99.7 to 99.6 per cent. On the whole the number of formally employed increased from 33.41 million in 2004-05 to 38.56 million in 2011-12 , while the number of informally employed increased from 426.20 million to 435.66 million during this period.

3.4 Employment in Labour-Intensive Manufacturing Sector

3.4.1 As per the Quarterly Employment Survey conducted by the Labour Bureau of the Ministry of Labour & Employment, of select labour- intensive industries there was generation of 4.78 lakh employment opportunities during the period from April 2014 and June 2015. Among the select sectors, the IT/BPO sector generated 2.29 lakh jobs followed by textiles, including apparel, sector which generated 2.04 lakh jobs during this period. (**Table 3.6**).

Table 3.6: Change in Estimated Employment in Selected Sectors (In thousands)

Sl.No	Industry/ Group	June,14 over Mar,14	Sept,14 over June,14	Dec,14 over Sept,14	March,15 over Dec, 14	Jun,15 over Mar,15	June,15 over Mar,14
1	Textile including apparels	69	49	79	24	-17	204
2	Leather	7	-18	1	-8	8	-10
3	Metals	47	47	-20	1	0	75
4	Automobiles	1	28	-23	20	-18	8
5	Gems & Jewellery	7	8	-5	-6	-3	1
6	Transport	0	-7	-1	-2	-2	-12
7	IT/BPO	51	57	89	37	-5	229
8	Handloom/ Powerloom	0	-6	-3	-2	-6	-17
	Overall	**182**	**158**	**117**	**64**	**-43**	**478**

Source: Calculated from Quarterly Report on Changes in Employment in Selected Sectors published by Labour Bureau, Government of India
Note: The coverage of this report is only partial and it does not give a full picture of the extent of employment.

3.5 Other Priority Sectors for Employment Generation – Tourism

3.5.1 The tourism sector is one of the largest employment-generating sectors and plays a facilitating role in providing employment to both the skilled as well as the less advantaged segments of society. In addition it is also capable of creating employment in geographically difficult terrains, coastal as well as interior regions. The Twelfth Plan accordingly laid an emphasis on tourism sector for generating employment opportunities through its varied dimensions such as transportation, accommodation, eating and drinking establishments, retail shops, entertainment businesses and other hospitality services. The contribution of the sector to total GDP and employment in the country is given in **Table 3.7**. The substantial increase in inbound tourism and the growth rate of Foreign Tourist Arrivals (FTAs) is expected to substantially increase employment.

Table 3.7: Contribution of Tourism to Total Gross Domestic Product and Employment (in per cent)

Year	Contribution of Tourism to GDP			Contribution of Tourism to Employment		
	Direct	Indirect	Total	Direct	Indirect	Total
2009-10	3.68	3.09	6.77	4.37	5.80	10.17
2010-11	3.67	3.09	6.76	4.63	6.15	10.78
2011-12	3.67	3.09	6.76	4.94	6.55	11.49
2012-13	3.74	3.14	6.88	5.31	7.05	12.36

Source: Annual Report, Ministry of Tourism, GoI, 2014-15

3.5.2 The share of the tourism sector to employment has increased by 2.19 percentage points between the period from 2009-10 to 2012-13. The steady increase observed can be further accelerated through skill development. The Ministry of Tourism is operating a number of schemes for skill training in the hospitality sector to meet its demand for skilled workforce and generate employment. The components under the scheme include youth trained under 'Hunar Se Rozgar Tak (HSRT)', training of tourist guides, training of tourist facilitators under the Capacity Building for Service Providers Scheme and so on. A total of about 2.07 lakh persons trained under HSRT since the inception of the programme in 2009-10 till June 2015. In order to enhance the placement of the graduates, the Ministry of Tourism launched a new HSRT vertical, 'Badhte Kadam', in December 2014, which opens up its implementation to industry and private hospitality institutes, subject to a minimum 75 per cent placement assurance on the part of the implementers.

3.5.3 The growth in the tourist infrastructure in terms of new circuits, the development of old circuits, the new Swadesh Darshan Scheme, the National Mission on Pilgrimage Rejuvenation and Spiritual Augmentation Drive (PRASAD) and so on will lead to an increase in the demand for manpower in different economic activities and hence to more employment opportunities.

3.6 Other Priority Sectors for Employment Generation – Construction

3.6.1 The construction sector is a major employment driver, being the second-largest employer in the country – next only to agriculture. This is because of the chain of backward and forward linkages that the sector has with other sectors of the economy. About 250 ancillary industries such as cement, steel, brick, timber and building material are dependent on the construction industry. A unit increase in expenditure in this sector has a multiplier effect and the capacity to generate additional income by as much as five times[9]. Construction has three components: infrastructure construction (e.g. roads, power, ports and urban infrastructure); industrial construction (e.g. textile plants, steel plants, refineries, and pipelines); and real estate construction (residential and commercial). As per the NSSO 2011-12 Employment-Unemployment Survey, the employment of rural males in the sector increased from 6.8 per cent in 2004-05 to 13 per cent in 2011-12 while for rural females it increased from 1.5 per cent to 6.6 percent. For urban males it increased from 9.2 per cent to 10.7 per cent

[9] From equitymaster,com, *Construction Sector Analysis Report*, November 2012

and for urban females from 3.8 per cent to 4 per cent during this period. To boost the infrastructure sector, public investment in the sector was increased in the 2015-16 Union Budget. Outlays for both roads and railways was increased by Rs. 14,031 crore and Rs. 10,050 crore respectively. Further, the capital expenditure of the public sector units is expected to be Rs. 3,17,889 crore, an increase of approximately Rs. 80,844 crore over 2014-15 (RE). A National Investment and Infrastructure Fund (NIIF) is proposed to be established with an annual flow of Rs. 20,000 crore. Tax-free infrastructure bonds for projects in the rail, road and irrigation sector have been permitted and the PPP mode of infrastructure development is to be revisited and revitalized. These measures are expected to give an impetus to the industrial and infrastructure construction sectors in the medium term[10].

3.7 Other Priority Sectors for Employment Generation – Micro Small & Medium Enterprises (MSME)

3.7.1 Micro, small and medium enterprises account for almost the entire non-agricultural sector. The ministry concerned has launched the National Manufacturing Competitiveness Programme to improve the competitiveness of the sector. According to the Fourth All India Census of MSMEs, there were 36.2 million MSMEs in 2006-07, providing employment to 80 million persons[11]. According to the 2014-15 Annual Report of the Ministry of MSME the number of MSMEs are projected to have increased to 48.8 million in 2013-14 with estimated employment to 111.4 million[12]. The introduction of the Apprenticeship Protsahan Yojana for the MSME sector and the provisions under the amended Apprentice Act, 2014, allowing the establishments to engage apprentices in optional trades would enable the MSME sector to seek the services of skilled manpower resulting in better productivity and growth – and leading to greater level of employment.

3.7.2 In addition, among the activities listed out as part of the vision for Team India by 2022 in the Union Budget 2015-16, the following initiatives would help create jobs, especially in rural India, in the years to come:

(i) 'Housing for all' by 2022 which would require Team India to complete 20 million houses in urban areas and 40 million houses in rural areas.

(ii) Providing basic facilities – 24-hour power supply, clean drinking water, a toilet, and connectivity by road.

(iii) At least one member from each family should have access to some means of livelihood and employment or economic opportunity.

(iv) Connecting the 1,78,000 habitations still not connected by all-weather roads. This will require completing 1,00,000 kilometres of roads currently under construction plus sanctioning and building another 1,00,000 km.

(v) To ensure that there is a senior secondary school within 5 km of each child, we need to upgrade over 80,000 secondary schools and add 75,000 more – or upgrade junior or middle schools to the senior secondary level.

(vi) Under the 'Make in India' initiative, the target is to create 100 million job opportunities by 2022 and these are to be strengthened through the 'Skill India' initiative.

3.8: Labour Reforms

3.8.1 Labour being a concurrent subject, there are 44 Central labour legislations and about 100 State legislations[13]. This hinders the ease of doing business, especially for enterprises spread across states. In fact the National Manufacturing Competitiveness Council

[10] Press Information Bureau, *General Budget 2015-16, Highlights & Summary*, 28th February 2015
[11] Chapter-II, Growth & performance of MSME Sector, Table-2.1,Annual Report 2014-15, Ministry of MSME
[12] ibid
[13] Suggested Labour Policy Reforms, FICCI, 2014

referred to there being a need for just three laws: one relating to rights, one to welfare and one to safety.

3.8.2 The share of organized formal employment, as per the 2011-12 NSSO Employment-Unemployment data is 7.8 per cent[14]. Therefore, the labour legislations are applicable only to 37 million, as against a total workforce of around 474 million. According to the Ministry of Labour & Employment's Annual Employment Review, 2011, only about 0.32 million organized sector establishments come under the ambit of the labour laws.

3.8.3 The initiatives of Ministry of Labour and Employment, such as the launch of the Shram Suvidha portal; providing unique Labour Identification Number (LIN) to units to facilitate online registration; filing of self-certified and simplified single online returns by the industry; transparent labour inspection schemes; and timely redressal of grievances and amendments to labour laws, would increase compliance and expand coverage of the organized sector. As an initiative on a pilot basis, the Ministry has selected the Chief Labour Commissioner (Central) organization, the Employees State Insurance Corporation (ESIC), the Employees Provident Fund Organisation (EPFO) and the Directorate General of Mines Safety (DGMS). These departments' responsibilities cover 16 labour laws. State Governments would join this Unified Single Web Portal subsequently. The web portal will contribute proactively to achieve the objective of simplifying business regulations and bringing in transparency and accountability in labour inspections.

3.8.4 The Ministry of Labour & Employment has introduced reforms in a number of labour legislations which are in various stages of the amendment process. Under the Minimum Wages Act, 1948, an amendment is proposed to make the National Floor Level Minimum Wage statutory, and to extend it to all employments.

3.8.5 The Apprentices Act, 1961, was amended by Parliament to allow MSMEs also to undertake apprentice training. Some of the major amendments include: pan-India establishments will now be under the purview of Directorate General of Training (DGT); apprentices to be engaged at establishment level instead of trade-wise; extending apprenticeship training to non-engineering graduate and diploma holders; employers to undertake demand-based new courses (optional trades); simplifying the procedure for registration of contract of apprenticeship training, etc. This would encourage establishments to take in more apprentices and provide shop floor training.

3.8.6 To cover more workers in the ambit of the Employees' Pension Scheme, 1995 (EPS), the Ministry of Labour & Employment has enhanced the statutory monthly wage ceiling under the EPS from the existing Rs. 6,500 to Rs. 15,000. It has fixed a minimum pension of Rs. 1000 per month and 20 per cent additional relief on the amount of assurance benefit admissible under Employees' Deposit Linked Insurance Scheme, 1976. The Ministry is also contemplating bringing in an amendment to the Employees' Provident Fund & Miscellaneous Provisions Act, 1952, to expand its coverage to include more workers.

3.8.7 The Factories Act (Amendment) Bill, 2014, has been proposed for allowing the states to raise the applicability of the Act to units employing 20 workers where power is used and to 40 for others, from the existing 10 and 20, respectively. The Bill removes prohibitions on women working on certain machines in motion and near cotton openers; allows the State Governments to make rules allowing women to work night-shifts in factories upon fulfilling certain conditions; increases the permissible overtime hours from 50 hours in one quarter to 100 hours, and from 75 hours to 125 hours in certain cases. The amendments should have a positive impact on the participation of female labour force in factories.

3.8.8 The Labour Laws (Exemption from Furnishing Returns and Maintaining Registers by Certain Establishments) Act, 2014, is the amended Act that increases the number of labour laws under which units

[14] Skill Development & Employment Vertical- Computed from NSSO Employment-Unemployment Survey various Rounds using unit level data.

will be exempt from maintaining registers and filings returns from 9 to 16 and also the applicability of the Act from units engaging not more than 19 workers to not more than 40 workers.

3.8.9 The Payment of Bonus (Amendment) Act, 2015, which was passed by Parliament in 2015, envisages enhancement of eligibility limit under section 2(13) from Rs.10,000/- per month to Rs.21,000/- per month and calculation ceiling under section 12 from Rs. 3500 to Rs.7000 or the minimum wage for the scheduled employment, as fixed by the appropriate Government, whichever is higher. The provisions of the Payment of Bonus (Amendment) Act, 2015 shall be deemed to have come into force on the 1st day of April, 2014.

3.8.10 The Ministry of Labour & Employment have taken steps for drafting the Labour Code on Industrial Relations, by simplifying, amalgamating and rationalizing the relevant provisions of three Labour Laws: (i) The Industrial Disputes Act, 1947, (ii) The Trade Unions Act, 1926, and (iii) The Industrial Employment (Standing Orders) Act, 1946. Tripartite Consultations for drafting the Labour Code on Industrial Relations are under process with the representatives from Central Trade Unions, Employers' Association and Central Ministries/State Governments.

3.8.11 Retail trade being the largest service sector employer in the country a Model Shops and Establishments Bill was drafted to regulate this sector in the interest of workers. The Bill would contain provisions relating to the mandatory weekly holiday, number of working hours per day etc which can be adopted by the States on voluntary basis. The move is to allow the small and medium shops to operate on all seven days just like the Shopping malls so that more jobs can be created in the retail sector also. The bill has been circulated to all the states/UTs for adopting the same voluntarily.

3.9: Providing Social Security to All

3.9.1 To help in improving the competitiveness of India's manufacturing sector, one of the strategies identified in the Twelfth Plan was to provide social protection to the low income workforce. In units where the employee strength is more than 10 workers, and are registered, workers are covered under the Employees' Provident Fund and the Employees Insurance Scheme. But according to the Economic Census, 2005, nearly 75 per cent of the workforce is employed in establishments employing less than 10 workers and these account for nearly 95 per cent of the total number of establishments (**Table 3.8**).

Table 3.8: Distribution of Establishments by Size and Class of Employment (in per cent)

Sl.No.	Size by class of employment	Item	Year		
			1990	1998	2005
1	1-5	Establishments	**93.4**	**94.0**	95.1
		Persons usually working	54.5	58.6	64.2
2	6-9	Establishments	3.5	3.3	3.4
		Persons usually working	8.4	8.3	10.2
3	10 & above	Establishments	3.1	2.8	1.5
		Persons usually working	37.1	33.1	25.5

Source: Fifth Economic Census 2005 – All India Report, Table 5.12, Chapter V

3.9.2 To bring these workers under the social safety net, the erstwhile Planning Commission had prepared a Concept note on the feasibility of a comprehensive social security scheme for unorganized sector workers, which formed the basis for the Institute of Financial Management and Research (IFMR[15]) report on 'Comprehensive Social Security for the Indian Unorganised Sector'. As the financial implications of covering more than 400 million workforce was very high, it was decided to bring about a convergence of the existing social security schemes under a common platform. Accordingly a pilot project, to be implemented in 20 districts, converging three social security schemes viz. Rashtriya Swasthya Bima Yojana, Aam Aadmi Bima Yojana and the Indira Gandhi National Old Age Pension Scheme, implemented by three different Ministries was being conceptualized. The common platform would be enabled by issuing a social security smart card to the beneficiaries of these schemes. This would involve identifying and de-duplicating the beneficiary database; and also to enrol the beneficiaries who are left out in all the three schemes. Since at present there is no centralized data base of unorganized workers, the Ministry of Labour & Employment is working on registration, identification and creation of a nationalized database of unorganized workers and develop a national platform for delivery of services for unorganized workers. This national platform will be Aadhaar Seeded and unique identification number to the unorgamnised workers will be provided.

3.9.3 The Rashtriya Swasthya Bima Yojana (RSBY), meant for unorganized sector workers, was transferred from the Ministry of Labour & Employment to the Ministry of Health & Family Welfare on "as is where is" basis with effect from 1st April 2015. Henceforth, the Ministry of Health and Family Welfare will be concerned with the delivery of health care, while enrolment of the unorganized sector workers under the scheme would continue to rest with the Ministry of Labour & Employment. Since the inception of the RSBY, the coverage of the scheme has been extended to a large number of occupational groups, such as construction workers, licensed railway porters, street vendors, MGNREGA workers (who have worked for more than 15 days during the preceding financial year), *beedi* workers, domestic workers, sanitation workers, mine workers, rickshaw-pullers, rag-pickers and Auto/Taxi drivers. At present, the RSBY is being implemented in 19 States/UTs. The Committee of Secretaries (COS) has recommended that the scheme be restructured and implemented through a trust/society at the State level.

3.9.4 To meet the catastrophic health expenditure which pushes poor households below the poverty line every year, the Government has decided to launch a new health protection scheme which would provide health cover up to Rs. 1 lakh per family. For senior citizens of age 60 years and above belonging to this category, an additional top-up package up to Rs.30000 will be provided.

3.9.5 In keeping with an announcement in the 2015-16 Union Budget, the Cabinet has approved the operationalization of three social security schemes – the Atal Pension Yojana (APY), the Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) and the Pradhan Mantri Suraksha Bima Yojana (PMSBY). The Atal Pension Yojana (APY) is to cover the unorganized sector; subscribers would receive a fixed minimum monthly pension of Rs. 1,000, Rs. 2,000. Rs. 3,000, Rs. 4,000 or Rs. 5,000 at the age of 60 years, depending upon their contributions – which itself would vary with the age of joining APY. The Central Government would also contribute 50 per cent of the total contribution or Rs. 1000 per annum, whichever is lower, to each eligible subscriber account for a period of five years (from 2015-16 to 2019-20). Those who joined the APY before 31st December, 2015, who are not members of any statutory social security scheme, and who are not income tax payers are eligible. The pension would also be available to the spouse on the death of the subscriber; thereafter the pension corpus would be returned to the nominee. The minimum age of joining APY is 18 years and maximum age is 40 years. The benefit of fixed minimum pension would be guaranteed by the government.

[15] Report on Comprehensive Social Security for the Indian Unorganized Sector, Centre for Micro Finance, IFMR, December 2013.

3.9.6 The Union Cabinet approved the continuation of the minimum pension of Rs. 1,000 per month to the pensioners of the 1995 Employees Pension Scheme (EPS) in perpetuity. The Cabinet also approved the corresponding grant of continuous annual budgetary support for implementing the minimum pension, which will be to the tune of Rs. 850 crore per year on a tapering basis. Providing a minimum pension of Rs. 1,000 per month is an effort to provide meaningful subsistence to pensioners who have served in the organized sector. The present proposal is likely to benefit approximately two million pensioners under the EPS.

3.9.7 Further, in the Union Budget 2015-16, the employees of the organized sector were given the option to choose between the Employees' Provident Fund and the New Pension Scheme (NPS). Secondly, for employees below a certain threshold of monthly income, contribution to EPF would be optional, without affecting or reducing the employer's contribution. With respect to ESI, the employee would have the option of choosing either ESI or a health insurance product recognized by the Insurance Regulatory and Development Authority (IRDA). The proposals are being examined in consultation with stakeholders.

3.9.8 In order to incentivize creation of new jobs in the formal sector, a new scheme, Pradhan Mantri Rozgar Protsahan Yojna (PMRPY), has been proposed, wherein 8.33 percent of employer contribution under the Employees' Pension Scheme shall be made by the Government of India for all new employees enrolling in EPFO for the first three years of their employment. This will incentivize the employers to recruit unemployed persons and also to bring into the books the informal employees. In order to channelize this intervention towards the target group of semi-skilled and unskilled workers, the scheme will be applicable to those with salary up to Rs.15000 per month As a part of the textile booster package, for apparel and made up sector, the Ministry of Textiles has extended the PMRPY Scheme, wherein the Government will pay the employers share of 12 per cent under EPFO for all new employments. i.e. 8.33 per cent EPS contribution and 3.67 per cent EPF contribution.

3.10: Skill Development

3.10.1 Accelerated economic growth increased the demand for skilled manpower – and brought to the fore the shortage of such skilled manpower in the country. India is among the countries in which employers are facing the most difficulty in filling up vacancies. For India, the difficulty of filling up these jobs is 48 per cent, above the global standard of 34 per cent in 2012[16]. The lack of applicants, a shortage of applicants with hard skills, and a shortage of suitable employability – including soft skills – are some of the key reasons in why it is difficult to find suitable candidates to fill the available jobs. The Twelfth Plan aims at improving the outreach of skill development, both quantitatively and qualitatively, in order to bridge social, regional, spatial and gender divides. The Plan also aims at putting in place a dedicated institutional mechanism: support mechanisms to augment the financial requirements/ provide skill loans for poor students (Credit Guarantee Fund); the development of the National Skill Qualification Framework, incorporating the standards developed by Sector Skill Councils; and the creation of a regulatory framework to oversee its functioning. In addition, the Plan focuses on the training of trainers; promoting Public-Private Partnerships; linkages between all stakeholders to bridge the demand and supply gap of skilled manpower; and the training of informal sector workers. Developing an ICT-based real-time labour market information system; creating an online national register of the persons skilled, and their current engagement, to not only provide a national database to employers and all other stakeholders but also to facilitate a transparent monitoring system; converting employment exchanges into career centers, etc., are also part of the Plan objectives. In order to meet these objectives and goals, a number of initiatives on skill development have been undertaken.

3.10.2 To expand its outreach, the Skill Development Initiative needs a considerable expansion of its capacity, innovative delivery approaches and Public Private Partnerships. Towards this end, the following initiatives have been undertaken:

[16] *Knowledge Paper on Skill Development in India: Learner First,* September 2012, prepared by Ernst & Young for FICCI

[17] Skill Development Initiative: Modular Employable Skills Scheme: Feedback from the Field, Astha Ummat, July 2013.

(i) The Modular Employable Scheme was started in 2008 that aimed at training one million persons in demand-driven vocational skills over the next five years – and one million each year after that to support skills training, certification and upgradation in the unorganized sector. The scheme catered to school drop-outs and existing workers. According to an evaluation study done by the ILO[17], the scheme is considered to have helped provide certification of vocational skills to people for whom formal education is impossible due to restrictive program prerequisites. The certification has enabled them to have better livelihoods, develop soft and advanced skills and increase their productivity at work. It also increases their bargaining power in industry. Challenges to the scheme have been identified in the study. For one, the MES is not designed as an outcome-based scheme in that it did not ensure a link between training and employment or self-employment for those not from industry. Another major challenge being faced by the scheme is ensuring the employability of the people trained or tested under it. At present there is very little information available on the placement of the trainees. A proper mechanism to assess demand should also be developed and utilized at the state level so as to ascertain the appropriate manpower requirements and make the scheme more demand-driven – so the training offered is more closely linked to employment opportunities. The issue of increasing communication between employers in terms of identifying the skills required in the market, and between the various training institutes in terms of provision of training for identified skills, was also raised.

(ii) In 2008, Industrial Training Institutes (ITIs) were brought under Public-Private Partnerships (PPP). An evaluation study[18] points out that the success of this PPP scheme generally depends on the location of the ITI, the nearness of industrial units and that of the industry partner, and also the extent of involvement of the industry partner and other members in the IMC. Lack of staff – especially of a full-time principal – in the ITI was another drawback that was mentioned. The same findings were corroborated in an evaluation study conducted by CII[19]. On a positive note it was mentioned that the intake capacities have improved substantially after the introduction of the PPP. Data on enrolment of students in ITIs is not available to assess the progress.

(iii) The following Centrally Sponsored Schemes implemented by the Ministry of Labour & Employment have been transferred to the Ministry of Skill Development: Skill Development Initiative-Modular Employable Skills; Skill Development for 34 Districts affected by Left Wing Extremism (LWE); Upgradation of 1396 ITIs; Enhancing Skill Development Infrastructure in NE State & Sikkim; Setting up of Skill Development Centre at Gulbarga & Bangalore; Upgradation of existing ITIs into Model ITIs.

(iv) The Ministry of Rural Development has reworked the placement-linked skill development programme for rural poor youth into the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), which targets those in the age group 15-35 years. Training is undertaken in NCVT or

[18] Assessment of Evaluation of Scope of Up-Gradation of Select Industrial Training Institutes through PPP in Maharashtra & Tamil Nadu by Maharashtra Economic Development Council, July 2010.

[19] Upgrading Industrial Training Institutes under the Public Private Partnership Scheme: An Impact Assessment Study: East & North East Report, May 2014.

SSC-recognized courses. Projects are undertaken in PPP mode with assured placement for 75 per cent of trained candidates. The scheme offers post-placement support to the candidates. The Cabinet has approved removal of existing restriction which limits the allocation of DDU-GKY to 25 percent of NRLM allocation to enable the Ministry to expand its focus, inter-alia, to cover training courses of longer duration for placements in foreign jobs, captive jobs, industry internships, training by accredited institutes and champion employers, and re-skilling/up-skilling of rural poor youth, including rural poor youth who have passed out from ITIs / Polytechnic Institutes.

(v) The Ministry of Minority Affairs has launched a number of new schemes like the 'Seekho Aur Kamao (Learn and Earn)' Scheme, which aims at upgrading the skills of the minority youth in various modern / traditional vocations depending upon their educational qualification, present economic trends and the market potential for their skills. This could help them discover suitable employment or make them skilled enough to go for self-employment.

(vi) Upgrading the Skills and Training in Traditional Arts/ Crafts for Development (USTTAD): This new scheme was approved during 2014-15 to preserve the rich heritage of the traditional arts and crafts of India's minorities and build up the capacity available to poor traditional artisans and craftsmen. In order to promote self-employment for minority communities through development of entrepreneurial skills with credit linkages, MANAS (Maulana Azad National Academy for Skills) has been established by the National Minorities Development and Finance Corporation on 10th November 2014. As an integrated education and livelihood initiative for the minority communities, the "Nai Manzil" scheme was launched in the August 2015. The scheme aims for educational enhancement and skill training, especially for the school dropouts from minority communities and for youth getting an education from the *madrasa* system of education. The scheme is intended to cover people between the 17- 35 age group and will provide avenues for continuing higher education and also open up employment opportunities. Skill training under the programme would cover the following areas viz; (i) manufacturing (ii) engineering (iii) services and (iv) soft skills.

(vii) The Swarna Jayanti Shahari Rozgar Yojana (SJSRY) in the Twelfth Plan was restructured as the National Urban Livelihood Mission (NULM). NULM will target the urban poor who are occupationally vulnerable, for Employment through Skills Training & Placement (EST&P). The Mission will focus on providing assistance for developing and upgrading skills of the urban poor so as to enhance their capacity for self-employment and wage employment. The Support to Urban Street Vendors (USV) component will cover a socio-economic survey of street vendors, development of pro-vending urban planning and vendors' markets, credit enablement of vendors, skill development and micro-enterprise development, and convergence under various schemes of the government.

(viii) To bring the unorganized sector, especially MSME units, into scope of apprenticeship training, the Apprentice Protsahan Yojana was launched from 16th October, 2014, to support 100,000 apprentices in the next two and a half years by sharing 50 per cent of the stipend. Enhanced rates of stipend have been notified for trade apprentices, with the minimum rate per month payable indexed to the minimum wage of semi-skilled workers. The Government will reimburse the stipend payable to apprentices undergoing training in MSMEs for the first two years of training, after which the cost will be borne by the employer.

(ix) The scheme for "Enhancement of Skill Development Infrastructure in the North Eastern States & Sikkim" has been revised to include construction of 22 new ITIs instead of 14 as per the existing scheme. This will enhance the training capacity in the North East.

(x) The National Skill Certification and Reward Scheme was launched in pursuance to the announcement made in the Union Budget for the year 2013-14. The scheme was in operation from August 2013 until September 2014. The National Skill Development Corporation (NSDC) was designated as the implementing agency for this 'STAR' scheme. The scheme was a reward-based skill development programme. Under it, 1.4 million enrolments and training were done with 856,000 certified candidates.

(xi) Based on learnings from the STAR scheme, the Ministry of Skill Development and Entrepreneurship launched the Pradhan Mantri Kaushal Vikas Yojana (PMKVY) the flagship outcome-based skill training scheme of the Ministry. The programme aims at skill certification and rewards to mobilize a large number of youth for outcome-based skill training. Under the scheme, monetary rewards would be provided to trainees who are successfully trained, assessed and certified in skill courses run by affiliated training providers. The scheme targets reaching out to 2.4 million candidates (1.4 million fresh trainees and 1 million in the stream which recognises prior learning) in its first year of implementation. It will target school drop-outs, women and disadvantaged sections of the society as well as 50,000 persons with disabilities. It will focus on difficult areas, like districts affected with LWE and North East. The implementing agency of this scheme is NSDC. In the Union Budget 2016-17 it has been decided to scale up implementation of PMKY to skill 1 crore youth over the next three years.

(xii) In March, 2015, the Government launched the National Action Plan for Skill Training of Persons with Disabilities. This National Action Plan is a partnership between the Ministry of Skill Development and Entrepreneurship (MSDE) and the Department of Empowerment of Persons with Disability, for skilling 2.5 million people with disabilities over seven years.

(xiii) The Department of School Education and Literacy has reworked the scheme of "Vocationalisation of Higher Secondary Education" into "Vocationalisation of Secondary and Higher Secondary Education", incorporating lessons from the Haryana pilot project on the National Vocational Education Qualification Framework (NVEQF) and subsuming the revamped scheme into the Rashtriya Madhyamik Shiksha Abhiyan (RMSA). The revamped scheme has introduced vocational education from Class IX onwards – i.e., at the secondary stage.

(xiv) A National Board for Skill Development Certification is proposed to be set up in partnership with the industry and academia to set standards and certify skill development courses.

(xv) It was announced in Union Budget 2016-17, that 'Entrepreneurship Education and Training' will be provided in 2200 colleges, 300 schools, 500 Government ITIs and 50 Vocational Training Centres through Massive Open Online Courses. Aspiring entrepreneurs, particularly those from remote parts of the country, will be connected to mentors and credit markets. 1500 Multi Skill Training Institutes would be set up across the country to promote entrepreneurship. During 2017-18 empanelment of 510 project Institutes is to be processed and courses to commence from 2017.

3.11: Core Indicators of the Twelfth Five Year Plan

3.11.1 One of the core indicators identified in the Twelfth Plan document is the generation of 50 million new work opportunities in the non-farm sector and providing skill certification to an equivalent number of people. The National Skill Development Agency (NSDA) assigns annual targets of skilling to the Union Ministries and is involved in monitoring its progress. The targets and achievements made during the Twelfth Plan as of October 2015 are given in **Table 3.9.** As is evident, only in 2013-14 could the target set by NSDA be achieved. This calls for better implementation by the line Ministries and timely reporting of data. Further, the National Policy for Skill Development and Entrepreneurship, 2015, projects Recognition of Prior Learning (RPL), reskilling and up skilling of 298.25 million existing workforce and skilling of 104.62 million new entrants over 2015-2022.

Table 3.9: Annual Skilling Targets and Achievements

Year	Skilling Target (in lakh)	Persons skilled (in lakh)	Achievement (in per cent)
2012-13	72.51	51.88	71.5
2013-14	73.42	76.37	104.0
2014-15	105.08	76.12	72.4
2015-16	125.69	104.16	82.9

Source: National Skill Development Agency.

3.12: Focused Institutional Mechanism for Skill Development

3.12.1 In May 2008, the Union Cabinet had approved an institutional structure for skill development consisting of: the PM's National Council on Skill Development, for policy; the National Skill Development Coordination Board (NSDCB), for coordinating the efforts of various stakeholders; and the National Skill Development Corporation (NSDC), for catalyzing private sector efforts. However, in June 2013, an autonomous body, namely the National Skill Development Agency (NSDA), with a single-point focus on coordinating and harmonizing skill development efforts in the country, was formed by subsuming the PM's National Council on Skill Development, the National Skill Development Coordination Board under the erstwhile Planning Commission and the Office of the Adviser to the PM on Skill Development. Recognizing the need and urgency of quickly coordinating the efforts of all concerned stakeholders to achieve its vision of a 'Skilled India', the Department of Skill Development and Entrepreneurship was created on 31st July, 2014, which was further made into a full-fledged Ministry of Skill Development and Entrepreneurship on 9th November, 2014.

3.12.2 The National Skill Development Agency (NSDA), the National Skill Development Corporation (NSDC), the National Skill Development Fund (NSDF) and 37 approved Sector Skill Councils (SSCs) were brought under the Ministry of Skill Development. The thrust of the Ministry is to co-ordinate all skill development efforts across the country; to remove the disconnect between the demand and supply of skilled manpower; the building of new skills and skill upgradation; and encouraging entrepreneurship.

3.12.3 To create further convergence between the vocational training system through ITIs and the new skill initiatives of the government, the Training Directorate under the Ministry of Labour & Employment was transferred to the Ministry of Skill Development and Entrepreneurship w.e.f. 16th April, 2015.

3.12.4 A Skill Loan Scheme for Vocational Education and Training, aimed at providing financial support from the banking system to students who have a specified minimum educational qualification, has been initiated. The amount of the loan varies from Rs.5,000 to Rs. 1.50 lakh with no requirement of collateral or third-party guarantee. Expenses covered by the loan include: (i) Tuition or course fee; (ii) Examination / library / laboratory fee; (iii) Caution money deposit; (iv) The purchase of books, equipment and instruments; and (v) Any other reasonable expenditure found necessary for completion of the course. This scheme will help trainees receive loans allowing them to attend courses covered by the National Skill Qualification Framework (NSQF) and offered by approved training partners of the NSDC, the State Skill Missions(SSM), the State Skill Corporations (SSC), ITIs, ITCs, polytechnics and so on.

3.12.5 A Credit Guarantee Fund Scheme for Skill Development (CGSSD) has been launched for guaranteeing Skill Development Loans sanctioned by member banks of the Indian Banks Association (IBA) or other banks and financial institutions, as may be directed by the government. Further, the government, through the Department of Financial Services in the Ministry of Finance, shall establish a fund for guaranteeing loans sanctioned under the scheme. A total corpus of Rs. 1,000 crore with contribution of Rs. 500 crore only during 2013-14 has been made by the Department of Financial Services to National Credit Guarantee Trustee Company Limited (NCGTC) from its budget resources.

3.13: Systemic Reforms: Providing Mobility Pathways

3.13.1 NSQF is a quality assurance framework which organizes qualifications according to a series of levels of knowledge, skills and aptitude. These levels are defined in terms of learning outcomes which the learner must possess regardless of whether they were acquired through formal, non-formal or informal learning. The NSQF would also help shift the emphasis to outcome-based learning – both in the general and vocational space. The NSQF will also facilitate Recognition of Prior Learning (RPL), which is the process of recognizing previous learning, often experiential, towards gaining a qualification. Additionally, it would help align Indian and international qualifications. The Government approved the NSQF in December, 2013. So far 1911 Qualifications have been aligned with NSQF out of which 1463 are from Sector Skill Councils, 141 are from Directorate General of Training (DGT) and 300 are from various Central Ministries and 7 from State Governments.

3.13.2 The NSQF is anchored in the National Skill Development Agency (NSDA) and it would be implemented through the National Skills Qualification Committee (NSQC). The major functions of the NSQC would be: (i) Approve and notify the National Occupational Standards (NOSs) and the qualification packs prepared by the Sector Skills Councils, including job roles that exist across various sectors. (ii) Approve the accreditation norms developed by the concerned Sector Skills Councils for training providers in the sector.

3.13.3 The introduction of the NSQF is a major systemic reform aimed at improving the quality and outcome of training. The NSQF provides for a five-year implementation schedule. After the third anniversary (end-2016) of the notification of the NSQF, (i) Government funding would not be available for any training, educational programme or course which is not NSQF-compliant and (ii) All Government-funded training and educational institutions shall define eligibility criteria for admission to various courses in terms of NSQF levels. After the fifth anniversary (end-2018) of the notification of the NSQF, it shall be mandatory for all training, educational programmes or courses to be NSQF-compliant. Subsequently, all training and educational institutions shall define eligibility criteria for admission to various courses in terms of NSQF levels.

3.14: Improve Quality & Quantity: Training of Trainers

3.14.1 The Ministry of Skill Development & Entrepreneurship* operates 21 institutions directly wherein Craftsman Instructor Training Scheme (CITS) courses are run. However, the combined training capacity of these institutes is about 3,600 trainers per

(Note* Many of the reforms were initiated by the Ministry of Labour & Employment from where the Training Vertical and Apprenticeship Training Vertical was transferred to Ministry of Skill Development & Entrepreneurship in April 2015).

annum. In March 2014, this scheme was revamped as "Up-gradation of Model Industrial Training Institutes to Advanced Training Institutes" to create a pool of trained instructors for training of craftsmen as per the needs of industry and for improving the delivery of quality vocational training. Four ATIs would train a minimum of 800 trainers per year on a two-shift basis. These ATIs are located at Haldwani (Uttarakhand), Calicut (Kerala), Jodhpur (Rajasthan) and Chaudwar (Odisha). Another scheme "Setting up of additional Regional Vocational Training Institutes (RVTIs) for women" in states with no existing RVTIs is also approved, wherein eight new RVTIs would be set up with an annual training capacity of 3,840 women.

3.14.2 The Ministry of Skill Development & Entrepreneurship has initiated several measures during the Twelfth Plan to improve the quality and outcome of training. These include: introducing a semester system of training in ITIs; making it mandatory for ITIs to re-affiliate after every five years; and allowing ITIs and industry to enter into flexi-MoUs to redesign courses to suit local industry requirements. Several MoUs have already been signed with Maruti Suzuki, TATA Motors, Flipkart, Raymonds and so on.

3.15: Promoting Public-Private Partnerships in Skills

3.15.1 The Ministry of Skill Development and Entrepreneurship is in the process of setting up Multi-Skill Institutes (MSIs) through Public-Private Partnership (PPP) mode. The Ministry is actively exploring new models for setting up green-field institutions in the skills space and envisions the MSIs as pioneering national institutes for reforming the skill training system in the country. Elements for linking the MSIs with the ITI framework are also being explored.

3.15.2 In order to enhance private sector participation in skilling, the National Skill Development Corporation has been working to enhance the capacity of private training providers through the provision of loan, grant and equity funding. The NSDC has developed a wide network for skilling, with 207 NSDC-approved private training partners and 2,904 operational NSDC partner centres – including 676 mobile centres – providing coverage across 28 States and 5 UTs in a total of 471 districts across India.

3.16: Bridging the Demand-Supply Gap

3.16.1 The Ministry of Labour & Employment had taken several new initiatives during 2014 to increase industry participation and thereby improve the quality of training. The Ministry had constituted Mentor Councils (MCs) to revamp courses under the National Council of Vocational Training (NCVT) in 25 sectors. The Mentor Councils have representatives from thought leaders among various stakeholders: one of the top ten industries in the sector; innovative entrepreneurs who have proved to be game-changers; academic/professional institutions; champion ITIs for each of the sectors; and experts in delivering education and training through modern methods, like through use of IT, distance education and so on. The Mentor Councils are mandated to work towards revamping and suggesting new courses, improving assessment systems and so on for subjects under the purview of the NCVT. Eleven priority sectors including construction, IT & ITES, textiles, tourism & hospitality, beauty & wellness, and automobiles have been selected to start the process.

3.16.2 The Government has also approved a scheme titled "Upgradation of ITIs into Model ITIs" involving setting up of a model ITI in every State to set a benchmark for quality vocational training and to establish demand centres for industries.

3.16.3 Sector Skill Councils are autonomous industry-led bodies responsible for the creation of industry-led standards for skill training – the National Occupational Standards (NOS) and Qualification Pack (QP). NOSs describe best practices by bringing together performance criteria, knowledge and skills pertaining to a job role. A set of NOSs related to a specific job role is called a Qualification Pack (QP). QPs drive the process of skill training. On the basis of the QPs and NOSs, training needs are analysed, which leads to curriculum development. Once the curriculum is developed, training is conducted – followed by the assessment and certification of the students. As on 31st March, 2015, across 28 Sectors, standards for 1,319 job roles pegged at NSQF levels 1 to 8 have been defined by the Sector Skill Councils. Fourteen SSCs have covered the development of 80 per cent of entry-level workforce QPs. Till date, the NSDC Board has approved proposals for 37 Sector Skill Councils. There are approximately 450 corporate representatives in the governing councils of these SSCs.

3.17: Skilling the Informal Sector

3.17.1 The Skill Development Initiative Scheme is based on modular employable skills – providing the minimum skill set sufficient for gainful employment to school-leavers, existing workers, ITI graduates and so on. Being implemented since 2007-08, the scheme provides for assessment and testing of such skills as are acquired experientially. Similarly, there are schemes which are specifically targeted at the poor and rural population below the poverty line – such as the Deen Dayal Upadhyaya Grameen Kaushal Yojana. Meanwhile, the National Urban Livelihood Mission caters to the urban poor.

3.17.2 The NSDA, along with the National Institute of Open Schooling (NIOS), organized a National Workshop on "Strategy Planning for Implementing RPL for Informal Sector Workers" in April, 2014. An important outcome of the workshop was the selection of six Sector Skill Councils for pilot studies – agriculture, capital goods, construction, gems & jewellery, healthcare and domestic work. RPL processes can identify the skills they have and the gaps in their skill sets; and it can give them formal recognition of the former which they can use to access further training. The NSDA is engaged in certain pilot studies for RPL in sectors like agriculture, domestic work, gems & jewellery and healthcare, while a similar study on the construction sector is being monitored by the Ministry of Labour & Employment. The findings of these pilot studies will improve the policy and programmes meant for informal sector skilling and the recognition of prior learning. The Ministry of Labour & Employment has started the RPL Scheme for construction sector workers to receive a 15-day gap training at site for an National Council for Vocational Training (NCVT) certificate. The scheme will be funded from cess funds collected from construction projects.

3.18: Integration, Outcomes and Monitoring

3.18.1 The Labour Market Information System (LMIS) is an integrated database which contains socio-economic data in modules on (i) supply-side labour force statistics (ii) the demand for skilled and unskilled labour (iii) market trends like wage structures and distribution, economic growth trends across sectors, focus areas for skilled manpower, occupational shortages etc. The LMIS is intended to be used as a business intelligence tool to generate key analysis and reports which will determine policy interventions by different government stakeholders and the industry at large. The LMIS is being developed in a modular manner, with the various modules being compiled through different sources.

3.18.2 The success of the LMIS depends on the institutional structure that is put in place to assimilate real-time information. At the very least, linkages should be established between the various government departments responsible for various policies affecting the labour market on the one hand, and statistical agencies and departments collecting employment-related information on the other. A systematic analysis of institutional structures that aim to collect and analyze labour market information could provide valuable insights on how an efficient and effective information system needs to be sustained. The analysis should focus on the division of responsibilities and the degree of autonomy of various institutions, the involvement of users, linkages with the broader economic environment, and so on.

3.18.3 The data on the National Labour Market Information System(LMIS) is displayed in the form of 10 National Repositories namely Trainers, Training Centers, Training Providers, Assessors, Assessment Agencies, Employers, Trained Candidates, Courses and Prospective Candidates each contributing to build a holistic picture of the skill development ecosystem in the country. As on date, 65 lakh trained candidate data from 4 different Central Ministries are reflected on the LMIS which includes 7 major central skill development schemes.

3.18.4 NSDA has developed a roadmap for integrating all remaining data sources including States, Central Ministries and other Agencies working in the skill development space. The first step in this direction is to undertake a scoping study of all skill development Management Information system (MIS) systems in the country. Following this study, NSDA will develop an action plan for state integration and roll out which will include strengthening of state and institutional MIS systems in a systematic phase wise approach.

3.18.5 The employment linkage on the LMIS has been facilitated through integration with the National Career Services Portal maintained by the Ministry of Labour and Employment. Through this integration, candidates trained and certified through Government Schemes and programmes will reflect as potential job seekers on the National Career Service (NCS) portal. National Skill Development Agency (NSDA) will also be signing MoUs with all major employment agencies and job portals for sharing of candidate data available on the National LMIS. This will ensure that candidates have multiple avenues facilitating employment linkages through the system.

3.18.6 The LMIS will make citizen services accessible over the Internet, through mobile phones, kiosks, call centres as well as through personal computers, setting forward a vision for electronic service delivery that does not do away with the need for personal contact, but rather supports better management with the infusion of technology. The system provides a consolidated and unified view of various stakeholders at any given point of time and empowers the Government and agencies to take informed decisions by providing intelligent and insightful reports, as required.

3.19: Employment Exchanges and State Missions:

3.19.1 The Ministry of Labour & Employment is implementing the National Career Service Project (NCSP) as a mission-mode project to transform employment exchanges into "career centres" that provide a variety of employment-related assistance, whether on skill development or on apprenticeship. The National Career Service (NCS) portal is supported by a call centre and a helpdesk. There is also a network of delivery channels, including employment exchanges, vocational rehabilitation centres, coaching-cum-guidance centres, and so on. In addition, 100 Model Career Centres (MCCs) are proposed to be established during the Twelfth Plan. Approvals for 100 MCCs have been accorded till March, 2016, and these are being operationalized. It is proposed to inter-link State Employment Exchanges with the National Career Service platform. where part funding for IT upgradation, minor refurbishing of the employment exchanges will be provided along with funds for organizing job fairs. Funds have been released to 18 States under this component.

3.19.2 The NCS Portal differs from the LMIS. The National Career Service portal caters to job-market entrants looking for jobs, and to industry on the lookout for new employees. The LMIS, on the other hand, assimilates data, researches and analyses it, and the information is used for making larger policy decisions. Data assimilation from different stakeholders consisting of the government, public and private sources for both the LMIS and NCS calls for legislative or policy backing.

3.19.3 Most State Governments have set up their State Skill Development Missions either under the respective Chief Minister or Chief Secretary. However, only a few States have been able to harmonize the skilling efforts across various line departments. Of special mention is the Uttar Pradesh Skill Development Mission, which has converged schemes and resources with a top-up funding facility to cover gaps in Central funding; and the Rajasthan Skill & Livelihood Development Corporation, with its "skill icon of the month" award to encourage enrolment and performance of candidates.

3.20: Other Initiatives on Skill Development

3.20.1 Under Section 135 of the new Companies Act, 2013, companies with an annual turnover of Rs. 1,000 crore and more, or a net worth of Rs. 500 crore and more, or a net profit of Rs. five crore or more during any financial year, must spend at least two per cent of their average net profits made during the three immediately preceding financial years on activities related to corporate social responsibility or report the reason they did not. The CSR activities as listed in Schedule VII include employment-enhancing vocational skills.

3.20.2 Ten per cent of Special Central Assistance (SCA) to the Scheduled Caste Sub Plan, 10 per cent Special Central Assistance to the Scheduled Tribes Sub Plan, 5 per cent of the Border Area Development Programme, 20 per cent of the funds under the Building and Other Construction Workers Welfare Cess, and 10 per cent of the allocation under the Integrated Action Plan for LWE districts have been earmarked for skill development.

3.20.3 A new National Policy for Skill Development and Entrepreneurship, 2015 has been made operational since July 2015. The policy lays stress on achieving Skill India target by focusing on scale, speed and standard for sustainable livelihoods.

3.20.4 The Ministry of Skill Development and Entrepreneurship has initiated the process of establishment of National Skills Universities. These universities are to provide nationally-recognized university degrees and certification for vocational skills; design and conduct assessment procedures; design vocational curriculums (with SSCs) customized to providing horizontal academic mobility; offer faculty training courses; and conduct research in the skills landscape.

3.20.5 The Human Resource and Skill Requirement Reports were launched by the National Skill Development Corporation (NSDC) and Ministry of Skill Development and Entrepreneurship in April, 2015. The objective of these skill gap reports is to understand the sectoral and geographical spread of incremental skill requirements across 24 high-priority sectors between 2013-17 and 2017-22. On the basis of these studies, it is estimated that an incremental demand of 109.7 million skilled people would be required by 2022 across these 24 sectors. The top 10 sectors including automobiles, retail, handloom, leather, and so on account for about 80 per cent of the requirement.

3.20.6 To promote entrepreneurship, in January 2016, the Startup India scheme was launched under which a dedicated Start-up fund worth Rs. 10,000 crore would be created for funding of Start-ups. The Start-ups would be exempted from paying income tax on their profit for the first three years. It was also mentioned that a simple exit policy for Start-ups is being worked out and the Government is working towards fast-tracking of start-up patent applications. An eighty per cent exemption in patent fee for start-up businesses, and a self-certification based compliance system for start-ups would be introduced in respect of nine labour and environment laws. The Atal Innovation Mission (AIM) has also been launched to serve as a platform for promotion of world-class Innovation Hubs, Grand Challenges, Startup businesses and other self-employment activities, particularly in technology driven areas. The Atal Innovation Mission shall have two core functions: (i) Entrepreneurship promotion through Self-Employment and Talent Utilization (SETU), wherein innovators would be supported and mentored to become successful entrepreneurs (ii) Innovation promotion: to provide a platform where innovative ideas are generated.

3.20.7 To promote entrepreneurship among SC/ST and women entrepreneurs the “Stand Up India Scheme” was also launched in January 2016. The Scheme is intended to facilitate at least two such projects per bank branch, on an average one for each category of entrepreneur. It is expected to benefit at least 2.5 lakh borrowers. The Stand Up India Scheme provides for : (i) Refinance window through Small Industries Development Bank of India (SIDBI) with an initial amount of Rs. 10,000 crore (ii) Creation of a credit guarantee mechanism through the National Credit Guarantee Trustee Company (NCGTC) (iii) Handholding support for borrowers both at the pre loan stage and during operations. This would include increasing their familiarity with factoring services, registration with online platforms and e-market places as well as sessions on best practices and problem solving. The overall intent of the approval is to leverage the institutional credit structure to reach out to these under-served sectors of the population by facilitating bank loans repayable up to 7 years and between Rs. 10 lakh to Rs. 100 lakh for greenfield enterprises in the non-farm sector set up by such SC, ST and Women borrowers. (iv) Margin money of the composite loan would be up to 25 per cent. Convergence with state schemes is expected to reduce the actual requirement of margin money for a number of borrowers. (v) Over a period of time, it is proposed that a credit history of the borrower be built up through Credit Bureaus.

3.20.8 The Department of Industrial Policy & Promotion has suggested an action plan for skill development under the 'Make in India' programme to meet its skill needs:

Short-term Initiatives (1 year):

i. Launch a national campaign to make skills aspirational, and mission-mode projects for skilling and entrepreneurship in focused 'Make in India' sectors.

ii. Partnership with 100 corporate groups to create sustainable skill development models; continuous workplace training (apprenticeship); and at least 25 per cent of CSR funding earmarked for skill development.

iii. Initiate action to set up 2,500 multi-skilling institutions in PPP mode (new-look, new-feel institutions with strong industry linkages) and Skills Universities. Based on skill mapping, use existing infrastructure like schools, colleges, ITIs, post offices, railways and digital broadband to set up skilling centres. Available human resources from defence and paramilitary forces can help ramp up skilling capacity significantly.

iv. Strategically partner with mega programmes like Swachh Bharat Abhiyan, Digital India, National Solar Mission.

v. Support states in their attempt to build an institutional base, through funding and technical support.

Medium-term Initiatives (3 years):

vi. Integrating skilling in schools (Class 9+) and higher education. (Target: 10 per cent enrolment in vocational courses; one-third of schools to offer vocational courses; half of the new capacity in higher education to be in skill-oriented programs.)

vii. The complete alignment of skill standards across multiple assessing and certifying bodies in the country to NSQF, to reach the goal of 'One India, One Skilling Standard'; the amendment of recruitment rules for government employment as per NSQF qualifications.

viii. A special cell to meet the skilling needs and standards of international manufacturing companies, and a coordinated action plan to harness 'overseas employment' opportunities.

ix. Creating one IT-enabled platform, which integrates all relevant skilling stakeholders and initiatives. The platform should enable job exchange, monitoring, delivery, assessment, certification and governance.

x. Create a large pipeline of instructors for skill development with career progression pathways through new high-quality institutions, linking to demand generation in key focus sectors.

3.21: The Way Forward:

3.21.1 The skill development initiative, started in 2009 with the objective of skilling 500 million by 2022, has taken off in a big way with the launch of National Skill Development Mission. State Governments – by and large – have adopted the skill development mandate as a route to decrease the level of unemployment prevailing especially among the youth. However, there is a need to strengthen the State Skill Development Missions (SSDMs) as the one-point nodal centre for convergence of skill development schemes and resources. The SSDMs should be able to prioritize skill development schemes taking into account the State's particular needs and channelize the resources accordingly. In this regard it may be mentioned that NITI Aayog had constituted a Sub-Group of Chief Ministers on Skill Development to look into various facets of skill development. The Sub-Group has submitted its report.The key recommendations among others include strengthening of SSDMs for integrated delivery at one point, incentivize private sector participation, making skill aspirational, adopting strategies for improving access and outreach, improving skills relevance and quality, etc. The Report of the Sub-Group has been placed in public domain and implementation on recommendations has commenced.

3.21.2 To scale up, with speed, standard and sustainability the skill development mandate calls for financial resources. At present, budgetary resources are the main source of funding. Alternative sources of funding like imposing of a cess for skill development, the use of funds collected under the education cess, the building & construction workers' cess, or MPLADS/ MLA Funds are other options that need to be explored.

3.21.3 For skill development to be sustainable, the economy must grow and jobs must be created. The new initiatives announced under the 'Make in India' programme, like permitting 100 per cent FDI in construction sector through the automatic route; the Startup India mission; the Digital India; the Atal Innovation Mission; opening up of FDI in rail sector; increasing the ease of doing business; creation of industrial corridors; the Smart Cities Mission; the creation of sanitation facilities under the Swachh Bharat Abhiyan, and so on are expected to create the right ambience for an industrial revival. The revival in turn would help achieve the Twelfth Plan vision of creating 100 million manufacturing sector jobs by 2022.

3.21.4 To facilitate this, the initiatives announced under Shramev Jayate for increasing the ease of doing business, the amendments to the Apprentices Act, 1961, the Skill India initiative and so on need to be replicated by State Governments in order to facilitate the creation of jobs in the economy and to reap the benefit of the demographic dividend. There is a strong linkage between the 'Make in India' project and the 'Skill India' mission. The states need to identify sectors with comparative advantage for manufacturing growth and focus on skill training in those areas – including the sectors requiring skilled manpower as brought out by the skill gap reports of the NSDC and the Ministry of Skill Development & Entrepreneurship. Central Ministries should coordinate with the states in assessing the physical progress of the various skill development programmes launched during the Twelfth Plan.

3.21.5 The recent initiatives brought about to enhance access, equality, quality and innovation in the area of skills and vocational education, and the new institutional framework defined by the government, should strengthen the Skill India mandate and involve the Central Ministries and State Governments in taking forward this agenda. Skilling is the joint responsibility of both the private and public sector and each should leverage its expertise to come together and create a holistic skill environment for the country's youth.

3.22: Learning from the Appraisal

3.22.1 Efforts should be made to strengthen the State Skill Development Missions for improving the delivery framework, for better learning outcomes and also to ensure an integration of the skill development schemes routed through different Central Ministries towards the target group.

3.22.2 There is need to broad base the availability of financial resources beyond the gross budgetary support though involvement of private sector, civil society and local bodies in designing, implementation and monitoring of skill development schemes.

3.22.3 Skill development should form a component of all schemes of the Ministries so as to address the skill targets that would be required under the signature schemes of the government like Make in India, Startup India, Standup India, Digital India, Swatch Bharat, Smart cities, rural road connectivity etc. Skill development under Skill India needs to be mainstreamed by making skilling and placement outcomes a monitorable target of all developmental schemes implemented by the Government of India. In the absence of a skilled labour force India would not be able to tap jobs that would arise in the non-farm sector as technology driven jobs are the requirement of the day.

3.22.4 Decent job creation with coverage of social security net for employees/workers through legislative or schematic intervention should be made the underlying guideline for jobs created through both the public and private sector. This would to some extent narrow down the aspirational gap among the educated unemployed youth in pursuing public sector jobs which are fewer in number.

3.22.5 Under the Shram Suvidha Portal, participation by the State governments should be made mandatory so that the benefits of ease of doing business can be gained by employers irrespective of his location.

4

Governance

4.1 Introduction

4.1.1 The Twelfth Five Year Plan recognizes good governance as critical to translating Plan outlays into significant outcomes, through efficient resource utilisation and public service delivery. In this theme Chapter, a multi-pronged approach has been recommended covering systemic improvements to enhance the effectiveness of public expenditure, to improve customer satisfaction from the delivery of public services, and to tackle the problem of corruption. Each approach translates into several action areas which are briefly summarized as under:

4.1.2 **Improving the effectiveness of public expenditure:** The recommended action areas include: strengthening local institutions; encouraging the participation of people in the development process; an enhanced role for voluntary organisations; restructuring Centrally Sponsored Schemes (CSSs) to incorporate better implementation mechanisms; strengthening capacity for implementation; building in better convergence; and improving monitoring and evaluation. The Second Administrative Reforms Commission (ARC) had recommended the "Agency" system of implementation, wherein Agencies are seen as accountable organisations with a defined implementation mandate, mission, budget, performance standards and targets. The tools recommended for effective implementation are, first, quantifiable measurement of outcomes and, second, participative programme development. The quantification of outcomes and visible results are important for credibility of public expenditure. The Twelfth Plan also identifies[1] inadequate consensus among stake-holders for policy changes and poor coordination amongst agencies and organisations as some of the reasons for poor implementation. For this, the Plan recommends the development of backbone capabilities to strengthen multi-stakeholder consultation and for building consensus in policy and implementation processes. Building consensus and disseminating best practices is seen as key for successful public expenditure.

4.1.3 **Improving public service delivery:** The thrust areas include a sharper focus on e-governance platforms for the delivery of various public services like ration cards, licences, passports, etc., and the expansion of biometric-based unique identity numbers for residents of the country in tandem with the National Population Register (NPR). Transparency is to be achieved through multi-media and enhanced awareness of government programmes and schemes. For accountability, continuation of the Result Framework Documents (RFD) has been recommended, which seeks to objectively grade performance of Ministries/ Departments on pre-specified outcomes and objectives. The RFD targets need to be designed to keep in mind the citizens' and stakeholders' perspectives.

4.1.4 **Combating Corruption:**Transparency in public expenditure, procurements through technology based e-tendering, and Civil Service reforms in line with the recommendations of the 2nd ARC are some of the areas that require immediate attention.

[1]Para 10.52 of Chapter 10 on 'Governance', Twelfth Five Year Plan Document.

4.1.5 The succeeding sections of this theme Chapter summarise the current status of action taken and the way forward.

IMPROVING THE EFFECTIVENESS OF PUBLIC EXPENDITURE

4.2 Strengthening of Local Institutions

4.2.1 The Second Administrative Reforms Commission (ARC) made recomendations regarding different aspects of governance, including transparency in government, public order and anti-terrorism, ethics in governance, decentralization and empowerment of local bodies, refurbishing of personnel administration, creating citizen-centric administration, and so on. The Report, titled 'Local Governance – An Inspiring Journey into the Future' has made 256 recommendations on the delegation and devolution of powers to local governments, with State departments focusing on monitoring and supervision, ensuring standards and quality, and providing training and guidance to local governments. While most of these recommendations have been accepted, 24 recommendations were not accepted by the Government. The Fourteenth Finance Commission (FFC) has made recommendations for greater devolution of financial resources to local bodies, which have been largely accepted by the Government. The major recommendations of the FFC are given in **Box 4.1**.

Box 4.1: Recommendations of the Fourteenth Finance Commission

The Fourteenth Finance Commission (FFC) report covering the five-year period from April 1, 2015, was laid on the Table of the House on 25th February, 2015 along with explanatory memorandum on the action taken by the Government on the recommendations of the Commission.

a) A significant recommendation has been devolution of a higher share, of 42 per cent, of the Union's net tax receipts to States as against the previous share of 32 per cent (paragraph 8.13). Accordingly, the total devolution to the States in 2015-16 was Rs.5.26 lakh crore, which is Rs.1.78 lakh crore more than in 2014-15, and will increase to Rs.5.70 lakh crore in 2016-17. It has also recommended that a commensurate reduction takes place in Central Assistance to State Plans, which flow through Centrally Sponsored Schemes and Block Grants. These recommendations reflect the demand from the States for an increase in flows in the form of tax devolution and a reduction in Centrally Sponsored Schemes – in terms of both numbers and outlays. *These recommendations have been accepted.*

b) The new horizontal devolution formula recommended by the FFC incorporates two new variables, namely, the 2011 population and forest cover but excludes fiscal discipline (paragraphs 8.25 and 8.27). Further, 11 States have been identified for revenue deficit grant of Rs.1,94,821 crore (paragraph 11.37). *This recommendation has been accepted in principle.* The related institutional arrangements are yet to be put in place.

c) Focus on local bodies has been an ongoing concern and the FFC has recommended that grants to local bodies should be only for basic services and functions assigned to them under relevant legislation. The FFC has worked out the total grant to local bodies as Rs. 2.87 lakh crore for five years (paragraph 9.69) which has been accepted.

Rs. in crore

Local Bodies	Basic Grant	Performance Grant
Gram Panchayats	1,80,263	20,029
Municipalities	69,715	17,429

(Source: Explanatory Memorandum to the Action Taken on the Recommendations made by the 14th Finance Commission in its report submitted to the President on December 15, 2014),

d) Other recommendations deal with GST, the fiscal consolidation roadmap, the pricing of public utilities, public expenditure management, etc. *These are under examination.*

4.2.2 The delegation of powers to local bodies has been mandated by the 73rd and 74th Constitutional amendments. The States, however, have to develop institutional mechanisms at different levels to build up capacity in Panchayati Raj Institutions (PRIs), in order to make them sustainable and efficient governance models. While several subjects have been devolved to the local bodies in many States, line departments are still controlling funds and functionaries. The status varies widely; in the case of functions, all the 29 subjects have been devolved by Karnataka and Kerala, while in Chhattisgarh activity mapping has been undertaken for 27 subjects but Government Orders are yet to be issued. The pace of devolution of functionaries has been even slower. Functionaries have not been transferred in most States, including Andhra Pradesh, Arunachal Pradesh, Haryana, Himachal Pradesh, Punjab, Tamil Nadu and Uttar Pradesh. In most other States, administrative control has been devolved to PRIs only partially. In order to strengthen the decentralization process, the Ministry of Panchayati Raj (MoPR) has been conferring awards to the States every year based on a Panchayat Devolution Index (PDI) which is computed on the basis of the methodology outlined in **Box 4.2**.

Box 4.2: Panchayat Devolution Index

- In the first stage, States are assessed on the fulfilment of the following fundamental Constitutional requirements: the establishment of a State Election Commission; the holding of elections to PRIs; the setting up of State Finance Commissions; the constitution of District Planning Committees; and the reservation of seats for SCs /STs and women.
- States that fulfil each of these fundamentals qualify for evaluation of PDI which aims at assessing the status of devolution in respect of funds, functions and functionaries.
- For 2015-16, MoPR has commissioned a Devolution Index Study titled "where Local Democracy and Devolution in India is heading towards?" to assess the status of devolution of powers and resources, in order to develop an indicative evidence-based ranking- for which field assessment of actual devolution was also done.

4.2.3 The Fourteenth Finance Commission has recommended a grant of Rs.2.87 lakh crore to local bodies, which is a significant step up from the Rs.87,500 crore recommended by the Thirteenth Finance Commission. A major departure undertaken by the FFC is that now the funds have to flow to the Gram Panchayats that are directly responsible for the delivery of services, and not to any other level. Further, the grant recommended by the FFC has two parts – a basic grant (constituting 90 per cent of the total grant) to be given to all local bodies, and the remaining 10 per cent as a performance-based grant to be provided to address the following issues: (i) making available reliable data on local bodies' receipt and expenditure through audited accounts; and (ii) improvement in own revenues.

4.2.4 The increase in the funding available to local bodies consequent to the FFC's recommendations requires a large-scale effort to build capacity in the PRIs for planning, implementation and the maintenance of accounts. Earlier, programmes such as the Rajiv Gandhi Panchayat Sashaktikaran Abhiyan (RGPSA), the district component of BRGF, etc. were being implemented to strengthen the capacity of the PRIs and provide them supplementary untied funds. To give renewed impetus to PRIs, the new scheme Rashtriya Gram Swaraj Abhiyan (RGSA) after restructuring RGPSA is being launched. The capacities of the PRIs and State departments are being strengthened through various means for effective utilisation of the enhanced flow of funds to them.

4.2.5 In keeping with the Government's over-arching objective of making governance transparent and accountable, core common applications have been devised to address the entire spectrum of functioning of Panchayats. Further, the States have been encouraged to put the expenditure details and Annual Plans of the PRIs in public domain. Electronic delivery of services is also being promoted through Panchayats, and several States are in the process of adopting the "Service Plus" application for the electronic delivery of services to citizens.

4.3 Rationalization of Centrally Sponsored Schemes

4.3.1 This has been an ongoing effort over various Plan periods. In the Twelfth Plan, a major initiative has been consolidation of the multiple Centrally Sponsored Schemes (CSSs) with similar objectives. These schemes, wherein the majority funding is by the Centre, cover important national priority sectors like education, health, guaranteed employment, agriculture, drinking water, sanitation, rural roads and others. They are implemented by the States. The multiplicity of CSSs with pre-defined components had led to resources, both financial and managerial, being spread very thin. This often hindered the achievement of meaningful outcomes.

4.3.2 **Consolidation:** The Government reviewed 137 CSSs and five ACA Schemes and reduced them to 66 umbrella programmes to bring a sharper focus to development expenditure. In pursuance of the decision taken in the first meeting of the Governing Council of the NITI Aayog, a Sub-Group of Chief Ministers had been constituted in March 2015 to rationalise the CSSs further for ensuring that their implementation is streamlined and adequately flexible.The Sub-Group has since submitted its Report, which is under consideration of the Government. The Sub-Group has recommended that the number of CSSs should not exceed 30. In the Union Budget 2016-17, a total allocation of Rs.2.41 lakh crore has been made in respect of 28 CSSs.

4.3.3 In its Report, the Sub-Group has recommended that focus of CSSs should be on the schemes that comprise the National Development Agenda where the Centre and the States could work together. The key sectors identified by the Sub-Group that constitute important elements of the National Development Agenda include poverty elimination, drinking water & Swachh Bharat Mission, rural connectivity, agriculture including animal husbandry, fisheries, integrated watershed management & irrigation, education, health including nutrition, women & children, housing for all, urban transformation and law & order. Further, considering successful model of flexibility provided to States in choosing activities under RKVY, the Sub-Group has recommended that 25 per cent of the allocation in each financial year under a scheme should be flexi-fund. The recommendation of the Sub-Group regarding funding pattern of CSSs (90:10 for 8 NE States and 3 Himalayan States and 60:40 for other States) has already been accepted by the Government.

4.3.4 **Mission mode:**The next stage of reforms has been to further consolidate CSSs into sectoral missions by cutting across Ministries and Departments, so as to design public expenditure programmes that comprehensively address all aspects for effective outcomes. The projects under "mission mode" have clearly defined objectives, scope and implementation timelines/milestones as well as measurable outcomes and service levels. The Union Budget 2014-15 introduced many Mission Mode Schemes. Important missions are Swachh Bharat Abhiyan, Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), Namami Gange, etc. Further, the Union Budget 2015-16 also introduced new mission mode schemes like Atal Innovation Mission, National Skill Mission, Rurban Mission, Urban Rejuvenation Mission, Make-in-India Mission, National Rural Internet & Technology Mission, etc.

4.3.5 **Convergence:** The programmes entail several departments pooling their resources in a structured manner for convergence of their efforts on the ground. For example, under Namami Gange, the Ministry of Environment, Forest and Climate Change is responsible for afforestation; the Ministry of Urban Development for sanitation and sewerage treatment plants; the Ministry of Water Resources for effluent treatment plants; the Ministry of Tourism for waterfront development; the Ministry of Shipping for inland waterway transport; and so on. The implementation of the combined expenditure package is also earmarked for priority monitoring, with timelines. Similar action is underway in other Mission Mode Schemes.

4.3.6 **People's participation**: Another new aspect of this approach is inviting people's participation in implementation and funding of components of schemes. In Swachh Bharat Abhiyan, citizens of the country are fully involved in spreading the mission's message and in its implementation. Funding by corporations and individuals is being invited to construct sanitation facilities. Extensive use of the media is also made to spread the mission spirit. On 1st January, 2015, the National Institution for Transforming India was set up, in order to reinforce focus on policy evaluation and foster the spirit of cooperative federalism. The NITI Aayog will serve as the platform for Centre-State cooperation and help strengthen State Government capabilities in scheme formulation, implementation and monitoring.

4.3.7 **Gender perspective in the development process:** To sensitize Ministries and Departments towards gender-based perspectives in the development process, the Annual Budget circular mandates they all separately report the quantum of public expenditure earmarked for women in their respective budgets. The Gender Budget statement indicates the Budget's provisions for the schemes that are substantially meant for the benefit of women in two parts: Part A details schemes in which 100 per cent provision is made for women, and Part B reflects schemes where the allocation for women constitutes at least 30 per cent of the provision. All concerned Ministries and Departments have been advised to formulate and implement schemes keeping in view the gender perspective, with multi-sectoral convergence.

4.3.8 The suggested measures for efficient management of public expenditure is summarized in **Box 4.3**.

Box 4.3: Efficient Management of Public Expenditure

- ❖ The transfer of funds to States, along with the responsibilities associated with a higher funding share in more than 20 Government Programmes, will see the emergence of significant changes in scheme design and the implementation mechanisms being adopted by individual States so as to focus on outcomes and better address State-specific requirements.
- ❖ Some States may need to strengthen their capacity for designing, implementing and monitoring of schemes.
- ❖ The Central Government, through the NITI Aayog, may develop a resource hub on scheme templates and best practices as a ready reference resource, meant for States seeking successful models.
- ❖ Monitoring and implementation capabilities of States and Ministries will need to be strengthened and the focus on outcomes tightened.

4.4 Enhanced Role for the Voluntary Sector

4.4.1 The Twelfth Plan envisages strengthening governance at various levels by institutionalizing consultative planning. Included in this institutionalization is consultation with the voluntary sector – so that stakeholders are better represented, and citizens and people's groups can more easily access the process and entitlements that lead to empowerment. The Twelfth Plan also envisages institutionalization of the Joint Consultative Group Forum in all forms of planning, as recommended by the National Policy for the Voluntary Sector. In addition, the Plan visualizes State voluntary sector processes in line with the National Policy, and emphasizes the need for funding voluntary organizations in order to enable them to mobilize people as agents of social transformation. The other major areas emphasized in the Twelfth Plan are accreditation and certification of voluntary organisations and strengthening of the partnership between the public, private and voluntary sectors.

4.4.2 The voluntary sector was actively involved in the preparation of the 'Approach to the Twelfth Five Year Plan'. Extensive discussions were held with the voluntary sector and about 1,149 civil society representatives participated in this process. On the basis of inputs from human rights activists and social action groups Wada Na Todo Abhiyan (WNTA), Arghyam, and National Campaign on Dalit Human Rights (NCDHR), a report on the reconstruction of the civil society consultation process has been prepared for future reference, and has been uploaded on the NGO-Partnership System web portal. All Central Ministries and Departments, and the State Governments, have been advised to take necessary measures for institutionalization of Joint Consultative Groups in the planning process.

4.4.3 The NGO-Partnership System portal is a web-based database on voluntary and non-government organizations which has been started with the help of the National Informatics Centre (NIC) and is functional at present. The portal's aims are listed in **Box 4.4**.

Box 4.4: NGO-Partnership System Portal

- Get details of signed-up VOs and NGOs across India – arranged by State and sector.
- Get details of the schemes of the participating Ministries, Departments or government bodies offering grants to VOs or NGOs.
- Get a Unique ID for the VOs and NGOs signing-up on the portal - most of the Ministries and Departments have made it mandatory to have the Unique ID from this portal before applying for grants.
- Apply on-line for grants.
- Track status of an applications for a grant (subject to updating of the status on the portal by the concerned Ministries or Departments).

4.4.4 The NGO-PS portal is a dynamic site, which is updated as and when a new Voluntary Organization (VO) or Non-Government Organization (NGO) signs up. So far, there are 11 participating Ministries, Departments and Government bodies on the NGO-PS portal with information on the various schemes being implemented through VOs and NGOs. An effort is being made to comprehensively revalidate the portal with some other details like PAN/Aadhaar number to make it more transparent and reliable.

4.4.5 Further, a suitable policy or guideline on the accreditation of VOs/NGOs, one of the core objectives of the National Policy, is also being developed. In this direction, the methodologies followed by some accrediting agencies – Credibility Alliance, GuideStar India, CAF India, GiveIndia and Crisil – are being studied for evolving an effective accreditation system.

4.4.6 To strengthen the partnership between the public, private and voluntary sectors, a "civil society window" (CSW) was organized on the subject of universal access to affordable healthcare – focusing on developing a healthy partnership, based on the PPP model, for providing better health facilities to citizens. Also, a round table was organized on corporate social responsibility-related provisions under the Companies Act, 2013, with various stakeholders – the Indian Institute of Corporate Affairs, Ministries and Departments, PSUs, corporations and VOs/NGOs – discussing the opportunities, implications and challengesinvolved. Another CSW was held on 'Filling the Gap through Corporate Social Responsibility (CSR): Nutrition and Livelihood of Women', where representatives from the government, PSUs and VOs/NGOs discussed various issues and challenges related to the implementation of CSR projects.

4.4.7 Considering that voluntary organizations are involved in the implementation of various programmes and are recipients of grants from the Government, it may be essential to put in place transparent procedures for the selection of such NGOs – as well as suitable mechanisms to ensure their accountability. Similarly, regular monitoring and evaluation will be essential for the schemes implemented by NGOs. There are also some common challenges, including: effective coordination between the Centre, States, and the NGOs; misuse of funds; the receipt of grants under multiple schemes for the same work; and so on. These issues will need to be addressed by putting appropriate mechanisms in place.

4.4.8 Some of the priority areas for action with respect to the voluntary sector in the remaining period of the Twelfth Plan are listed in **Box 4.5**.

Box 4.5: The Voluntary Sector: The Way Forward

- Comprehensive revalidation of the NGO-PS portal with required details to make it more transparent and reliable.
- Develop suitable guidelines for the accreditation of VOs/NGOs,
- Working out an appropriate mechanism to ensure transparency in the procedure for selection of NGOs, accountability, monitoring and evaluation and also to address the common challenges mentioned earlier.

4.5 Strengthening Capacity for Implementation

4.5.1 Tapping the productive talent of the Government's human resources is critical to improving the quality of governance. There are about 17.61 million[2] officials and staff in the Central Government, State Governments, quasi-government bodies and local bodies, and the need is felt for improvement in their delivery of services.This would also lead to improvements in the efficiency and quality of programme implementation. The Government has laid considerable emphasis on enhancing the professional competence of staff, especially in new technology areas, through regular training programmes. This will need to be taken forward with renewed vigour as it will help re-invigorate the administration, and create a positive brand image for India in the time to come.

4.5.2 **National Training Policy:** In view of the changed environment in all spheres of governance and the emerging challenges being faced by civil servants, the Department of Personnel and Training formulated the National Training Policy, 2012, which has been circulated to all Ministries and Departments for adoption. The Policy provides for training all civil servants to equip them with skills for their current or future jobs, both at the time of their entry into service and at appropriate intervals in the course of their careers. Such training will be made available for all civil servants, from the lowest to the highest levels.

4.5.3 **Support to State training activities:** Various programmes have been designed to develop the knowledge and skills of senior- and middle-level officers of State Governments, state Public Sector Undertakings and state autonomous bodies. These programmes are conducted primarily in the apex training institute of each state. The programmes cover a large variety of subjects under several broad thematic groups, which include: computer awareness and IT; participatory administration; decentralised planning and governance; change management and disaster management; state financial management; gender issues; human rights, ethics and human values; and others.

4.6 Improvement in Project Monitoring, Prioritization and Evaluation

4.6.1 A significant part of the Gross Budgetary Support (GBS) flows to finance projects in infrastructure sectors. The delays in project completion and commissioning in infrastructure sectors like power, railways, roads, shipping, etc. have been a major area of concern. These delays result in blocked capital, cost overruns and failure to deliver critical infrastructure in a timely fashion. These are costs the country can ill afford. The NITI Aayog has been working with the Ministry of Railways to prioritize funding of Railway projects like the doubling of old lines and the laying of new ones. The effort has also been made to ring-fence funding for national projects like Northeast rail connectivity. A Project Monitoring Group (PMG) has been set up in the Cabinet Secretariat to resolve hurdles faced by large infrastructure projects. Further, reviewing the progress of infrastructure projects is now accorded top priority, with the Prime Minister chairing meetings with the concerned Ministries and the

[2]Economic Survey 2014-15, Statistical Appendix, pp A55.

NITI Aayog. Some other related efforts are listed in **Box 4.6**.

Box 4.6: IT-enabled Monitoring of Projects and Programmes

- Timely alerts need to be generated to reflect delays and hurdles faced by projects.
- PRAGATI (Pro-Active Governance and Timely Implementation), an IT-enabled service, has been designed and launched on 25th March, 2015, at the initiative of Prime Minister. It has three objectives: grievance redressal, programme implementation and project monitoring.
- This programme combines data management & analysis, GIS/other location-related applications and video-conferencing. Inputs are being provided by Department of Administrative Reforms and Public Grievances (Centralised Public Grievance Redressal and Monitoring System – CPGRAMS) in r/o grievance redressal, Ministry of Statistics and Programme Implementation in r/o programme implementation and Project Monitoring Group (PMG) in the Cabinet Secretariat in r/o project monitoring.

4.6.2 **Programme Evaluation:**Among the functions assigned to the NITI Aayog *inter alia* is to "actively monitor and evaluate the implementation of programmes and initiatives, including the identification of the needed resources so as to strengthen the probability of success and scope of delivery". The Development Monitoring Evaluation Office (DMEO) undertakes the evaluation of selected programmes and schemes, as per the requirement of the various divisions of the NITI Aayog and Central Ministries and Departments. The evaluation studies are designed to assess the programme performance, their process of implementation, the effectiveness of their delivery systems, and their impact. These studies are diagnostic in nature and aim at identifying the factors contributing to the success or failure of various programmes. This is to improve the design of future programmes – and also to derive methods to enhance the performance of existing schemes through mid-course corrections.

Improving Public Service Delivery

4.7 E-governance platforms for service delivery

4.7.1 Government schools, colleges, health centres and hospitals cover about 70 per cent of the population (about 800 million). There are numerous other services provided to citizens every day by government-run machinery; for example, the public distribution system (PDS) covers about 50-60 per cent of the population. Hence, efficient service delivery through e-governance platforms can be a powerful instrument in the effort to improve the lives of millions of citizens. Improved service delivery at the grassroots will enhance the credibility of the Government – which will, in turn, aid in the enlistment of people's support and cooperation in various government programmes and endeavours.

4.7.2 Several e-governance initiatives, including broadband connectivity to remote villages & islands, have been introduced. The aim is to enhance transparency and improve access to public services. The National e-Governance Plan (NeGP) was approved in 2006 with the intent of making all government services accessible to the common man in his locality through common service delivery outlets, and to ensure the efficiency, transparency and reliability of such services at an affordable cost.

4.7.3 In the last eight years, the NeGP has taken up 31 Mission Mode Projects (MMPs). Out of these, 24 MMPs are operational and delivering 222 services out of 252 envisaged. This includes the e-Visa facility which will be avilable for citizens of 161 (One Hundred Sixty One) country arriving at 16 (Sixteen) designated airports in India. Necessary infrastructure in this regard is being put in place. Visa on arrival facility is available for Japanese nationals at 6 (Six) International Airports in India. Four MMPs – the Crime & Criminal Tracking Network and Systems (CCTNS) for the police, Public Distribution System (PDS), India Post 2012 and e-Panchayat – are in the process of rolling out services. In addition, two similar MMPs, for health and education, are at the scoping stage; one, for employment exchanges, is at the design and development stage. A list of the MMPs under NeGP is given in **Box 4.7**.

Box 4.7: Mission Mode Projects under National e-Governance Plan

Central MMPs	State MMPs	Integrated MMPs
• Banking • Central Excise & Customs • Income Tax (IT) • Insurance • MCA21 • Passport • Immigration, Visa and Foreigners Registration & Tracking • Pension • e-Office • Posts • UID	• Agriculture • Commercial Taxes • e-District • Employment Exchange • Land Records (NLRMP) • Municipalities • e-Panchayats • Crime & Criminal Tracking Network and Systems (CCTNS) • Road Transport • Treasuries Computerization • PDS • Education • Health	• CSC • e-Biz • e-Courts • e-Procurement • EDI for e-Trade • National e-governance Service Delivery Gateway India Portal

4.7.4 The status of core infrastructure components is as under:

1. ***State Wide Area Network (SWAN)***: The network has been established in 34 States and UTs. States and UTs are utilizing the core infrastructure of SWAN for closed-user connectivity to various government offices. Applications are accessed through SWAN in a secured environment hosted at State Data Centres.

2. ***State Data Centres (SDC)***: This scheme's cost was estimated at Rs.1,623 crore over the period 2008-2017. So far, 26 SDCs have been established.

3. ***National Optical Fibre Network (NOFN)***:The project was approved in October 2011 at an estimated cost of Rs. 20,100 crore, and for implementation by 2015-end. At present, optical fibre cable connectivity is available in all State capitals, district headquarters and in every block. It is planned that all 250,000 Gram Panchayats will be similarly connected. This will be done by utilizing existing fibres of PSUs (BSNL, Railtel and Power grid) and laying incremental fibre to connect to Gram Panchayats wherever necessary. The "dark fibre network" thus created will be lit by appropriate technology, thereby creating sufficient bandwidth at the Gram Panchayats. This will be called the National Optical Fibre Network (NOFN). Thus, the connectivity gap between the Gram Panchayats and Block will be filled. As on December 6, 2015 (latest data available), optical fibre cable laying in 32,272 Gram Panchayats has been completed and 76,624 kilometre fibre laid. Non-discriminatory access to the NOFN will be provided to all service providers – telecom service providers, internet service providers, cable TV operators and so on, so content providers can launch related services in rural areas. Various categories of applications, for health, education and governance among others, can be provided by these operators.

   Digital India is the visionary plan for transforming India into a digitally connected India. The prerequisite for this is the availability of network connectivity. BharatNet, the rechristened NOFN, is the vehicle for attaining this vision. DOT had constituted a Committee to review NOFN and give its recommendations. The report of the Committee is now before the Government.

Box 4.8: The Nine Pillars of Digital India		
1. Broadband Highways	4. e-Governance: Reforming government through Technology	7. Electronics Manufacturing –Target NET ZERO Imports
2. Universal Access to Phones	5. e-Kranti: the electronic delivery of services	8. IT for Jobs
3. Public Internet Access Programme	6. Information for All	9. Early Harvest Programmes

4.7.5 Despite the successful implementation of several MMPs, it has been felt that the NeGP as a whole has not been able to make the desired impact and the portfolio of MMPs needs to be revamped. Emerging technologies such as cloud and mobile platforms should also be used, and the integration of services needs to be focused on. A SWOT analysis of NeGP carried out by MeitY, concluded the framework needed substantial improvements. The NeGPcould be redefined with an emphasis on transformation, as opposed to an incremental approach in terms of process improvements within each project. With this approach in mind, MeitY has taken up a programme called e-Kranti (NeGP 2.0) as one of the nine pillars of the 'Digital India'initiative listed in **Box 4.8**, with the following objectives:

(i) To redefine NeGP with transformational and outcome oriented e-Governance initiatives;

(ii) To enhance the portfolio of citizen-centric services;

(iii) To ensure optimum usage of core ICT infrastructure;

(iv) To promote rapid replication and integration of e-governance applications;

(v) To leverage emerging technologies; and

(vi) To make use of more agile implementation models.

4.7.6 **Reforming Government through Technology:** E-governance, a pivotal pillar of the Digital India programme, is also to be implemented by undertaking government process re-engineering (GPR). Electronic data bases, complete workflow automation and IT-based public grievance redressal are to be introduced in all government departments. Considering the multiplicity of agencies involved in the implementation of e-Kranti and the need for overall aggregation and integration at the national level, it is necessary that each agency involved has well-defined roles and responsibilities. Besides the ongoing 31 MMPs, 12 new MMPs have also been taken up under e-Kranti, as tabulated in **Box 4.9**.

Box 4.9 – New Mission Mode Projects under e-Kranti

Central MMPs	State MMPs	Integrated MMPs
• E-Sansad • Common IT Roadmap for Paramilitary Forces	• E-Vidhaan • Agriculture 2.0 • Rural Development • Women and Child Development	• Financial inclusion • National Geographical Information System • Social Benefits • Roads and Highways Information System (RAHI) • E-Bhasha • National Mission on Education through ICT (NMEICT) • Urban Governance

4.7.7 A single-window agency approach has been found to improve the ease of doing business. Similarly, a single-window approach to providing various services may be essential to minimizing delays and maximizing convenience for citizens. The delegation of powers to grass-root levels for effective work is also needed.

4.7.8 Another important task is to make redressal of the public's grievances more effective. All complaints received should be analysed and proper steps must be taken to eliminate them as much as possible. A suggestion box must be kept at each government office, especially those that deal with the public. In particular, every government organization must have the following:

Box 4.10: e-Governance Initiatives: The Way Forward

- Various e-governance initiatives taken up need to be scaled up for providing universal access.
- The applications should be made mobile-friendly to improve outreach.
- There is an urgent need to enact the Electronic Delivery of Services (EDS) Act which will mandate the Central Government, the State Governments and all public authorities to deliver all public services electronically. This will help in expediting the adoption/implementation of e-Governance related projects and mission mode programmes and the utilization of core e-governance infrastructure.
- The exercise of a unique National Birth Registration number to serve as an EID for every new-born child also needs to be taken forward in a time-bound manner.

(i) A fool-proof system for the registration of all complaints;

(ii) A prescribed time schedule for response and resolution;

(iii) A monitoring and evaluation mechanism to ensure that the norms prescribed are complied with;

(iv) Transparency and the dissemination of citizen-centric information; and

(v) A Citizens Charter that is uploaded on the website and updated on a quarterly basis.

4.7.9 The National Geographical Information System (NGIS) is being established under Department of Science & Technology "to position a new information regime for integrating GIS Assets of the country, develop innovative applications for various Ministries/ Departments and enhance the quality of GIS Assets and thereby develop the Decision Support System for good governance". The NGIS will also be used for governance, sustainable development and citizen empowerment.

4.8 Unique Identity Number for Residents

4.8.1 The unique identification authority of India (UIDAI) is a statutory authority established under the provisions of the Aadhaar (targeted Delivery of financial and Other Subsidies, Benefits and Services) act, 2016(" Aadhar Act 2016") on 12 july 2016, under the ministry of Electronics and information Technology (MeitY). Prior to its establishment as statutory authority, UIDAI was functioning as an attached office of the then planning Commission (now NITI Aayog) and was established with a vision "to empower residents of India with a unique identity and a digital platform to authenticate anytime, anywhere' with the objective to issue unique identification numbers (UID), named as" Aadhaar" to all residents of India that is (a) robust enough to eliminate duplicate and fake identities, and (b) can be verified and authenticated in an easy, cost–effective way.

4.8.2 Aadhar is the First on scale **Digital ID** service of the world, which is formless and paperless. With more than 106.14 croreAadhaars issued, Aadhar is the largest biometric programme in the world making India a global leader in biometric technology.

4.8.3 A key objective of Aadhaar program is to provide an **identity infrastructure** for delivery of various social welfare programs and for effective targeting of welfare services. While enabling better governance, welfare delivery is the prime focus of Aadhaar, it can also be utilized by enterprises and service providers such as banks, telecom companies, and others for improving their service delivery.

4.8.4 There are many benefits associated with such integration for the various stakeholders that range from better compliance management to significant savings in leakages and increased efficiency and accountability in service delivery. The key features of Aadhaar are: (a) 12-digit random unique number obtained through the process of de-duplication involving biometrics, (b) Only a number and not a card, (c) The number does not contain any intelligence, (d) Scalable technology architecture, (e) Open source technologies, (f) One Resident = One Aadhaar.

Aadhaar Act 2016

4.8.5 The Aadhar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Bill, 2016 was considered by the parliament and the same was passed on 16.03.2016. Further, the assent of the president of India was obtained on 25.03.2016 and the act, was accordingly published in the Official Gazette on 26.03.16 as aadhaar (targeted delivery of financial and Other Subsidies, Benefits and Services) Act , 2016 [Act 18 of 2016] and has come into force rfrom 12.09.2016, the date of notification of the same :

Some of the salient features of Aadhar Act are covered in the following s3exctions:

a. Section 1: Gives statutory basis to aadhar and the act would commence based on the dates that will announced different provisions of the act.

b. Section 3: gives every resident and entitlement to obtain an aadhaar number

c. Section 7: The Central Governmnet or the State Government, may require that the individual shall undergo Aadhaar authentication for the purpose of establishing identity of such individuals, as a condition for receipt of subsidy, benefit or service, the expenditure for which is incurred from the consolidated Fund of India . In the case of an individual to whom no aadhaar has been assigned,such individual shall make an application for enrollment. Section 7 further provides that, if an Aadhar number has not been assigned to an individual, the individual shall be offered alternate and viable means of identification for delivery of subsidy, benefit or service.

d. Section 8: mandates that requesting entity shall seek consent of the individuals before collecting identity information and while limiting the use of authentication purpose only. Empowers Authority to perform authentication of the Aadhar Number and respond with positive or negative response.

e. Section 29: Limits the requesting entities to use identity information only for purpose stated to individual and restricts sharing/disclosing of identity information further without prior consent. It also restricts publishing displaying or posting publically information of an aadhaar number.

Further, the following regulations are notified under the said Aadhaar act 2016;

- Unique identification Authority of India (Transaction of Business at Meeting of the Authority) Regulations,2016 (No. 1 of 2016)
- Aadhaar (Enrolment and update) Regulations 2016 (2 of 2016)
- Aadhaar (Authentication) Regulations 2016 (3 of 2016)
- Aadhaar (data Security) Regulations 2016 (4of 2016)
- Aadhaar (Sharing of Information) Regulations 2016 (5of 2016)

Value Proposition of Aadhaar

4.8.6 **Uniqueness**: Any individual, irrespective of age and gender, who is a resident in India and satisfies the verification process laid down by the UIDAI, can enroll for Aadhaar. An individual is required to enroll only once; the process is free of cost. In case, the resident enrolls more than once, ONLY ONE Aadhaar shall be generated, as the **Uniqueness** is achieved through biometric de-duplication.

4.8.7 **Aadhaar as Financial Address**: As Aadhaar is unique and does not change over the lifecycle of an individual, the 12-digit Aadhaar is sufficient to transfer any payments to an individual. Aadhaar offers the possibility of sending money by just using the 12-digit number for life without bothering about any changes in the bank account of the individuals. Thus, with this unique property of being valid for a lifetime, Aadhaar is very well perceived as a Financial Address in the banking sector.

4.8.8 **Authentication**: One of the other challenges the resident frequently faced was to establish his/her identity. The problem gets further complicated owing to the fact of using proxy documents and circulation of counterfeit documents in the country, which leads to lack of trust between service providers and the resident. However, with Aadhaar's property of **Authentication** enables an Aadhaar holder to authenticate with a service provider Anytime, Anywhere in the country to prove his/her identity. To facilitate this, UIDAI has established an ecosystem based on best global practices to ensure data privacy and reliability of authentication, with UIDAI being agnostic to the fact as to why was the authentication done.

4.8.9 **e-KYC**: Based on industry inputs, which was looking for digital KYC solution coming directly from the issuer of KYC, UIDAI developed another property called **e-KYC**. While developing this UIDAI maintained the privacy of the individual, by sharing demographic data of an individual only after receiving explicit authorization (consent) from the concerned individual. UIDAI has established an ecosystem which ensures that a resident can digitally share the KYC with a registered service provider by authorizing UIDAI whenever he/she wanted to share his/her KYC with the service provider to avail a service.

4.8.10 With the explicit consent / authorization by the resident, the Aadhaar e-KYC service provides an instant, electronic, non-repudiable proof of identity and proof of address along with date of birth and gender. In addition, it also provides the resident's mobile number and email address to the service provider, which helps in further streamlining the process of service delivery.

Enrolment Ecosystem

4.8.11 **Enrolment Implementation Model**: Aadhaar enrolment ecosystem is built in partnership with 431 Registrars, wherein Registrars are primarily State Governments, Public Sector Banks, Registrar General of India (RGI), etc. All the Registrars in the ecosystem are signatories to MoUs with UIDAI.

4.8.12 **Enrolment Philosophy**: One of the key considerations is to keep the Aadhaar system purely focused on identity. The Aadhaar system only collects minimal data to provide unique identity, issue the Aadhaar after biometric de-duplication, manage lifecycle changes of that identity record. As recommended by the Demographic Data Standards and Verification Committee Report (DDSVP) and Biometric Standards Committee, the UIDAI is collecting bare minimum demographic information from the residents such as name, age, gender, address, biometric (photograph, ten fingerprints and two iris) and relationship details in case of minors.

4.8.13 While the above fields are mandatory for every enrolment, there are other optional fields, such as: (a) In case of children below 5 years age, biometric information is not collected and their Aadhaar is linked to parent's/guardian's Aadhaar, (b) e-mail and (c) Phone Number.

4.8.14 **Enrolment Statistics**: The Enrolment Status as of **30th September, 2016** (per cent as per census 2015) is as under:

i. Total Aadhaar generation – **106.14 cr. (83 per cent)**

ii. 18+ Aadhaar generation – **79.06 cr. (98.3 per cent)**

iii. < 18 Aadhaar generation – **27.09 cr. (57.7 per cent)**

State wise saturation figures have been placed in **Annexure-4.1, 4.2, 4.3 & 4.4** respectively.

4.8.15 **Updation**: In order to maintain the data of the residents current and up-to-date, UIDAI has provided an institutional mechanism to enable residents to update their data. The updates include corrections and/or changes in the demographic details of residents due to change of address, mobile number or change of name after marriage, etc. and biometric attributes that need to be updated by the children upon attaining the age of 5 and 15 years, etc.

4.8.16 UIDAI has institutionalized process of updation through post, manual updation through its Permanent

Enrolment Centres and electronic/online updation through its Self Service Update Portal (SSUP). UIDAI recently launched the API to update mobile numbers in UIDAI database based on bio-metric authentication with any of the authentication ecosystem partners. The service will help provide 100 of thousands of service points to update mobile number.

4.8.17 **Enrolment Strategy**: With the Aadhaar saturation exceeding 90 per cent in over 18 states and between 75 to 90 per cent in 10 states, it is becoming more difficult to reach out the remaining population. Hence UIDAI has taken a slew of steps to reach out to the remaining population. Some of the key measures are:

a. Deployment of Permanent Enrolment Centers (PEC). Currently there are 27,836 such PECs and the location can be found online.

b. States are being encouraged to acquire enrolment kits. So far 12,140 additional kits have been procured by the States. All service departments are being advised to provide enrolment facility. Schools, hospitals and anganwadis are being encouraged to set-up enrolment camps.

c. 20,000 Common Service Centers (CSC) will act as Aadhaar Kendras.

d. A pilot is being initiated in >90% saturation States for “Aadhaar Challenge”. Wherein residents who are yet to enroll can contact UIDAI for enrolment. UIDAI will reach out to enrol such residents.

4.8.18 In compliance to the UIDAI’s policy, Aadhaar is issued to all residents including the children below 5 years of age. However, the biometrics viz. fingerprints and iris image is not captured for children below 5 years of age. In lieu of the same a dedicated client called “**Child Enrollment Client Lite**” has been developed to capture the demographic data and photograph of the children below 5 years of age. UIDAI intends to leverage the Aaganwadi worker network through partnership with Ministry of Women and Child Development.

4.8.19 **Recovering Lost EID/UID Number**: When a resident loses his/her UID number (and the associated UID letter) UIDAI has developed a process to recover the UID number by an Aadhaar holder. This requires an ‘Identity Check’ which involves capturing the resident’s biometric and demographics and comparing it against the entire UID database in order to locate the UID number of the resident. This service is online in nature and has been institutionalized through its Permanent Enrolment Centers.

4.8.20 There is also an ‘Aadhaar Search’ facility, where in if demographic information is input, it helps bring out matching results. UIDAI has provided over 31,805 such ‘Aadhaar Search’ log-ins to state officials.

4.8.21 **Aadhaar Generation and Letter Delivery**: Once the enrolment takes place, the encrypted enrolment packets are uploaded to a designated location at UIDAI. The data packet undergoes various stages of screening, quality control and validation in CIDR to ensure authenticity and de-duplication of source of data. After passing the additional data quality checks on demographic, biometric and other validations, the packet is subjected to biometric de-duplication before Aadhaar gets generated.

4.8.22 Once the Aadhaar is generated, an Aadhaar letter is printed and dispatched to the resident through India Post. As on date, over 104.93 crore Aadhaar letters have been dispatched. In addition, the UIDAI provides facility of an e-Aadhaar portal for downloading the Aadhaar letter in PDF format from the website of UIDAI (www.uidai.gov.in). The e-Aadhaar, is treated at par with the printed Aadhaar letter and is a valid and digitally signed electronic document. As on date, over 51 crore e-Aadhaar letters have been downloaded from website of UIDAI. Over 24,150 e-Aadhaar logins provided to state officials.

Authentication Ecosystem

4.8.23 The purpose of Authentication is to enable residents to prove their identity and for service providers to confirm that the residents are ‘who they say they are’ in order to supply services and give access to benefits. Aadhaar, being a unique digital ID – provides a powerful platform for authenticating a resident anytime and anywhere which is in line with the vision of the UIDAI.

4.8.24 The UID architecture is designed on an on-line system – data is stored centrally and authentication is done online. This is a forward-leaning approach that makes it possible to avoid the problems associated with many ID card schemes. Aadhaar Authentication service is built to handle upto 10 crore authentications a day across two data centers in an active-active fashion and is benchmarked to provide sub-second response time.

4.8.25 Aadhaar authentication is the process wherein Aadhaar, along with other attributes (demographic/ biometrics/OTP) is submitted to UIDAI's Central Server for verification; the Central server verifies whether the data submitted matches the data available in the server and responds with a "Yes/No". As on date, UIDAI supports: (a) Biometric (fingerprint + iris) based authentication, (b) Demographic-based authentication, and (c) One-time Password authentication.

4.8.26 **Authentication Implementation Model**: UIDAI provides Authentication and e-KYC services through agencies called Authentication User Agency (AUA), Authentication Service Agency (ASA) and e-KYC User Agency (KUA).

4.8.27 **Authentication User Agency (AUA)**: AUA is any government/public/private legal agency registered in India that seeks to use Aadhaar authentication for providing access to its services. An AUA is the principal agency that sends authentication requests to enable its services/business functions. An AUA connects to the UIDAI Data Centre/ Central Identity Repository (CIDR) through an ASA (either by becoming ASA on its own or contracting services of an existing ASA) using a secured protocol. As on 30th September, 2016, 282 entities have been on-boarded by UIDAI as AUAs and have undertaken over 272.93 crore authentication transactions successfully.

4.8.28 **Authentication Service Agency (ASA)**: ASAs are entities that transmit authentication requests to the CIDR on behalf of one or more AUAs. They play the role of enabling intermediaries through secure connection established with the CIDR. ASAs receive CIDR's response and transmit the same back to the AUAs. As on 30th September, 2016, 25 ASAs are providing these services.

Application of Authentication

4.8.29 **E-KYC Services**: For an individual, identity and address verification is a key requirement for enrolling in a new welfare program, or opening a new bank account, etc. Keeping in view of the various challenges experienced by either the service provider or an individual related to providing PoI and PoA, or KYC, UIDAI launched e-KYC services in May, 2013. Thereafter, the adoption and usage of this service has grown in leaps and bounds.

4.8.30 The service provider in all such cases can verify applicant identity and address using Aadhaar authentication and e-KYC online services instead of asking for paper copies of identity and address documents. This secure, electronic, paperless KYC process is expected to substantially reduce the cost of KYC and provide convenience to customers. In order for the service providers and individuals to leverage this service of authentication, UIDAI has extended the Authentication ecosystem to create an online e-KYC services.

4.8.31 **e-Know Your Customer User Agency (KUA)**: KUAs are extension AUAs that send KYC requests in electronic manner to enable its services/business functions. KUA connects to the CIDR through a KSA. As on date, 205 KUA entities are live on Aadhaar platform; carrying out a total of about 21.73 crore e-KYC transactions successfully, as on 30th September, 2016.

Seeding Ecosystem

4.8.32 The UIDAI does not collect or store any additional personal information or linking data, such as PAN number, Driver's License numbers, details of caste, creed, religion, income level or health status, etc. UIDAI has created a seeding ecosystem, where different partners can leverage various tools offered by UIDAI to link Aadhaar in their respective service delivery databases.

4.8.33 Aadhaar seeding is a process by which UIDs of residents are accurately included in the service delivery database of service providers for enabling Aadhaar based authentication during service delivery. The seeding process is accomplished in two steps. In the first step Aadhaar is to be **captured** into the beneficiary database and in the second step after **verification** with reference to UIDAI database (CIDR) it is linked to the beneficiary record in the database of the service provider.

4.8.34 UIDAI has undertaken multiple activities to ensure Aadhaar seeding is facilitated in various scheme databases. The Aadhaar seeding framework includes:

- A Standard Protocol Covering the Approach & Process for Seeding Aadhaars in Service Delivery Databases is available on UIDAI website.

  https://uidai.gov.in/images/aadhaar_seeding_june_2015_v1.1.pdf

- Sensitization workshops: UIDAI has conducted over forty eight workshops attended by nearly 716 participants at UIDAI HQ. UIDAI ROs are conducting many workshops at regional level with local administration in States.

- Developed content including classroom training and computer based training content for various stakeholders in Aadhaar seeding operators. In addition, a system for testing and certification has also been put in place to certify potential seeding workforce.

4.8.35 Aadhaar seeding in various large databases has grown steadily and as on 30th September 2016, a total of 14.41 crore Aadhaars were seeded in LPG database, 8.29 crores in MGNREGS, 16.74 crore in PDS, 1.36 crore in NSAP, 12.82 crore in Jan Dhan Accounts, 1.66 crore in EPFO accounts and 33.55 crore in bank accounts.

Data Security and Privacy

4.8.36 Data security and data privacy are both important requirements in any organization and processes should be put in place that ensure full compliance with the organization's guidelines at all times. There should be a governance structure to oversee the way data is stored, used and shared across the organization. Physical as well as Virtual security measures should be in place at each touch point for Data security.

4.8.37 Security and privacy of personal data has been fundamental in design of Aadhaar system without sacrificing utility of the national identity system. When creating a national identity system of this scale, it is imperative that privacy and security of personal data are designed into the strategy of the system from day one.

4.8.38 Aadhaar Act, 2016 has made multiple provisions for protection of privacy of individuals' information stored with UIDAI. Various sections of the act ensure that a resident consent is necessary to collect demographic data for the specified purpose only and cannot be shared with anyone further. Aadhaar Act also provides for punitive measures including fines and/or imprisonment up to 3 years for impersonation, unlawful dissemination / sharing of information, applicable to both individuals and companies. Appropriate measures have been taken to ensure security of data at enrolment and authentication as well. Further, UIDAI has been declared STQC ISO 27001:2013 certified.

4.8.39 UIDAI has constructed two captive data centers, one each at Manesar (Haryana) and Bengaluru (Karnataka). UIDAI has been identified to be declared as "Critical Infrastructure" by National Critical Information Infrastructure Protection Centre (NCIIPC) adding another layer of IT security assurance.

New Initiatives

4.8.40 ***Fertilizers and Kerosene*** – India still is a large agrarian economy with maximum population being marginalized farmers. Aadhaar has now started working with Department of Fertilizers and Ministry of Petroleum and Natural Gas to re-engineer processes for phased adoption of Aadhaar to reduce leakages and ensure that government benefits and subsidies reach the targeted beneficiaries.

4.8.41 ***ITR Filing*** – The Central Board of Direct Taxes (CBDT) has introduced Aadhaar based electronic verification for filing the Income Tax Returns (ITR) as an option to send ITR-5 directly to the department. This initiative makes the filing of income tax completely Electronic (Paperless) and simplifies the process of ITR Filing. Previously, after electronic filing, the taxpayer had to speed post signed copy of ITR-5 to the department within 120 days. With Aadhaar Verification Code, the verification of the I-T return filing will take place electronically in real time.

4.8.42 ***Unique Entity Number***– Based on directions of Hon'ble PM, UIDAI has recommended a protocol on the process of issuing Unique Identity for Corporations, Limited Companies, Propriety Firms, Registered Societies and Trusts. The protocol has been developed after inputs from various Ministries viz. CBDT, Ministry of Corporate Affairs, State officials, GSTN, etc.

4.8.43 ***Working with various Ministries*** – Aadhaar has started working with multiple ministries/departments viz. Road Transport, land records, education, labour amongst others to actively incorporate Aadhaar in their processes with an objective of digitization and de-duplication of records with a phased approach to move towards Aadhaar based service delivery approach.

4.8.44 ***e-KYC based SIM issuance***-Department of Telecommunication (DoT) has issued circular, dated August 16, 2016 allowing Telecom Services providers to start accepting Aadhaar e-KYC for issuance of new mobile SIM cards. With this change, the process of acquiring new SIM card becomes paperless and near instant activation of SIM cards besides being a major cost savings for the telecom companies. As on 30th September, 2016, about 75 lakhs new customers have been acquired by various telecom service providers by doing Aadhaar e-KYC.

4.8.45 ***Aadhaar linkage with Passport*** - Ministry of External Affairs (MEA) has decided to leverage Aadhaar of the applicants for verification, de-duplication and issuance of passport with an aim to reduce the Turn-Around-Time. The new process has been implemented at all 77 Passport Sewa Kendras (PSKs). Over 61 lakh Aadhaar holders have opted to give Aadhaar for applying for their Passports. Recently MEA has started giving passport within a week time in case applicant submits EPIC, PAN Card, Aadhaar together along with the passport applications. In this case also, Aadhaar e-KYC is performed by MEA at the time of visit of the applicant to the PSK.

Box 4.11: Aadhaar: The Way Forward

- ✓ Define timelines for seeding and application development.
- ✓ Broad-basing & leveraging the Aadhaar platform for various applications across government, businesses and other services for accounting and transparency.
- ✓ Proactively aid State Governments and institutions in verifying and digitizing beneficiary databases and seeding them with Aadhaar numbers.
- ✓ Expand availability of authentication services, e-KYC, etc. and also the network of Authentication Service Agencies (ASA), Authentication User Agencies (AUA), etc.
- ✓ Ensure residents have the facility to update their demographic details in the event of any changes.
- ✓ Conduct special enrolment camps to facilitate the enrolment of all children below the age of five, and attain universal enrolment.
- ✓ Link all bank accounts, insurance schemes, pension accounts, etc. with Aadhaar along with nominees for improved targeted services.

Combating Corruption

4.9 Legal and Regulatory Changes to Combat Corruption

4.9.1 The Fourth Report of the 2nd ARC dealing with 'Ethics in Governance' provided recommendations for combating corruption. The status on some of the action areas are given as under:

i. The proposal to amend the Prevention of Corruption Act, 1988 to ensure that sanctioning authorities are not summoned and instead the documents are obtained and produced before the courts by the appropriate authority is under examination. The proposal regarding amendment to Section 19(1) (a) & (b) of the Act to extend the protection of previous sanction to public servants who cease to be in service was agreed to by a Group of Ministers and the Bill stands referred to the Departmental Standing Committee on Personnel, Public Grievances, Pensions, Law & Justice for consideration.

ii. The Chief Justice of India has addressed letters to Chief Justices of all the High Courts to ensure that cases in respect of the Prevention of Corruption Act, 1988 are fast tracked and taken up for hearing on a priority basis, both at the High Court and district levels.

iii. The Lokpal and Lokayuktas Act, 2013 (1st January, 2014), provides for the establishment of a Lokpal body for the Union and Lokayuktas for States to inquire into allegations of corruption against certain public functionaries and for matters connected therewith or incidental thereto. The 24 States that have already set up Lokayuktas are: Andhra Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Punjab, Rajasthan, Sikkim, Tripura, Uttar Pradesh, Uttarakhand and West Bengal.

iv. In pursuance of the ARC's recommendation that operational guidelines of all developmental schemes and citizen-centric programmes should provide for a social audit mechanism, a revised EFC/PIB format effective from 1st April 2014 issued by the Ministry of Finance (Department of Expenditure) that requires all Ministries and Departments to formulate proposals for EFC/PIB clearly indicating the arrangements for audit – or social audit – of the proposal. The NITI Aayog had also requested all concerned that "social audit" be included in the operational guidelines for the monitoring of the following flagship programmes: (i) Sarva Shiksha Abhiyan (SSA), (ii) Mid-day Meal Scheme (MMS), (iii) Rajiv Gandhi Drinking Water Mission, (iv) Total Sanitation Campaign, (v) National Rural Health Mission, (vi) Integrated Child Development Scheme, (vii) National Rural Employment Guarantee Scheme, and (viii) Jawaharlal Nehru National Urban Renewal Mission.

4.9.2 In order to address deficiencies in the Prevention of Corruption Act, 1988, as regards the definition of offences, particularly those on the supply side of domestic corruption, and with a view to addressing other perceived gaps in the Act, an exercise was undertaken by the Department of Personnel and Training. The main objectives of this exercise were:

- To provide a clear and unambiguous definition for the term 'corruption'.
- To incorporate provisions for the confiscation and forfeiture of property illegally acquired by a corrupt public servant.
- To afford protection to public servants from frivolous and vexatious prosecution by extending the requirement of sanction by the competent government to retired officers or ministers even after their demitting office, for acts committed while in office.
- To lay down clear criteria and procedure for sanction of prosecution.

4.9.3 Based on the above exercise, proposals for amendments in the Prevention of Corruption Act, 1988, along with a related amendment in the Delhi Special Police Establishment Act, 1946, were approved by the Cabinet at its meeting held on 1st May, 2013. Accordingly, the Prevention of Corruption (Amendment) Bill, 2013 has been introduced in the Rajya Sabha on 19th August, 2013. The proposed amendments in the Prevention of Corruption Act, 1988 are, inter alia, aimed at –

a) providing for a clear definition of different forms of bribery including active bribery (i.e., for punishment of the bribe-giver) in line with international practice;

b) providing for liability of a commercial entity for failure to prevent bribery of a public servant by any person associated with such commercial entity;

c) incorporating separate provisions for confiscation and forfeiture of property illegally acquired by corrupt public servants;

d) protecting honest public servants from frivolous and vexatious prosecution by extending the requirement of sanction by the competent government to retired public servants for acts committed while in office; and

e) laying down clear criteria and procedure for sanction of prosecution.

4.9.4 The proposed amendment of Section 6A of the Delhi Special Police Establishment Act is aimed at protecting public servants at policy-making levels from frivolous and vexatious investigations by extending the requirement of approval by the Central Government even after they cease to be public servants or after they cease to hold sensitive policy-level positions.

4.9.5 The Prevention of Corruption (Amendment) Bill, 2013 was referred to the Department Related Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice for examination and report. The Standing Committee has submitted its report on the Bill to Parliament on 6th February, 2014, which is under consideration by the Government.

4.9.6 **e-procurement and e-tendering:** All Central Government organizations publish their tender enquiries, corrigenda and award of contract details through the Central Public Procurement Portal of the Government of India. The system also enables users to migrate to total electronic procurement mode. The primary objective of this portal is to provide a single-point access to the information on procurements made across various Central Government organizations.

4.10: Civil Service Reforms

4.10.1 Given the large role of the Civil Services in development and regulatory functions, the Twelfth Plan laid considerable emphasis on undertaking Civil Service reforms to enable them to play these roles more effectively. The Plan suggested expeditious implementation of the various recommendations in the Report of the Second Administrative Reforms Commission (ARC). Some of the specific recommendations identified in the Plan for special focus include:

(i) The need to keep the services young by recruiting candidates at the age of around 21 years;

(ii) Extensive and periodic training to enable the services to handle the vast variety of economic and management problems;

(iii) Providing long tenures to officers to enable them to understand the intricacies of an assignment and make an effective contribution;

(iv) An 'Up or out' evaluation system so that only the better officers stay in service;

(v) Allowing the lateral entry of suitably qualified personnel from outside government into top positions; and

(vi) The separation of the policy-making and execution functions of the Government, and adoption of the 'agency' structure for the execution function.

4.10.2 The Government has accepted most of the recommendations made in the Report of the 2nd ARC while decisions on some of the recommendations have been deferred. As regards the age for recruitment, it has been decided to keep the upper age limit for entry at 26 years for unreserved candidates, 28 for OBC, 29 for SC/ST candidates with an additional two years for the physically challenged in each category. Regarding extensive and periodic training, the Government has accepted the recommendation of the 2nd ARC and has made the training mandatory for all government servants at induction as well as at mid-career stage. However, the decision on the recommendations relating to tenures of officers, 'up or out' evaluation and allowing the lateral entry of suitably qualified personnel from outside government for top positions have been deferred for the time being. For implementation of the recommendations regarding the creation of executive agencies in the Government, it is proposed to prepare a roadmap based on a few pilots and the relevant international experience in this regard.

4.10.3 In a resolution dated 28th February, 2014, the Government of India appointed the Seventh Central Pay Commission. One of the terms of reference of the Commission is to work out a framework for an emolument structure linked with the need to attract the most suitable talent to government service, promote efficiency, accountability and responsibility in government work culture, and foster excellence in the public governance system to respond to the complex challenges of modern administration.The Report of the Commission has been submitted on November 19, 2015. It recommends performance-linked pay for all Central Government employees, with a pay matrix to be determined by each individual Ministry or Department.

Disaster Risk Management

4.11: Internalizing Disaster Management in Planning

4.11.1 Recognizing the need for internalizing disaster management in the planning process, the Twelfth Plan[3] stresses the following key initiatives:

a) An early warning system should be set up in all hazard-prone areas and the necessary innovations, technologies and their application should be prioritized.

b) Disaster / risk reduction should be built into all programmes – and specifically into the flagship schemes.

4.11.2 The National Disaster Management Authority (NDMA) has recognized that it would be pertinent to invest in efforts to strengthen community risk resilience at all levels. This would more adequately reduce the risks associated with disasters. The NDMA has also issued National Disaster Management Guidelines for Community-Based Disaster Management (CBDM). These lay emphasis on mainstreaming CBDM with government programmes, and provide detailed guidelines regarding areas of action for each government department.

4.11.3 However, disaster management guidelines are yet to be incorporated into most public expenditure programmes and schemes. The NDMA will need to work in collaboration with Ministries and Departments to create legislation that internalizes disaster risk reduction in every major scheme. Upto March, 2016, only about 31.28 per cent of the Twelfth Plan allocation made for disaster management schemes could be spent. The utilization of funds under these schemes needs to be speeded up. The scheme-wise allocation and fund utilization on disaster management is given in **Table 4.1.**

Table 4.1

Financial Progress of Plan Schemes of Disaster Management during Twelfth Plan

(Rs. in crore)

S. No.	Name of Scheme	Twelfth Plan Allocation	2012-13		2013-14		2014-15		2015-16		Total Expend. upto March, 2016	Expend. to allocation (in per cent)	BE 2016-17
			RE	Actual	RE	Actual	RE	Actual	RE	Actual			
A.	**Centrally Sponsored Schemes**												
1	Revamping of Civil Defence	300	21.07	18.91	0.06	0	17	15.34	0.5	0	34.25	11.41	0
2	Strengthening of Fire and Emergency Services	700	44.15	43.83	2.78	2.36	31	30.60	4	4	80.79	11.54	0

[3]Paragraphs 10.69 and 10.70 of Chapter 10 on 'Governance', Twelfth Five Year Plan Document.

S. No.	Name of Scheme	Twelfth Plan Allocation	2012-13		2013-14		2014-15		2015-16		Total Expend. upto March, 2016	Expend. to allocation (in per cent)	BE 2016-17
			RE	Actual	RE	Actual	RE	Actual	RE	Actual			
3	National Cyclone Risk Mitigation Project	1700	95.61	93.96	239.6	221.8	263.91	260.92	634	628.78	1205.46	70.91	641.92
4	Other Disaster Management Projects	410	34.38	33	27.38	3.69	1.4	0.42	34.41	21.28	58.39	14.24	35.97
	Total Centrally Sponsored Schemes	**3110**	**195.21**	**189.7**	**269.8**	**227.9**	**313.31**	**307.28**	**672.91**	**654.06**	**1378.89**	**44.34**	**677.89**
B	**Central Sector Schemes**												
5	Disaster Knowledge Network	100	0	0	0	0	0	0	0.01	0	0	0	0
6	National Disaster Management Training Institute	150	0	0	0	0	9.55	0	0.02	0	0	0	0
7	National Disaster Response Force	1000	0.01	0.06	11	6.95	50	8.89	10.82	10.76	26.66	2.67	163.09
	Total Central Sector Schemes	**1250**	**0.01**	**0.06**	**11**	**6.95**	**59.55**	**8.89**	**10.85**	**10.76**	**26.66**	**2.13**	**163.09**
	Grand Total	**4360**	**195.22**	**189.76**	**280.8**	**234.8**	**372.86**	**316.17**	**683.76**	**664.82**	**1405.55**	**32.23**	**840.98**

4.12 Summary on learnings

4.12.1 Some of the major learnings from this Theme Chapter, inter alia, include:

(a) While the transfer of larger funds to the States may witness significant changes in scheme design and the implementation mechanisms being adopted by individual States, there may be a need to strengthen the capacity of the States for designing, implementing and monitoring of schemes. In this context, NITI Aayog could play a pivotal role in disseminating best practices of successful models for adoption by the States.

(b) For strengthening the governance at different levels, the role of the voluntary sector would need to be enhanced significantly. For this purpose, suitable guidelines for the accreditation of voluntary organisations/NGOs would need to be developed.

(c) There is an urgent need for up-scaling of various e-governance initiatives for providing universal access of different services to the public. In this context, enactment of the Electronic Delivery of Services Act may help in expediting adoption/implementation of e-governance related projects and mission mode programmes.

(d) Aadhaar program would need to be made universal in a time-bound manner for enabling better governance. Further, the Aadhaar platform need to be broad-based and linked with beneficiary database of various government programmes for effective delivery and targeting of welfare services.

Annexure – 4.1

State-wise Aadhaar generated data until 30th September, 2016			
State	**Total Population (Projected 2015)**	**Numbers of Aadhaar assigned**	**Aadhaar (in per cent)**
A&NIslands	401,882	3,83,440	95%
AndhraPradesh	52,229,924	5,03,13,617	96%
ArunachalPradesh	1,462,443	9,06,341	62%
Assam	32,968,997	16,34,885	5%
Bihar	109,798,353	7,62,28,364	69%
Chandigarh	1,115,584	10,93,826	98%
Chhattisgarh	27,014,896	2,58,64,478	96%
Dadra&NagarHaveli	362,649	3,30,725	91%
Daman&Diu	256,937	2,00,442	78%
Delhi	17,720,573	2,00,22,291	113%
Goa	1,541,892	14,57,689	95%
Gujarat	6,21,00,000	5,36,54,431	86%
Haryana	2,68,16,977	2,68,37,076	100%
HimachalPradesh	7,252,406	71,59,345	99%
Jammu&Kashmir	13,273,505	85,24,160	64%
Jharkhand	34,869,720	3,23,72,505	93%
Karnataka	64,660,412	5,76,04,845	89%
Kerala	35,315,493	3,43,01,104	97%
Lakshadweep	68,149	65,091	96%
MadhyaPradesh	76,789,374	6,83,21,048	89%
Maharashtra	118,861,427	10,85,07,800	91%
Manipur	2,878,911	18,22,514	63%
Meghalaya	3,135,150	1,92,542	6%
Mizoram	1,154,010	4,91,764	43%
Nagaland	2,094,963	10,96,352	52%
Odisha	44,369,413	3,49,17,333	79%
Puducherry	1,316,320	12,63,165	96%
Punjab	29,303,888	2,91,72,370	100%
Rajasthan	72,583,213	6,07,50,866	84%
Sikkim	642,776	5,86,233	91%
TamilNadu	76,304,287	6,50,02,412	85%
Telangana	37,253,813	3,77,31,653	101%
Tripura	3,882,999	36,04,871	93%
UttarPradesh	211,105,381	16,31,41,627	77%
Uttarakhand	10,700,897	93,55,798	87%
WestBengal	96,622,186	7,65,18,988	79%
Total	**1,27,82,29,800**	**1,06,14,31,991**	**83.0%**

Annexure – 4.2

Aadhaar Saturation			As on 30th September, 2016
State Name	**Population (0 > 5 Years)**	**Aadhaar > (0>5 Years)**	**Saturation (in per cent)**
A & N Islands	30,414	19,181	63%
A P & Telangana	6,647,650	43,27,781	65%
Arunachal Pradesh	151,129	90	0%
Assam	3,398,343	2,548	0%
Bihar	13,502,086	17,49,322	13%
Chandigarh	86,580	50,804	59%
Chhattisgarh	2,687,787	16,25,686	61%
Dadra & Nagar Haveli	38,672	12,920	33%
Daman and Diu	20,264	7,578	37%
Delhi	1,460,951	5,64,279	39%
Goa	107,046	25,651	24%
Gujarat	56,15,629	19,95,102	36%
Haryana	2,498,932	17,80,822	71%
Himachal Pradesh	576,452	2,90,394	50%
Jammu & Kashmir	1,496,580	5,745	0%
Jharkhand	3,858,951	08,10,862	47%
Karnataka	5,338,118	17,54,779	33%
Kerala	2,594,734	8,95,978	35%
Lakshadweep	5,344	143	3%
Madhya Pradesh	7,902,681	36,28,448	46%
Maharashtra	9,902,593	42,85,253	43%
Manipur	271,503	431	0%
Meghalaya	429,605	130	0%
Mizoram	128,233	120	0%
Nagaland	208,652	166	0%
Odisha	3,863,956	58,856	2%
Puducherry	99,374	43,215	44%
Punjab	2,256,720	11,85,290	53%
Rajasthan	7,723,800	12,43,772	16%
Sikkim	44,780	11,796	26%
Tamil Nadu	5,583,495	36,053	1%
Tripura	341,191	1,13,540	33%
Uttar Pradesh	21,553,224	57,20,762	27%
Uttarakhand	978,266	2,17,313	22%
West Bengal	7,756,561	1,10,020	1%
TOTAL	**11,91,60,296**	**3,35,74,860**	**28.2%**

Saturation(in Percent)

Annexure – 4.3

Aadhaar Saturation in 5 < 18 years Age band 30th September, 2016			
State Name	**Population (5<18 Years)**	**Aadhaar (5<18 Years)**	**Saturation (in per cent)**
A & N Islands	88,379	78,264	89 %
A P & Telangana	21,367,030	1,84,26,171	86 %
Arunachal Pradesh	472,468	2,46,612	52%
Assam	9,376,750	3,20,965	3%
Bihar	36,743,822	2,02,34,564	55 %
Chandigarh	256,255	2,41,780	94 %
Chhattisgarh	7,623,528	66,40,399	87 %
Dadra & Nagar Haveli	93,766	76,848	82 %
Daman and Diu	50,522	45,176	89 %
Delhi	4,395,946	44,05,988	100 %
Goa	297,113	2,55,856	86 %
Gujarat	1,58,95,826	1,25,33,265	79 %
Haryana	7,147,353	64,55,799	90 %
Himachal Pradesh	1,701,665	14,88,837	88 %
Jammu & Kashmir	3,788,274	19,17,442	51 %
Jharkhand	10,776,115	92,12,871	86 %
Karnataka	15,127,252	1,25,62,643	83 %
Kerala	7,353,481	63,89,713	87 %
Lakshadweep	15,706	13,574	86 %
Madhya Pradesh	22,517,845	1,79,15,487	80 %
Maharashtra	28,293,953	2,33,96,829	83 %
Manipur	821,702	3,49,634	43%
Meghalaya	1,030,243	51,773	5%
Mizoram	318,444	1,13,613	36%
Nagaland	659,021	2,69,830	41%
Odisha	11,381,368	71,14,484	63 %
Puducherry	279,616	2,46,958	88 %
Punjab	6,987,678	61,38,225	88 %
Rajasthan	22,037,606	1,41,64,845	64 %
Sikkim	172,936	1,28,545	74 %
Tamil Nadu	16,271,273	1,24,59,955	77 %
Tripura	957,721	8,21,317	86 %
Uttar Pradesh	68,708,821	3,54,71,265	52 %
Uttarakhand	3,041,264	22,12,211	73 %
West Bengal	23,975,018	1,48,87,613	62 %
TOTAL	**35,00,25,760**	**23,72,89,351**	**67.8%**

Annexure – 4.4

Aadhaar Saturation in > 18 years, 30th September, 2016			
State Name	**Population >18 Years (Projected 2015)**	**Aadhaar >18 Years**	**% > 18 years Aadhaar**
Andaman and Nicobar Islands	283,264	2,85,995	101%
Andhra Pradesh & Telangana	60,604,247	6,52,91,318	108%
Arunachal Pradesh	837,909	6,59,639	79%
Assam	20,200,523	13,11,372	6%
Bihar	59,396,608	5,42,44,478	91%
Chandigarh	772,924	8,01,242	104%
Chhattisgarh	16,677,012	1,75,98,393	106%
Dadra and Nagar Haveli	230,651	2,40,957	104%
Daman and Diu	186,069	1,47,688	79%
Delhi	11,878,554	1,50,52,024	127%
Goa	1,135,971	11,76,152	104%
Gujarat	4,03,73,690	3,91,26,064	97%
Haryana	17,124,487	1,86,00,455	109%
Himachal Pradesh	4,968,378	53,80144	108%
Jammu and Kashmir	7,954,566	66,00,973	83%
Jharkhand	20,124,965	2,13,48,772	106%
Karnataka	44,085,021	4,32,87,423	98%
Kerala	25,344,502	2,70,15,413	107%
Lakshadweep	47,009	51,374	109%
Madhya Pradesh	46,278,105	4,67,77,113	101
Maharashtra	80,173,789	8,08,25,718	101%
Manipur	1,918,183	14,72,449	77%
Meghalaya	1,671,572	1,40,639	8%
Mizoram	713,087	3,78,031	53%
Nagaland	1,223,144	8,26,356	68%
Odisha	29,009,219	2,77,43,993	96
Puducherry	939,674	9,72,992	104%
Punjab	20,036,790	2,18,48,855	109%
Rajasthan	42,438,064	4,53,42,249	107%
Sikkim	426,771	4,45,892	104%
Tamilnadu	54,374,010	5,25,06,404	97%
Tripura	2,583,453	26,70,014	103%
Uttar Pradesh	119,160,687	12,19,49,600	102%
Uttarakhand	6,625,055	69,26,274	105%
West Bengal	64,633,303	6,15,21,355	95%
Grand Total	**80,44,31,256**	**79,05,67,780**	**98.3%**

5

Human Resource Development

The Twelfth Five Year Plan (2012-17) recognizes that a well-educated and healthy population, equipped with relevant knowledge and skills, is essential for social and economic development in the twenty first century. India has a young population with the labour force expected to further increase by 32 per cent over the next 20 years. To reap the 'demographic dividend' for the growth of the country, high levels of health, education and skill development must be achieved.

A. Healthy India

5.1 Overall Achievements

5.1.1 **Twelfth Plan goals:** The Twelfth Plan places emphasis on developing human capabilities for enhancing productive capacity. India has made significant progress in improving life expectancy and reducing infant and maternal mortality (IMR and MMR) due to the initiatives taken, like, promoting institutional deliveries and Skilled Birth Attendants (SBAs) under the NHM. However, there is a deep concern over the persistently declining child sex ratio. The falling learning levels among children can be partially attributed to the high incidence of child malnutrition, which has been shown to reduce learning ability. The Plan therefore aimed at reducing IMR to 25, MMR to 100 per 100,000 live births, and to improve Child Sex Ratio (0–6 years) to 950 by the end of the Plan. The Plan also aims at reducing Total Fertility Rate to 2.1 and under-nutrition among children aged 0–3 years to half of the National Family Health Survey (NFHS) -3 levels by the end of the Plan period. The strategy of the Twelfth Plan was to strengthen the initiatives taken in the Eleventh Five Year Plan to expand the reach of healthcare, improving the health delivery system and to initiate the move towards Universal Health Coverage. Department of Health & Family Welfare, Ministry of Health & Family Welfare (MoH&FW,) earlier, had multiple Centrally Sponsored Schemes which have been converged into two overarching schemes viz. National Health Mission and Human Resources in Health and Medical Education.

5.1.2 The achievements of the various monitorable goals under the Twelfth Plan are listed in **Table 5.1**.

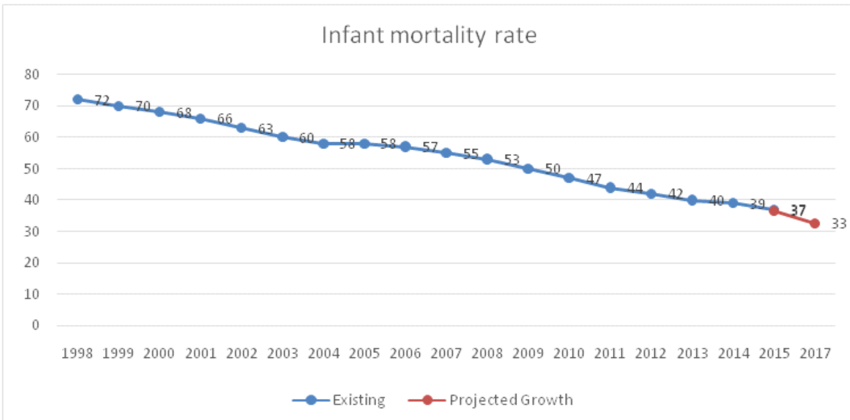
Table 5.1 : Twelfth Plan Achievements : Monitorable National Goals

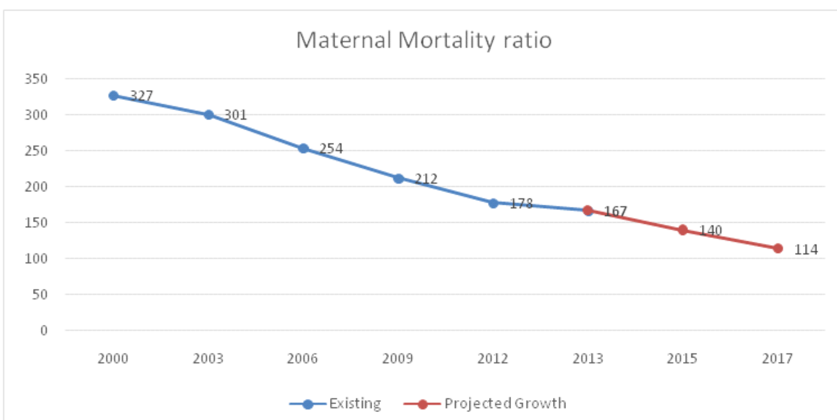
S.No	Actionable Items	Base line	Target	Achievement
1	IMR to 25	44	25	37 (SRS 2015)
2	MMR to 100	212	100	167 (SRS 2011-13)
3	TFR to 2.1	2.4	2.1	2.3 (SRS 2015)
4	Prevention & reduction of under nutrition in children under 3 years	40.4 per cent (NFHS- 3)	20.2 per cent	35.7% [NFHS-4 (2015-16)]
5	Prevention and reduction of anaemia among women aged 15–49	55.3per cent (NFHS- 3)	28 per cent	53% [NFHS-4 (2015-16)]
6	Raising the child sex ratio in the 0–6 year age group	914	950	919 (Census 2011) 919 [NFHS-4 (2015-16)]

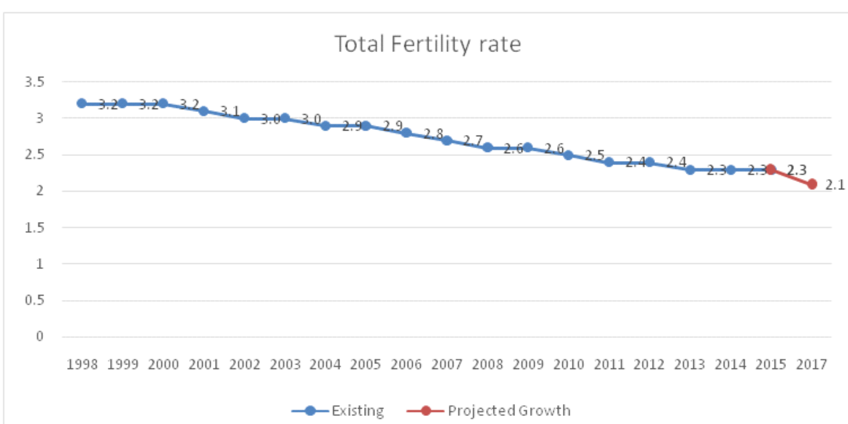
Note : NFHS-4 has measured under 5 Nutrition level as opposed to under 3 levels in NFHS-3

5.1.3 Rate of decline of Infant Mortality Rate (IMR), Maternal Mortality Ratio (MMR) and Total Fertility Rate (TFR) are shown in Fig. 5.1, 5.2 and 5.3. The projection of IMR for 2017, at the current rate of decline is 33, for Maternal Mortality Ratio, it is 114 and for Total Fertility Rate, it is 2.1.

5.1.4 **National Health Mission:** As per the Twelfth Plan strategy, the National Rural and Urban Health Mission have been converged to form the National Health Mission, to provide effective healthcare by covering all villages and towns in the country. The Mission envisages providing flexibility to States through various flexible pools i.e. NRHM-Reproductive and Child Health (RCH) Flexipool, NUHM Flexipool, the Flexi pool for Communicable Diseases and the Flexi pool for Non Communicable diseases, Injury and Trauma.







5.2 Health Care Service Delivery

5.2.1 Primary health care is provided through a network of 1,55,069 sub centers (SCs) and 25,354 Primary Health Centres (PHCs). In spite of such a vast network, the availability of primary care to the common citizen is limited due to shortages in infrastructure and inadequate human resources. There is a shortage of 35,110 SCs (20 per cent) and 6,572 PHCs (22 per cent) as per population norms (Bulletin of Rural Health Statistics-2016). As on 31st March, 2016, the overall shortfall in the posts of Health Worker (Female) and Auxiliary Nurse Midwife (HWF/ANM) was 2.53 per cent of the total requirement. Similarly 8.14 per cent of the PHCs were without a doctor, 44.59 per cent without a lab technician and 27.10 per cent without a pharmacist- adversely affecting service delivery. Most of the shortfall in qualified manpower is concentrated in a few States, namely, Arunachal Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Tamil Nadu, Tripura, Uttarakhand and Uttar Pradesh.

5.2.2 The Secondary level of health care is provided through a network of 5,510 Community Health Centres (CHCs) constituting the First Referral Units (FRUs); 1,065 Sub-District Hospitals (SDHs) and 773 District Hospitals (DHs). There is a shortage of 2,210 (30 per cent) CHCs (Bulletin of Rural health Statistics-2015). Overall a high 81.19 per cent of the sanctioned posts of specialists-surgeons, obstetricians & gynaecologists, physicians and paediatricians- at CHCs were vacant, severely constraining their service delivery capabilities.

5.2.3 Tertiary care in India is skewed towards urban areas. Moreover, care by private providers is much more expensive than from government providers. As per the 60th Round of the National Sample Survey (NSS), the average 'total expenditure for hospitalised treatment per hospitalization case', during a period of 365 days in government facilities is Rs. 3,238 in rural areas and Rs. 3,877 in urban areas. The corresponding figures for treatment from private facilities are much higher being Rs. 7,408 in rural areas and Rs. 11,553 in urban areas. As per the 71st round of the NSS, this cost has increased to Rs 6,120 in public health facilities and Rs.25, 850 in private facilities. Despite the cost differential, more than 70% of illness spells were treated in the private sector including clinics and hospitals and charitable institutions, with the remaining being treated in the public health facilities, Government hospitals account for about 70% of institutional deliveries in rural areas and 47% in urban areas.

5.2.4 Rashtriya Swasthya Bima Yojana (RSBY) was launched in 2007 to address the health needs of the unorganised sector and operationalized in April, 2008. Under the Scheme, a smart card based cashless insurance, including maternity benefit with a hospitalization coverage of Rs. 30,000/- per annum, is provided on a family floater basis to below poverty line (BPL) families (for upto five members of a family) and 11 other defined categories of unorganized workers. Initially, this scheme was implemented by the Ministry of Labour and Employment, before it was transferred to Ministry of Health & Family Welfare on "as is where is" basis with effect from 1st April 2015. At present, the RSBY is being implemented in 16 States and UTs. Senior Citizen Health Insurance Scheme with an enhanced coverage of Rs. 30, 000 per senior citizen in the eligible family, over and above the RSBY (base cover), has been implemented with effect from 1st April, 2016. It is expected that a new National Health Protection Scheme may be introduced during 2017-18 which will replace RSBY.

5.2.5 Medical cover to the Central Government Employees is provided through the Central Government Health Scheme (CGHS). Since its operation is limited to 25 cities, a large proportion of employees and pensioners remain excluded from this umbrella scheme. A rough estimate indicates that only 54 per cent (6.7 lakh of 12.5 lakh) of serving employees and 44 percent (4.4 lakh of 10.12 lakh) of civil pensioners are CGHS beneficiaries. Therefore, there is a need to extend the coverage of CGHS to more dispersed locations, or, an alternative system of medical coverage needs to be devised.

5.3 Strengthening Infrastructure for Improved Access and Outreach

5.3.1 The Plan also aims at telemedicine and consultation support to doctors at primary and secondary facilities from specialists at tertiary centers. So far, 41 government medical colleges have been connected to the National Knowledge Network (NKN) to ensure delivery of e-Education and e-Health initiatives. In addition, 27 Regional Centres and 4 Peripheral Cancer Centres (PCCs) have also been networked through a telemedicine network. Telemedicine solutions have been implemented in some States on a pilot basis under NHM, but mainstreaming of such efforts requires greater perseverance and persuasion.

5.3.2 A policy change has taken place for new health facilities under NHM, from a 'population norms' to a 'time to care' norm in hilly and desert areas. Indian Public Health Standards (IPHS) guidelines for health facilities, staffing pattern for Health facilities have thus been revised adding provisions for additional hands in response to an increase in case load or in the range of services demanded. In each State, 25 per cent of its districts which are in the lowest quintile of the health index have been identified as high priority districts. All tribal and left wing extremism (LWE) affected districts, which are below the State's average of composite health index, have also been designated high priority districts. These districts are to receive higher per capita funding, relaxed norms, enhanced monitoring and focused supportive supervision and are encouraged to adopt innovative approaches to address health challenges.

5.4 Moving Towards Universal Coverage

5.4.1 **Free drugs service initiative:** Under NHM Free Drug Service Initiative- substantial funding is being given to States for provision of free essential drugs and setting up of systems for drug procurement, quality assurance, IT based supply chain management systems, training and grievance redressal, etc., subject to States/UTs meeting certain specified conditions. Detailed Operational Guidelines for NHM-Free Drugs Service Initiative were issued in July 2015. Drugs and Vaccines Distribution Management Systems (DVDMS) application developed by CDAC is being implemented in 17 States. All 36 States/UTs have notified policy to provide essential drugs free of cost in public health facilities.

5.4.2 **Free Diagnostics Service Initiative:** Under the National Health Mission, Free Diagnostics Service Initiative, technical and financial support is provided to States within their resource envelope for provision of free essential diagnostic services in public health facilities. The operational guidelines on Free Diagnostics Service Initiative also contain model RFP documents for a range of PPPs such as Tele radiology, hub and spoke model for lab diagnostics and CT scan facilities in District Hospitals. Further, to ensure functionality of equipment, support is also provided for comprehensive biomedical equipment maintenance.

5.4.3 **Emergency Patient Transport and Referral System:** Free referral and patient transport is being provided to pregnant women, sick children and patients requiring hospitalization. Over 22000 ambulances/ patient transport vehicles are now-operational across states. These include Emergency Response Service vehicles and Dial 102 Patient Transport Service vehicles and empanelled vehicles for transporting pregnant women to government hospitals for delivery and back.

5.4.4 **Strengthening District Hospital for multi specialty care and as training site:** District hospitals (DH) are now under increasing pressure due to increased utilization and expectations from the population. There is thus a need to augment clinical services in all basic specialty areas as per IPHS and also to develop them as Institutions where skill based trainings can be conducted for nursing and paramedical staff. Strengthening of DH would ensure availability of minimum specialty services under IPHS. The draft guidelines have shared with the States. This has been identified as a key priority under NHM.

5.4.5 **Pradhan Mantri National Dialysis Programme:** The 'Pradhan Mantri National Dialysis Programme' has been rolled out in 2016 under which support is being provided to all States for provision of free dialysis services for the poor. Guidelines for dialysis services in District Hospitals in PPP mode with model RFP were issued in April, 2016. Free Dialysis services to poor under this initiative have become operational across about 300 districts.

5.5 Strategies for Maternal and Child Health

5.5.1 It is the Government of India's current policy that, all deliveries are to be undertaken by a skilled birth attendant (SBA). Under the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) component of NHM more than 70,000 Auxiliary Nurse Mid wives (ANM), Lady Health Visitors (LHVs) and Staff Nurses (SNs) have also been trained as Skilled Birth Attendants (SBAs). ANMs are incentivised to perform skilled deliveries in villages with a high number of home deliveries, including the remote and inaccessible areas with a high proportion of home deliveries. To strengthen the service delivery under Maternal and Child Health, 495 dedicated maternal and Child Health Wings have been approved to add 30,000 additional beds. The Pradhan Mantri Surakshit Matritava Abhiyan (PMSMA) has been launched to ensure quality antenatal and post natal care to pregnant women in the country. Under the campaign, a minimum package of anti natal care services would be provided to the beneficiaries on the 9th day of every month at the Pradhan Mantri Surakshit Matritava Abhiyan (PMSMA) clinics to ensure that every pregnant women receives at least one checkup in the second and third trimester of pregnancy. The service of 108 ambulance needs to be popularized in the States which are lagging behind in MCH care.

5.5.2 Pre-term birth is an important cause of neonatal morbidity and mortality. Guidelines to address morbidities due to pre-maturity and to improve survival by use of injectable corticosteroids by ANMs to pregnant woman in pre-term labour, have also been developed. Another simple and cost effective intervention for improving survival of pre-term and low-birth weight newborns is implementation of Kangaroo Mother Care (KMC).

5.5.3 **Home Based New-born Care (HBNC):** This crucial scheme for the reduction of neonatal mortality launched in 2011 has incentivized Accredited Social Health Activists (ASHAs) for providing home based essential new born care. ASHAs also make visits to all newborns according to a specified schedule for the first 42 days after the child's birth.

National De-worming Day (NDD):

Ministry of Health 8s Family Welfare had adopted a single day strategy called National Dc-worming Day in 2015 to combat STH infections in the children. During NDD, a single dose of Albendazole is administered to the children by school teachers and Anganwadi workers.

Ministry of Health and Family Welfare launched MAA-Mothers' Absolute Affection programme in August 2016 for improving breastfeeding practices (Initial Breastfeeding within one hour, Exclusive Breastfeeding up to six months and complementary Breastfeeding up to two years) through mass media and capacity building of health care providers in health facilities as well as in communities.

Intensified Diarrhoea Control Fortnight (IDCF) - To combat diarrheal mortality in children with the ultimate aim of zero child deaths due to childhood diarrhoea, Intensified Diarrhoea Control Fortnight (IDCF) is being implemented as a campaign in the month of July, since 2014, for control of deaths due to diarrhoea across all States & UTs.

5.5.4 **India Newborn Action Plan (INAP)**: INAP aims to end preventable newborn deaths and improve the quality of care through prioritizing such babies that are born too soon, too small, or sick. These account for the majority of all newborn deaths. It also defines six pillars for intervention: pre-conception and antenatal care; care during labour and child birth; immediate newborn care; care of healthy newborn; care of small and sick newborn; and care beyond newborn survival. Special Newborn Care Units (SNCUs) have been set up in district hospitals and medical colleges to provide round the clock services for sick newborns. Newborn Stabilization Units (NBSUs) at the level of FRUs and Newborn Care Corners (NBCCs) at delivery points have also been operationalized all over the country.

5.5.5 **Universal Immunization**: As per the latest survey data available (NFHS-4), the immunization coverage has shown remarkable improvement in 23 states as compared to NFHS-3, decline in immunization coverage is noted only in five states. Data for comparison is not available for 8 states/UTs.

The gaps in the programme are a matter of grave concern, not only because of the high mortality burden on account of Vaccine preventable diseases (37 per cent), but also because of the fact that infectious diseases affect the vulnerable poor more than they do the rich. Additionally, the loss of productive hours owing to these sicknesses has a potentially devastating economic impact on a vast majority of Indians whose survival is critically dependent on their daily wage.

5.5.6 **Mission Indradhanush:**

Three phases of Mission Indradhanush have been completed and the fourth phase is ongoing in North-eastern states, with plan for expansion to other states in April 2017. During the three phases and ongoing fourth phase, as on 1st March 2017, more than 2.1 crore children were reached of which more than 55 lakh children have been fully vaccinated. Further, 55.95 lakh pregnant women have been vaccinated with Tetanus toxoid. A total of 505 districts have been covered during Mission Indradhanush till, March 2017.

Inactivated Polio Vaccine (IPV): In concurrence with the World Polio End Game strategy, IPV was introduced in November 2015 in six states. The expansion of IPV was done throughout the country by June 2016. Till January 2017, around 1.36 crore doses of IPV have been administered since its introduction.

Rotavirus Vaccine: To reduce the burden of diarrhoea caused by Rotavirus, the government introduced Rotavirus vaccine in March 2016 in four states of Andhra Pradesh, Haryana, Himachal Pradesh and Odisha. The vaccine is provided as three doses at 6, 10 and 14 weeks of age. The rotavirus vaccine has been expanded to four more states namely Assam, Madhya Pradesh, Rajasthan and Tripura on 18th February 2017 and will be expanded to Tamil Nadu by May 2017.

Rubella vaccine as Measles Rubella (MR) vaccine: MR vaccination campaign targeting children from 9 months up to 15 years of age, has been launched on 5th February 2017 in five states namely Karnataka, Tamil Nadu, Goa, Lakshadeep and Pondicherry. Subsequent to the completion of the campaign, the Rubella vaccine will be introduced as MR vaccine replacing measles containing vaccine 1 & 2 at 9-12 months and 16-24 months of age. The vaccine will be introduced in remaining states in a phased manner.

Adult JE vaccine: Japanese Encephalitis vaccination in children was introduced in 2006. However, the vaccine was expanded in adult population of districts with high disease burden of adult JE in 2015. A total of 31 districts have been identified for adult JE vaccination in the states of Assam, Uttar Pradesh & West Bengal. Adult JE vaccination campaign has been completed in 21 districts during which 2.6 crore adults were vaccinated with JE vaccine. Of the newly identified 10 districts, the campaign is ongoing in 6 new districts of West Bengal and 4 districts of Assam will be covered in last quarter of 2016-17.

Scale-up of Pentavalent vaccine:

To provide protection against pneumonia and diarrhoea caused by Hemophilus influenzae b, Pentavalent vaccine was introduced in two states in 2011. Till 2014, the vaccine was expanded to 8 states. Further expansion of pentavalent vaccine was done in 2014 and 2015 with the vaccine being scaled up nationally by December 2015. The pentavalent vaccine has replaced three primary doses of DPT and Hepatitis B given at 6, 10 and 14 week of age. Till November 2016, around 12.5 crore doses of pentavalant vaccine have been provided.

5.5.7 **Family Welfare**: Data from NFHS 4 shows that the unmet need for Family Planning has decreased (relative to NFHS 3) in the country. Under the National Family Planning programme, new contraceptive choices namely Injectable MPA (under Antara programme) and Centchroman (Chhaya) have been added to the current basket of choices. The 'Mission Parivar Vikas' has been launched in 146 high fertility districts of seven high focus states for increasing access to contraceptives and family planning services. There is now a greater emphasis on promotion of spacing methods and post-partum family planning. The ASHAs are actively involved in the home delivery of contraceptives, providing pregnancy-testing kits as well as promoting spacing among eligible couples within their community. RMNCH+A counsellors have also been engaged across high delivery caseload facilities to inform, counsel and follow-up on beneficiaries from the antenatal period itself.

5.6 Controlling Communicable and Non Communicable Diseases

5.6.1 Under the Revised National Tuberculosis Control Programme (RNTCB), Programmatic Management of Drug Resistant TB (PMDT) (erstwhile DOTS Plus), services are available in all 36 States and UTs across 704 districts covering the entire population. During 2015-16, daily regimen for treatment of drug sensitive TB, scaling up of Cartridge Based Nucleic Acid Amplification Test (CBNAAT) machines to improve diagnosis of MDR-TB and new drug bedaquiline in 6 referral sites to improve Drug Resistant TB cases, have been introduced. Similarly, under the National Vector Borne Disease Control Programme, guidelines for vector control, for insecticide residual spray, use of rapid diagnostic kits and so on, are available in the public domain. Under the National Programme on Prevention & Control of Anti-Microbial Resistance, two separate groups i.e. the Expert Working Group and the Steering Committee have been constituted under the chairmanship of the Director General of Health Service (DGHS) for better implementation. Under the National Tobacco Control Programme, key thrust areas include the training of health and social workers, information, education and communication (IEC) activities, monitoring and enforcement of tobacco control laws school awareness programs, coordination with Village Health Sanitation & Nutrition Committees (VHSNC) and the establishment or strengthening of cessation facilities and the provision of pharmacological treatment facilities at the district level.

5.6.2 The progress towards communicable diseases is detailed in **Table 5.2**.

Table 5.2 Achievement of Goals : Communicable Diseases

Disease	Twelfth Plan Targets	Achievement
Malaria	Annual Malaria Incidence of <1/1000	0.84 for the year 2016 (source: MoH&FW)
Filariasis	<1 per cent microfilaria prevalence in all districts	Mf rate 0.8% for the year 2016. Out of 256 LF endemic districts, 88 have reported Mf rate less than 1% which have stopped Mass Drug Administration (MDA) and successfully passed Transmission Assessment Survey (TAS). Forty more districts have achieved Mf rate <1% and are under validation through TAS. In the event of clearance of TAS, MDA will be stopped in these districts.
Dengue	Sustaining case fatality rate of <1 per cent	0.2 per cent in 2016(Source: MoH&FW)
Chikungunya	Containment of outbreaks	58265 cases in 2016 (Source: NVBDCP)
Japanese Encephalitis	Reduction in mortality by 30 per cent	Case fatality rate of JE is 16.9% in 2016 (11% reduction since 2012).
Kala-azar	Elimination by 2015, that is, <1 case per 10000 population in all blocks	In 2016, 539 (85 Per cent) out of 633 endemic blocks have achieved elimination target
Tuberculosis	Reduce the annual incidence and mortality by half	Achievement for 2015: Incidence reduced from 234 to 217 per 100000 population (7 percent) and mortality reduced from 38 to 36 per 100000 population (5 percent). (Source: MoH&FW)
Leprosy	Reduce prevalence to <1/10,000 population and incidence to zero in all districts.	Achievement for 2015; Prevalence is 0.68 per 10,000 population as on 31.3.2014. Prevalence rate of Leprosy reduced to Less than 1/10,000 population in 532 Districts (Source: MoH&FW) as on 31.3.2015.
HIV/AIDS	Reduce new infections to zero	Overall reduction of 66% in the annual new HIV infections from the year 2000 and 32% reduction from 2007, the base year for NACP-IV. The adult HIV prevalence has decreased from 0.41% in 2001 to 0.26% in 2015 (Source-.India HH/ Estimations 2015-Technical Report of the National AIDS Control Organization)

5.6.3 Despite the overall achievement of the Twelfth Plan's goals on communicable diseases at the national level, regional variations remain a matter of concern. The MoH&FW needs to share disaggregated data at district level for such communicable diseases, so that districts with endemic prevalence of specific diseases can be identified. This would help in the formulation of micro-plans and strategies- both preventive and curative- that would target the complete elimination of such diseases from the affected pockets.

5.6.4 NCDs account for 60 per cent of total deaths in India. For non-communicable diseases, primary care including for the prevention of hypertension and diabetes, and screening is provided under the National Programme for Prevention and Control of Cancer Diabetes, Cardiovascular Diseases and Stroke (NPCDCS). The programme also deals with secondary prevention through routine follow up with medication to prevent strokes and ischemic heart disease. Till March 2016, the programme is being implemented in 468 districts with 318 district NCD clinics in DHs and 1,705 in CHCs. Seventy one Cardiac Care units have been set up. 418 districts have so far been sanctioned in the ROPs communicated to 34 States/UTs under the NPHCE, to provide dedicated health care facilities upto districts hospital to the elderly people in the country. Under the tertiary level activities of the Programme namely *RashtriyaVarishth Jan SwasthyaYojana (RVJSY)', 18 medical institutes have so far been funded to develop Regional Geriatric Centres (RGCs) in different parts of the country. Also, AIIMS, New Delhi and MMC,^ Chennai have been funded to establish National Centres of Ageing (NCAs) each in the premises of these institutions. In addition, a Longitudinal Ageing Study in India (LASI) project has been launched by the Ministry of Health and Family Welfare in collaboration with other International partners at VigyanBhawan, New Delhi on 22nd March, 2016 under tertiary level activities of the programme to assess the health status of the elderly (age45-60 years). The main objectives of the study are to provide comprehensive evidence based on health and well-being of the elderly population in India.

5.7 Public Health:

5.7.1 The Twelfth Plan recognizes that a major weakness of our health system is its insufficient focus on public health. Therefore a slew of initiatives have been taken which include, but are not limited to, the strengthening of the eight existing branches of the National Centre for Disease Control (NCDC); the opening of 27 new branches of the NCDC, the setting up of a Central Surveillance Unit (CSU) in Delhi, State Surveillance Units (SSUs) in all State/UT headquarters and District Surveillance Units (DSUs) in each district. Under the Integrated Disease Surveillance Programme (IDSP), Surveillance units have been established at Centre (CSUs), State /UT (SSU) and Districts (DSU) and over 96% of districts re reporting on a weekly basis. 2,679 early warning signals (EWS)/outbreaks were detected by IDSP and 117 District labs have been made functional as on December 2016.

5.7.2 **Data Collection:** As per therecommendations of the Twelfth Plan, it had been proposed that the Central Bureau of Health Intelligence (CBHI) work as a National Institute of Health Intelligence (NIHI). One of its objectives will be to collect, analyze and disseminate data related to the health sector for evidence based policy decisions, planning and research.

5.8 Instruments for Service Delivery

5.8.1 **Effective Governance:** The NHM framework identifies the role of Village Health Sanitation and Nutrition Committee (VHSNC) as the forum for grass root level action to address the common social determinants of health. They will converge various initiatives at the village level. It envisages the involvement of ASHA, ANM and Anganwadi Workers (AWWs) in training programmes (components of training include sanitation, drinking water, health & hygiene, the prevention and identification of malnutrition, safe water storage &

distribution, the building and use of toilets, and hand washing as well as IEC for behavioural change for these interventions. Box 5.1 discusses how Gram Arogya Kendras in Madhya Pradesh already serve as platform for convergence of the Integrated Child Development Services (ICDS) and Health.

Box 5.1: Best Practices of Convergence

Gram Arogya Kendra (GAK): Madhya Pradesh

MoH&FW with Ministry of Women and Child Development (WCD) under the "Health for All" initiative established 49,000 Anganwadi-cum-GAK in each village. The first layer of provision of health services was through ASHA and ANM. They were further supervised by the sector supervisors and sector medical officers (i.e. the medical officer of the area PHC). Together they are called Swasth Gram Prahari Dal.

1. **They serve as a platform for the convergence of health and nutrition services.**
2. **They decentralize health service delivery and reaching the last mile**:

They ensure the timely availability of maternal and child health services and the early identification of potential disease conditions**.**

3. **They address the second of the 'three delays' (delay in reaching the facility)**:

By co-locating the AWC and GAK, all women and child-related services are available in one place, and the community can easily understand the links between health and its determinants like nutrition, water and sanitation.

4. **They serve as a single unit for all village health records.**

5.8.2 **Convergence with other SectoralProgrammes:**

Rashtriya Bal Swasthya Karyakram (RBSK) which was launched in 2013 provides child health screening and early interventions services by expanding the reach of mobile health teams at block level. These teams carry out screening of all the children in the age group 0-6 years enrolled at Anganwadi. Centres twice a year and children 6-18 years enrolled in government/government aided schools, once a year. RBSK covers 30 common health conditions, including- early detection of birth defects, diseases, deficiencies and development delays (4 Ds). The programme also works in tandem with the Ministry of Women and Child Development, Ministry of Social Justice and Empowerment and Ministry of Human Resource Development.

5.8.3 **3Accountabilityfor Outcomes:** The model for accountability includes a three tier structure wherein the Mission Steering Group (MSG) oversees the programme implementation and governance at the national level: the State Health Mission and the governing body of the State Health Society does so at the State level; and the District/ City Health society does so at that level. At the facility level, the RogiKalyanSamiti (RKS) will play a similar role in ensuring accountability to the community. Another major accountability mechanism is the DISHA Committee, which functions under the chairpersonship of the local Member of Parliament and includes participants from Panchayti Raj Institutions (PRIs) and all related social sectors in the district. The NHM also encourages community oversight to the programme through the mechanism of social audit and periodic concurrent and statutory audits. Common Review Missions, with participation from the Ministry, partners, civil society organizations and public health experts are another mechanism to review the programme performance on an annual basis.

5.9 Regulatory Framework

5.9.1 **Health and Medical regulation:** The "Central Drugs Standards Control Organization"(CDSCO) has been functional for quite some time now and has been regulating medical products such as drugs, and medical devices, it also oversees the conduct of clinical trials. The "Food Safety & Standards Authority of India" (FSSAI) has been functional since 2008.

5.9.2 Efforts are being made to strengthen CDSCO to enable it to take decisions for the safe use of medicines. However, much remains to be accomplished: for one, drug regulation needs to be reformed to prevent the Centre and States jurisdictions from overlapping. In addition the Drugs and Cosmetics Act, 1940 needs to be amended so that it applied to medical devices in addition to the drugs. A beginning has been made by framing separate rules for medical devices. Rules have been framed for the regulation of clinical research and trials to ensure the safety of clinical trial participants; however this is still a work in progress and further refinement would be necessary

5.9.3 **The FSSAI** is undertaking a major e-Govcrnance exercise for ensuring greater transparency and also to create awareness on food safety matters. Its website (www.fssai.gov.in) has been fully operationalized and the information is extensive and updated. The electronic, print and social media is also being used for this purpose.

5.9.4 **Regulation of medical practice:** The Clinical Establishments Act 2010 is now applicable in ten States namely Arunachal Pradesh, Bihar, Himachal Pradesh, Jharkhand, Mizoram, Rajas than, Sikkim, Uttar Pradesh, Uttarakhand, Assam and all SixUnion Territories, except Delhi. Draft minimum standards in standard formats have been prepared for major categories of clinical establishments and for 33 categories of specialty / super specialty-wise departments.Standard Treatment Guidelines for 21 medical domains have been finalized. Similarly, draft formats for collection of statistics from clinical establishments have been finalized. The Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act, 1994 is also being enforced in all States through proactive measures.

5.10 Medical Education and Human Resources in Health

5.10.1 According to the records of the Medical Council of India (MCI), there were 9.29 lakh doctors in the Indian Medical Register as on 31st March 2014. Assuming 80 percent availability, it is estimated that, around 7.4 lakh doctors may actually be available for active service. That means a doctor to population ratio of 1:1,674 against the WHO norm of 1:1,000. There are also an estimated 7.71 lakh Ayurvedic, Unani, Siddha, Naturopathy and Homeopathic practitioners. If they are included that would means the availability ratio rises to 1:855. This could happen only through amending State level law about registration of doctors and providing an enabling provision to also allow the enrolment of Indian System of Medicine (ISM) professionals in the State medical register.

5.10.2 To encourage doctors working in remote and difficult areas, the MCI with the approval of the Central Government has amended the Post Graduate Medical Education Regulations, 2000, thus to provide 50% per cent reservation In Post Graduate diploma courses for government medical officers in the Government service, who have served for at least three years in remote or difficult areas, An incentive of 10 per cent of the marks obtained in the entrance test up to the maximum of 30 per cent will be granted to such officers.

5.10.3 Bachelor of Science (Community Health) course has been approved to create mid-level health professionals to be primarily deployed at sub-centres, currently manned by an Auxiliary NurseMidwife (ANM). These graduates would be expected to possess the necessary public health and ambulatory care competencies to serve rural population. Assam, Chhattisgarh and Jharkhand have shown willingness to adopt the course and include the same in their State programme implementation plant (PIPs) for the NHM.

5.10.4 To strengthen India's medical human resources base in terms of general physicians, specialists and paramedics, a number of Centrally Sponsored 'Schemes have been initiated in the Twelfth Plan. These include:

i. The establishment of new medical colleges (upgrading district hospitals): 22 have been approved.

ii. Setting up of 14 more AIIMS in different states will increase the intake of UG seats by 100 per institute per batch and BSc. Nursing seats by 60% per institute per batch when completed. Subsequently, PG courses will be started in all these AIIMS, increasing PG seats as per prevalent norms.

iii. Financial assistance to strengthen and upgrade 72 government medical collages to increase the number of Post Graduate seats by 4,000 nos.

iv. Setting up 36 State level institutions of allied health sciences in government medical colleges with an annual through put of 4,680 allied health ,professionals.

v. Setting up 45 pharmacy colleges with an annual output of 5,400 pharmacists.

vi. In the Twelfth Plan, a National Institute of Paramedical Science (NIPS) at Najafgarh, Delhi and five Regional Institutes of Paramedical Sciences (RIPS) at Bhubaneswar, Nagpur, Chandigarh, Coimbatore and Bhagalpur have been approved. These are aimed at bridging the gap between the need for and the availability of paramedical professional. They would also function as centres for improving the quality ofparamedical training.

5.11 Health Information System

5.11.1 **NHM** envisages a fullyfunctional health information for effective decision-making. /This requires information of service delivery, data both aggregate and granular, including HMIS, MCTS, Hospital information System data, Revised National TB Control ProgrammeIDSP,Clinical Establishments Act, PCPNDT implementation. The output of these systems also needs to be linked for display in the GIS application. States/ UTs are uploading facilities wise information on the national HMIS Portal. A fully functional health information system is yet to be put in place.

5.11.2 Recent e health initiatives taken by MoHFW include **Kilkari** that delivers free, weekly, time-appropriate 72 audio messages about pregnancy, child birth and child care directly to families' mobile phones from the second trimester of pregnancy until the child is one year old. Kilkari has been launched in Jharkhand, Odisha, Uttar Pradesh, Uttarakhand, Madhya Pradesh,Himachal Pradesh, Delhi, Bihar and Rajasthan.

ANM Online, a tablet based application allows ANMs to enter and update the service records of beneficiaries on real / near real time basis and also acts as a job aid. ANMOL has been successfully implemented in the entire State of Andhra Pradesh and is currently being used by 11,865 ANMs in the State.

Mobile Academy, a free audio training course designed to expand and refresh the knowledge base of Accredited Social Health Activists (ASHAs) and improve their communication skills, has been implemented across five States.

E-RaktKosh initiative, acentralized blood bank management system to provide information on availability of nearest blood bank, status of a particular blood group in blood banks, navigator assistance and automation of blood bank services apart from donor registries and promotion of voluntary donation in phased manner has also been implemented.

MeraAspataalthat captures patients' feedback about their experience in the health facilities on the services that they received or sought to receive, to make health care delivery in public health facilities more patient centric and accountable.

5.11.3 Best practices adopted for Health Information System by the States are depicted in **Box 5.2**.

Box 5.2: Best Practices for Information Technology in Health

i. **Madhya Pradesh:** The State has started maternal death reviews through Skype with the nodal officers of each district.

ii. **Lakshadweep:** The Union Territory of Lakshadweep has achieved 100 per cent in birth and death registration, institutional deliveries, immunization and through their sustained efforts.

iii. **Gujarat:** GIS mapping has been effectively utilized to select the best location for new health facilities in poorly serviced area. The Government of Gujarat has also sanctioned High Impact Interventions in 77 high priority talukas through a Special Purpose Vehicle (SPV).

iv. **West Bengal:** Web enabled software **Store Management Information System (SMIS)** has been introduced in all health units. The procurement through the system is being done by the health units up to the level of Sub Divisional Hospital (SDH) to generate procurement orders against fund allotment.

v. **Haryana :** Has taken up on a pilot basis , the online Birth Registration Process leading to the generation of the Aadhar identity of the newborn. Scaling up is now under process.

5.12 New and Upgraded Medical Institutions

5.12.1 Two major Central Sector Schemes namely Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) and Redevelopment of Hospital/ Institutions which provide funding to Institutions namely AIIMS, New Delhi, PGIMER, Chandigarh, JIPMER Puducherry, Safdarjang Hospital & Medical college, New Delhi etc.: together account for 51.61 per cent of the Twelfth Plan allocation for Medical Education of the Central Sector allocation for Medical Education.

5.12.2 The objective of PMSSY is to correct the imbalances in availability of affordable/reliable tertiary level healthcare in the country in general and to augment facilities for quality medical education in the under-served areas by setting up AIIMS or AIIMS like Institutions at the regional level. The three new AIIMS at Andhra Pradesh, Maharashtra and West Bengal will have a 960 bed hospital intended to provide healthcare facilities in 42 speciality or super speciality disciplines. New AI1MS at Bathinda, Gorakhpur and other upcoming A1IMS will have a 750 bed hospital with 39 speciality or super speciality departments.

5.12.3 In all, the six new AIIMS, set up under the first phase of PMSSY, the medical colleges and nursing colleges have begun admitting students and the hospitals have been made functional for MBBS and B.Sc. (Nursing) teaching purposes. In the second phase of PMSSY, 2 more AIIMS like institutions have been approved to be set up at Rae Bareli in UP and in West Bengal. The project in west Bengal shall be established in Phase-IV. Under phase-IV of PMSSY, the four announced AIIMS in Andhra Pradesh, West Bengal, Maharashtra and Gorakhpur have been approved by the Union Cabinet. In the fifth phase, seven AIIMS have been announced at Jammu, Kashmir, Punjab, Assam, Bihar, Himachal Pradesh and Tamil Nadu. Cabinet has approved setting up of AIIMS in Bathinda, Punjab.

73 government medical colleges have been approved for upgradation under different phases of PMSSY. Of the 13 existing government medical colleges selected for upgradation under the first phase, 10 have been completed. 6 existing government medical colleges have been taken up under second phase, out of which 3 have been completed. 39 existing government medical colleges are being upgraded under the third phase. 13 existing government medical colleges have been approved for upgradation under fourth phase. Also, 2 government medical colleges have been approved by the Ministry to be upgraded under PMSSY.

5.12.4 **Redevelopment of Hospitals/Institutions:** This scheme aims at creating and improving the infrastructure of nine Central Government hospitals or institutions during the Twelfth Plan. The proposals for infrastructure development under this scheme have been received for the establishment of a National Cancer institute at Jhajjar in Haryana and for construction of a new OPD building at Masjid Moth Campus at AIIMS, New Delhi, for the setting up of a satellite centre of PGIMER Chandigarh at Sangrur, for the redevelopment of SafdarjangHospital, New Delhi (Phase-I) and for establishment of JIPMERInternational School of Public Health at JIPMER, Puducherry.

5.13 Indian System of Medicine and Homeopathy (AYUSH)

5.13.1 The strength of the AYUSH system lies in preventive and promotional health care, diseases and health conditions relating to women and children, non-communicable diseases, geriatric healthcare stress management, palliative Care, rehabilitation and so on. The Department of AYUSH has been elevated to a full-fledged Ministry with effect from 9th November 2014. Moreover, responding to the India initiative, the United Nations has declared 21st June as International Yoga day which was celebrated with fervour across the globe on 21st June, 2015 and second on 21st June, 2016. The following is the status of key recommendations of the Twelfth Plan with regard to AYUSH.

5.13.2 **Integration of AYUSH facilities:** The Government of India has adopted a strategy of co-location of AYUSH facilities at Primary Health Centres, Community Health Centres and District Hospitals. The engagement of AYUSH Doctor / paramedics and their training is supported by the Department of Health & Family Welfare, while support for AYUSH infrastructure, equipment / furniture and medicines is provided by Ministry of AYUSH under the National AYUSH Mission. So far, AYUSH facilities are providedin 50 per cent of CHCs and 37 percent of PHCs.

5.13.3 **National AYUSH Mission:**Four erstwhile Centrally Sponsored Schemes of the Ministry of AYUSH namely development of AYUSH Hospital and Dispensaries:

Development of AYUSH Educational Institutions: Development of Quality Control of Ayurveda, Siddha, Unani and Homoeopathy (ASU8&H) Drug and the National Mission on Medical plants have been merged into a single 'National AYUSH Mission to support the efforts of State/UT Governments to provide AY'USH health services/education in the country, particularly in vulnerable and far-flung areas. The concept of AYUSH Gram - as envisaged in Twelfth Plan document- is also covered under the National AYUSH Mission. The responsibility for developing system - wise standard treatment guidelines in AYUSH has been given to the National Institute of Siddha, in Tamil Nadu, the National Institute of Homoeopathy, in Kolkata, the National Institute of Unani Medicine, in Bengaluru, the National Institute of Ayurveda, in Jaipur, Institute of Post Graduate Teaching and Research in Ayurveda in Jamnagar, the Morarji Desai National Institute of Yoga, in New Delhi and the National Institute of Naturopathy, in Pune.

5.13.4 **Medicinal Plants:** A thrust is being provided for the conservation and cultivation of medicinal plants, the livelihood augmentation of communities by value addition to raw material, R&D, and facilitating quality assurance. A start has been made to support setting up of common facilities for testing, certification, standardization, quality control facilities and other capacity building measures in ten AYUSH industry clusters in different regions. To ensure internationally acceptable standards for AYUSH drugs, a Pharmacopeia Commission of Indian medicine and homoeopathy has been established. Steps have also been taken for global promotion of the AYUSH systems. Ministry of AYUSH has signed MOU with World Health Organization for cooperation on traditional medicine.

5.13.5 **Research and Quality Assurance:** An AYUSH research portal has been operationalized and augmented with about 22979 to promote evidence- based practice and research in AYUSH and project scientific developments in the AYUSH sector. A voluntary quality certification mechanism for granting standard and premium marks has been put in place under the aegis of Quality- Council of India (QCI). National Medicinal Plant Board (NMPB) has finalized a scheme for the voluntary certification of raw materials from medicinal plants in collaboration with the Quality Council of India (QCI). Organic cultivation and certification of medicinal plants, is being supported by NMPB under its schemes. Deviating from the existing practice of a common legislation and regulatory system for allopathic and AYUSH medicines, the Ministry has decided to have a separate legislation for regulation of AYUSH drugs and set up Central Drug Controller for AYUSH.

5.13.6 **Human resource:** Theprogress of reforms in AYUSH undergraduate and postgraduate education has been slow. It is proposed to link the major AYUSH education institutes with a broadband network under National Knowledge Network (NKN). This will help to connect the National Institutes under AYUSH with other important institutes such as AIIMS, IITs etc.

5.14 National AIDS Control Programme (NACP)

5.14.1: India is estimated to have around 86000 annual new HIV infections in 2015, showing 66% decline in new infections from the year 2000 and 32% decline from 2007, the base year for NACP-IV. Adult HIV prevalence has decreased from 0.41% in 2001 to 0.26% in 2015 with 21.17 lakhs people living with HIV/AIDS in the country according to HIV estimations 2015 technical report of NACO. The Department of AIDS Control has since been merged with the Department of Health & Family Welfare, common policy and oversight mechanisms have been set up in NRHM-NACP Coordination Committee (NNCC) at the National level, and the Joint Programme Management Committee (JPMC) at the State Level.

5.15 Department of Health Research

5.15.1 The Indian Council of Medical Research (ICMR) has been pursuing national health objectives. It channelizes its research endeavours towards the control and management of communicable diseases, fertility control, and maternal & child health, the control of nutritional disorders developing alternative strategies for healthcare delivery, research into major non-communicable diseases such as cancer, cardiovascular disease and other metabolic and haematology disorders, environmental health, mental health, etc. Health research for marginalized sections of the population and tribal communities continues to be a priority for ICMR. In addition to the health/medical research activities undertaken by ICMR and funding of extramural research projects, the DHR has launched five schemes to promote health research in the country.

5.15.2 **Health research governance:** The setting up of Medical Technology Assessment Board (MTAB) for undertaking health technology assessment on cost effectiveness and appropriate technology for public health choice is in process.

5.16 Financing for Health

5.16.1 As would be clear from Table 5.3 the overall financial releases have been far short of the levels desired by the Twelfth Plan. Moreover with the acceptance of recommendations of the Fourteenth Finance Commission (FFC) resulting in increased devolution of untied funds to the State Government and the change in the funding pattern of the Centrally Sponsored Schemes (from 75:25 to 60:40); it is imperative that State Government commit a part of the increased untied devolution to the health sector, in order to achieve the targeted goals in this sector.

5.16.2 **Other models of financing -Public Private Partnership (PPP):** Twelfth Plan has recommended PPP as an opportunity to tap the material, human and managerial resources of the private sector for public good. Pathological and radiological diagnostic services (including CT scan and tele- radiology systems), dialysis services, bio-medical equipment maintenance programme, ambulance services, mobile medical units, bio-medical waste disposal, operation of PHCs and sub centres are being implemented under PPP mode for which national guidelines have been disseminated. Some examples of PPP are enumerated in Box 5.3.

Table:5.3 : Financing for Health: 12th plan Funding (Rs. in crore)

Ministry/ Department	12th Plan Outlay	Approved Outlay	2012-13	2013-14	2014-15	2015-16	2016-17	Total	Approved Outlay as % age of 12th Plan Outlay	AE as % age of Approved Outlay	AE as % age of 12th Plan Outlay
			Actual Expenditure (AE)								
MoH&FW and Mo AYUSH	300018.00	**158214.17**	23265.16	25072,86	26021.40	28610.84	29949.59	132919.85	52.73	84.01	44.30
H&FW	268551.00	**142786.00**	20908.18	22476.66	23684.66	25468.12	28120.76	120658.38	53.17	84.50	44.93
NHM (CSS)	193405.71	**102248.00**	16762.75	18215.44	18039.3	18282.38	18216.76	89516.63	52.87	87.55	46.28
Health (CS)	75145.29	**40538.00**	4145.43	4261.22	5645.36	7185.74	9904.00	31141.75	53.95	76.82	41.44
Health Research	10029.00	**3575.17**	460.31	569.62	590.64	648.52	915.29	3184.38	35.65	89.07	31.75
AIDS Control	11394.00	**6667.00**	1316.07	1473.16	1286.96	1605.34	0	5681.53	58.51	85.22	49.86
AYUSH	10044.00	**5186.00**	580.6	553.42	459.14	888.86	913.54	3395.56	51.63	65.48	33.81

Actual Allocation (AE)
NHM plan outlay for 2016-17 also include plan outlay of RSBY of Rs. 1500.00 crore
2016-17: AIDS merged with DOHFW
Expd. Provisional as on 08.03.2017 for DoHFW, HR, and AYUSH as on 16.03.2017

Box 5.3: Best Practices for Public Private Partnership

1 **West Bengal :** 68 fair price outlets have been set-up for the supply of medicines, consumables and implants in government hospitals through PPP, offering 48 per cent to 67.25 per cent discount on MRP under PPP arrangements. Fair price diagnostic centers and dialysis units have also been set up.

2. **Lakshadweep:** Specialty hospital and dialysis units have started functioning in the Lakshadweep Islands under PPP mode with all modern amenities.

3. **Gujarat: Mukhyamantri Amrutam (MA) Yojana :** The scheme provides "cashless," quality tertiary medical and surgical care to the members of BPL families with a chain of 63 empanelled hospitals (44 private hospitals) providing up to a sum of Rs. 2 lakh per family, per year, on a family floater basis including new born children from day one. This is not an insurance based scheme as it is 100 per cent funded by the State.

5.17 Summary of main learnings:

5.17.1 Despite significant improvements in health indicators and achievement of Millennium Development Goals to a large extent, the targets of the Twelfth Plan were largely missed, especially with respect to maternal and child health. The large supply-side gaps (for which data is available) that may be partly associated with these outcomes is the lack of adequate health facilities (20 per cent and 23 per cent shortfall of sub- centres and PHCs respectively) and health workers (particularly shortage of specialists (81.19 per cent) to staff the facilities; gaps which must be filled up on priority.

5.17.2 A number of new/improved schemes were introduced during the course of the Plan period (Mission Indradhanush, Rashtriya Bal Swasthya Karyakram, transfer of RSBY to MoH&FW, NHM Free Drugs and Diagnostics Initiative etc) that are aimed at addressing multiple national health goals. The overall impact of these schemes will have to be evaluated in due course to guide further policy measures in health.

5.17.3 52.73 per cent of the envisaged total 12th Plan Outlay was actually allocated during the period, of that utilisation (AE) is about 84.01 per cent. The utilisation as per percentage of 12th Plan Outlay is about 44.3 per cent..

5.17.4 Initiatives like Kayakalp encourage public health facilities in the country to work towards standards of excellence to help the facilities stay clean and hygienic. This does not apply only to physical cleanliness, but to develop and put in place systems and procedures for activities such as bio-waste disposal etc. Without much expenditure, this programme is expected to have a large impact on the utilization of public health facilities.

5.18 The Way Forward

5.18.1 **Inclusive Growth:** In order to achieve the goal of inclusive growth, inter-State and inter-district disparities need to be addressed. This is all the more important if Twelfth Plan monitorable goals are to be achieved not only at the National level but also at the State level. The Southern States have far exceeded the benchmarks for MMR, IMR and TFR, while the EAG States, despite witnessing a rapid decline on these parameters, still remain short of their targeted outcomes. These States are not only deficient in health infrastructure but also in human resources for health. One way to address this is by revising the formula for allocation of funds to States under the National Health Mission (NHM). Currently, the allocation is based on socio economic and health lag. The formula should have an appropriate balance of the distance from the mean achivement backwardness criteria and incremental performance of the health systems (As measured through the NITI Index developed specifically for this purpose).

5.18.2 **Flexibility to States:** The States may be given flexibility by allowing programmatic decisions to be taken at the state level by the Chief Secretary of State as Chairman of the State Level Sanctioning Committees as in the Rashtriya Krishi Vikas Yojana (RKVY).

5.18.3 **States need to be incentivised:** Consequent on the recommendations of FFC, total devolution to the States in 2015-16 was higher by Rs. 1.78 lakh crore i.e.

from Rs 3.48 lakh crore in 2014-15 to Rs 5.26 crore in 2015-16. States need to be incentivised to allocate a larger proportion of these funds on health.

5.18.4 **Fully functional Health Information System (HIS):** A fully functional HIS should include: universal registration of births, deaths and cause of death. Maternal and infant death reviews, nutritional surveillance among women & children, out- patient and in-patient information through Electronic Medical Records (EMR) to reduce response time in emergencies & help in hospital administration, data on human resources within the public & private health system, financial management in the public health system, a national repository of teaching modules, Tele-medicine and consultation support to doctors at primary and secondary facilities from tertiary centres, nationwide registry of clinical establishments, blood banks, drug testing laboratories etc. should also be included.

5.18.5 **Focus on Public Health:** There is an urgent need for a dedicated Public Health Cadre with support team comprising epidemiologists, entomologists, public health nurses, inspectors and male Multi-Purpose workers. All public health facilities should be compliant with the Indian Public Health Standards (IPHS). IPHS standards need to be defined for all existing and upcoming tertiary level institutions.

5.18.6 **Integration/Co-location of AYUSH facilities:** The strength of the AYUSH system lies in preventive and promotional health care, which needs to be leveraged to reduce the load on already overburdened curative care facilities.

B. BETTER EDUCATED INDIA

5.19 The Twelfth Plan's Aims for Education

5.19.1 To take advantage of the youth bulge in order to improve the productivity and competitiveness of the economy, not just the health but also the education level of the population need to be focused on, in order to enhance employability. Education is also an important tool for enhancing socio-economic mobility as it provides skills and competence for improved participation. The Twelfth Plan has a special focus on the expansion of education, improving the quality of education and ensuring that all segments of the society get equal educational opportunities. This special emphasis on education has led to an increased allocation of resources for the education sector as a whole. The Twelfth Plan aims at improving Mean Years of Schooling (MYS) from 5.7 to 7 years by the end of the Plan; reducing drop-out rates; enhancing access to higher education by creating additional capacities in the higher education institutions which will be aligned to the skill needs of the economy, and eliminating all kinds of divides specially in terms of gender and social gaps in enrolment by the end of the Plan. It also emphasizes on improving attendance; reducing dropout rates; increasing the overall literacy rate and improving the quality of higher education. Accordingly, the Plan aims at achieving near-universal enrollment in secondary education with a gross enrolment ratio (GER) exceeding 90 per cent; raising GER at senior secondary level to 65 per cent; reducing the drop-out rate to less than 25 per cent; ensuring quality secondary education and implementing common curricula and syllabi of nationally acceptable standards for science, mathematics and English across the country.

5.19.2 The following sections cover the progress made in elementary education, secondary education and higher education during the course of the Twelfth Five Year Plan.

5.20 School Education and Literacy

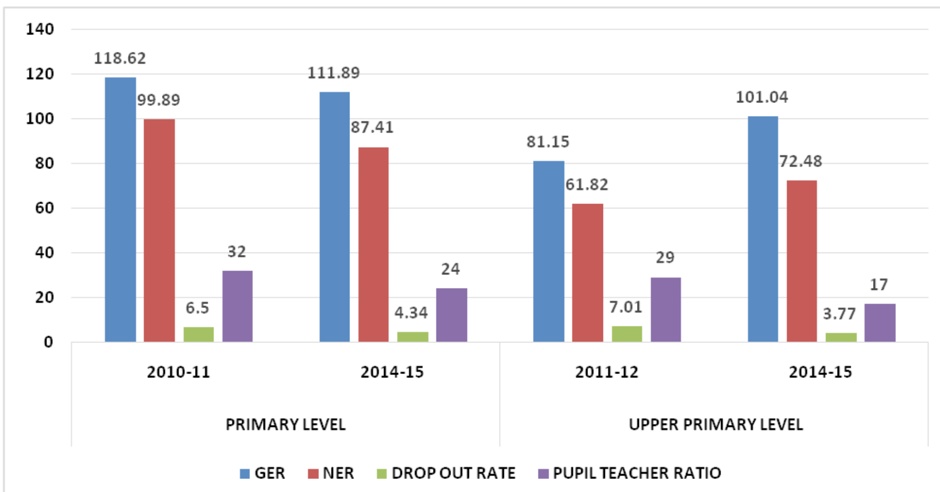
5.20.1 The priority areas for education policy have been access, equity, quality and governance. The Twelfth Plan focuses on these but lays more emphasis on improving learning outcomes at all levels. As per Census 2011, the literacy rate of India was 72.99 per cent against which the Twelfth Plan target is 80 per cent. The gender gap in literacy was 16.25 per cent in 2011 against which the Twelfth Plan target is below 10 per cent.

5.21 Elementary Education

5.21.1 The elementary education sector has witnessed a near universalization of education (more than 90 per cent habitations covered) and strengthening of physical infrastructure in terms of school buildings and additional classrooms. Sarva Shiksha Abhiyan (SSA), within the Right to Education, has been the main vehicle for increased access. The transition rate from upper primary to the secondary level has gone up to 90 per cent and the dropout rate at upper primary stage has gone down to 3.77 per cent.

5.21.2 Enrolment at the elementary level under the SSA has increased from 19.28 crore in 2010-11 to 19.77 crore in 2014-15 and the number of schools has increased from 13.62 lakh in 2010-11 to 14.45 lakh in 2014-15. The average dropout rate significantly reduced to 4.34 per cent at primary stage and to 3.77 per cent at upper primary stage in 2014-15, indicating an improvement in the retention rate. The SSA has also led to significant reduction in the Out of School Children (OoSC), from 134 lakh in 2005 to 61 lakh in 2014. This constitutes 3.05 per cent of the total children in the school going age cohort as against the Twelfth Plan target of below 2 per cent. Incidentally, a GER of more than 100 per cent at primary level indicates enrolment of under and over aged children compared to the 6-11 age target group. The performance of major educational indicators in primary and upper primary levels is given below in **figure 5.4.**

Figure 5.4 : Major Education Indicators in Primary and Upper Primary Levels



Source: DISE. Reports for various Years

5.21.3 With the objective of reducing the gender gap, in enrolment, particularly among marginalized sections of society, Kasturba Gandhi BalikaVidyalayas (KGBVs), now an integral part of SSA, have been set up in educationally backward blocks. As of now, 3,609 KGBVs have been sanctioned in the country, out of which 3,600 are operational. The total enrolment in the KGBVs is 3.48 lakh girls, out of which 30 per cent are from SCs families, 25 per cent from STs, 31per cent from OBCs, 7 per cent from minority and 6.6 per cent from other below-poverty-line (BPL) families. An evaluation of KGBVs was conducted by NUEPA and some of the major findings have been given in **Box 5.4**. The infrastructure development at the elementary level under SSA has been very good with almost 90 per cent of the civil work under various activities viz. new schools, additional class rooms, drinking water, toilets both for girls and boys completed till March 2015. A new Scheme *Beti Bachao Beti Padhao* has also been initiated in 2014-15 to focus on girls' education. A small deposit scheme for girl children namely 'Sukanya Samridhi', has also been launched as part of the 'Beti Bachao Beti Padhao', which would fetch an interest rate of 9.1 per cent and provide a rebate on income tax. A 'Sukanya Samridhi account' can be opened at any time from the birth of a girl child till she attains the age of 10 years, with a minimum deposit of Rs. 1,000. A maximum of Rs 1.5 lakh can be deposited during a financial year.

5.21.4 The Twelfth Plan also envisages expansion of the Mid-Day Meal Scheme (MDMS) in a progressive

Box 5.4 : Evaluation of KGBV

i. Learning outcome- students living in the KGBV hostels were faring far better than their peers in the regular schools mainly due to additional academic support, a stress-free environment, with the time and space to study along with the opportunity to learn from peers.

ii. There is a lot of variation across States and even across districts in the same State with respect to recruitment processes, student-teacher ratios, qualifications for 'full time' and 'part time' teachers, salary structure, conditions of employment, job description, leave rules and pupil-teacher ratios.

iii. Many States have full time male staff and in many KGBVs, that this team visited, male staff had unrestricted access to the living quarters of the girls.

iv. Across students (most of whom are from socially and economically disadvantaged sections of society) complaints of persistent hunger and inadequacy of food were received, while growing children need adequate and nutritious food.

v. The identification of students is done in an ad-hoc manner.

vi. The percentage representation of special focus groups is fairly good and reflects their size in the population. However, the programme is not reaching out to out-of-school girls.

vii. The basic issue is that sustainability remains a big question in many States, especially in States that have budgetary constraints and in States where there is little ownership of the programme.

viii. In most States the BRC, CRC or the DIET are not linked to the KGBVs.

Source: NUEPA Evaluation Study of KGBV in 2013

manner, with support to children in private schools (25 per cent EWS quota), particularly in SC/ST and minority concentrated areas, besides bringing about convergence with school health programme. The coverage under MDMS is 10.03 crore children during 2015-16. The MDMS is also a source of livelihood for people, and particularly women, as it engages about 25.52 lakhs cook-cum helpers by States/UTs out of which 80 per cent are women. The social audit system for MDMS has also been launched on a pilot basis in Andhra Pradesh.

5.22 Secondary Education

5.22.1 The near-universalization of elementary education and improvement in transition rates, particularly amongst the disadvantaged groups, has led to increased pressure on the existing secondary education infrastructure. GER at secondary level increased from 65 per cent in 2010-11 to 80.01 per cent in 2015-16, and in the higher secondary level from 39 per cent to 56.16 per cent in the corresponding period. The number of secondary/senior secondary schools has increased substantially from 2.06 lakh in 2010-11 to 2.52 lakh in 2015-16. These and other achievements are outlined in **Box 5.5**. Various schemes and institutions like, the Rashtriya Madhyamik Shiksha Abhiyan (RMSA), Model Schools, National Council of Educational Research & Training (NCERT), Navodaya Vidyalaya Samiti (NVS), Kendriya Vidyalaya Sangathan (KVS), National Institute of Open Schooling (NIOS) and Central Tibetan Schools Administration (CTSA) are instrumental in striving to achieve the above vision.

5.22.2 Progress under two major CSSs in Secondary Education, namely the Rashtriya Madhyamik Shiksha Abhiyan (RMSA) and Scheme for Setting up of 6,000 Model Schools at block level, has not been sufficiently satisfactory. This is because of a lack of proposals being received from the States and problems related to land availability and acquisition. In terms of infrastructure development at secondary level, there is a shortfall of about 28 per cent in the construction of new schools and the strengthening of existing schools. In addition, a large number of vacancies for teachers (about 14.78 per cent) remain unfilled despite an acute shortage of teachers. The progress made so far suggests that the targets for the appointment of additional teachers and the construction of additional classrooms are unlikely to be achieved. However, the targets for strengthening of existing schools and the opening of new schools can be achieved provided sustained efforts are made in the remaining Plan period. The RMSA has been broad-based to include schemes such as ICT@Schools, Vocationalisation of Education, Girls' Hostel and

Inclusive Education of Disabled at Secondary Stage and the revamped scheme has been operating since 2013-14. The Rashtriya Madhyamik Shiksha Abhiyan (RMSA) is a Centrally Sponsored Scheme and there has been substantial progress since inception in the major Educational Indicators (annexure-A) including opening of new schools.

The Model Schools schemes was also a Centrally Sponsored Schemes started w.e.f 2009-10 wherein 3500 Model Schools were propose for EBBs and 2500 were to be opened under PPP model. Till March 2015, MHRD had approved 2490 schools in 23 states in EBBs.

It is further submitted that for RMSA, an allocation of only Rs. 4562 crore as against approved outlay of Rs.20,120 Cr. Was made during the 11th Plan and an allocation of only Rs.17,040 crore as against approved outlay of Rs. 32,846 crore was made during the 12th Plan. In case of Model Schools also, against the projection of requirement of Rs. 36000 Cr., only Rs. 6000 was allocated during the period of 12th Plan.

5.22.3 To improve outreach and accessibility particularly in educationally backward blocks (EBBs) in the rural areas, 6,000 Schools, one schools per block (3,500 in EBBs and 2,500 in non EBBs in PPP mode) were to be set up.

Till 31sth March 2015,2490 schools in EBBs in 23 states had been approved, after which the scheme for setting up of 6000 schools at block level as Benchmark of Excellence was delinked from Union support. No school was awarded under PPP component of scheme. The Union Budget for 2015-16 has delinked the Scheme from Central support and transferred to the States.

The States of Andhra Pradesh, Telangana Tamil Nadu, Jammu & Kashmir, Odhisa and Rajasthan etc., have as State initiative started Model Schools which are reported to be running successfully.

5.22.4 Further, to improve access and outreach at the secondary level, there is a proposal to upgrade secondary schools and ensure their availability within 5 kms. This would help to absorb the increased transition rate from the upper primary level.

5.22.5 To address the educational requirements of children of paramilitary forces, particularly those affected by extremism, and in areas with high concentration of Railways and other Central Government employees, the Central Government has also been administering the Kendriya Vidyalayas (KVs) in various locations including metro cities and defence areas. However, progress in the establishment of KVs is slow as only 54 KVs have been sanctioned up to 2014-15 as against the target of 500. The Twelfth Plan had envisaged a mentoring role for the KVs so as to extend their facilities after school hours to students of government schools. In addition, to serve the objectives of excellence coupled with equity and social justice, Jawahar Navodaya Vidyalayas (JNVs) have been set up predominantly to attract talented students from rural areas. Out of a total of 598 JNVs sanctioned, 588 are operational in rural areas..

5.22.6 Further, in Union Budget 2016-17, 62 new NavodayaVidyalayas are proposed to be opened in the remaining uncovered districts over the next 2 years

Box 5.5 Educational Achievements from 2010-11 to 2014-15

i. The enrolment at the elementary level under the SSA has increased from 19.28 crore to 19.77 crore.

ii. The number of schools has increased from 13.62 lakhs to 14.45 lakh.

iii. The average dropout rate has significantly reduced to 4.17 per cent, indicating an improvement in the retention rate.

iv. The SSA has led to the reduction in Out Of School Children (OoSC) from 134 lakh in 2005 to 61 lakh in 2014.

v. GER at secondary level increased from 65 per cent to 80.01 per cent while in higher secondary level from 39 per cent to 56.16 per cent.

vi. The number of secondary/senior secondary schools has increased substantially from 2.06 lakh to 2.53 lakh.

5.23 Initiatives to Improve School Quality

5.23.1 Focused programmes for ensuring learning have been initiated in most of the States, with specific interventions designed to target children in Classes I & II to improve learning outcomes. These interventions include activity-based learning methodologies and models for early reading and mathematics. The strengthening of teaching and learning of maths and science in upper primary schools are being pursued through focused teacher training along with provision of teaching-learning materials.

5.23.2 NCERT has developed learning indicators to determine expected learning outcomes of all classes covering all subjects. It has also developed a framework for Performance Indicators for Elementary School Teachers (PINDICS) and shared it with States. These performance standards define the criteria expected when teachers perform their major tasks and duties. These are further delineated as performance indicators that can be used to observe progress and to measure actual result compared to expected result.

5.23.3 To improve school leadership and competence of school headmasters and educational administrators, a new National Centre for School Leadership (NCSL), within the National University of Educational Planning and Administration (NUEPA), has been set up. The NCSL has developed a framework and also a curriculum for school leadership. The programme has been initiated in the States/UTs of Andhra Pradesh, Chhattisgarh, Daman & Diu, Dadra & Nagar Haveli, Gujarat, Himachal Pradesh, Karnataka, Kerala, Mizoram, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. The programme will be expanded to all States.

5.23.4 The National University of Educational Planning and Administration (NUEPA) is also in the process of developing indicators for school performance assessment. The initiatives include (a) the development of school performance standards to provide common core and expectations for all schools (b) guidance on strategies for helping schools to improve their performance, and (c) use of the performance standards set as the reference or benchmark for both internal and external evaluations of the school.

5.23.5 The use of information and communication technology to complement and supplement classroom teaching and learning is pursued as an important strategy to foster quality education at elementary and secondary stages of education. Both under SSA and RMSA, assistance has to be given to States in the provision of computer hardware and related facilities, which would also be used to provide online course content and related materials to students through massive online open course. Key activities include providing computer equipment or labs to schools, development of curriculum based e-learning materials in local languages, and training of teachers in computer use and provide all learning resources on interactive portals named e-Pathshala and National Repository of Open Education Resource (NROER).

5.23.6 Curricular reforms involving revising of syllabi and textbooks based on the National Curriculum Framewirk,2005 prepared by the NCERT, facilitating learning in age-appropriate classes, and improving learning through the provision of library and other supplementary materials are all quality improvement initiatives. As of March 2016, 25 states had revised their curriculum in the light of NSF, 2005, 8 states/UTs wre following of NCERT and 3 Uts were following the curriculum of neighboring States.

5.23.7. Although much has been achieved with regard to gender parity at the national level, there still exists regional and social disparities across the country. Taking into account the gender bias which is inherent across most sections of society, a 'Digital Gender Atlas for Advancing Girl's Education in India' was launched on International Women's Day in March 2015. The tool has been developed in partnership with the United Nations Children's Fund (UNICEF) to help identify low-performing geographic pockets for girls, particularly from marginalized groups. It provides comparative analysis of individual gender-related indicators over the years. The Gender Atlas is available on the RMSA website.

5.24 Issues Needing attention in School Education and Literacy

5.24.1 Despite progress in terms of improvement in access and outreach, the major issues that require immediate attention include:

(i) The focus is now on quality improvement and enhancing student leaning. Manyprogrammes have been initiated by central and States/UTs Government to foster quality education and improve students learning outcomes. However, improved school infrastructure and learning environment in all schools have contributed to substantial improvement in the students Classrooms ration(SCR) from 41:1 to 27:1 in 2015-16 . More Efforts need to be made in this direction.

(ii) There has been a substantial increase in the total number of teachers in schools imparting elementary education from 5.22 million in 2006-2007, to 8.08 million in (2015-16 U-DISE). These efforts have contributed to a sharp improvement in pupil teacher ratio (PTR) at the primary level in government schools from 36:1 in 2006-07 to 25: 1 in 2015-16. However, there is still an acute shortage of professionally qualified, component, trained and motivated teachers with about 8.3lakh vacancies across the country.

(iii) The recruitment service conditions of teachers and redeployment of teachers are primarily in the domain of respective State Governments and UT administrations. However, the central Government has been pursuing the matter of expeditious recruitment and redeployment of teachers with states and UTs at various for a. in many States vacancy of teachers occurs due to delay in the process of appointment of teachers as a result of litigations and procedural delays in the appointment of teachers which, in any case is time consuming.

(iv) The preponderance (81893-11.50%) as per UDISE 2015-16 of single teacher school at the primary level across the country also adversely affects the quality of teaching.

(v) The percentage of professionally trained teachers at the elementary stage (classes I-VIII) in all schools has been increased from 70.78% (2013 -14) U-DISE, NUEPA) to 82.41% (U-DISE 2015-16).

vi) A related issue is professional qualification and training received by teachers. According to the latest report of the Unified- District Information System for Education (U-DISE) on School Education in India', 79% of teachers are professionally qualified. For the higher secondary level, the percentage of qualified teachers is around 85.13 %. There is a need to increase the percentage of qualified teachers and also upscale training of 'both qualified and under qualified teachers'.

(vii) To address the gender equality issues, states Governments may be encouraged to recruit and appoint adequate female teachers. At present, women constitute only 47.99 % of female teachers in all schools.

(viii) More than 50% of primary schools lack the hand washing facilities on the schools premises. **UDISE does not capture information on this aspect.**

(ix) There is poor convergence of MDMS with school health programme. Therefore, linkages between medical colleges and Home Science faculty with State MDMS steering and monitoring committees and institutions are needed to evolve state specific guidelines for improved quality and safety.

(x) Only 79.20 % schools have kitchen sheds. This implies that almost 20% schools (2.09 lakhs) have thier Mid day Meal preparations either in an open area or in the classrooms. This is a major cause of concern as it impacts student safety.

(xi) Financial constraints is the main hurdle in implementation of the Schemes of RMSA and Model School. Under RMSA and Model schools, the States identify land first and then propose for up-gradation of New Schools.

5.25 Higher Education

5.25.1 The Twelfth Plan envisages building on the momentum generated during the Eleventh Plan and continued focus on the **Three Es- expansion, equity and excellence.** This is sought to be achieved through overriding emphasis on quality, diversified higher education opportunities to meet the needs of employers, and governance reforms to enable institutions to have autonomy to develop distinctive strengths. The Twelfth Plan targets include enhancing enrolment capacity by 10 million and increasing public spending in the State higher education system through the Centrally Sponsored Schemes of Rashtriya Uchhatar Shiksha Abhiyan (RUSA), Technical Education Quality Improvement Programme (TEQIP), National Mission on use of ICT in higher education, Consolidation and Upgradation of Central Institutions and Expansion of Skill Based Programmes including Community Colleges. It also aims at setting up of multi-disciplinary universities, the creation of 20 centers of excellence, 50 centers for training and research in frontier areas of science & technology and humanities, 20 design innovation centres, and 10 inter institutional centers, the establishment of a council for industry and higher education for collaboration, a national initiative for the inclusion of persons with disabilities, improving academic quality, rejuvenating academic staff colleges, strengthening accreditation system, reviewing the doctoral education system, establishing State Councils for higher education and institutes for academic leadership in higher education, increasing private initiative, and institutional and policy reforms.

5.25.2 By the end of 2014-15, the university and higher education system had 760 universities, 38,498 colleges and 12,276 diploma level institutions. The All India Survey on Higher Education (AISHE, 2014-15), estimated the total student enrolment in higher education at 34.2 million with 18.4 million boys and 15.7 million girls. There has been substantial progress in the thrust areas of expansion, equity, excellence and employability during the period. The Gross Enrolment Ratio (GER) in higher education increased from 11.5 per cent in 2005-06 to 24.3 per cent in 2014-15. Notably, the target of increasing the GER to 25.2 per cent by the end of Twelfth Plan (2017) and further to 30 per cent by 2020 appears to be achievable. However, the growth of higher education institutions with requisite faculty and infrastructure support has not kept pace with the increase in enrolments, and even less so in relation to the apparent and latent demand.

5.25.3 The Rashtriya Uchhatar Shiksha Abhiyan is a centrally sponsored - reform driven scheme to improve access, equity and excellence in State Higher Education System. 35 States including UTs have onboarded RUSA. 34 State Higher Education Plans(SHEPs) have been received from States and UTs and as many have been considered so far by the Project Approval Board. The following have been approved under RUSA : Creation of 16 Universities through upgradation of autonomous colleges(8) and clustering of colleges(8) ; 60 new model degree colleges, 54 colleges have been upgraded to model degree college and 29 new professional colleges have been supported; infrastructure grants to 1250 colleges and 117 Universities; Faculty recruitment support for 253 posts; and faculty improvement in 8 states; Support to Vocationalization of Higher Education in 7 states and Equity initiatives in 18 States'; support for National Quality Renaissance Initiative (NQRI) to the National Assessment and Accreditation Council and support for needs assessment study and capacity building for higher education administrators (620 leaders trained across the country) to the Tata Institute of Social Sciences.

5.25.4 To improve the quality and use of Information & Communication Technology in education, connectivity to 21,569 colleges using 20X512 Kbps VPN over Broadband was provided under the National Mission on Education through Information & Communication Technology (NMEICT). About 600 Universities/ Institutions have been provided with 1 Gbps fibre optic connectivity, and 400 node local area networks (LAN) have been provided to 50 NMEICT connected universities. In addition, more than 1000 courses in engineering, humanities etc. have also been developed and launched under the National Programme on Technology Enhanced Learning (NPTEL). Creation of digital contents for 77 post graduate subjects by Inflibnet and 87 under graduate subjects by CEC have been completed. Over 125 virtual labs, in 9 Engineering and Science disciplines, comprising more than 770 experiments are ready for use. More than one lakh teachers have been trained under the Talk to Teacher Project. More than 4,000 spoken tutorials are available for online access and 1 lakh Low Cost Access Devices have been distributed by IIT Bombay. The SWAYAM MOOCs platform has been developed and has made functional with 337 courses prepared by the best teachers in the country. The platform is extended to about 3 cr students across the country who can choose anytime, anywhere and any one mode of quality education at no cost. The UGC has issued a regulation facilitating transfer of credits from institution offering the course into the academic record of the student. (2) Transponders have been leased from ISRO GSAT 15 satellite and (32) DTH channels for higher education institutions have been made functional. These channels transmit high quality educational content on a 24x7 basis through DD Free Dish.

5.25.5 To address the issue of shortage of quality faculty, the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) was launched on 25th December, 2014 as a Central Sector Scheme with all India coverage, and an outlay of Rs. 900 crore in the Twelfth Five Year Plan. The Mission is to comprehensively address all issues related to teaching, teacher preparation, professional development, curriculum design, designing and developing of assessment & evaluation methodology, research in pedagogy and developing effective pedagogy. It will address the requirement for trainers and teachers in the education sector as a whole. A Project Approval Board has been constituted and the guidelines of the Scheme have also been approved. 42 projects have been approved in 08 Project Appraisal Board Meetings.

5.25.6 A strategy for higher education internationalization was to be developed during the Twelfth Plan. This was to include faculty and student exchange programmes, institutional collaborations for teaching education and research, exposure to diverse teaching–learning models and enhanced use of ICTs. Globally compatible academic credit systems, curricula internationalisation and processes for mutual recognition of qualifications need to be put in place. A professional national agency and an ‘India International Education Centre’ at New Delhi were proposed to be created to undertake internationalisation activities. It will support selected institutions to establish dedicated internationalisation units. However, progress in this direction has been very slow.

5.25.7. To help students, Higher Education Institutions and Employers to access degree certificates of candidates, Union Budget 2016-17 has proposed to establish a Digital Depository for School Leaving Certificates, College Degrees, Academic Awards and Mark Sheets, on the pattern of a Securities Depository. This will help validate their authenticity, safe storage and easy retrieval. The said digital depository will be known as National Academic Depository (NAD). It will be on 24x7 online mode and will comprise of inter-operable digital depositories which shall keep the academic awards in digital format to ensure data integrity.

5.25.8. In Union Budget 2016-17, it has been decided that a Higher Education Financing Agency (HEFA) will be set up with an initial capital base of Rs. 1000 crore. The HEFA will be a not-for-profit organization that will leverage funds from the market and supplement them with donations and CSR funds. These funds will be used to finance improvement in infrastructure in top institutions and will be serviced through internal accruals.

5.25.9. An enabling regulatory architecture will be provided to ten public and ten private institutions to emerge as world-class Teaching and Research Institutions. This will enhance affordable access to high quality education for ordinary Indians.

5.25.10. In order to improve quality of higher education, a National Institutional Ranking Framework that would evolve institutions on a set of parameters has been launched in September, 2015. This allows ranking of higher educational institutions on objective, verifiable parameters. The first India Rankings was released on 4.4.2016 and the next edition is going to be released on 3.4.2017.

5.25.11 In order to improve the standards in the technical institutions, TEQIP-II project has been implemented from 2012-2017. The project helped in strengthening the institution by better governance systems, improve the teacher-student ratio and increased the employability of the technical educational graduates through a host of interventions.

5.25.12 The National Digital Library has been operationalised with the help of IIT-Kanpur connecting all the higher educational institutions to a large repository of digital learning material. So far more than 25 lakh books and journals are made available to more than 1000 institutions across the country. This would help institutions from backward regions to access high quality library resources. Under the e-Shodh Sindu project, more than 18000 electronic journals are centrally procured and made available to institutions provided they access to the best digital journals from across the world.

5.25.13 In order to promote research in higher educational institutions, IMPRINT initiative has been launched on 5.11.2015 by Hon'ble President and Hon'ble Prime Minister. Under this initiative, the issues concerning the standard of living of general public have been categorised into (10) Domains and the research community was asked to submit research projects that could result in better scientific solutions. Under this, (259) projects for Rs.595 cr. have been approved by the Apex Committee in the first call. Under the Uchhatar Avishkar Yojna, industry-sponsored projects requiring specific innovations have been promoted by providing 75% government contribution. Under this, (92) projects worth Rs.282.65 crore have been sanctioned in the first round. In order to promote innovation, a massive programme for starting incubation centres for Startups have been undertaken. One Research Park at I IT Madras, (15) Technology Business Incubators and (15) Startup Centres have been started in various premier educational institutions to promote innovative ideas and to convert them to commercial projects. Two Research parks, one each at IIT Bombay and NT Kharagpur are presently *under construction.* In addition, an EFC Memo for establishment of 11 Research *Parks* and 60 startup centres across institutions is under circulation amongst various Ministries/Departments for comments.

5.26 The Governance Structure in Higher Education

5.26.1 The University Grants Commission (UGC) promotes & coordinates university education; determines & maintains standards of *teaching, examination and research* in universities; *frames regulations* on minimum standards of *education;* frames regulations on *academic collaboration* between *Indian and foreign* educational institutions; monitors developments in the *field of collegiate- university education;* and disburses grants to the universities and colleges. It has been serving as a vital link between the *Union and State Governments and institutions* of higher learning.

5.26.2 The UGC also advises the Central and State Governments on the measures necessary for improvement of university education. However, the changing economic scenario has necessitated providing autonomy to institutions. Accordingly, the Twelfth Plan aims to provide institutional autonomy by transforming the role of government to one that is steering and evaluative; strengthening the capacity of the higher education system to govern itself through widespread and coordinated regulatory reforms, and to increase transparency in both public and private institutions by requiring them to disclose important standardized information related to admissions, fees, faculty, programmes, placements, governance, finance, business tie-ups and ownership.

5.26.3 To strengthen governance, steps were initiated during the Plan to create a new legislative framework and provide a new governance structure for higher education in the country. Several new laws were under consideration, which include (i) The Prohibition of Unfair Practices in Technical Educational Institutions, Medical Educational Institutions and Universities Bill aimed at checking unfair practices relating to capitation fees and misleading advertising through mandatory disclosures by academic institutions; (ii) The National Accreditation Regulatory Authority for Higher Educational Institutions for which the Bill seeks to make accreditation by independent accreditation agencies mandatory for all higher educational institutions; (iii) The Education Tribunals Bill to create a Central tribunal and State-level tribunals for expeditious resolution of disputes relating to institutions, faculty, students and regulatory authorities; (iv) The Foreign Educational Institutions (Regulation of Entry and Operations) Bill to enable quality foreign education institutions to enter and operate in India and regulate operations of foreign education providers; (v) National Commission for Higher Education and Research (NCHER) Bill to create an umbrella regulatory authority subsuming the UGC, and current regulators, AICTE, NCTE and DEC; and (vi) The National Academic Depository Bill, 2011, to create a repository of all academic credentials in the country. However, some of these Bills have lapsed and need to be re-introduced in the Parliament.

Legislative Initiatives

To strengthen *governance, steps* were initiated to create a new legislative *framework and provide a* new governance structure for higher *education* in the country. Several new laws were introduced in the Parliament which *also included* the *following:*

(i) The National Accreditation Regulatory Authority for Higher *Educational Institutions for which the Bill* seeks to make accreditation by independent accreditation agencies mandatory for all higher educational institutions;

(ii) The Foreign Educational Institutions (Regulation of Entry and Operations) Bill to enable quality foreign education institutions to enter and operate in India and regulate operations *of foreign education providers;*

(iii) The National *Academic* Depository Bill, *2011, to create a repository of* all *academic* credentials in the *country;*

However, consequent to the dissolution of XVth Lok Sabha, the above *bills lapsed.*

In the meanwhile, University Grants Commission (UGC) notified a few regulations viz., UGC (Mandatory Assessment and Accreditation of Higher Educational Institutions) Regulations, *2012* thereby *making accreditation* mandatory of all eligible higher educational institutions.

It further notified the University Grants Commission (Promotion and Maintenance of Standards of Academic Collaboration between Indian and Foreign Educational Institutions) Regulations, 2016, spelling out the modalities for academic collaboration between the Indian Higher Educational Institution and Foreign Higher Educational Institution.

As far as National Academic Depository is concerned, the Union Cabinet in its meeting held on 27th October, 2016 accorded its approval for establishing and operationalising National Academic Depository (NAD).

NAD will be an online store house of academic awards (degrees, diplomas, certificates, mark-sheets etc) lodged by the academic institutions / boards / eligibility assessment bodies in a digital format. It will be on 24X7 online mode for making available academic awards and shall help in validating their authenticity, their safe storage and easy retrieval.

5.27 Technical Education

5.27.1 Technical Education plays an important role in creating skilled manpower, thereby enhancing industrial productivity and improving the quality of life. It covers courses and programmes, *inter alia*, in engineering, technology, management, architecture, town planning, pharmacy, applied arts and crafts, hotel management and catering technology. The Twelfth Plan envisages the intake of technical education institutions growing at a faster pace so as to create diverse opportunities for students and to meet the skilled human resource needs of the growing economy. The technical/management education system at the Centre comprises the All India Council of Technical Education (AICTE) as regulator; 22 Indian Institutes of Technology (IITs); 20 Indian Institutes of Management (IIMs), including 6 announced in the Union Budget for 2014-15 and One for Union Budget for 2015-16; the Indian Institute of Science (IISC), 31 National Institutes of Technology (NITs), and Indian Institute of Engineering Science and Technology (IIEST), Shibpur; 2 Indian Institutes of Information Technology, at Allahabad and Gwalior; North Eastern Regional Institute of Science & Technology or NERIST (Itanagar), Central Institute of Technology (CIT), Kokrajhar, National Institute of Industrial Engineering (NITIE), Mumbai, Ghani Khan Chowdhary Institute of Engineering and Technology, Malda ; Sant Longowal Institute of Engineering and Technology (Punjab); National Institute of Foundry and Forge Technology (Ranchi); three Schools of Planning and Architecture at Bhopal, New Delhi and Vijaywada; National Institute of Industrial Engineering (Mumbai); 7 Indian Institutes of Science Education and Research (IISERs) and 46 technical universities and Institutions.

5.27.2 The newly set up IITs need to be fully developed in terms of infrastructure and faculty to maintain their brand name. MHRD is also setting up five new IITs in Andhra Pradesh, Chhattisgarh, Goa, J & K, Kerala, and Karnataka and converting the Indian School of Mines, Dhanbad into a full-fledged IIT.

5.27.3 The Indian Institutes of Science Education and Research (IISERs) have been functional at Kolkata (WB) and Pune (Maharashtra) since 2006, Mohali (Punjab) since 2007, Bhopal (MP), Thiruvananthapuram (Kerala) since 2008, Tirupati since 2015 and Behrampur since 2016. The total student strength at present is 5,315 while fully functional campuses will have approximately 9,275 students and 900 faculty members. These institutions have been declared as 'Institutions of National Importance' under the National Institutes of Technology, Science Education and Research (NITSER) Act, 2007 (as amended in June, 2012). One new IISER, as per the Andhra Pradesh Reorganization Act, 2014 has been started in Tirupati, Andhra Pradesh from 2015-16. In addition, the Union Budget for 2015-16 announced setting up of 2 new such institutes, one each in Nagaland and Odisha.

5.27.4 Six new Indian Institutes of Managements (IIMs), at Amritsar (Punjab), Sirmaur (HP), Vishakhapatnam (AP), Bodh Gaya (Bihar), Bhubaneswar (Odisha) and Nagpur (Maharashtra) were announced during 2014-15. Their academic session started from 2015-16 in temporary campuses. One IIM was announced in 2015-16 which has started functioning since 2016-17. Some of the newly set up IIMs are still running from transit/temporary campuses as construction work for building of permanent campuses started late due to land acquisition problems. The other issue pertaining to these institutions is faculty shortage; about 25-30 per cent posts in IIMs have been lying vacant, which needs immediate attention.

5.27.5 The National Institutes of Technology have also been declared 'Institutions of National Importance' under the National Institutes of Technology Act, 2007, and Science Education and Research (NITSER) Act, 2007 (as amended in June, 2012). The total number of NITs has gone up to 31 i.e. one each in all States and major UTs.

5.27.6 The 2015-16 Union Budget also announced the setting up of a Post Graduate Institute of Horticulture Research and Education at Amritsar; and three National institutes of Pharmaceutical Education and Research in Maharashtra, Rajasthan and Chhattisgarh.

5.27.7 Polytechnic education is an important constituent of technical education and has played an important role in providing skilled manpower at various levels. In the last two decades, many polytechnics have started offering courses in emerging disciplines. These include electronics, computer science, medical lab technology, hospital engineering, and architectural assistantship; specialized diploma programmes have been offered in leather, sugar, and printing technologies among others; programmes tailored to female enrolment such as garment technology, beauty culture and textile design have also been initiated. To stimulate the growth of polytechnics in the country, particularly in the underserved and educationally backward regions, 300 polytechnics were planned during Eleventh Plan to be set up with Central financial assistance at Rs.12.30 crore per polytechnic. Till May, 2015, 295 polytechnics have been sanctioned under the scheme at a total cost of Rs. 2,448.63 crore. For the remaining 5 polytechnics, the concerned State Governments have not provided their consent for providing land and meeting recurring expenditure. Out of the 295 polytechnics, 157 are now operational. This component has been merged with RUSA.

5.27.8 A total of 20 Indian Institutes of Information Technology (IIITs), in Public Private Partnership (PPP) mode, have been approved in various States. Out of these, 15 IIITs had started both undergraduate and postgraduate academic sessions in 2013-14, 2014-15. and 2016-17. During the first four years of each IIIT, the Central Government provides assistance towards recurring expenditure to the extent of Rs.10 crore; the actual year wise requirement varies depending upon the growth of the institute and its requirement for funds.

5.28 Quality Issues in Higher Education

5.28.1 One of the main consequences of the massive expansion in higher education has been its effect on quality particularly due to huge growth of private institutions. The quality issues in Indian higher education have today arisen to the top of the policy agenda. Universities have been expanding faster than the quality of secondary education graduates, with the result that those who enter colleges are increasingly ill-prepared. The problem of comparison is complicated by the rapid obsolescence of many established curricula as the knowledge explosion accelerates. The meaning of quality in the face of knowledge explosion provides some critical criteria for the evaluation of quality, domestically and globally. However, the Times Higher Education Ranking (2012-13) Survey placed no Indian institution among its top 200 institutions. The top ranked Indian institutions were IIT Kharagpur (234), IIT Bombay (258) and IIT Roorkee (267). Though these world rankings are limited in their scope and coverage of institutions, especially those in Asia, it is imperative to examine the basis and components on which institutions are judged and placed in the global rankings. Firstly, single discipline universities and universities dedicated to just postgraduate studies are not considered because of their narrow focus and areas of strength. The major components considered are teaching (learning environment, student teacher ratio, quality of curriculum), research (volume, income from research, reputation), and citations (research influence). Other factors like international outlook, industry income, employer reputation, etc. are also included. Indian higher education is not particularly strong in the above-mentioned areas, which is certainly a cause of concern. The university system needs to look at these parameters closely and endeavour to improve each one of them and especially focus on the component of research.

5.28.2 Apart from international rankings, other parameters of judging quality are employability and employer satisfaction. According to a survey done by the World Bank and the Federation of Indian Chambers of Commerce and Industry (FICCI), 64 per cent of employers are “somewhat”, “not very”, or “not at all” satisfied with the quality of the engineering graduates they hire. Increasing unemployment among university graduates is another growing problem. According to the industry reports, only 25 per cent of technical graduates and 10-15 per cent of other graduates are considered employable by the industrial sector. More than 62 per cent of the candidates require training to be eligible for any job in the IT sector. To enhance employability, there is a need for industry and academia interaction and apprenticeship/internship training in the industry.

5.28.3 Another facet mirroring quality is investments in R&D and research outcomes in the institutions of higher learning. The expenditure on R&D in India is only 0.80 per cent of GDP. It needs to be enhanced to 1.5 per cent of GDP. The Kakodkar Committee recommended strategies to improve technical education in the country and enhance the research budget of every institution to 2 per cent of the total. Innovation and creation of new knowledge are the major areas in which universities in the developed countries have an edge over their Indian counterparts. Investment in R&D in developed countries is not limited to public funding; therefore, funding from the private sector (especially industry) is equally important. This has helped universities and industries in such countries to maintain their competitive edge.

5.28.4 The Twelfth Plan recognizes that higher education requires significantly larger investments to deliver on the multiple objectives and to achieve the various goals that have been set out for it. This investment has to come from both public and private sources and from both Central and State exchequers. It is in this context that the erstwhile Planning Commission had constituted a Committee on Corporate Sector Participation in Higher Education, in January 2012 under the Chairmanship of N R Narayana Murthy, a founder, and past Chairman of Infosys. The Committee's mandate was to examine the potential for and provide recommendations on the modalities for corporate sector participation in higher education. This participation was to be in support of the development of national education and innovation hubs and the Institutions of National importance (INIs) / centers of excellence, as well as of models for industry-institution interaction to act as catalysts of innovation and sustainable and inclusive economic and regional development.

5.28.5 The report was formally released on 8th May 2012 and its recommendations were three-fold: to create enabling conditions to make the higher education system robust and useful in order to attract investments; secondly, to improve the quality of higher education by focusing on research and faculty development, with corporate sector participation and, thirdly, to engage the corporate sector to invest in existing institutions, set up new institutions, and develop new knowledge clusters. It was decided that the Government would set up a group to examine the recommendations of the Committee and filter out the ideas which may not be feasible/ implementable giving the current state of affairs. The group would also prepare a list of ideas/activities which can be implemented immediately. The gist of recommendations can be seen in **Box 5.6.**

Box 5.6: Narayana Murthy Committee's Recommendations on Corporate Sector Participation in Higher Education

A. Creating enabling conditions to make the higher education system robust and useful to attract investment:

1. Autonomy – in financial, regulatory, academic and administrative aspects
2. Resources – ensuring availability of land, infrastructure and connectivity
3. Fiscal incentives – to encourage investments and attracting funding
4. Enabling environment – (such as visas) for free movement of faculty and students to promote collaboration with world-class institutions abroad
5. Freedom to accredit – with global accreditation agencies to put Indian institutions on par with the best
6. Access to funds – through scholarships to enable students to pursue their chosen fields of study

B. Corporate participation in improving quality by enhancing research focus and faculty development:

7. Enhancing research focus – through dedicated funding for research, sponsored doctoral programs, and part-time Masters and PhD programs
8. Faculty development – by increasing the talent pool of faculty from corporates (working and retired), faculty development programs, and sponsorships of visits by expert faculty

C. Creation of new infrastructure through corporate investments in higher education:

9. Setting up of new facilities by the corporate sector in existing universities and higher education institutions either as Centres of Excellence (CoEs) or in the form of technology parks.
10. Setting up of new universities and higher education institutions.
11. Developing new knowledge clusters / hubs.

5.29 Measures for Improving the Quality of Higher Education

i. The UGC is also implementing schemes to augment quality and promote research, including scientific research, namely, University with Potential for Excellence (UPE); Centre with Potential for Excellence in Particular Area (CPEPA), Colleges with Potential for Excellence (CPE), Special Assistance Programme (SAP), UGC Basic Scientific Research (BSR), etc. The Rashtriya Aavishkar Abhiyan (RAA) envisages the motivation and engagement of children in innovative thinking. Research activities and programmes in universities and institutions in their core areas of competence need to be strengthened.

ii. 'Quality Assurance of Higher Educational Institutions, through assessment and accreditation, has been made mandatory. As per the University Grants Commission (UGC) (Mandatory Assessment and Accreditation of higher Educational Institutions) Regulations, 2012 it is mandatory for all higher educational institutions to be accredited by an assessment and accreditation agency after passing out of two batches or six years, whichever is earlier. The National Assessment and Accreditation Council (NAAC) of UGC and the National Board of Accreditation (NBA) of All India Council of Technical Education (AICTE) conduct assessment and accreditation of Universities/Colleges/lnstitutions.

The UGC has launched several schemes to improve standards of education in universities and colleges. Under these, financial assistance is provided to eligible universities and colleges for the creation and upgradation of infrastructural facilities, including libraries, laboratories and hostels and for the strengthening of teaching and research. Indian Institute of Technology (IIT), Madras, along with its National Programme on Technology Enhanced Learning (NPTEL) partners, and the National Association of Software and Services Companies (NASSCOM) have run three Massive Online Open Courses (MOOCs) of 10 weeks each. IIT Madras certifies the successful completion of the course while charging a nominal fee. Similarly, IIT Kanpur has conducted five Online Courses with certification of 4-5 weeks duration. IIT Bombay has also run four courses globally and three more courses are currently going on. A project on the "Development of National Digital Library" has also been sanctioned to IIT, Kharagpur.

iii. The Government notified the National Skill Qualification Framework (NSQF) on 27th December, 2013 to enable a person to acquire a desired competency level, transit to the job market and, at an opportune time, return in order to acquire additional skills to further upgrade competence and ensure their all-round development. Recognizing the need to provide students horizontal and vertical mobility from the vocational to the general higher education stream the Government launched "Skill Assessment Matrix for Vocational Advancement of Youth" (SAMVAY). The teachers for vocational training may be drawn from the industries for the relevant stream and regular school teachers can be trained to impart vocational education with the partnership of industry.

iv. This credit framework along with the Credit Framework for Skill Development (CFSD), issued by the UGC would allow the pursuit of diploma to degree and post-degree programmes in vocational education. The UGC provides grants to universities and colleges under the two schemes namely "Community Colleges" and "B.Voc degree programme", which offer employment oriented skill based vocational courses. An industry partner is essentially associated with these for curriculum development, the delivery of courses and to assess learners. A scheme named "Pandit Deen Dayal Upadhyay Kaushal Kendra" has also been approved by the Commission. The UGC has decided to approve 100 KAUSHAL centres under this Scheme in universities and colleges across the country during theTwelfth Plan. These centres will impart skill based education ranging from the certificate to the post graduate level.

v. A Student Financial Aid Authority to administer and monitor the front end of all scholarships as well as educational loan through the Pradhan Mantri Vidya Lakshmi Karyakram is also being envisaged.

vi. To facilitate partnerships between Indian and foreign educational institutions, a scheme of Global Initiative for Academic Networks (GIAN) was launched in November 2015. It enabled foreign faculty to come and take one/ two week courses in Higher Educational Institutions in India. So far 801 courses have been approved and 629 courses conducted. To improve the quality of deemed to be universities a new set of Regulations for Deemed to be Universities was framed under which focus was on increasing transparency and improving quality. Mandatory NAAC accreditation and mandatory review of syllabus every three years are the important initiatives included in the Regulations for improvement in standards.

5.30 Sports

5.30.1 The importance of sports in the life of a young student is invaluable. Sports instils lessons that are essential as young, impressionable students learn values like discipline, responsibility, self-confidence, sacrifice, and accountability and above all sportsmanship.

5.30.2 The Twelfth Plan envisages the broad basing of sports and games and connecting them to schools and colleges on the one hand and local bodies on the other. This is to be done through the launching of Sarva Krida Abhiyan; National Physical Fitness Programme; support for sports in institutions of higher education; and support for sports infrastructure. A CSS, the Panchayat Yuva Krida Aur Khel Abhiyan (PYKKA) was launched in 2008-09 and continues during Twelfth Plan. The scheme was revamped as the Rajiv Gandhi Khel Abhiyan (RGKA), and aims to cover all 6,545 block panchayats, providing each an outdoor playfield and a pre-fabricated indoor hall. The scheme runs in convergence with MGNREGA, BRGF, IAP and NLCPR.

5.30.3 PYKKA envisaged covering 2 lakh village panchayats and 6,373 block panchayats, developing playing field in each by 2016-17 (the end of the Twelfth Plan). As against the target of covering 1,28,000 village panchayats and 4,078 blocks panchayats by 2013-14, 65,735 village panchayats and 1,978 block panchayats were covered. A sum of Rs. 1,044.42 crore was spent till 31st March 2014 for developing infrastructure and holding Annual Rural Competitions.

5.30.4 A new scheme, the National Sport Talent Search Scheme (NSTSS), was launched on 20th February, 2015 with the objective of identifying sporting talent among students between 8 and 12 years of age (Class IV to Class VI). The scheme was to locate those who possess inborn qualities such as anthropometric, physical and physiological capabilities without any anatomical infirmities. The talents so identified would be nurtured in district level sports schools/central sports schools or national sports academies so they could excel at the national and international sports competitions. An earlier scheme, Identification and Nurturing of Sporting Talent in India (INSTAL), has been subsumed in NSTSS.

5.30.5 Other schemes for facilitating sports and sportspersons are Special Cash Awards (including Rajiv Gandhi Khel Ratna Award); Pension to Meritorious Sportspersons; Assistance to Sports Federations; National Sports Development Fund; and Urban Sports Development Scheme. These schemes are to help in creation of a sporting atmosphere in the country.

5.30.6 The Department of Sports is heading towards broad basing of sports and games, but some areas need greater focus for achieving the goals of the Twelfth Plan. These include (i) Sarva Krida Abhiyan; (ii) National Physical Fitness Programme; and (iii) support for sports in institutions of higher education

5.31 Youth Affairs

5.31.1 The Twelfth Plan envisages the introduction of NSS/NCC as compulsory co-curricular activity in educational institutions; targeting female membership in NYKs and grading of youth clubs; convergence for optimal utilisation of NYKs/National Youth Corps with proper coordination between Centre and States in implementing various youth development programmes; and a new National Youth Policy with focus on youth empowerment and employability. The National Youth Policy-2014 has been launched with the youth age-group defined as those between 15 and 29 years for a more focused approach, better development of productive youth, and to channelize and effectively utilize youthful energy.

5.31.2 Keeping in view the Twelfth Plan aspirations to modernize youth hostels in tourist areas and increasing the strength of the NSS volunteers at the rate of 5 lakhs per year during the Plan period, the Youth Hostel Scheme and National Service Scheme have been revamped. The other schemes run by the Department of Youth Affairs are the National Youth Corps; Promotion of Scouting and Guiding; International Cooperation etc.

5.31.3 The Finance Minister had announced in the 2014-15 Budget Speech: "Youth of India are pragmatic and forward-looking and wish to be leaders in all fields. In order to promote leadership skills, I propose to set up a 'Young Leaders Programme' with an initial allocation of Rs.100 crore. A new Scheme entitled "National Young Leaders Programme (NYLP)" has been introduced to develop leadership qualities among the youth that would enable them to realize their full potential and in the process, to contribute to the nation-building process. The NYLP aims to motivate youth to strive for excellence in their respective fields and to bring them to the forefront of the development process. Some of the components of the above scheme are to be implemented through Nehru Yuva Kendra Sangathan and the National Service Scheme. The Twelfth Plan Outlay for Department of Youth Affairs to cover these schemes is Rs. 2,048 crore.

5.31.4 Skill Upgradation Programmes for Women are among the key features of NYKS. Under these thousands of women have been provided training for various skills.

5.31.5 Some of the programmes being run by the Department of Youth Affairs are the promotion of sports in youth clubs, district youth conventions, promotion of folk culture, youth leadership, national integration camps, adolescent health and development, tribal youth exchange, environmental awareness, national youth festivals, theme based awareness & evaluation, blood donation camps, the organization of vikas melas and job fairs, and awareness and education for the prevention of drug abuse and alcoholism in Punjab and Manipur.

5.32 Human Resources: Outlays and Expenditure

5.32.1 The approved outlay and progress of expenditure in MHRD is given in the **Annexure 5.1**. It can be seen that the overall expenditure for the first three Plan years (2012-2015) has been only 37.44 per cent of the Plan approved outlay of MHRD. This is an unsatisfactory pace of expenditure. One of the main reasons for slow progress on expenditure is the non-completion or time over-run of ongoing civil construction projects, particularly in case of newly set up institutions like IITs, IIMs, IISERs, Central Universities and school buildings under some of the newly launched schemes. To achieve financial and physical objectives in the remaining period, the pace of expenditure must be stepped up.

5.32.2 For the Ministry of Youth Affairs and Sports, the expenditure during the first three Plan years (2012-15) has been only 41.78 per cent of the approved Plan outlay, mainly on account of slow progress made on newly proposed schemes. Here, too, the pace of expenditure needs to be enhanced substantially if the financial and physical objectives of the Plan are to be achieved. The details of outlay and expenditure are given in **Annexure 5.2**.

5.33 Education, Sports and Youth Affairs : The Way Forward:

5.33.1 Elementary Education

i) The dropout rates among SCs and STs, which are much higher than the national average, need to be addressed.

ii) Efforts should be made to bring the out-of-school children, migrant and slum children into the mainstream with the help of NGOs, self help groups (SHGs), etc.

iii) Convergence with MGNREGA on the construction of infrastructure and toilet construction, which may meet some of the demands in the school infrastructure deficient States.

iv) To address the problem of teacher absenteeism and to make them accountable for it, a mechanism for electronically marking teacher attendance needs to be adopted. Further, accountability of teachers imparting education in publicly funded schools needs to be ensured through a structured mechanism.

v) To enhance their learning outcomes, disadvantaged children need targeted intervention through specific strategies and supplemental instructions.

5.33.2 Secondary Education

i) A major hurdle identified in the implementation of RMSA and model school scheme is land availability and acquisition. States may be encouraged to enhance the capacity of existing secondary schools by vertical expansion and strengthening existing infrastructure. They can also run schools in two shifts to efficiently utilize existing infrastructure. Facilities can also be shared among schools.

ii) To enhance access to education and participation of children from hilly and sparsely populated areas and districts afflicted with civil strife, residential hostels for boys and girls in existing schools are needed.

iii) Secondary education needs the adoption of international standards of evaluation with appropriate modification.

iv) Common curricula should be adopted across the country for science and English, to the extent possible.

v) The current RMSA scheme needs to provide for physical education teachers.

vi) Provision of support for out of school children as per guidelines developed by NIOS needs to be made.

vii) The total number of educationally backward blocks in the country is 3,451 or 52 per cent of the total blocks which is high. Most of these are in Bihar, Jharkhand, MP, Odisha, Rajasthan, Telangana and UP. These States are to be motivated to first set up such schools as would improve access to elementary and second to make available educationally qualified and skilled manpower.

viii) Private participation in the education space must be incentivized to bring in greater investments which could raise Gross Enrolment Ratio (GER) and lower drop-out rates.

5.33.3 Higher Education

i) There is a serious issue of quality in higher education and it needs to be addressed through industry academia interaction.

ii) Investments in R&D and research outcomes in the institutions of higher learning need to be enhanced. The expenditure on R&D in India is only 0.80 per cent of GDP, which should be increased.

iii) There is a huge deficit in existing faculty in various higher education institutions-both centrally and state funded. Many institutions face acute shortages of experienced and senior faculty, which hampers curricula development, research initiatives and general management of institutions. This needs to be urgently addressed.

iv) Need for making education loans more affordable.

v) Research and innovation need special focus and encouragement. The ATAL Innovation Mission and SETU would help in this direction.

vi) Need for more clarity to make education loans more affordable.

5.33.4 Youth Affairs

i) To consider introduction of NSS/NCC as compulsory co-curricular activity in educational institutions and increasing the strength of the NSS volunteers.

ii) Targeting increase in female membership in NYKs, skill up gradation programmes for women being one of the key features of NYKS;

iii) Grading of youth clubs and promotion of sports in youth clubs;

iv) Optimal utilization of NYKs/National Youth Corps with proper coordination between Centre and States in implementing youth development programs;

v) Modernization of youth hostels in tourist places;

5.33.5 Sports

i) Broad basing sports by connecting these to local bodies through a revamped *Panchayat Yuva Krida Aur Khel Abhiyan*, rechristened as the Rajiv Gandhi Khel Abhiyan;

ii) Identification of sporting talent among students aged 8–12 years (class IV to class VI). They would then be nurtured in district-level sports, or national sports academies, so they could excel at national and international sports competitions.

iii) Giving enough space to the National Physical Fitness Programme and support for sports in institutions of higher education to help create a sporting atmosphere in the country.

5.34 Empowering Women and Child Protection

5.34.1 The Appraisal of the Twelfth Plan recognises the primacy of India's women and children - who constitute around 70 per cent of India's population. It also recognizes the fact that more inclusive growth begins with children and women. In this perspective, the Twelfth Plan assesses the effectiveness of multi sectoral strategies in breaking an intergenerational cycle of multiple deprivations- poverty, social exclusion, undernutrition and gender discrimination faced by children and women, all of which impact upon present and future generations of India's citizens.

5.34.2 Nutrition constitutes the foundation for human development, by reducing susceptibility to infections, reducing the related morbidity, disability and mortality burden, enhancing cumulative lifelong learning capacities and adult productivity. Maternal and child undernutrition is the cause attributable to more than one third of the mortality of children under five years (LANCET 2008). Ensuring optimal nutrition for young children (under three years of age) is critical, in order to avert cumulative and largely irreversible growth and development deficits over the life cycle, which erode human capital inter-generationally. It is globally acknowledged that nutrition-especially of the young children is one of the most effective entry points for human development, poverty reduction and economic development, with high economic returns. As also highlighted by the recent Economic Survey 2015-16 (Chapter 5: Mother and Child) investment in early childhood provides high economic returns. This is the most rapid and critical period of physical and cognitive development; early life conditions significantly affect outcomes in adulthood and the success of subsequent interventions in schooling and training are significantly influenced by early life development. The early years have a cumulative lifelong impact. With respect to nutrition the Twelfth Plan aims to reduce undernutrition children below 3 years of age to half of the 2005-06 (NFHS) levels by 2017. However data from recent surveys presented below in **Box 5.7** suggests that the achievement of this target is a challenge despite encouraging progress made by several States.

5.34.3 The Twelfth Plan envisages converging efforts from the Ministries of Women & Child Development and of Health & Family Welfare to achieve a synergic impact: the reduction of maternal and child malnutrition, anemia and mortality- especially in the high burden States and districts. This has resulted in higher priority being accorded to the provision of health services at ICDS AWCs. The Twelfth Plan emphasised the gender component of development planning and making it more child-centric.

5.34.4 The approach towards women, children and nutrition has evolved over the years with a marked paradigm shift from welfare to development to a rights based approach. In the current paradigm, women are recognized as equal partners in social, economic, development and political processes and as prime movers of social change and as agents of economic change. Inter sectoral convergence at all levels of governance is also recognized to be a crucial determinant of whether multi sectoral actions achieve their desired outcomes.

5.35 Malnutrition

5.35.1 The progress made on nutrition has been encouraging with all the four decisions of the Prime Minister's National Council on India's Nutrition Challenges under varying stages of implementation.

i. The strengthening and restructuring, of ICDS is well underway, as outlined above.

ii. The Multi sectoral Programme to address maternal and child under nutrition in 200 high burden districts, was also approved in 2013.

iii. Launching a nationwide IEC campaign was also accomplished during 2010-12.

iv. Bringing a strong nutrition focus to sectoral programmes was achieved through effective multi sectoral reviews with 17 Ministries, with nutrition now being anchored in the relevant sectoral strategies of the Twelfth Plan.

v. The institutional arrangements for nutrition coordination are also evolving, being vested in the ICDS National Mission Steering Group.

5.35.2 **Child Stunting in children under 5 years** has reduced in 13 States covered in Phase 1 as compared to NFHS 3, although absolute levels are still high in some States. The most significant reductions in child stunting are seen in Tripura by 31.93 per cent and in West Bengal by 27.13 per cent. Reductions are also seen in Haryana, Maharashtra, Meghalaya, Uttarakhand, MP, Sikkim and Goa. In 10 States/UTs, less than one-third of children are stunted. Despite progress made, more than 40 per cent of children are stunted in Bihar, Madhya Pradesh and Meghalaya, followed by 36.2 per cent in Karnataka and 35.4 per cent in Maharashtra.

5.35.3 **Child Wasting in children under 5 years** is still high in Phase I States/Union Territories, with levels above 25 per cent in Karnataka, Maharashtra and Madhya Pradesh. Significant reductions are seen in Meghalaya (by 15.4 percentage points) and in Madhya Pradesh (by 9.2 percentage points) - although absolute levels are still high. Increases in child wasting are reported in 7 States, with sharp increases in Karnataka (by 48.3 per cent) and in Maharashtra (by 55.1 per cent).

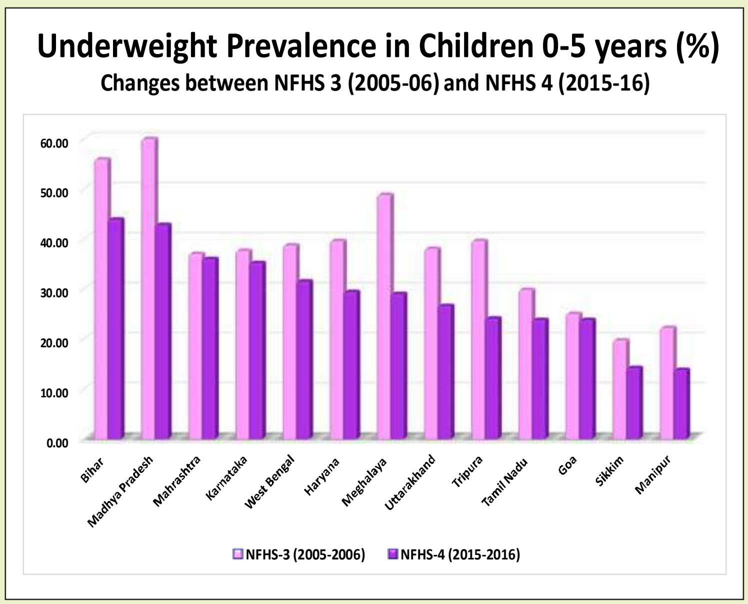
5.35.4 Longer term interventions are also needed to ensure that good quality data on child nutrition is available regularly at national, State, district and local levels and is analysed and used for informed action at different levels. For real time data monitoring and tracking, the strengthening and linking of the Integrated Child Development Services Management Information System (ICDS MIS) with the NRHM/NHM Health Management Information System (HMIS) and the Mother Child Tracking System (MCTS) is critical, with the integration of child nutrition data being integrated into the MCTS. Policy and technical guidance is also needed to ensure that nutrition surveys are a part of a comprehensive plan, have a robust design methodology and are compatible with data needs and the research agenda. An emerging issue is to understand the growth standards used for nutrition status assessment.

Box 5.7 : Summary of National Family Health Survey 4 (2015-16) Findings in Phase I States and UTs

The results of National Family Health Survey (NFHS) 4 are now available for Phase I i.e. for 15 States and 2 UTs. This shows promising improvements in maternal and child health and nutrition between NFHS 3 (2005-06) and NFHS 4 (2015-16).Child Nutrition levels show encouraging improvement.

Underweight prevalence in children under 5 years (composite indicator) has declined in 13 States covered in Phase 1 (for which NFHS 3 baseline data is available) - although absolute levels are still high in some states. NFHS 3 data is currently not disaggregated for AP and Telengana and NFHS 3 baseline data is not available for the UT s. This is as seen in the chart below.

- Remarkable reduction is seen in MP from 60 per cent in NFHS 3 (2005-06) to 42.8 per cent in NFHS 4 i.e. by 17.2 percentage points or by 28.6 per cent. Bihar also shows significant reduction from 55.9 per cent to 43.9 per cent, by 12 percentage points or by 21.4 per cent over this 10 year period.
- Meghalaya shows remarkable reduction by 19.8 percentage points or by 40.5 per cent. Tripura similarly shows a reduction by 15.5 percentage points or by 39 per cent. Manipur shows a significant reduction of 8.4 per centage points or by 37.84 per cent.
- Maharashtra and Karnataka show near stagnation, with Maharashtra reporting 36 per cent in NFHS 4, marking a decline of only 1 percentage point since NFHS 3 and Karnataka reporting 35.2 per cent in NFHS 4, marking a decline of only 2.4 percentage points since NFHS 3.



5.36 Early Childhood Development and Integrated Child Development Services (ICDS)

5.36.1 ICDS is one of the world's largest programmes for early childhood development with a package of services comprising: supplementary nutrition, immunization, health check-up, referral services, pre-school non-formal education and nutrition & health education. The scheme has been restructured in the Twelfth Plan. This restructuring involved a programmatic redesign, greater operational flexibility through 4 umbrella schemes- (i) Integrated Child Development Services (ICDS); (ii) Integrated Child Protection Services (ICPS); (iii) Rajiv Gandhi Scheme for Empowerment of Adolescent Girls- or Sabla and Saksham- for the holistic development of adolescent boys and (iv) National Mission For Empowerment of Women (NMF-W), including the Indira Gandhi MatritvaSahyog Yojana (NMEW including IGMSY). In addition, ICDS, the National Nutrition Mission (NNM) and the World Bank assisted ICDS Systems Strengthening and Nutrition Improvement Project (ISSNIP) have also been restructured into a new Centrally Sponsored Scheme.

5.36.2 The ICDS programme benefits 10.30 crore children, including pregnant and lactating mothers under its Supplementary Nutrition Programme and 3.54 crore under its Pre School Education segment through 7075 operational projects and 13.49 lakh operational Anganwadi Centres as in December, 2015. The norms for supplementary nutrition have been enhanced and provision for additional Anganwadi worker cum nutritional counselor has been made in high burden districts. A national Early Childhood Care and Education (ECCE) Policy was approved in 2013. The approved National ECCE Curriculum Framework & Quality Standards and ECCE Council resolution have both been notified and circulated. Further, the construction of 2 lakh Anganwadi Centre buildings during Twelfth Plan at Rs. 4.5 lakhs per unit was also approved. About 13.85 per cent AWC buildings have been constructed with assistance from various schemes like MPLADs (678 AWCs), MLALADs (1,604 AWCs), Rural Infrastructure Development Fund (12,165 AWCs), Backward Region Grant Fund of Panchayati Raj (43,155 AWCs), Other RD (16,237 AWCs), MoMA (15,608 AWCs), Tribal Development (488 AWCs), MGNREGA (1,282 AWCs), State Plan (31,501 AWCs) etc. Physical targets and achievement of the scheme is given at **Table 5.4**. Presented in **Box 5.8**, the findings of a recent quick evaluation study of ICDS AWCs conducted by the Programme Evaluation Organisation (PEO), now DMEO, highlight that ICDS has contributed to improved nutrition of the beneficiary children and that ICDS MIS data corresponded well with the external assessment.

5.36.3 Under Swachh Bharat Abhiyan, a toilet is to be provided in each newly constructed/upgraded building as an integral part of the construction. Bal Swachhta Mission has been launched in New Delhi on 14th November, 2014 on the occasion of Children's Day. One of the themes of this mission is clean toilets. There have been various state specific initiatives on ICDS. Some best practices from different states related to improving nutrition outcomes and reaching children under 3 years are highlighted in **Box 5.9**. Specifically, the Maharashtra initiative of using ICT enabled systems for improved tracking of child nutrition status is presented in **Box 5.10**.

Table: 5.4 Physical Target and Achievement of Flagship ICDS Scheme 2012-13 to 2015-16

Year	RFD target	No. of operational projects	RFD target	No. of operational AWCs	No. of Supplementary nutrition beneficiaries {Children (6 months to 6 years) & P&LM}	No. of pre-school education beneficiaries {Children (3-6 years)}
2012-13	7000	7025	13.40 lakhs	1338732	956.12 lakh	353.29 lakh
2013-14	7045	7067	13.52 lakhs	1342146	1045.09 lakh	370.71 lakh
2014-15	Target not fixed	7072	13000 new	1346186	1022.33 lakh	365.44 lakh
2015-16 (as on 31.12.2015)	Target not fixed	7075	Target not fixed	1349091	1030.14 lakh	354.05 lakh

Box 5.8 : Checking Anganwadi Centres

A Quick Evaluation study of ICDS Anganwadi Centres was conducted by the Programme Evaluation Organisation (PEO), now DMEO, to validate the ICDS MIS data in selected States/UTs. The study's reference period was from Dec-2013 to February -2014.The study was conducted on purposive random sampling basis 510 AWCs in, 19 States/UTs were selected, AWCs were visited by PEO teams during the month of April, 2014. It was found that total number of children enrolled in the registers as 31,397 which 62.70 per cent were rural and balance 37.30 per cent were urban. Out of the total enrolled children, 15,300 children i.e.48.70 per cent were chosen for weight measurement.

One of the important findings of the study was that the children in the normal grade i.e. not undernourished, were 76 per cent of the total sample size, which is very encouraging. This indicates that ICDS has contributed to improved nutrition of these children. This also compared well with ICDS MIS data which recorded the percentage of normal grade children as varying between 75.4 per cent and 78. 8 per cent. It was found that 75.7 per cent of the AWCs are maintaining records properly.

Some challenges also emerged in terms of the work load of AWWs (who were also assigned other tasks), the need for improved nutrition interventions for younger children, and ensuring the optimal location of AWCs at local levels. The need were also identified for improved sanitation, facilities and infrastructure of AWCs, as 41 per cent of the AWCs did not have adequate space to accommodate children and 51.8 per cent were found to have unhygienic conditions. The opening of nursery schools in urban and rural areas is also recognised as a challenge, addressing which may catalyse service quality improvement in ICDS AWCs.

Box 5.9 : ICDS Best Practices

Some of the best practices under ICDS from various States on nutrition strategies , care and counselling to reach children under 3 pregnant and lactating mothers

i. **Nava Jatan (Chhattisgarh)** Community level Suposhan volunteers are assigned to track and look after a group of young undernourished children and ensure their appropriate care and feeding, with health referrals and support as needed, till the children comes back to normal grade and are no longer undernourished.

ii. **Dular (Bihar and Jharkhand)** Women community level volunteers and local resource persons each take responsibility for 15-20 families with young children counselling and linking them with ICDS and related health services for improved nutrition.

iii. **Positive Deviance (West Bengal, Odisha)**: Mothers support groups, featuring positive role model mothers whose children are growing well counsel mothers of undernourished children. Demonstrated spot feeding sessions (for 12 days), followed by home based practice sessions (18 days) and then by follow up and repeat cycles.

iv. **Mission Baal Sukham (Gujarat) features** 3 levels of management

- The Village Child Nutrition Centre as "Bal Shaktim Kendra" at Anganwadi centres for malnourished children without any medical needs.
- The Child Malnutrition Treatment Centre as "BalSewa Kendra" at PHC/CHC/ Sub District level for malnourished children needing some medical care.
- Nutrition Rehabilitation Centre or "BalSanjeevani Kendra" at District Hospital/ Medical College for malnourished children requiring significant medical care.

5.37 Protecting the Children

5.37.1 Integrated Child Protection Scheme (ICPS) aims at building a protective environment for children in difficult circumstances, as well as other vulnerable children, through Partnership between the government and civil society. Its financial norms have been revised w.e.f. 1st April 2014 to include enhanced financial norms for child maintenance, staff salaries, care and protection services and the establishment of statutory bodies and better service delivery structures for implementation of the scheme. This was another step forward in ensuring

Box 5.10: Maharashtra's Use of Technology to Monitor ICDS Outcome

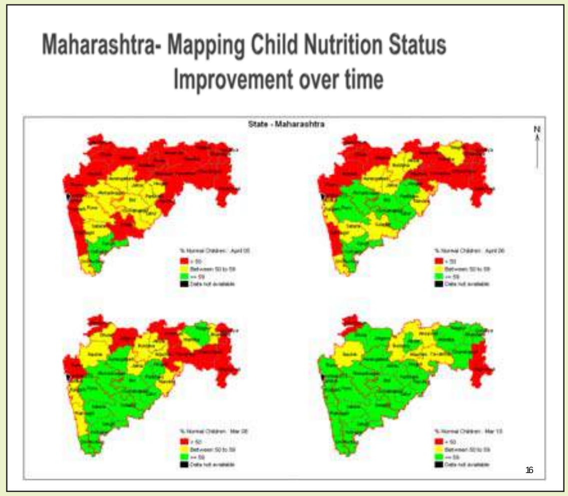
Maharshtra's experience illustrates how real time monitoring of child nutrition status is possible with improvements in ICDS MIS and the use of ICT.

i. Nutrition Surveillance System (NSS) is operational in the State through single point data (In each AWC)) entry (AWC wise) from all operational ICDS Projects;

ii. Segmented data (organised by AWC, Sector ,Project and District) are generated on pre-defined indicators;

iii Analysis of data is linked with both MIS and Geographic Information System (GIS) ;

iv All upper and lower tiers of a project (sector, gram Panchayat, PHC, project, district and State) automatically receive the collated data of their area. By putting in place NSS, tracking of severely underweight children are tracked and referred to PHCs/CHCs for health support;



v. NSS reduces paper work by almost 75 per cent saving drudgery, time and stationary, avoiding data discrepancies, and enabling better analysis & monitoring from the top (state level) to bottom (AWC) level, permitting receipt of feedback from lowest tiers etc.

vi Software for capturing the data on all essential indicators of implementation of ICDS and its financial management system is in place. The data capturing system is user friendly and in local language.

a safe and protective environment for every child – free from violence and exploitation. The major initiatives under the scheme include 1,521 Homes of various types, 317 specialized adoption agencies; 299 community based safe spaces named as Open Shelters for children in need in urban and semi-urban areas.

5.37.2 Efforts for children's care, support & rehabilitationinclude; an increase in number of statutory bodies such as the Child Welfare Committees (CWCs) and the Juvenile Justice Boards (JJBs) to 643 and 642 respectively against 660 districts in the Country; setting up of service delivery structures i.e. State Child Protection Societies (SCPS) in 34 States and 636 District Child protection Units (DCPUs); Child-line services operational in 328 locations across the country through 550 partners; and a Track Child portal for missing and found children under ICPS etc.

5.37.3 However, there are also still some major challengesexperienced during the implementation of the scheme like mapping the vulnerabilities of children & available initiatives/resources, including district wise Protection Plans; upgrading existing protection infrastructure to ensure minimum standards of care; the registration & inspections of all Homes etc.

5.37.4 Some areas that need attention for effective implementation of ICPS include more focus on strengthening family based non institutional care services through adoption, sponsorship and foster care, fast-tracking, the setting up of Inspection Committees, Management Committees & Children's Committees and the registration of all child care institutions under the JJ Act.; constitution of CWCs and JJBs; reducing the Pendency of cases at the CWCs and JJBs; recruitment of staff where still not done; building Convergence with other Departments etc.

5.38 Empowering Women

5.38.1 There are several schemes under the 'Umbrella Scheme for Protection and Development of Women'wherein in Budget 2015-16, allocations have been made under the Central Plan. The Nirbhaya Fund with a non-lapsable corpus of Rs.1,000 crore was set up in the Ministry of Finance in 2013-14 and guidelines were finalized in May 2015. The corpus has expanded with Rs 1,000 crore each added in each of the subsequent 2 Budgets. Guidelines for utilization of the Fund' have been framed with the Ministry of Women & Child Development (WCD) as the nodal authority. The Ministry of WCD can be approached by various Ministries/ Departments for funds with the proposals/schemes, to strengthen the safety and security of women in the country.

5.38.2 **National Mission for Empowerment of Women (NMEW):**This mission aims at strengthening the inter-sector convergence; coordination among various women's welfare and socio-economic development programmes across ministries and departments. A National Mission Authority has been reconstituted overseen by a steering committee at the level of the Secretary of the Ministry of WCD. A total of Rs 25 crore has been allocated for the year 2015-16 under the Central Plan.The State Mission Authority (SMA), which is the highest policy making body at the state level for NMEW, has been constituted in 27 States and 5 UTs. The State Resources Centres for Women (SRCWs), which are fully funded by the Centre and responsible for planning, execution and monitoring of the mission's vision and activities at the State level, have been set up in 26 States and 4 UTs.

5.38.3 To provide support like food and shelter, counseling, medical facilities and vocational training to women SWADHAR scheme is being implemented. The Scheme for universalization of the Women's Helpline has been approved on February, 2015 with a total project cost of Rs.69.49 crore for implementation through States /UTs from 1st April, 2015. The scheme envisages to provide 24 hour emergency and non-emergency response to all women affected by violence both in public and private sphere, whether in the family, the community, or the workplace etc. The Scheme for One Stop Centre for Women has also been approved on March, 2015 with a total project cost of Rs. 18.58 crore for implementation through States /UTs from 1st April, 2015. This scheme is to facilitate or provide medical aid, police assistance, legal counseling / court case management, psycho-social counseling and temporary shelter to women affected by violence. Each State and UT is planned to get on 'One Stop Centre' in the first phase.

5.38.4 SABLA**,** the Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (11-18 years) is implemented in 205 districts with two components one dealing with nutrition and the other with non nutrition aspects. The pace of implementation for the non-nutrition component was slow till 2012-13, as it involves convergence with various line Ministries (for which a lot of preparatory work was to be undertaken at State level). In addition limited financial resources were provisioned for the various non-nutrition services under the scheme. SABLA is under evaluation for continuation in the Twelfth Plan. There is a need to work towards mainstreaming women in new and emerging areas of the economy through necessary skill and vocational training, credit facilities and marketing support and technology education. This will help women to take up entrepreneurial activities in new and emerging trades. Suitable training modules for short term, market oriented, and demand-driven programmes for women within a flexible delivery framework need to be prepared.

5.38.5 **Working Women Hostel (WWH):**This scheme has benefited 69051 working women with 921 hostels set up all over the country till 31-12-2015. The scheme has been strengthened with a more proactive monitoring mechanism. As per the revised guidelines of the **STEP** Scheme-2014, assistance will be available in any sector for imparting skills related to employability and entrepreneurship. Against a target of 30000 a total of 30953 beneficiaries were covered under STEP Scheme during 2014-15.

5.38.6 'UJJAWALA'**-** is a Comprehensive Scheme for Combating Trafficking whichhas been revised with enhanced financial norms and strengthening of the monitoring mechanism. As in December 2015 286 projects including 162 Protective and Rehabilitative Homes have been sanctioned under the Scheme. On the eve of International Women's Day, a day that celebrates the achievements of women and showcases issues important to their well being, Mahila E-HAAT a platform for women entrepreneurs to showcase and marlcet their products is being launched. This platform, set up by Ministry of Women and Child Development under the RashtriyaMahilaKosh, will create a complete economic eco system for Women Entrepreneurs. It provides direct interaction between producers and consumers. This platform, set up by Ministry of Women and Child Development under the RashtriyaMahilaKosh, will create a complete economic eco system for Women Entrepreneurs. It provides direct interaction between producers and consumers.

5.38.7 A total of 7,35,239 women have been benefitted as on December 2015 from cumulative loans adding up to Rs. 360.24 crore from the RashtriyaMahilaKosh.To revamp the activities of RMK, a committee of senior bankers, social workers and experts was constituted, which has since submitted its Report. It has been decided to provide credit to individual applicants besides SHGs, either directly or through partners of RMK. This credit would be to provide need based training for capacity building or livelihood creation activities. It was also decided to engage 10-15 selected institutions, instead of directly funding intermediary organizations. An online marketing platform for women entreprenuers, Mahila E-Haat, was recently launched on 07th March 2016 to provide a platform women entrepreneurs to showcase and market their products. This platform set up under the Rashtriya Mahila Kosh, is expected to create a complete economic eco system for Women Entrepreneurs. It provides direct interaction between producers and consumers.

5.39 Child Sex Ratio

5.39.1 Raising the child sex ratio in the 0–6 year age group from 918 to 950 is one of the monitorable targets of the Twelfth Plan. The decline in the ratio has been steep and unabated since 1961.The ratio has fallen from 927 in 2001 to 918 in 2011 as per Census 2011 (Primary Census Abstract), which is an all-time low since 1961. It declined in 18 States and 3 UTs and sharp falls in the range of 79 to 17 points were seen in the ratio in Jammu & Kashmir, Dadra & Nagar Haveli, Lakshadweep, Andhra Pradesh, Daman and Diu, Manipur, Nagaland, Rajasthan, Maharashtra, Uttarakhand and Jharkhand during 2001-2011. The steepest fall of 79 points is in Jammu & Kashmir -from 941 to 862.

5.39.2 There was a decline in the Child Sex Ratio in 429 districts, which is more than two thirds of the total number of districts in the country. In 143 districts the decline has been of the order of 20 to 49 points. In 25 districts the decline has been by more than 50 points.

5.39.3 Between 2001 and 2011 the child sex ratio in Rural Areas declined from 933 to 919 and in urban areas from 906 to 905. While the absolute level of the ratio is lower in urban as compared to rural areas - the rate of decline in rural areas is steeper and this has major adverse implications for the future. These trends are visible in **Figure 5.5**.

5.39.4 There are also significant gender differentials of 8 points (all India) in the mortality rates of children under 5 years - which was 59 for girls as against 51 for boys (the aggregate was 55) in 2011. Even sharper gender differentials were seen in States such as Jharkhand (18), Chhattisgarh (17), (Rajasthan (15) and Uttar Pradesh (14) (RGI, 2012).

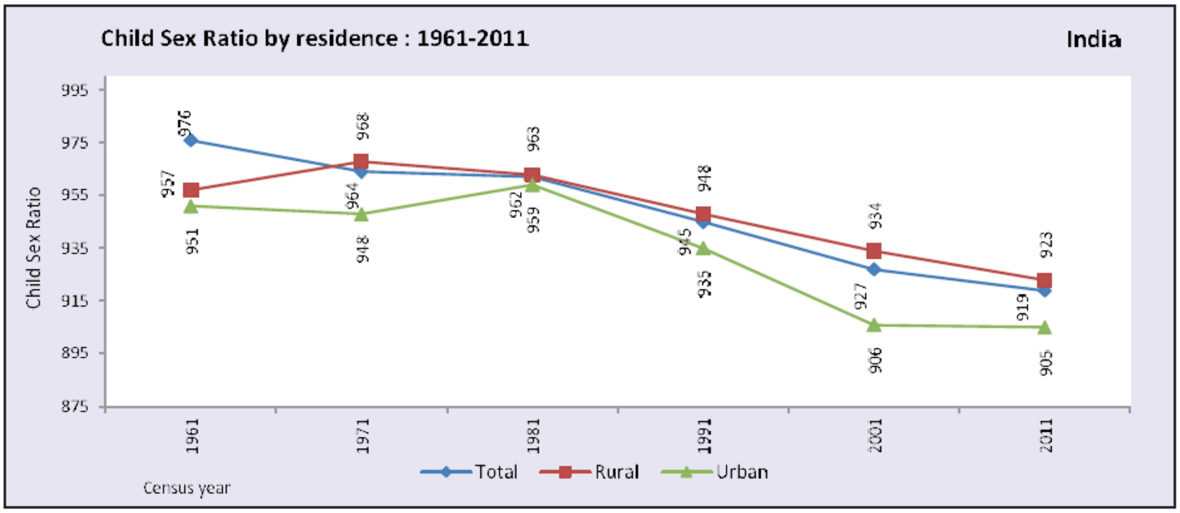
5.39.5 These trends indicate that the problem of sex selective abortion and elimination is increasing in magnitude and no longer confined to just some States or only to urban areas. This much wider spectrum and spread of the problem has to be addressed. The issue includes: pre-birth sex selective elimination, infanticide in some areas, and grossneglect of the young girl child. Efforts must include care and protection of the young girl child in insecure environments, along with longer term interventions for girls' education and protection, women's empowerment and gender equality.

5.39.6 One of the recommendations of the Plan has been that the Girl Child Specific District Plan of Action to be developed through decentralized planning processes. To address the CSR issue of Child Sex ratio, the Scheme 'Care and Protection of Girl Child- was formulated as a multi sectoral action plan. Its intent was to improve Child Sex Ratio in 100 gender critical districts based on the National Plan of Action.

5.39.7 A new scheme called **Beti Bachao Beti Padhao**, aiming to address the issue of Child Sex Ratio through a National level strategy was launched in January 2015. It has focus on a mass communication campaign, along

Figure 5.5: Trend in Child Sex Ratio (0-6 years by Residence) (Rural Urban Disaggregation)

Child Sex Ratio (0-6 year) by residence



Source: RGI –Primary Census , Abstract , 2011 *
(* The CSR 2011 was published as 919 by RGI and then subsequently corrected to 918)

with focused attention for improving Child Sex Ratio &promoting girls education in 100 gender critical districts (with low child sex ratio) through multi-sectoral action. The Campaign will endeavor to build up public opinion against gender biased sex selection, changing societal norms. The Scheme 'Care and Protection of Girl Child- A Multi sectoral Action Plan to improve Child Sex Ratio in 100 Gender Critical Districts has been subsumed in the scheme. The scheme also builds on innovative approaches emerging from states and local initiatives, as highlighted in **Box 5.11**. The overall goal of the Beti Bachao Beti Padhao (BBBP) programme is to celebrate

Box 5.11: Improving the Child Sex Ratio :
Best Practices from States

Rajasthan' s State Girl Child Policy

Rajasthan witnessed a sharp 21 point decline in the Child Sex Ratio from 909 in 2001 to 888 in 2011 by 21 points. Disaggregated district level estimates revealed an even deeper dimension of the problem in districts with exceedingly low child sex ratios such as Jhunjhunu (837), Sikar (848) and Karauli (852). The Annual Health Survey 2010-11 highlighted a stark gender differential of 15 points in Child Mortality (under 5 years) as this was 87 for girls, as compared to 72 for boys.

Rajasthan became the first State to set up a State Task Force For Care and Protection of the Girl Child, in April 2012 and to develop and adopt a State Specific Policy - the Rajasthan State Policy For the Girl Child 2013. Linked to the CM's 7 point programme for women, and monitored by the State Chief Minister, the State Task Force, headed by the State Chief Secretary, also develops and monitors a time bound multi-sectoral action plan to ensure care and protection of the girl child, linked to longer term interventions for gender equality.

A Haryana Panchayat 's initiative on changing attitudes towards the girl child:

A Bibipur panchayat in Jind district of Haryana has taken several initiatives to change prevailing societal norms and attitudes which discriminate against the girl child and women. Recently the panchayat introduced a "Selfie with daughter" contest, utilizing the current pattern of clicking selfies to emphasise love for and pride in having a girl child. This has caught the public imagination and is now being replicated in different districts and panchayats.

the Girl Child and enable her education. The total project cost of the programme for the 2 year and 6 month period is Rs. 199.99 crore with 100 per cent Central Assistance.

5.40 Enabling Legislations

5.40.1 A number of enabling legislations have been introduced in the last two years to address violence and discrimination against women and children. These need to be properly implemented and enforced.

5.40.2 Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act 2013 makes it mandatory for all offices or unorganized sector enterprises with 10 or more employees to have an internal complaints committee to address grievances in a stipulated time or face penalty. The Protection of Children from Sexual Offences Act, 2012 provides protection to all children under the age of 18 years from the offences of sexual assault, sexual harassment and pornography. These offences have been clearly defined for the first time in law. The Act provides for stringent punishments, which have been graded as per the gravity of the offence. The Criminal Law (Amendment) Act, 2013 has also been enacted with more stringent provisions.

5.41 Women and Children :The Way Forward

In this emerging perspective and as also highlighted by the recent Economic Survey 2015-16, young children must be placed first on the development agenda- the rationale for imperative action being to ensure faster, more inclusive and sustainable human development and economic growth. Envisaged pathways for the way forward include-

5.41.1 Development and Implementation of a National Plan of Action for Children -for survival, development, protection and participation, with monitorable outcomes. This would be reinforced by contextually relevant State and District Plans of Action For Children. These Plans of Action would give effect to the updated National Policy For Children and recent/new legislations.

5.41.2 Initiating a new National Nutrition Mission, with a focus on preventing and reducing child undernutrition; reaching pregnant and breast feeding mothers and children under three years across the life cycle; converging action on key determinants of undernutrition. These include maternal and child care, infant and young child feeding- especially early and exclusive breast feeding for the first six months of life, health, hygiene and sanitation; enhancing community ownership and leadership of panchayats in becoming “kuposhanmukt”. Specific strategies would be developed for poor performing States and districts and high prevalence areas, with synergistic linkages of the State/ district programme implementation plans of ICDS, National Health Mission, Swachh Bharat with improved monitoring, for accelerating reductions in child undernutrition and related mortality. As suggested in the Economic Survey 2015-16, creating a “Nudge unit within government”, as other countries have done, may be a useful way of taking this agenda forward.

5.41.3 **Institutional mechanisms are needed to ensure that Nutrition surveys are part of a comprehensive plan**, have a robust design methodology and are compatible with data needs. This is needed to ensure that good quality data on Child Nutrition Status is available regularly at National, State, District and local levels, is analysed and used for informed action at different levels.

5.41.4 **Real time nutrition data monitoring and tracking by service providers must be strengthened**. The strengthening and linking of the Integrated Child Development Services Management Information System (ICDS MIS) with the NHM Health Management Information System (HMIS) and the Mother Child Tracking System (MCTS) is critical, with the integration of child nutrition data in MCTS, using the joint ICDS NHM Mother and Child Protection Card as the foundation.

5.41.5 **Strengthening the ICPS scheme to cover all vulnerable children**. All components of the scheme must be functional in all parts of the country.

5.41.6 **Strengthening community action for a protective environment for children**, ensuring child friendly panchayats and urban local bodies-especially for the girl child, in Beti Bachao Beti Padhao gender critical districts.

5.41.7 **Reinforcing BetiBachao, BetiPadhao through State policies for the girl child and women** and specific interventions such as promotion of equal property rights, affirmative action, promoting 50 per cent reservation for women in PRIs/ ULBs etc.

5.41.8 **Designing a time bound comprehensive strategy for Women's Empowerment, Development and Protection,** as envisaged through an umbrella scheme and convergence with other sectors. This would build on the recommendations of the High Level Committee on the Status of Women. This would also include a comprehensive strategy to End Violence against Women and Girls; ensuring women's safety and security and reflecting multisectoral interventions.

5.41.9 Mobilizing enhanced State resources for Women and Children, utilizing opportunities provided by the enhanced devolution of resources to States. State Plans and budgets should be reviewed using a gender & child lens - guided by agreed Twelfth Plan monitorable outcomes and in future, adapted and contextualized Sustainable Development Goals. In future, this may also culminate in the development and use of Gender and Child Score Cards for States /Districts.

5.41.10 Need for providing adequate resources both by State and Central governments with effective & result driven monitoring mechanisms to implement the strengthened & Restructured ICDS- especially its innovative components.

5.41.11 Poverty Task Forces at national/state levels should integrate gender and child poverty concerns and build this into indices to measure the inclusiveness of growth or social inclusion.

5.42 Summary of Learnings

5.42.1 Despite significant improvements in health indicators and achievement of millennium development goals to a large extent, the targets of the 12th Plan were largely missed, especially with respect to maternal and child health. The large supply- side gaps for which data is available and that may be partly associated with these outcomes is the lack of adequate health facilities (20 per cent and 23 per cent shortfall of sub- centres and PHCs respectively) and health workers (particularly shortage of specialists (81.19 per cent)) to staff the facilities; gaps which must be filled up on priority.

5.42.2 A number of new/improved schemes were introduced during the course of the Plan period (Mission Indradhanush, Rashtriya Bal Swasthya Karyakram, transfer of RSBY to MoH&FW, NHM Free Drugs and Diagnostics Initiative etc) that are aimed at addressing multiple national health goals. The overall impact of these schemes will have to be evaluated in due course to guide further policy measures in health.

5.42.3 Less than 50 per cent of the total 12th Plan outlay was allocated during the period. Of that, utilization levels for the first four years are 81.34 per cent. Efforts must be made to improve utilization capacities of States with effective governance and stewardship mechanisms.

5.42.4 Kayakalp initiative encourages every public health facility in the country to work towards standards of excellence to help the facilities stay clean and hygienic. This does not apply only to physical cleanliness, but to develop and put in place systems and procedures for activities such as bio-waste disposal or protocols etc. This initiative has led to improvement in cleanliness in health facilities. Without much expenditure, this programme is expected to have a large impact on the utilization of public health facilities.

5.43 Education

5.43.1 **School Education**: Despite significant improvements in access and equity during the 12th Plan period, school education in India remains beset with issues of quality. In order to make all boys and girls ready for primary education as well as to reduce dropout rates in the early primary classes, it is essential to ameliorate the quality of education imparted by linking one year of pre-primary education with primary schooling which is so critical for school preparedness and early childhood development. Moreover, in order to ensure that all girls and boys complete free, equitable and quality school education leading to relevant and effective learning outcomes, there is an urgent need to target learning outcomes. To this end, the NCERT should develop grade-wise, quantifiable and measurable learning standards for both primary and secondary education. For this to be effective, there is a need to develop and implement a system for assessment/ evaluation of schools and for greater use of ICTs for monitoring learning outcomes, school evaluation as well as student attendance. It is equally imperative to substantially increase supply of qualified teachers and set up biometric attendance mechanism to address teacher absenteeism.

5.43.2 Encouraging demonstrative teaching, field visits, learning from surroundings, and sharing of best practices across States, like Activity-Based Learning (ABL) and Project-Based Learning (PBL), would go a long way in improving enrolment and retention. Involvement of NGOs and Self-Help Groups in programme implementation, such as for mainstreaming out of school children, and home visits by teachers/volunteers to involve parents would ensure inclusive and equitable quality education. In order to eliminate gender disparities in education and ensure equal access to all levels of education, including persons with disabilities and children from socially and disadvantaged sections of society, it is imperative to expand residential schools including additional KGBVs in educationally backward blocks and areas with high concentration of SCs/STs/minorities, to set up seasonal hostels (especially for children of migrants), to provide transport/ escort facilities for disadvantaged children, and to ensure greater use of e-content in local languages, especially to target children in remote or tribal areas. It is equally important to increase access to vocational courses (relevant to state needs) at secondary/ senior-secondary levels as well as to source vocational instructors on part-time basis from ITIs, polytechnics, and industry.

5.43.3 **Higher Education:** In order to ensure equal access for all men and women to affordable and quality technical, vocational and higher education, there is a need to expand existing Massive Open Online Courses (MOOCs) and SWAYAM (Study Webs of Active-Learning for Young Aspiring Minds) as well as to increase public spending in State higher education through existing CSS of RUSA, TEQIP, and National Mission on Education through Information and Communication Technologies. Equally significant are encouragement of private investment in higher education/ globalization; proper utilisation of infrastructure (evening classes, part-time courses, shift system, online admission); and strengthening accreditation mechanisms and monitoring of quality at private institutions affiliated to Central/State universities by benchmarking and bringing them under university umbrella.

5.43.4 Some other measures for improving the quality of higher education include increasing investments in R&D; monitoring research quality by using indicators such as publication in internationally-reputed journals; engaging with industry for curriculum development to improve employability of graduating students; addressing faculty deficit in higher education by using teaching assistance from enrolled research degree students and contractual part-time recruitment of retired faculty; strengthening faculty exchange programmes, and substantially expanding number of scholarships/ educational loans / financial aid to deserving students with help from national and international organisations.

5.44 Women and Child Development

5.44.1 **Moving from Policy to Practice:** While there are strong Constitutional, legislative, policy, plan and programme commitments addressing multidimensional concerns related to Women, Children and Nutrition, effective implementation remains a challenge. Translating policies into effective programmes and positive care practices at community and family levels is a key concern. For this, changing societal norms related to the intergenerational cycle of gender discrimination and improving family care behaviours related to maternal, infant and young child nutrition is critical. This is demonstrated by recent initiatives such as BetiBachaoBetiPadhao and Nutrition initiatives such as Atal Baal Mission in Madhya Pradesh.

5.44.2 **Convergence at field level:** There are several sectoral programmes of various line ministries, addressing the different direct and indirect determinants of undernutrition, and intervening at different stages in the life cycle. These include the Integrated Child Development Services, SABLA for adolescent girls, Indira Gandhi MatritvaSahyog Yojana, National Health Mission (including RMNCH +A, Janani Suraksha Yojana), Swachh Bharat Mission, the National Rural Drinking Water Programme, Mid Day Meals Scheme, Targeted Public Distribution System, National Food Security Mission, Mahatma Gandhi National Rural Employment Guarantee Scheme and the National Rural Livelihood Mission- among others. Despite existing institutional mechanisms, these remain fragmented. Implementation experience of successful State Nutrition Mission initiatives demonstrates that what is needed is governance reform, with state leadership and effective convergence at field levels- at village, panchayat, block, district and state levels, linking with national level. **Decentralized district specific planning:** Beti Bachao Beti Padhao has demonstrated the effectiveness of focusing on districts with critical gender indicators, with district specific plans led by District Collectors, mobilizing multisectoral action and with active ownership and motivation of panchayats.

5.44.3 Similarly in Nutrition, State and district leadership, district specific planning, use of nutrition data, mapping and making undernutrition visible, field level convergence between ICDS and the health system, use of local community resource volunteers / mothers' support groups and community ownership are essential prerequisites for success as seen in the Madhya Pradesh Atal Baal Mission, the Gujarat Baal Sukham, Maharashtra Rajmata Jijau Mission and Bihar Mission Manav Vikas. State experiences with approaches such as Keno Parbo Na in West Bengal and Ami BhiParibu in Odisha, while not implemented in mission mode, also demonstrate the importance of changing care and feeding behaviors, using local community resources and positive role model mothers to demonstrate good feeding practices and counsel other mothers of severely undernourished children for sustained improvement.

5.44.4 **Creating a protective environment:** Initiatives to address violence against children and women are highlighting the need to prevent and deter such acts and to create a protective environment for children and women, along with addressing such violations after they occur. The lesson learnt is that a multipronged approach is needed, which includes prevention, protection, quality response, interventions and care, restorative justice, rehabilitation and re integration. This again calls for a change in mind sets and societal norms.

5.44.5 **Ownership of Panchayati Raj Institutions:** Several examples of women's empowerment initiatives under NMEW such as in Rajasthan, Beti Bachao Beti Padhao in Haryana and child related interventions under ICDS in Madhya Pradesh reaffirm the criticality of the ownership of panchayati raj institutions and of community based tracking and monitoring of key indicators related to the Child Sex Ratio and nutrition status of young children for achieving results. Ownership of panchayati raj institutions and urban local bodies is even more relevant in the context of the recent enhanced devolution of resources, following the Fourteenth Finance Commission recommendations.

5.44.6 **Engendering Development and making it more child centric:** Implementation experience of gender budgeting, now adopted by 57 Ministries and Departments (as on March, 2016), highlights the need for gender budgeting and child budgeting to move from merely monitoring resource allocations by Ministries and Departments to ensuring and monitoring gender related outcomes, involving sectors, states, districts and local self-governments, in order to be more effective.

5.44.7 **Measuring progress:** A major lesson learnt over this period has been that timely and robust good quality data on Child Nutrition Status must be made available periodically, at national, state and district levels, comparable with baselines, to benchmark and track progress. The wide divergence in data from service providers, from different surveys, with different methodologies/design and coverage can lead to incorrect assessment of progress and programmatic interventions.

5.44.8 An outlay of Rs. 1,17,707 crore was provided for the Twelfth Five Year Plan (2012-17) for the Ministry of Women and Child Development. Breakup of Twelfth Five Year Plan Outlay (BE) and Actual Expenditure of Ministry of Women and Child Development is given at **Table 5.5.**

Table 5.5 : Twelfth Plan Outlay and Expenditure of Ministry of Women and Child Development

(Rs. in crore)

S.No.	Year	BE	Actual Expenditure
1	2012-13	18500.00	16954.14*
2	2013-14	20350.00	17951.12*
3	2014-15	21100.00	18437.82*
4	2015-16	10286.73	17136.24*
5	2016-17	17300.00	

Source: E-Lekha, CGA

Annexure 5.1

Twelfth Plan Outlay and Expenditure of Ministry of HRD (Rs. in Crore)												
	Twelfth Plan Outlays	Annual Plan 2012-13		Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16		Annual Plan 2016-17	**Total 2012-13 to 2016-17**	
		BE	AE	BE	AE	BE	AE	BE	RE	BE	**BE**	**Exp**
1	2	3	4	5	6	7	8	9	10	11	**12 (3+5+7+9+11)**	**13(4+6+8+10)**
School Education & Literacy	343028	45969	42821.37	49659	43684.41	51828	42478.60	39038.50	39038.50	40000	226494.50	**168022.88**
Higher Education	110700	15438	12703.24	16198	14182.83	16900	12574.75	15855.26	14428	16500	80891.26	**53888.82**
Total	**453728**	**61407**	**55524.61**	**65857**	**57867.24**	**68728**	**55053.35**	**54893.76**	**53466.50**	**56500**	**307385.76**	**221911.70**

Source: Budget Documents

Annexure 5.2

Twelfth Plan Outlay and Expenditure of Ministry of Youth Affairs and Sports (Rs. in Crore)														
	Twelfth Plan Outlays	Annual Plan 2012-13		Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16			Annual Plan 2016-17		**Total 2012-13 to 2016-17**	
		BE	AE	BE	AE	BE	AE	BE	RE	AE	BE	RE	**BE**	**Exp.**
1	2	3	4	5	6	7	8	9	10	11	12	13	**14 (3+5+7+9+12)**	**15(4+6+8+11)**
Ministry of Youth Affairs and Sports	**6648**	1041	885.33	1093	1031.21	1643	1000.60	1389.48	1311.84	1308.07	1400	1412.15	**6566.48**	**4225.21**

6

Physical Infrastructure

6.1 Introduction

6.1.1 Infrastructure is pivotal for the growth of India. The Twelfth Plan theme of faster, more inclusive and sustainable growth will be achieved with the help of adequate infrastructure being made available. During the Twelfth Plan, the emphasis is on completing ongoing initiatives on a fast-track mode and to further take up major projects which would drive the economy. Investments in infrastructure sector have been affected by various factors including lower GDP growth - with causality running both ways. The status of investment and issues in various infrastructure sectors, are given in sections 6.2 to 6.20 below. The key issues affecting private investment and PPPs across various sectors and way forward are mentioned separately in paragraphs 6.21 to 6.25 below.

6.2 Investment in Infrastructure

6.2.1 The Twelfth Plan had projected an investment of Rs. 55,74,663 crore at current prices with a share of 48 per cent from the private sector during the Plan period (2012-17). As against the Annual Plan projection of Rs. 7,51,012 crore, the actual investment in 2012-13 was Rs. 5,52,431 crore, about 74 per cent. Similarly, against the Annual Plan projection of Rs. 8,87,454 crore in 2013-14, the investment was Rs. 6,26,884 crore, implying an achievement of 71 per cent.

6.2.2 The investment anticipated in 2014-15 of Rs. 7,13,099 crore is somewhat higher than what was achieved during 2012-13 and 2013-14. However, investments anticipated in 2015-16 and 2016-17 of Rs. 8,92,085 crore and Rs. 10,38,324 crore respectively are significantly higher due to recent initiatives in many sectors like electricity, roads, railways, ports and telecommunications which are aimed at creating additional capacities and speed up project implementation. Further, higher budgetary allocations in the years 2015-16 and 2016-17 to infrastructure sectors have the potential to crowd in greater private investment. The total outlay for infrastructure in Budget Estimates 2016-17 stands at Rs. 2,21,246 crore.

6.2.3 Based on the lower investment received in the first two years of the Plan and the anticipated investment level in remaining three years of the Plan, the Twelfth Plan projections have been revised to Rs. 38,22,822 crore which is about 69 per cent of the original Plan projections of Rs. 55,74,663 crore. The revised projections of public investment (Centre & States) for the Twelfth Plan stands at 88 per cent of the target (revised from Rs. 28,90,823 crore to Rs. 25,41,599 crore), while the revision in private investment is estimated at 48 per cent of the target (revised from Rs. 26,83,840 crore to Rs. 12,81,223 crore). Thus, the shortfall in realizing the projected private sector investment largely accounts for the downward projections of the infrastructure investment in the Twelfth Plan. Sector-wise details for the revised projections for public and private investments in various infrastructure sectors are given in **Annexure 6.1**. One of the principal reasons for shortfall in private investment across sectors relates to issues in financing of infrastructure projects. These are discussed in **Box 6.5** of this chapter.

6.2.4 The revised projected investment is still 1.6 times the investment of Rs. 23,77,746 crore achieved in the Eleventh Plan at current prices. The revised share of private investment in Twelfth Plan is projected at about 34 per cent compared to 48 per cent in the original projection and is less than the 37 per cent achieved in the Eleventh Plan. As per the revised projections, investment as a percentage of GDP for the Twelfth Plan as a whole would go down to 6.11 per cent against the original projection of 8.18 per cent and 7 per cent achieved in the Eleventh Plan.

A. Power Sector

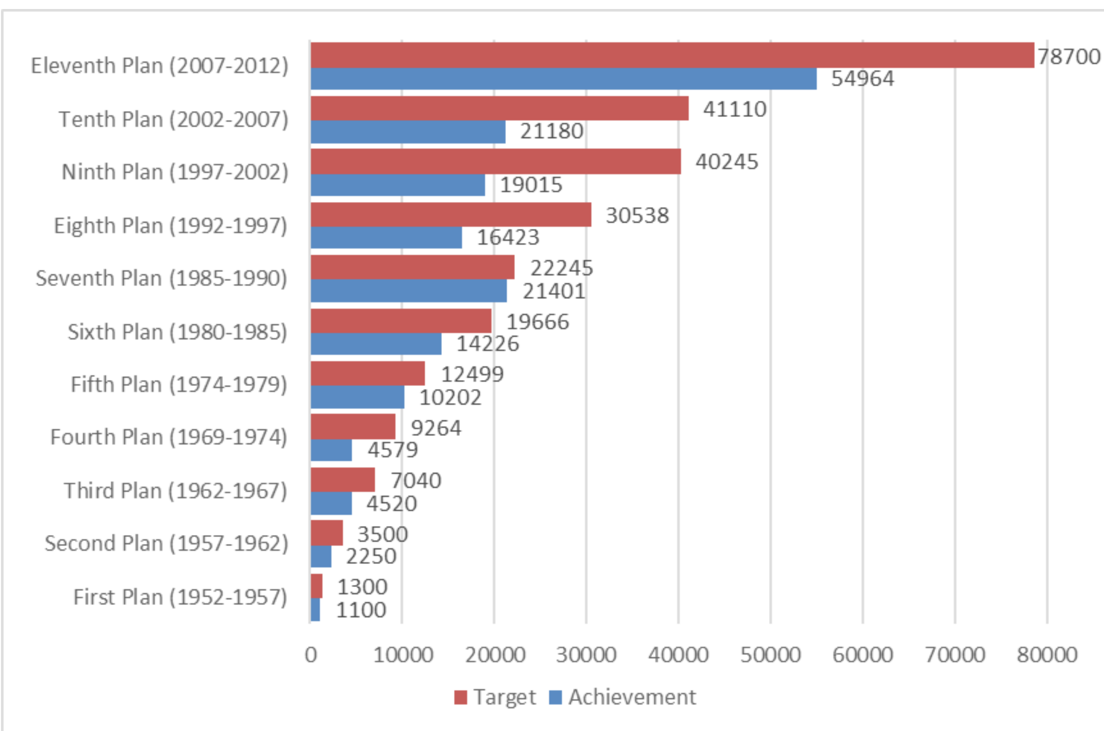
6.3 Aims and Capacity Addition

6.3.1 The Twelfth Plan aims to further build on the power and energy sector initiatives taken up in the Eleventh Plan, covering areas such as access, pricing, generation, distribution and transmission.

6.3.2 The incremental capacity addition achieved during the Eleventh Plan was much better than what was achieved in the previous Plans, as can be seen in **Figure 6.1**. The Twelfth Plan has been a success in this sector so far. During the Annual Plans (viz. 2012-13, 2013-14, 2014-15, 2015-16 and part of 2016-17) 88928.82 megawatts (MW) has already been achieved as on 30th September, 2016, which is 100.41 per cent of the Plan target of 88,536.6 MW. During the FY 2015-16, a capacity addition of 23976.6 MW (as on 31st March, 2016) has been achieved– which is 119 per cent of the Annual Plan target of 20,037.1 MW. The target of capacity addition during the FY 2016-17 is 16654.5 MW. Against this a capability of 3928.5 megawatts (MW) (as on 30th September, 2016) has been achieved.

6.3.3 As far as generation is concerned, the Working Group for the Twelfth Plan had estimated a requirement of 1,403 billion units (BU) by 2016-17. During the first four years of the Plan (viz. 2012-13, 2013-14,2014-15 and 2015-16), the electricity generation in the country was 912.06 BU, 967.15 BU,1048.67 BU and 1107.82 BU against the annual targets of 930 BU, 975 BU, 1,023 BU and 1137.5 BU – being 98.1 per cent, 99.2 per cent, 102.5 per cent, and 97.4 per cent respectively. The proposed target for power generation during FY 2016-

Figure 6.1: Targets/Achievements for Capacity Addition in Five Year Plans (MW)



17 is 1178 BU. The generation during (2015-16) registered a growth of 5.64 per cent compared to last year.

6.4 Fuel shortage: The issues concerning fuel shortage, both coal and gas are as follows:

6.4.1 **Coal:** While coal demand since the beginning of the Eleventh Plan has been increasing at about 6-7 per cent per annum, the actual rise in supply has ranged between 4-5 per cent per annum. This created severe coal shortages, wherein no Fuel Supply Agreements (FSAs) could be signed in respect of new plants which came into being after 31st March, 2009. Taking into account the overall domestic availability and actual requirements, the government decided on 21st June, 2013, that Coal India Limited (CIL) would sign FSAs for 78,000 MW power plants expected to be commissioned by March, 2015, and supply 65 per cent, 65 per cent, 67 per cent and 75 per cent of Annual Contracted Quantity (ACQ) for the last four years of the Twelfth Plan respectively. So far, CIL has signed FSAs for about 76,000 MW. The Ministry of Power has also identified thermal power plants with an aggregate capacity of about 20,900 MW that at present have neither a firm coal linkage nor a coal block. After the Supreme Court had to cancel 204 coal blocks allotted in a non-transparent manner, an Ordinance – the Coal Mines (Special Provisions) Ordinance, 2014 (now replaced by an Act) – was promulgated by the Government of India. So far, 46 coal blocks have been allocated to power sector through auction/allotment till November, 2015. It is expected that once the auction/allotment of all the 204 coal blocks is complete, the issue of fuel shortage in coal-based thermal power plants will be resolved.

6.4.2 **Gas:** Against the total gas allocation of 108.69 MMSCMD (Firm and Fallback)to the Power sector, the actual average gas supplied for FY 2015-16 was only 22.90 MMSCMD.

6.5 Falling Share of Hydro Capacity

6.5.1 A critical issue to be dealt in the power generation sector is the falling share of hydro-electric power generation. India's hydro-electric potential is assessed at about 1,48,700 MW, of which 1,45,320 MW is from projects of capacity above 25 MW. Out of the latter, only about 36,082 MW (25 per cent) has been harnessed so far. The maximum potential is in the North-Eastern Region, primarily Arunachal Pradesh, where the least potential has been harnessed. The total hydropower potential in Arunachal Pradesh is 50,328 MW (50,064 MW through projects of above 25 MW), out of which only 405 MW has been harnessed so far – although four projects with a cumulative capacity of 2,854 MW are under construction, and DPRs of 16 projects (above 100 MW) aggregating to 17,832 MW have been concurred in by the Central Electricity Authority. The civil movement against large dam projects and the related resettlement and rehabilitation issues have come in the way of timely completion of many hydro projects. To accelerate hydropower development, the required clearances and completion of Carrying Capacity and Cumulative Impact Assessment studies of river basins are also being expedited. The progress of prioritized projects and the roads/ bridges required for these projects are being monitored at the highest level, including by the Committee of Secretaries.

6.5.2 In the hydro-thermal mix of installed capacity, the share of hydro-electric capacity was about 26 per cent by the end of the Tenth Plan, which has fallen to about 17 per cent by 31st March, 2015. This is a serious concern from the point of view of the stability of the power system and needs to be addressed urgently through various modes. The share of clean energy (hydro, renewables and nuclear) generation was 23 per cent in total electricity generation in 2013 and continued to be so in 2014.

6.6 Creating a National Grid

6.6.1 The total transformation capacity was 6,58,949 MVA and the total transmission line length was 3,41,551 circuit km (at the end of March, 2016) against 4,09,551 MVA and 2,57,481 circuit km respectively at the end of the Eleventh Plan. The cumulative inter-regional transmission capacity has reached 58,050 MW by the end of March, 2016, and is targeted to reach 68,050 MW by the end of the Twelfth Plan. However, 28,114 ckm transmission line has been added during FY 2015-

16 against the target of 23,712 ckm, which is 118 per cent. The proposed target for transmission line capacity addition for FY 2016-17 is 23,384 ckm.

6.6.2 Short-term open access at inter-state level is allowed, in order to utilize the spare transmission capacity that becomes available on account of margins due to inherent design variations in power flow, as well as the inbuilt spare transmission capacity created to cater to future load growth or generation addition. As short-term trades are allowed only on any incidental margins available in the transmission system, congestion is observed in some transmission corridors, especially in the import of power to the Southern Region from the Eastern and Western Regions. It is also pertinent to mention that congestion does not necessarily mean that generation is not getting dispatched or load is not being met, because sometimes utilities want to access the cheapest sources of power to meet their requirements and this in turn leads to congestion, which is thus more economic in nature. During 2014-15 (up to February, 2015), about 10 per cent (3.1 BU) of the unconstrained volume traded through Power Exchanges could not be scheduled on account of transmission congestion. However, with the augmentation of the transmission network undertaken, and addition of more transmission lines, there has been some reduction in congestion.

6.6.3 **Distribution:** Distribution is the critical link in the entire power sector value chain, as it is the interface between utilities and consumers. Under the Indian Constitution, power is a concurrent subject, and the responsibility for distribution and supply of power to rural and urban consumers rests with the States. GoI provides assistance to States through various Central Sector Schemes for improving the distribution sector, mainly through Integrated Power Development Scheme (for urban areas) and the Deendayal Upadhyaya Gram Jyoti Yojana (for rural areas). These are covered by **Annexure 6.2** and **Annexure 6.3**, respectively. Under new initiative of Ministry of Power 24x7 'Power for All' scheme has been lunched to provide 24x7 reliable & quality power supply. 21 States have signed the Power of All document. Remaining States will be completed by June, 2016.

6.7 Financial restructuring of distribution companies

6.7.1 The main issue affecting the power sector is the financial viability of the distribution companies, or discoms. The tariffs awarded by electricity regulatory commissions have not been sufficient to recover even the cost of supply. In fact, the gap between average revenue and average cost is widening over time. This can be seen in **Figure 6.2**.

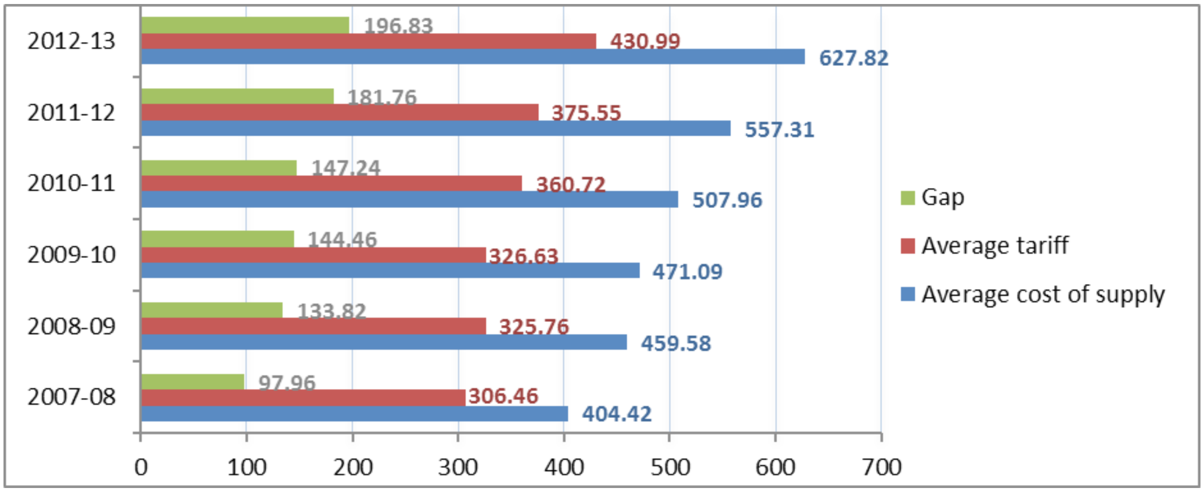
6.7.2 This has led to a situation where the total annual commercial losses of the discoms (without subsidy) increased to about Rs. 1,05,000 crore during 2012-13. Section 65 of the Electricity Act, 2003, stipulates that State Governments may provide subsidy in consumer tariffs, as determined by the regulatory commission, but would need to pay the amount of subsidy in advance to the concerned power distribution utilities.

6.7.3 GoI has introduced the Ujwal DISCOM Assurance Yojana (UDAY), wherein inter-alia 75 per cent of DISCOM debt as on 30th September, 2015, were to be taken over by the concerned State Government over two years and converted into bonds to be issued by the discoms to participating lenders duly backed by the State Government guarantee. DISCOM debt not taken over by the states shall be covered by the Banks/Fls into loans as bonds. MOU has been signed by Twenty five (25) States and One (01) UT in all viz. Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhnad, Karnataka, Kerala, Manipur, Madhya Pradesh, Maharashtra, Meghalaya, Punjab, Rajasthan, Sikkim, Tamil Nadu, Telangana, Tripura, Uttarakhand, Uttar Pradesh and Punducherry.

6.7.4 Some improvements in reduction in gaps between Average cost of service (ACS) and Average revenue realized (ARR) has been in respect of few states due to reduction in invefficiencies, reduction interest cost and cost reflective tariffs. Discoms' poor financial situation has led to lower scheduling of power by them. Since they are not in a position to pay for power purchase. Consequently, the peak energy deficit came down from 9 per cent (in 2012-13) to 4.7 per cent (in 2014-15) and energy shortage from 8.7 per cent (in 2012-13) to 3.6 per cent (in 2014-15).

Figure 6.2: Gap between Average Cost of Supply (ACS) and Average Tariff, 2007-08 to 2012-13

(In paisa/unit)



6.7.5 **Recommendations of the Fourteenth Finance Commission (FFC):** The FFC has made the following recommendations for the power sector:

i. 100 per cent metering to be achieved in a time-bound manner for all electricity consumers.

ii. The Electricity Act, 2003, currently does not have any provision of penalties for delays in the payment of subsidy by a State Government. Therefore, the Act may be suitably amended to facilitate levy of such penalties. However, the Ministry of Power is of the view that there is no such proposal for imposing any penalty on a State Government. There is provision in Section 65 itself that the state Commission may, in advance, compensate persons affected by the grant of subsidy in the manner that Commission may direct as a condition for license, or any other person concerned to implement the subsidy provided for by the State Government. Besides, the spirit of the Act is that the State Government should be distant from the regulators. In the federal structure, the grant of subsidy is a prerogative of the State Government, and the Government of India may not have any role in imposing penalty on any State authorities.

iii. In order to provide financial autonomy to the SERCs, Section 103 of the Electricity Act, 2003, provides for the establishment of a State Electricity Regulatory Commission Fund by each State Government, to enable the SERCs to perform their responsibilities as envisaged under the Act.

6.7.6 Regarding 100 per cent metering, while 92.4 per cent of 11 KV feeders in the country are metered, consumer metering is not complete in many States – for example, in J&K, Bihar, Jharkhand and most of the north-eastern States. Further, metering of agricultural consumers is also incomplete in most States, who otherwise have been able to meter their non-agricultural consumers. Tariffs for the agricultural sector where metering is not available, is based on normative criteria. In addition to meters not being installed, there is the problem of faulty meters, which are not replaced at regular intervals by the distribution companies. Complete metering of all consumers will not only help in raising revenues of the discoms but also make a correct assessment of the losses for each category of consumers.

6.7.7 Regarding payment of subsidies, it has been observed that, against the announced subsidy of Rs. 89,678 crore for the years 2010-11 to 2012-13 by the state governments, the actual subsidy released was Rs. 82,205 crore – leaving a significant gap. The State

Governments are not paying subsidy upfront despite the clear provisions of Section 65 of the Electricity Act, 2003.

6.7.8 Regarding autonomy to the SERCs, it is pertinent to mention that while creation of the State Electricity Regulatory Commission Fund may give some kind of autonomy to the State Electricity Regulatory Commissions, its non-existence has never actually impaired the working of the SERCs. It has been noted in the past that in some States, the Comptroller and Auditor General had argued against creation of the State Electricity Regulatory Commission Fund.

6.8 Power Sector in the North Eastern Region (NER)

6.8.1 **Current status:** The North-Eastern States have 3,364.11 MW installed capacity, comprising of 1,287.08 MW in the State sector, 2,052.50 MW in the Central sector and 24.53 MW in the private sector. Category-wise, it is 1,242 MW in the hydro sector, 1,865.44 MW in the thermal sector and 256.67 MW in the renewable sector. The peak demand of the region was 2,528 MW, and energy requirement 14,225 MU during 2014-15. However, NER had 12.9 per cent peak deficit and 8.7 per cent energy deficit during this period, which is higher than the national average. The NER States have high T&D losses, which vary from 24 per cent (in Meghalaya) to 46 per cent (in Arunachal Pradesh), as compared to all-India average T&D losses of 23 per cent.

6.8.2 **Development of Hydro-Electric Potential:** According to CEA, the identified hydro potential in NER is 63,257 MW. Out of it, merely 1,911 MW (3 per cent) has been developed and 4,280 MW (9 per cent) is under development. The balance is yet to be harnessed. It may be noted that, in India, three rivers – namely the Siang, the Subansiri and the Lohit – feed the Brahmaputra. Apart from these, three other rivers originating within India feed the Brahmaputra: the Tawang, the Dibang and the Kameng. As regards the hydro potential of the Brahmaputra River in India, the majority of it is in Arunachal Pradesh. The total hydropower potential in Arunachal Pradesh is 50,328 MW, out of which merely 405 MW has been harnessed so far.

6.8.3 Presently in NER four Central sector projects (2,770 MW), one State sector project (40 MW) and nine private sector projects (1,470 MW) are under implementation. NER is endowed with a large hydro potential. After meeting the expected power demand of NER, surplus power needs to be transmitted to the load centers of Northern, Western and Southern Regions over long distances. The power transfer has also to be carried out through the narrow "Chicken Neck" corridor about 18 km long and 22 km wide, in the north of West Bengal between the international borders of Bangladesh and Nepal. In this regard, a +800kV, 6,000 MW bi-pole line from Bishwanath Chariali in Assam to Agra in UP, is under construction by POWERGRID for evacuation of power from up-coming hydro projects in NER and also from Bhutan. In order to address the issue of implementation of intra-state transmission, sub-transmission and distribution system in NER, the Cabinet approved the Comprehensive Scheme for Strengthening of Transmission & Distribution Systems in Arunachal Pradesh and Sikkim on 15th September, 2014. The Cabinet Committee on Economic Affairs (CCEA) also approved the North Eastern Region Power System Improvement scheme for six other North-Eastern States (Assam, Manipur, Meghalaya, Mizoram, Tripura and Nagaland) for strengthening of the intra-state transmission and distribution system. This scheme is to be funded on 50:50 sharing basis by the Government of India and the World Bank.

6.9 Impact of Budget on the Power Sector

6.9.1 In the Union Budget for 2015-16, it was proposed to set up five Ultra Mega Power Projects (UMPPs) of 4,000 MW each in the plug-and play-mode – in other words, with all the clearances and linkages in place before the projects are awarded. Minister of Power has identified two UMPPs to be bid out. These are: Bedabahal UMMP (Odisha) and Cheyyur UMPP (Tamil Nadu). The bid process for Bedabahal UMPP and Cheyyur UMPP will be initiated after revision of Standard Bidding documents and allocation of coal to Infra SPV for domestic coal based projects. This will unlock investment of about Rs. 60,000 crore.

6.9.2 In the Budget of 2016-17, 100 per cent village electrification target has been set by 1st May, 2018. The budgetary funds for 2016-17 under the village electrification programme entitled Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) have been reduced to Rs. 3,000 crore compared to Rs. 4,500 crore in 2015-16, while feeder separation has been included in the scheme, as there are no population norms related restrictions. The quantum of subsidy under new DDUGJY is reduced from 90 per cent to 60 per cent, in the light of higher FFC allocations to states. The budget estimate for power sector during 2016-17 is Rs. 79,883.57 crore (GBS: Rs 12,200 crore and IEBR: Rs. 67,683.57 crore).

6.10 The Coal Sector

6.10.1 Coal contributes over 57 per cent of India's primary commercial energy supply and is, therefore, the mainstay of India's energy sector. Around 78 per cent of coal produced in India is consumed for power generation (utility and non-utility). Although the share of renewable energy in India's total energy mix is expected to increase sharply in the coming years, the dominance of coal in the mix is not likely to change till 2031-32, given the lower-than-expected gas production from existing fields and no new major gas discoveries. India ranks third amongst the coal producing countries in the world after China and the USA and has sizeable coal reserves, which are expected to last for over 50 years considering the current level of production. The growing demand for coal has made it imperative to augment domestic production from the public as well private sector and to expedite the reforms process for realizing efficiency gains through increased competition in coal sector.

6.10.2 **Production:** Though domestic coal production has increased significantly in the last decade, coal demand continues to outstrip domestic supply, mainly because of a spurt in demand from the power sector. Against a compound annual growth rate of 4.6 per cent in coal production during the Eleventh Plan period, the coal demand/offtake grew at 6.6 per cent. The Twelfth Plan envisages a compound annual growth rate of 8.0 per cent in coal production but the demand/offtake is expected to grow even higher at around 8.9 per cent. During the first four years of Twelfth Plan, the compound annual growth in coal production has been recorded at 4.27 per cent as against the envisaged target of 8.0 per cent. This is in spite of the fact that there was an impressive growth of around 8.5 per cent in coal production from CIL during 2015-16 (536.50 MT). As far as offtake is concerned, the compound annual growth rate in the first four years of the Plan period has been almost recorded at 6.53 per cent (provisional) against originally envisaged target of 8.9 per cent for the Plan period. The coal production target at the terminal year of Twelfth Plan is set at 724.7 MTs against 795 MTs set at the time of formulation of Twelfth Five Year Plan

6.10.3 The coal demand/offtake is mainly driven by coal based thermal power generation. The coal based generation recorded the ever highest growth rate of 12.1 per cent during 2014-15 but the same has come down to 7.7 percent during the year 2015-16, mainly on account of lower system demand for power. Though, the domestic coal supply from the CIL and SCCL has improved considerably in the last two years, coal production from captive mines is lagging much behind the envisaged level of production. This has resulted in high coal import to the level of 199.88 MT in the year 2015-16 against 217.78 Million Tonnes (MTs) during 2014-15. The higher coal imports calls for sustained efforts to raise domestic production

6.10.4 In order to address the coal demand-supply gap, which is mainly met through imports, it has been decided to quickly enhance the production from Coal India Limited from the current level of 536.5 MTs in 2015-16 to 1 billion Tonnes by 2019-20. Similarly, the current annual production level of SCCL is envisaged to increase from 60.38 MTs to 65 MTs by 2019-20. The current level of production from captive blocks is 31.10 MTs, even lower than previous year, and this is envisaged to reach about 300 to 400 MTs. However, details of captive block production can be ascertained only on completion of the on-going auction process and transfer of mining lease and other related activities to the new successful bidder. The envisaged enhancement in production is subject to completion of the critical evacuation rail lines and facilitation of land acquisition and related R&R issues.

6.10.5 **Demand and Supply:** The demand for coal in the terminal year of the Twelfth Plan (2016-17) was assessed at 980.5 MTs (both coking and non-coking), out of which the share of the power sector was expected to be about 738.4 MTs (captive plus non-captive). At the same time, coal production was anticipated to be 795 MTs, leaving a gap of 185 MTs to be imported. However, both demand and production are registering lower levels. It is expected that at present trend of growth, import of coal may be nearly same as envisaged. The above facts indicate that both demand and production have not grown at anticipated rates..

6.10.6 Though the trend in coal production of CIL in the first two years of the Plan period has been disappointing, it has shown an impressive growth (CAGR) of around 7.7 per cent during the next two years i.e. 2014-15 and 2015-16. For the terminal year of the Twelfth Plan, CIL has set a coal production target of 598.6 MTs against the coal production target of 615 MTs set at the time of the formulation of the Twelfth Plan. Coal production from CIL and overall vis-à-vis targets in the last few years is shown in **Figure 6.3(a) and 6.3(b).**

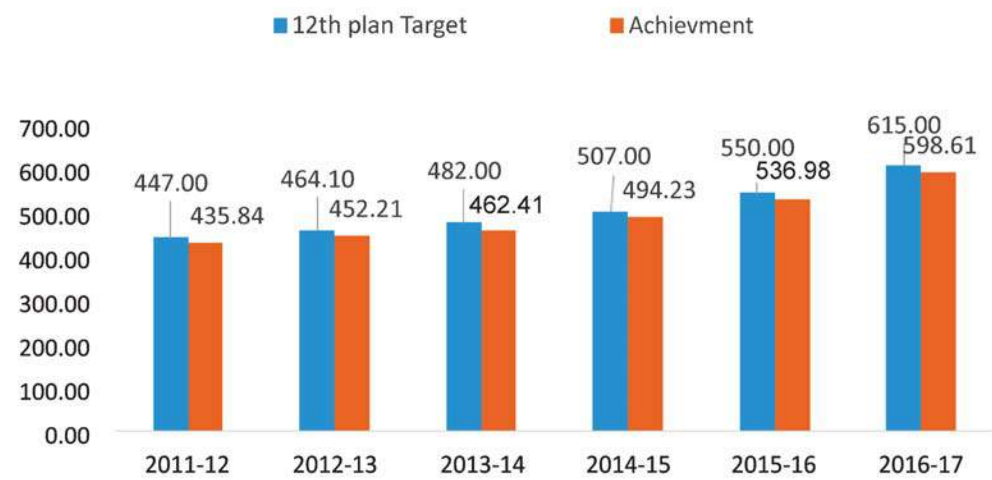
6.10.7 **Augmentation of Coal Transportation Infrastructure:** As already mentioned in the chapter earlier, coal production has failed to keep pace with the growing demand. This is reflected in the rise in imports over 2012-13 (the first year of the Plan). The reasons for this are: cancellation of captive mines, delays in environmental clearances; land acquisition; R&R issues; and inadequate infrastructure. As far as infrastructure is concerned, one of the main impediments is the delay in construction of three railway lines: the Tori-Shivpur-Katotia line in North Karanpura, Jharkhand; the Jharsuguda-Barpalli-Sardega line in Ib valley, Odisha; and the Bhupdeopur-Korichapar-Dharamjaigarh line in Chhattisgarh. All the three lines are now expected to be completed in phases by the year 2018. The Ministry of Coal has signed two separate MOUs with the Ministry of Railways and the State Governments of Odisha and Jharkhand for taking up these railway projects in the respective states. In addition, there are inadequacies in port capacity and handling as well.

6.10.8 **Washeries:** To comply with the directives of MoE&F&CC to supply coal of not more than 34 per cent ash to the power plants situated beyond 500 kms from pitheads (w.e.f. 5th June, 2016), Coal India Ltd. has initiated action to set up 15 new washeries including 6 coking coal washeries with a capacity of 18.6 MTPA and 9 non-coking coal washeries with a capacity of 94 (75.5 initially) Mty are scheduled to be installed in subsidiaries of CIL. All the washeries are envisaged to be commissioned by 2020.

For 100 per cent compliance of the directives of MoFE and CC for supply of less than 34 per cent ash coal to the power plants located 500 kms away from the coal sources, located at road centers or at critically polluted areas, it has been proposed that washeries will be set up either by CIL on their own, or by consumers on their own or by a third party on behalf of the consumers. Where ever possible, CIL would facilitate consumers to set up washeries at pitheads by providing raw coal, land, water, power, railways siding facilities , etc, for coal evacuation/handling.

6.10.9 **Coal Mines (Special Provisions) Ordinance, 2014 and (Special provisions) Act, 2015:** To ensure the uninterrupted supply of coal to end-use plants based on captive coal, the Government promulgated the Coal Mines (Special Provisions) Ordinance, 2014 to facilitate auctioning or allotment of 204 coal blocks following the Supreme Court judgment. It provides for public auction of the mines by way of competitive bidding, thereby eliminating discretion. The ordinance provides that all the firms that had their coal blocks cancelled by the Supreme Court, barring those convicted for offences related to the allotment of mines, can bid in the e-auction after paying an additional levy. Firms running specified end-use plants like steel, cement and power, including the ones having coal linkages also qualify for the e–

Figure 6.3 (a) Twelfth Plan Targets & Actual Production from Coal India Limited (CIL) (in MTs)



Source: Ministry of Coal
Note: Proposed Plan target & likey production for 2016-17

Figure 6.3 (b) Targets & Achievments-Overall (in MTs)

Source: Ministry of Coal
Note: Proposed Plan target & likey production for 2016-17

auction. A nominated authority will ensure the transfer of rights, interests and titles of these blocks. The revenue for auction/allotment shall accrue to the coal bearing states concerned.

6.10.10 Since the Bill to replace the ordinance was passed by the Lok Sabha, but could not be passed in the Rajya Sabha, the Coal Mines (Special Provision) Second Ordinance, 2014 was promulgated by the President on

26th December, 2014. To replace the Second Ordinance, the Coal Mines (Special Provisions) Bill, 2015 was introduced in the Lok Sabha on 2nd March, 2015 and passed by both the Houses of Parliament. The Coal Mines (Special Provisions) Act, 2015 received the assent of the President of India on 30th March, 2015.

6.10.11 Under the provisions of the Coal Mines (Special Provisions) Act, 2015 and Rules made thereunder, a total of 82 coal mines have so far been allocated through e-auction. The estimated revenue which would accrue to coal-bearing states from the 31 coal mines auctioned so far during the life of the mine/lease period is Rs 1,96,698 crore. The likely benefit to consumers in terms of reduction of electricity tariffs from 9 coal blocks auctioned for the power sector will be Rs 69,311 crore approximately. In addition, an estimated amount of Rs.1,97,450 crore would accrue to coal-bearing states from the allotment of 51 coal mines to Central and State PSUs over the life of the mine /lease period.

6.10.12 In the Union Budget 2016-17, Government has renamed the 'Clean Energy Cess 'levied on coal, lignite and peat as 'Clean Environment Cess' and simultaneously increased the rate from 'Rs. 200 per tonne to Rs. 400 per tonne.

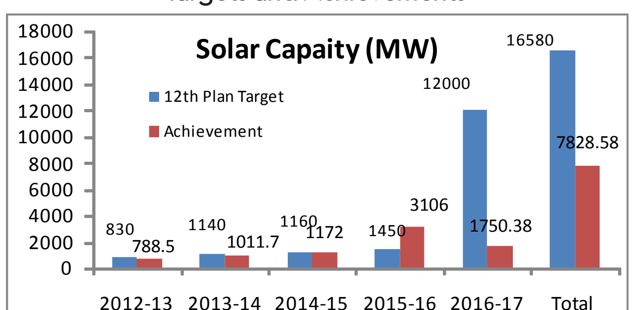
6.10.13 **Plan Outlay and Expenditure:** Actual expenditure in the first four years has been Rs. 37,771 crore (51.8 per cent) as against the Twelfth Plan outlay of Rs. 72,872 crore.

6.11 The New and Renewable Energy Sector

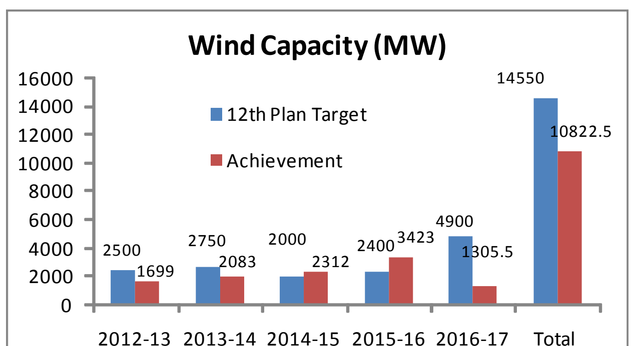
6.11.1 **Introduction**: The Twelfth Plan set bold targets for the renewable energy sector by adopting a target of capacity addition of 30,000 MW, which was more than the total capacity of 24,912 MW as at the time of Plan commencement on 1st April, 2012. In the latest round of bidding under the National Solar Mission, tariffs reached an all-time low of Rs.4.34/kwh. Grid parity for solar generation is on its way to becoming a reality. Solar power targets have now been revised upward to 100 GW by 2022 as against the earlier target of 20 GW by 2022. The target for wind energy has also been increased to 60 GW by 2022. Other proposals include 10 GW of biomass-based power and 5 GW of small hydro power for the same period. Thus total renewable energy capacity has been targeted at 175 GW by 2022. The Twelfth Plan Targets vis-à-vis achievement in respect of Solar and Wind power capacity are given in **Figure 6.4.**

6.11.2 The solar power capacity targets of 100 GW have been divided into grid-connected solar parks, large solar plants and rooftop photo-voltaic(RTPV) systems. India's seriousness in reducing its carbon emissions is evident in the enhanced share of renewables in its energy mix, as well as recognition of RE as a source of energy security. Additionally, off-grid plants under the new solar scheme help India achieve its goal of universal electrification. Projects for development of solar capacity along irrigation canals, solar water pumps for irrigation and drinking purposes have also been approved by the government. Several steps have been taken to chance solar penetration, such as the approval of 25 solar parks across the country for development of mega/ultra-mega solar power in various states.

Figure 6.4: Solar and Wind Power: Targets and Achievements



Source: MNRE
Achievement in respect of 2016-17 is upto 30.9.2016



Source: MNRE
Achievement in respect of 2016-17 is upto 30.9.2016

6.11.3 **Thrust Areas:** Renewable Energy has relevance across different sectors – providing energy access, energy availability, and encouraging domestic and industrial/ commercial/ building applications. Towards this end, the Government has identified obstacles in this sector's growth: high cost, the need for integration with conventional energy, and the absence of institutional linkages. The Twelfth Plan also lists the priorities in the above areas. The thrust areas may include providing access to finance, security of payment, reducing technical and economic barriers to achieving the raised targets, among others. Due to the intermittent nature of solar energy, large-scale deployment will require the development of grid management and load balancing mechanisms in co-ordination with State Load Dispatch Centres and R&D institutions. To ensure that States utilities deploy solar energy, Renewable Purchase Obligations (RPOs) need to be stringently enforced. These are the thrust areas for redressal by the Government.

6.11.4 **Grid-connected Renewable Power**: This segment of solar power forms the bulk of the overall Twelfth Plan target, comprising nearly 33 per cent. However, the performance during its first four years has been lackadaisical, with a mere 60 per cent achievement against the Twelfth Plan's physical targets. Wind comprises 50% of the target and performance during first four years has been 63%. The delay in announcement of GBI and withdrawal of Accelerated Depreciation (AD) in the Wind sector and delay in launch of the 750 MW solar schemes in the Phase II of the JNNSM are some of the reasons for the poor achievements. The Government has reinstated AD in the wind sector, which is expected to boost wind power development in the country. Further, a continued reduction in the project costs of wind and solar energy is perceived as a positive feature towards the achievement of targets in coming years. Rooftop solar has become an important constituent for grid-connected solar power.

6.11.5 **Off Grid Distributed Renewable Power (including rural applications):** The Achievements under this area have also been dismal. Rooftop solar has become an important constituent for off-grid application. As it has been envisaged to implement the above programme entirely through subsidies, growth has been inhibited due to weak local distribution infrastructure and a lack of economies of scale. Apart from this, most agencies are struggling to achieve commercial viability and the majority of them are reliant on subsidies and/or grants. However, a few enterprises have shown signs of scaling. As a capital-intensive business, enterprises face a number of challenges. First, they need significantly high levels of up-front capital for plant installation. Second, as the cost of standard domestic financing is high, it prevents enterprise raising debt from the market. Third, the enterprises face challenges surrounding affordability as well as collecting regular payments from consumers. The continuous up-gradation of technology also requires continuous up-gradation of skill levels. These challenges need to be suitably tackled with innovative financing and a better regulatory framework.

6.11.6 Biomass for cooking, rural electrification, biogas and heating solutions for industrial applications are others areas to focus on. The potential of mini grids in rural areas also continues to remain untapped. In industrial applications, however, there is a greater uptake due to enhanced financial viability.

6.11.7 **Policy Approach:** The expected gains from falling costs – in propelling renewable energy (especially solar power) to play a major role in the energy sector are recognized. But solutions in many operational areas are still difficult to find. The issues listed in the Twelfth Plan for policy action include subsidy debate (capital versus generation-based), the adoption of bidding route to discover costs, the need to attract loan funds, helping renewable energy make inroads in rural areas, supporting domestic manufacturing of equipment, and the role of technology in enhancing efficiency. NITI Aayog has recently prepared a report – *India's Renewable Electricity Roadmap 2030: Toward Accelerated Renewable Electricity Deployment* – which is expected to offer credible options for policy-makers. Approval of the Green Corridors project for setting up transmission corridors for renewable energy is a major achievement during the Twelfth Plan period. Another committee of experts in the NITI Aayog has submitted a Report to Ministry of Finance on financing the large 175 GW renewable energy target by 2022. The report strongly suggests that in the first place, all non-financial support options should be made available to RE e.g. project development, policy support, legislative enablers, and coordinated implementation ecosystem. Such interventions are critical to reach the 175GW RE targets. The ecosystems should also ensure that all direct and indirect incentives should get reflected in the tariff of

RE at the procurement end. Further the incentive design and procurement mechanism should be specific to the characteristics of resource and technology under consideration.

6.11.8 The revised Tariff Policy notified in January, 2016, inter-alia states that "Long term growth trajectory of Renewable Purchase Obligations(RPOs) will be prescribed by the Ministry of Power in consultation with MNRE, and with the percentage so made applicable to start with, the SERCs shall also reserve a minimum percentage for purchase of solar energy from the date of notification of this policy, which shall be made such that it reaches 8 per cent of total consumption of energy, excluding Hydro Power, by March, 2022 or as notified Government from time to time.

6.11.9 The Government has set the momentum to reach the targeted capacity addition of 175 GW by 2022. A RE-INVEST was organised in February, 2015 **(Box 6.1)**.

6.11.10 Solar Initiatives:

i. The setting up of 25 solar parks, each with the capacity of 500 MW and above, which will be able to accommodate over 20,000 MW of solar power projects in state. So far, 34 solar parks of aggregate capacity of about 20,000 MW in 21 states have been approved.

ii. The setting up of over 300 MW of Grid-Connected Solar PV Power Projects by defence establishments and paramilitary forces, with Viability Gap Funding (VGF) from NCEF.

iii. The setting up of 1,000 MW of Grid-Connected Solar PV Power Projects with Viability Gap Fund (VGF) support by Central PSUs under various Central/state schemes, in three years during 2015-16 to 2017-18.

iv. Pilot-cum-demonstration projects for the development of Grid-Connected Solar PV Power Plants on canal banks and canal tops: Solar PV Power Projects totaling the full target capacity of 100 MW (50 MW canal-top and 50 MW canal-banks) have been approved in 8 states.

v. The setting up of 15,000 MW of Grid-Connected Solar PV Power projects under National Solar Mission through NTPC/ NVVN in three tranches. NTPC is also undertaking solar energy projects aggregating capacity of 3,200 MW.

vi. The setting up of (a) 2,000 MV and 5,000 MW of Grid-Connected Solar PV Power Projects with VGF through SECI under Batch I of Phase-II of JNNSM, (b) Grid-Connected Rooftop and Small Power Plants Programme for setting up aggregate capacity of 10,000 MV and (c) Decentralized generation of 10,000 MW of solar power.

6.11.11 Wind Energy Initiatives:

i. The restoration of Accelerated Depreciation (AD) Benefits to wind power projects by the Government has created a robust manufacturing base for wind turbines in the country.

ii. Excise duty on carbon pultrusions used for manufacture of rotor blades, and intermediates, parts and sub-parts of rotor blades for wind operated electricity generators has been reduced from 12.5% to 6.0%.

iii. The classification of renewable projects from red to green category: wind and solar power projects of all capacities, and small hydro projects of <25 MW capacity have been put in green category, i.e. the project developers to obtain clearance from SPCB to "establish and operate" only once in the beginning.

iv. Setting up a Joint Venture Company (JVC) to undertake first Demonstration Offshore Wind Power Project in the country along the Gujarat coast.

6.11.12 Renewable Energy Financing:

i. The Ministry of Finance has accorded in-principle approval for the issuance of tax free infrastructure bonds of Rs 5,000 crore for funding renewable energy projects during FY 2015-16.

ii. The Reserve Bank of India has issued revised guidelines for all scheduled commercial banks making significant inroads for renewable energy in the priority sector lending: (a) inclusion of renewable energy in categories of priority sector, (b) bank loans up to a limit of Rs 15 crore to borrowers for purposes like solar-based power generators, biomass-based power generators, wind mills, micro-hydel plants and for non-conventional energy-based public utilities viz., street lighting systems, and remote village electrification. For individual households, the loan limit will be Rs. 10 lakh per borrower.

iii. Authorized Share Capital of IREDA has been raised by the Government from Rs.1,000 to Rs. 6,000 crore, which will help to increase and strengthen the borrowing capacity of IREDA.

Box 6.1: RE-INVEST 2015

RE-INVEST 2015, the first meet and exposition in India targeted at global investors in renewable energy, laid a strong foundation for the penetration of renewable energy in India.

It featured the signing of Green Energy Commitments by various public and private sector companies, which agreed to invest in the renewable energy sector during 2015-2019. A commitment of 292 GW was made by power producers in the solar energy, wind energy, small hydro and bio-energy sectors.

The manufacturing sector also witnessed a commitment of 62 GW made by the stakeholders and significant commitments were made by financial institutions, to finance renewable projects with a total capacity of more than 78 GW.

6.11.13 **Physical Targets and Achievements:** It is evident that about 63 per cent of the overall physical targets of the Twelfth Plan has been achieved during the first four years of the Plan. Solar capacity addition of 5847 MW grid-interactive solar has been achieved during the first 4 years of the Plan, which is 58 per cent of the total Twelfth Plan target 10,000 MW. MNRE has made plan to add 10,500 MW capacity MW capacity during the terminal years of Twelfth Plan i.e.2016-17, this would lead to over achievement (163 per cent) of the Twelfth Plan solar target. Wind power has achieved 9517.15 MW in first four years and the target for year 2016-17 is 4000 MW and expected to be achieved.

6.11.14 **Plan Outlay and Expenditure:** Actual expenditure in the first four years has been Rs. 9456 crore (which is just over 49 per cent) as against the Twelfth Plan outlay of Rs. 19,113 crore. Considering targeted outlay of Rs. 10,192.83 crore (IEBR) of 2016-17, the expenditure against the total Twelfth Plan outlay is estimated to be about 102 per cent.

6.12: The Petroleum and Natural Gas Sector

6.12.1 **Introduction:** The Twelfth Plan acknowledges that the elasticity of demand for commercial energy may remain high as India's economy grows and traditional fuels get substituted by cleaner ones. Resultantly, the demand for petroleum products is projected to increase at an annual rate of 4.7 per cent. The Plan also made suggestions in other sectors – infrastructure, capacity building and policy reforms in multiple areas of oil and gas industry. While there has been indifferent achievement on most scores, there is satisfactory progress on the pricing front. The latter has been aided by the recent reduction in crude oil prices, which have had a benign impact across India's macro economy, ranging from an improved growth outlook and lower inflation, to healthier fiscal account.

6.12.2 ln October, 2014, the Government took a major step to decontrol high-speed diesel (HSD). Similarly, a modest rise in the price of LPG, as well as limiting the number of subsidized cylinders per consumer also had a favourable effect on the economy. Disbursing subsidy on domestic liquefied petroleum gas (LPG) cylinders directly to Aadhaar-linked accounts of beneficiaries from 1st January, 2015 , is yet another major step to curb wasteful consumption of domestic LPG. As on 16.03.2017, 16.82 crore LPG consumers are getting LPG subsidy directly into their bank accounts. So far, more than Rs. 45,288 crore have been transferred into bank accounts of consumers. The use of Aadhaar based scheme has made black marketing harder, and reduced leakages of LPG After implementation of PAHAL Scheme, the sale of domestic cylinders which includes subsidized cylinders, registered a growth rate of 5.7%

during 2015-16 upto (January 2016) as against 11.31% in FY 2014-15 (upto January 2015) despite increase in consumer base with the addition of 1.6 crore new LPG connections during FY 2015-16. Based on prices and subsidy levels in 2014- 15, it is estimated that the potential annual fiscal savings due to PAHAL will be Rs 14818 crore and Rs 6443 crore during 2014-15 and 2015-16 respectively. Under Pradhan MantriUjjwalaYojana (PMUY), 5 croreLPG connections will be provided by 2018-19 to BPL families with a support of Rs. 1600 per connection. Rs. 8000 crore has been allotted towards the implementation of PMUY in the budget of 2016-17. PMUY aims at empowering millions of poor women in our country, who are forced to inhale unhealthy emissions from burning coal, wood and other unclean fuels while cooking. The target of 1.5 crore connections fixed for the current financial year 2016-17 has been achieved within a span of less than 8 months. Around 1.9 crore LPG connections have been released across the country under PMUY as on 15th March, 2017.On gas pricing, the Government in its order dated March 21, 2016 has provided freedom for marketing the gas to be produced from discoveries in deep- water, ultra deep water and high pressure–high-temperature areas. Various initiatives taken by Government are provided in **Box 6.2**.

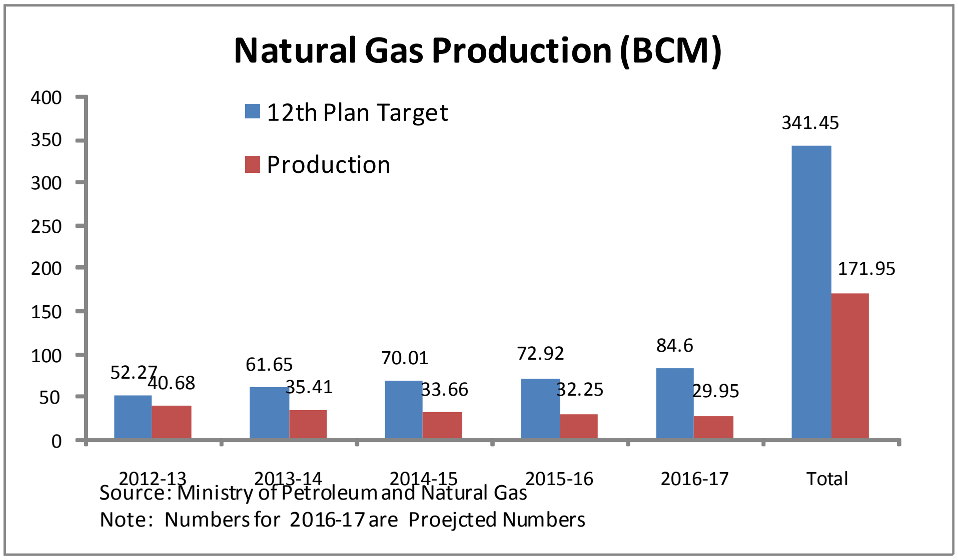
Urja Ganga: In a bid to accelerate development of gas pipeline infrastructure, a capital grant of Rs. 5,176 crore (40%) was granted for the first time for development of 2539 km long gas pipeline project i.e. Jagdishpur-Haldia and Bokaro-Dhamra Pipeline (JHBDPL). Hon'ble PM laid the foundation stone of the Varanasi CGD Project as part of 'Urja Ganga' on October 24, 2016. This pipeline would provide connectivity to the eastern part of the country with National Gas Grid and provide impetus to collective growth and development of this region and CGD development of cities falling within this network.

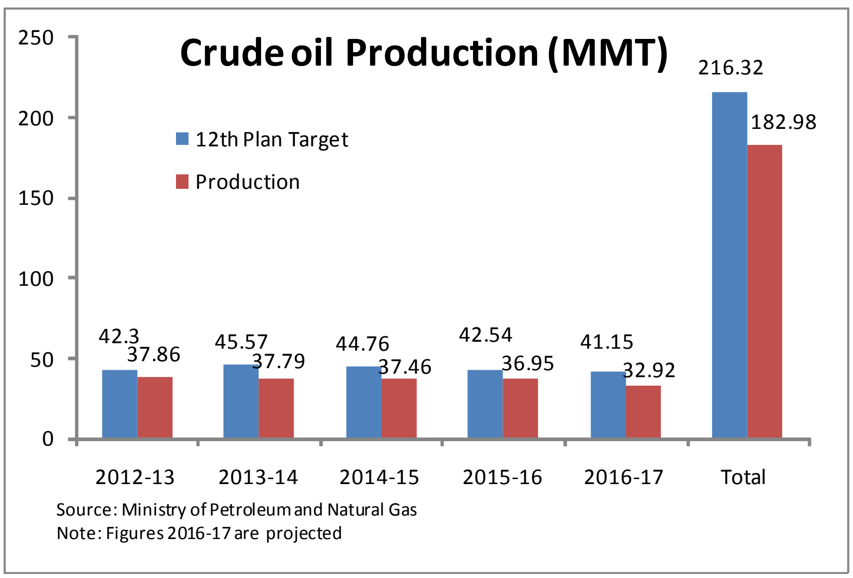
6.12.3 **Thrust Areas**: The thrust areas include reducing import dependency by raising domestic production, enhancing oil and gas security, insulating public finances by appropriate pricing policy, enhancing investment attractiveness and improving the delivery mechanism of subsidized products to the target categories. Import dependency continues to rise, posing a major challenge. Therefore, the upstream sector continues to have a high rank in terms of the Government's priorities for oil and gas sector.Hon'ble Prime Minister has urged all stakeholders to increase the domestic production of Oil and Gas and to reduce import dependence by 10% by 2022, when India celebrates its 75th year of Independence. He has further enunciated a clear roadmap on future of energy sector which rests on 4 pillars viz., Energy Access, Energy Efficiency, Energy Sustainability and Energy Security.

6.12.4. The achievement in the production, exploration and refinery sub- sectors, as well as growth in consumption is given in the paras below.

6.12.5 **Production:** The production of crude oil has remained in the vicinity of 37 MMT in the first four Plan years. However, in case of natural gas, there has been an considerable drop. It is apparent that both private explorers and National Oil Companies (NOCs) have not been able to bring any new field into production. The gas production from RIL-BP-Niko KG basin field, which had led to an exponential increase in India's oil and gas production during the Eleventh Plan, has also significantly dipped. A large number of discoveries are still pending monetization, raising a question mark on the efficacy of the New Exploration Licensing Policy (NELP), launched in 1997 against the backdrop of rising oil imports. NOCs, i.e. ONGC and OIL, account for about 70 per cent of the country's total oil & gas production, whereas the remaining 30 per cent is contributed by the private sector or joint ventures. The NOCs possess nominated fields, which are plateauing or declining. Several discoveries made under NELP regime have not been converted into producing fields. The EOR/IOR schemes implemented by the NOCs in the existing fields are intended towards arresting the natural decline of old fields. However, it is the new fields which hold the key and it is, therefore, important to devise incentives so as to bring in more discovered fields/ marginal fields into production. The production of crude oil and natural gas, as against the Twelfth Plan targets are depicted in **Figure 6.5.**

Figure 6.5: Crude Oil and Natural Gas:
Twelfth Plan Targets and Achievements





6.12.6 **Consumption:** With steady GDP growth over the years, the high elasticity of petroleum demand has been responsible for continuous rise in demand for the latter. However, a host of reasons impacted demand in 2013-14, which resulted into a near flat growth. Overall LPG consumption in 2015-16 grew at CAGR of 6 per cent over the base year 2011-12. However, consumption of superior kerosene (SKO) has registered negative growth trend of 5 per cent in the same period. High-Speed Diesel (HSD) consumption in 2015-16 grew at a CAGR of about 4 per cent over the base year 2011-12, while petrol registered a high growth of about 10 per cent CAGR. This is due to shrinking of the price gap between petrol and diesel and a major shift towards petrol driven cars/two wheelers due to the lowering of petrol prices. Overall, the demand for petroleum products grew at near 6 per cent, 1 per cent and 4 per cent and 11per cent in the years 2012-13, 2013-14 and 2014-15, 2015-16 respectively. Overall consumption of petroleum products growth in 2015-16 was 5.7 per cent from the base year 2011-12.

6.12.7 **Exploration**: India's 26 sedimentary basins have not been exploited to the optimum levels and require intensive exploration efforts for enhancing crude oil and natural gas production in the country. Despite Government's policy for allowing 100 percent foreign direct investment in the upstream sector, the progress has not been encouraging which was largely attributed to various policy blockades. Although, exploratory efforts witnessed a steady decline during the 12th Plan period, much of the focus of the Government was on addressing various issues, removing bottlenecks and implementing policy reforms to provide a level playing field in the upstream sector. Since mid 2014, Government has undertaken a series of transformative reforms and various initiatives to incentivise upstream sector and kick-start exploration efforts. These include inter-alia, gas pricing reforms, marketing and pricing freedom for gas produced from deep-water, ultra deep-water and high pressure–high temperature areas, auction and initiating award process of 67 marginal fields under Discovered Small Field Policy, introducing Hydrocarbon Licensing and Exploration Policy, easing out rigidities in the functioning of PSC regime, permission of extraction of Coal Bed Methane (CBM) to Coal India Limited and its subsidiaries in coal mining areas, Hydrocarbon Vision for North East, National Data Repository (NDR) and Gas hydrates, policy for early monetization of hydrocarbon discoveries, National Seismic Programme for 2D seismic survey of entire un-appraised areas and reassessment of hydrocarbon reserves. These focused steps would pave the way in accelerating progress in exploratory activities.

6.12.8 **Refining**: India has 230.066 MMTPA of refining capacity with a surplus refining capacity of about 15%, making it the second largest refiner in Asia after China. Private & joint venture companies own about 41% of total capacity. The projects face local problems relating to land acquisition, environment and forest clearances, Right of Use (RoU) for pipe line projects, and delays in engaging with the community and low rate of return on large investments~~. As~~ India is likely to register growth in consumption of petroleum products. Value addition by export oriented refineries is also an important net foreign exchange earner. As~~and~~ there is a long lead between the concept stage and ultimate commissioning of refineries, expanding refining capacity an area of immediate concern. With the growth in consumption of petroleum products during 2015-16 around 11.6 per cent over the previous year, the refining capacity requires to be revamped.

6.12.9 **Pricing**: The Government has achieved reasonable success in adjusting the prices of sensitive products, leading to containment of under-recoveries. There has been a sharp reduction by around 83% in under-recoveries from Rs. 161029 crore in FY 2012-13 to Rs 27570 crore in 2015-16. The Rs. 0.50/Litre monthly rise in diesel retail selling price has resulted not only in dampening growth in its consumption, but also reduced under-recovery. As explained above, in October, 2014, the Government took the major step of decontrolling HSD. Similarly, a modest rise in price and limiting the number of subsidized LPG cylinders per consumer has also had a favourable effect. Directing subsidy on domestic LPG cylinders to beneficiaries' Aadhaar-linked accounts, from 1st January, 2015, has been a major step. LPG witnessed the world's largest Direct-Benefit Transfer Programme, with about 16.82 crore beneficiaries receiving a total of Rs 45,288croredirectly in their bank accounts as on 16.03.2017. The Central Excise duty collection from petroleum products during 2016-17 (April-December, 2016) was 164636 crore, registering an increase of 47.42% as compared to Rs. 111677 crore collected during the corresponding period in 2015-16. The Government has notified the 'New Domestic Natural Gas Pricing Guidelines, 2014' for pricing of Domestic Natural Gas under which the price of Natural Gas is notified on an interval of six months based on the price prevailing at Henry Hub, NBP, Alberta Canada and Russia. Accordingly, the price of Natural Gas has been notified @ US $ 2.50/MMBTU on Gross Calorific Value (GCV) basis for the period from 1st October 2016 to 31st March 2017. Gas price ceiling is 5.30/MMBTU for discoveries for HPHT and from difficult areas for the same period.

6.12.10 **Infrastructure, Outlay and Expenditure:** The investment regime for petroleum infrastructure continued to be unclear due to land issues (gas pipelines), lack of clarity on gas pricing (liquid natural gas, or LNG, terminals) and unresolved regulatory issues (gas pipelines and city gas distribution networks). Both upstream and downstream regulatory regime is thus under debate for an overhaul**.** A total outlay of Rs. 4,41,688 crore was approved for this sector over the Plan period, which included GBS of Rs. 5,147 crore. The Actual cumulative upto February 2017 is 456122.77 crore under I&EBR (102% of the total approved IEBR) and Rs. 4444.54 crore under GBS (Plan) (86 per cent of the total approved GBS (Plan). There is vast scope for this sector to contribute to the overall growth agenda by major investments in upstream, refining, LNG terminals and pipelines. However, local issues will need to be addressed for these investments to materialize on the ground.

Box 6.2: Petroleum and Natural Gas Schemes

PAHAL – Direct Benefit transfer for LPG Consumer (DBTL) Scheme : Government, as a measure of good governance has introduced well targeted system of subsidy delivery to LPG consumers through PAHAL. This initiative of the Government was aimed at rationalizing subsidies based on approach to cut subsidy leakages, but not subsidies themselves.PAHAL has entered into Guinness book of World Records, being largest Direct Benefit Transfer scheme.

So far, more than 16.82 crore (as on 16.03.2017)LPG consumers are getting LPG subsidy and Rs. 45,288 crore have been transferred directly into their the bank accounts.

PAHAL has helped in identifying ghost/multiple/inactive accounts. Blocking of such accounts have resulted in estimated savings of more than Rs 21,000 cr during FY 2014-15 & 2015-16.

Further, Government has taken steps to rationalise the subsidy outgo by excluding such LPG consumers or his/her spouse having taxable income of above Rs 10 lakh, from availing LPG subsidy.

Pradhan Mantri Ujjwala Yojana (PMUY)

The Government has launched “Pradhan Mantri Ujjwala Yojana”(PMUY) for providing LPG connections to 5 crore women belonging to the Below Poverty Line (BPL) families over a period of 3 years starting from FY 2016-17. Objective of the scheme is to provide clean cooking fuel solution to poor households especially in rural areas. Use of LPG as a cooking fuel helps in effectively addressing health hazards associated with the use of conventional sources of cooking fuels. As on 14.3.2017, more than 1.90 crore connections have been released under the scheme against the target of 1.5 crore fixed for FY 2016-17.

Direct Transfer of Cash Subsidy on PDS Kerosene (DTCK): Ministry of Petroleum & Natural Gas has launched Direct Benefit Transfer in PDS Kerosene (DBTK) Scheme. The need to implement DBTK was felt to initiate reforms in allocation anddistribution of PDS SKO distribution system. Under the DBTK, PDS Kerosene is sold to the identified beneficiaries at non-subsidized rates and the applicable subsidy is directly transferred into the bank account of the beneficiaries. Implementation of DBTK will result in better subsidy management through direct transfer of subsidy into bank accounts of beneficiaries. This would result in reducing expenditure on subsidy and also help in curbing diversion of subsidized kerosene.

Under the provisions of the DBTK Scheme, the States/UTs would be given cash incentive of 75% of subsidy savings during the first two years, 50% in the third year and 25% in the fourth year. In case the States/UTs voluntarily agree to undertake cuts in kerosene allocation, beyond the savings due to DBT, a similar incentive would be given to those States/UTs.

Jharkhand has become the first State in the country to implement DBTK in four districts, with effect from 1.10.2016. State Government of Karnataka, Telangana, Nagaland and Haryana have taken voluntary cut of more than 200,000 KL in their PDS Kerosene allocation and availed cash incentive.

LNG Re-gasification Capacity to be enhanced to meet domestic demand of gas: At present, country is having 4 R-LNG terminals in the country with storage and re-gasification capacity of 26.3 MMTPA. In order to meet the demand of increased re-gasification demand, Petronet LNG Ltd (PLL) is expanding the capacity of its Dahej R-LNG terminal by 5 MMTPA which is expected to be commissioned by the end of FY 2016-17. Further, an expansion of Dahej by 2.5 MMTPA and development of break-water facility at Dabhol terminal to operationalize 5 MMTPA capacity is expected by 2021-22. On the eastern coast of the country, 3 new R-LNG terminals of 5 MMTPA capacity each (i.e. Dhamra, Kakinada and Ennore) have been planned and the same are expected to be developed by 2022.

National Gas Grids: At present, the country’s gas pipeline network is 15,000 km long. It is proposed to build another 15,000 km of gas pipeline to complete the national grid. Out of this proposed additional 15,000 km, about 14,500 km has already been authorized by MoP&NG/PNGRB and these projects are at various stages of implementation.Development of National Gas Grid would connect all major demand and supply centres in India.

Urja Ganga:

In order to develop gas pipeline network in the eastern part of the country, the Cabinet Committee on Economic Affairs (CCEA) has approved partial capital grant at 40 percent (Rs. 5,176 crore) of the estimated capital cost of Rs.12,940 crore to GAIL for development of two gas pipeline projects i.e. Jagdishpur- Haldia and Bokaro-Dhamra Pipeline projects. This is the first time in the history that Government has come forward to fund the gas pipeline infrastructure in the country. This project will connect eastern part of the country with National Gas Grid and will ensure the availability of clean and eco-friendly fuel i.e. Natural Gas to the industrial, commercial, domestic and transport sectors in the States of Uttar Pradesh, Bihar, Jharkhand, Odisha and West Bengal.

In order to put thrust on development of CGD network for securing the un-interrupted supply of cooking and transport fuel to public at large, the Government has accorded the highest priority in domestic gas allocation to PNG (Domestic) and CNG (Transport) segments. Government has decided to meet 100% demand of CNG and PNG sector through supply of domestic gas. At present, 30 CGD companies are developing CGD network in 80 Cities/Districts across 19 State(s)/UTs. As on date, about 34.89 lakh households and 27.5 lakh vehicles are benefitting from these clean and conventional fuels. The aim is to expand the PNG network across the country raising the number of households connected with PNG to 10 million by 2019.

HELP: The Government has approved the Hydrocarbon Exploration and Licensing Policy (HELP) and the four main facts of this policy are :

i. Uniform license for exploration and production of all forms and hydrocarbon.

ii. An open acreage policy.

iii. Easy to administer revenue sharing model and

iv. Marketing and pricing freedom for the crude oil and natural gas produced.

Discovered Small Field Policy: The Government put on offer 67 fields for online international competitive bidding with the objective of monetizing of hydrocarbon resources locked for years under the 'Discovered Small Field Policy' which is packed with all possible reforms similar to HELP. All these fields are located in existing oil and gas producing basins, where oil or gas has already been discovered. Bids were launched on May 25, 2016 and by bid closing date a total of 134 e-bids were received for 34 contract areas.

The CCEA has since given its approval to award contract in 31 contract areas (23 on onshore and 8 in offshore) of discovered small fields of ONGC and OIL. Award of contract is expected to provide faster development of fields and facilitate production of oil and gas thereby increasing energy security of the country.

B. Communications Sector

6.13 Telecommunications

6.13.1 Telecommunications is one of the critical components of socio-economic development. Globally, it's all pervasive reach has proved to be the driver for accelerating growth. In India, a series of proactive policy measures along with active participation by private sector have played an important role in the exponential growth of the telecom sector.

6.13.2 The growth of mobile telephony has been one of India's most visible success stories and has helped achieve faster, more inclusive and sustainable growth. The sector has continued to grow rapidly during the Twelfth Plan period. The total subscriber base as on 30th September, 2016 was 1074.24 million compared to 951.34 million at the beginning of Twelfth Plan. Thus overall tele-density has increased to 84.09 per cent during this period. In addition, rural tele-density has increased from 39.22 per cent to 51.24 per cent. The total number of broadband subscribers has also grown to 149.75 million, indicating the advent of next phase of growth in telecommunications.

6.13.3 The first two years of Twelfth Plan were among the most eventful years for the Telecommunications Sector. It faced serious transparency challenges arising from issues raised by the allocation of licenses in 2008, which forced the quashing of 122 licenses by the Supreme Court. The Government adopted a multi-pronged approach and initiated a series of policy measures to maintain the growth momentum and make it more competitive. As a first step, the National Telecom Policy-2012 (NTP-2012) was notified with the primary objective of maximizing this public good by making available reliable, affordable and high quality converged telecommunication services anytime, anywhere.

6.13.4 The NTP-2012 also outlined various measures to develop a conducive ecosystem. Spectrum was delinked from licencing, paving the way for adoption of auctions and a mechanism for its allocation. The Government also announced some significant initiatives, like the policy on mergers and acquisitions, inter-service area mobile number portability, market access for domestically manufactured products and 100 per cent FDI in the sector. The revival of the two ailing Public Sector Undertakings, Mahanagar Telephone Nigam Limited (MTNL) and Bharat Sanchar Nigam Limited (BSNL) was also taken up, keeping in view their strategic importance. These measures are expected to drive Indian telecom sector in a big way in the years to come.

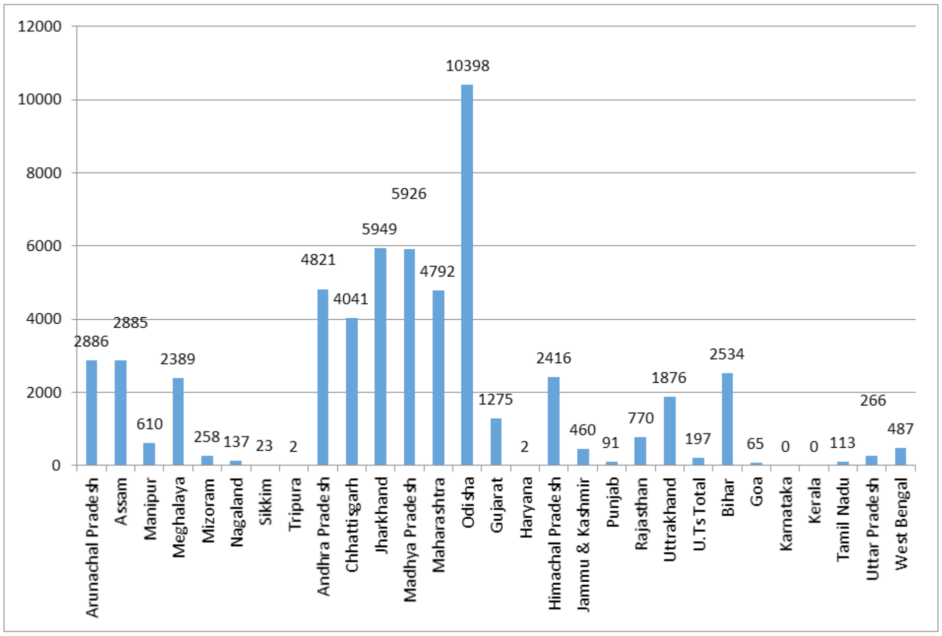
6.13.5 The policy interventions taken by the Government have started yielding the desired results, particularly in the telecom sector and electronics manufacturing. The auction of Spectrum in three rounds in November, 2012, March, 2013 and February, 2014, generated revenues of Rs. 9,407.64 crore, Rs. 3,639.48 crore and Rs. 61,162.22 crore respectively. The spectrum auctions conducted in February, 2015, have further resulted in a commitment of Rs. 1,09,343 crore, to be paid by the winning telecom companies to the Government. In the electronics hardware manufacturing sector, project proposals worth over Rs. 18,000 crore have been received. In addition, the Government has also approved establishment of two semiconductor wafer fabrication facilities in the country with a total investment of Rs. 63,000 crore. **Box 6.3** gives a glimpse of the measures taken during the Plan in the telecom sector.

Box 6.3: Major Telecom Policy Measures since 2012

i. National Telecom Policy, 2012.
ii. National Policy on Electronics, 2012.
iii. National Policy on Information Technology, 2012.
iv. Policy on Adoption of Open Source Software (OSS) for Government of India.
v. “e-mail Policy of Government of India” and “Policy on Acceptable Use of IT Resources of Government of India.
vi. Policy on Electronic Development Fund.
vii. Framework for Enhancing Cyber Security of Indian Cyberspace.
viii. Semiconductor Wafer Fabrication (Fab) Manufacturing Facilities.
ix. Reduction in tariff for National Roaming.
x. Delicensing of frequency bands 433-434 MHz and 9-50 KHz.
xi. Implementation of first phase of the unified licence regime.
xii. Revised guidelines for mergers and amalgamations.
xiii. Preferential Market Access for domestically manufactured telecom products in government procurement.
xiv. Increase in FDI up to 100 per cent for all telecom services.
xv. Revision of minimum broadband speed for download from 256 kbps to 512 kbps.
xvi. Revival Plan for BSNL and MTNL.
xvii. Establishment of Telecommunications Standards Development Society, India (TSDSI) through government-industry initiative.
xviii. Revival Plan of ITI Ltd. through financial restructuring and infusing Rs. 4,156.79 crore.

6.13.6 The Government of India has also initiated programmes for universal access to mobile connectivity, extending mobile coverage to all the remaining uncovered villages (numbering 55,669) (**Figure 6.6**) in a phased manner by March, 2019. Out of the 55,669 uncovered villages, 3,000 villages are envisaged to be provided with mobile coverage during 2016-17. The Government's major focus is to reach the unreached and remote areas, especially the Left Wing Extremism-affected areas, North-Eastern States, the Himalayan States, the Western Border States and the Islands on priority basis. Against a target of installing 2,199 towers in LWE areas by June, 2016, 2,173 towers have been set up as on September 30, 2016 and therefore, remaining 26 towers will have to be installed during 2016-17 to meet the target.

Figure 6.6: Uncovered Villages (Mobile)



6.13.7 An exclusive optical fibre based 'Network For Spectrum' (NFS) has been planned, at an estimated cost of Rs. 13,334 crore, to cater to the communication needs of the defence services. The most crucial component of the project is the laying of nearly 60,000 Km OFC spread over the whole country. The project is being implemented by BSNL and the work of OFC laying was awarded in July-August, 2014.

6.13.8 The creation of 'Broadband Highways' across the country for providing affordable and equitable access to information and knowledge is at the heart of the Digital India Programme. This view has also been echoed by the Fourteenth Finance Commission. The Government has therefore, undertaken a massive programme to connect all 2,50,000 Gram Panchayats (GPs) in the country with a minimum 100 Mbps bandwidth, under the National Optical Fibre Network Project (NOFN). Optical Fiber Cable (OFC) laying work has been completed in 59,945 Gram Panchayats as on September 30, 2016. Against a revised target of connecting 1,00,000 GPs by March 31, 2017, 10,153 Gram Panchayat have been connected as on September 30, 2016 and therefore, the remaining 89,847 will need to be connected during 2016-17. This programme is now being restructured as BharatNet and proposed to be implemented in three phases as approved by the Telecom Commission in its meeting held on April 30, 2016. In addition, the National Knowledge Network (NKN) a state-of-the-art multi-gigabit pan-India network for providing a unified high-speed network backbone for all knowledge-related institutions such as research laboratories, universities and other institutions of higher learning, including professional institutions in the country has also been initiated. NKN has connected 1,585 institutions throughout the country as on May, 2016. The NKN will provide high speed backbone connectivity for e-governance infrastructure such as data centres at the national and state levels, and State Wide Area Networks (SWANs). NKN will also provide massive data transfer capabilities required for e-governance applications.

6.13.9 **Digital India:** The Government initiated the Digital India Programme in August 2014, to transform the country into a digitally empowered society and knowledge economy. It is a umbrella programme focusing on making technology central to enabling change. The contours of the programme are given in **Box 6.4**.

Box 6.4: Digital India

Objectives - Centered on 3 Key Pillars

1. Infrastructure as utility to every citizen
2. Governance and services on demand
3. Digital empowerment

Key Action Areas

1. Broadband highways	2. Universal access to phones	3. Electronics manufacturing
4. e-governance - eKranti	5. Public service delivery outlets	6. Jobs in IT sector
7. Digital literacy	8. Information for all	9. Early harvest programmes

6.13.10 The National e-Governance Plan (NeGP), is one of the flagship programmes of Government of India. NeGP was designed and approved for implementation in 2006, with the objective to create a nation-wide framework for e-governance in India. As part of NeGP, out of the 252 electronics services envisaged under 31 Mission Mode Projects, 222 services are operational. NeGP has now been subsumed into e-Kranti, which is an integral part of the Digital India programme with the vision of "Transforming e-Governance for Transforming Governance". The mission of e-Kranti is to ensure a government-wide transformation by delivering all its services electronically to citizens through integrated and interoperable systems and multiple modes while ensuring efficiency, transparency and reliability of such services at affordable prices.

6.13.11 e-Kranti now has 44 Mission Mode Projects (MMPs) (including the 31 MMPs under NeGP), which focus on specific aspects of electronic governance. There are 13 Central sector MMPs, 17 State sector MMPs and 14 Integrated MMPs together with the core ICT infrastructure. The MMPs follow the key principles of e-Kranti: 'Transformation and not Translation'; 'Integrated Services and not Individual Services'; 'Government Process Reengineering (GPR) to be mandatory in every MMP'; 'ICT Infrastructure on Demand'; 'Cloud by Default'; 'Mobile First'; 'Fast Tracking Approvals'; 'Mandating Standards and Protocols'; 'Language Localization'; 'National GIS (Geo-Spatial Information System)'; 'Security and Electronic Data Preservation'. In addition, e-Kranti also covers several new areas: e-Education; Digital Literacy programme; e-Healthcare; GIS-based decision-making; Technology for Farmers; Technology for Security; Technology for Financial Inclusion; and Technology for Justice. The implementation of e-Kranti is critical for the success of e-governance, easy governance and good governance in the country.

6.13.12 It may however be mentioned that the funding arrangement for the National e-Governance Action Plan (NeGAP), which was hitherto being implemented as a Centrally-Sponsored Scheme, has undergone a change in the light of the recommendations of the Fourteenth Finance Commission. It has been left to the States to decide to continue (or not) with this scheme/ programme out of their increased devolution of resources and thus no direct provision has been made in the 2015-16 budget of MeitY for NeGAP. Therefore, States need to support these schemes, so that the core ICT infrastructure created so far would continue to be properly utilized in its entirety. In addition, the implementation of integrated and State sector MMPs as well as the National Information Infrastructure (NII) under e-Kranti would keep flourishing.

6.13.13 **Challenges and the way forward:** The major developmental challenges faced by the sector are to expand the reach of broadband and connect the hitherto unconnected areas, thereby increasing rural tele density. This need to be predominantly driven through the Universal Service Obligation Fund (USOF), as service provisions in unconnected rural and far flung areas is still commercially unviable.

6.13.14 The present growth of the telecom sector is mainly driven by voice telephony. The next wave of growth in the telecom sector will be driven by data. The Government has already initiated programmes to boost data driven services. Facilitating the creation of infrastructure for meeting the carriage requirements of data demand is a priority area for the Government.

6.13.15 The realization that there are issues in the implementation of NOFN led the Government to constitute a committee to review the architecture, implementation strategy, utilization models and institutional structure of NOFN and to align NOFN with the vision of Digital India. The committee has submitted its recommendations, which are being examined by the Department of Telecommunications. An early decision on the recommendations can help in reshaping NOFN to expeditiously deliver the vision of Digital India.

6.13.16 The other major challenge in the telecom sector is to regain investors' confidence. This needs to be promoted by a simplified licensing framework, which has the flexibility to adjust and adapt to rapid technological changes. In order to align the legal framework to modern requirements, legislation for converged regulation of the communications sector to serve public interest objectives is proposed. The efficient utilization of spectrum also needs promotion, through policies relating to spectrum trading and spectrum sharing. **Box-6.5** lists the tasks in near future for the communications sector.

Box 6.5: Communications Sector: Near-Future Tasks

i. Fast- track the implementation of BharatNet programme for providing broadband connectivity to Gram Panchayats and support the Digital India programme.
ii. Facilitating public wi-fi facilities at public places for access to the information highway.
iii. Provision of mobile services in Left Wing Extremism (LWE) affected areas.
iv. Strengthening of mobile telecommunication network in the North-Eastern States.
v. Strengthening of telecommunication network in A&N Islands and Lakshadweep and connecting the Islands with the mainland.
vi. Fast tracking the completion of the Network for Spectrum project.
vii. Enactment of Right of Way rules to facilitate laying of telecom infrastructure.
viii. Revival and revitalization of BSNL/ MTNL.
ix. Rolling out of emergency communication plan for dealing with disasters.
x. Strategy for promoting indigenous R&D, IPR generation and telecommunication manufacturing.

6.13.17 With the National e-Governance Programme (NeGP) infrastructure in place, and majority of the Mission Mode Projects (MMPs) having started providing services, it is essential to re-examine the programme as a whole. This is essential for improving the delivery of services and fast tracking the implementation of such schemes and sub-components of NeGP that are yet to take off. The ultimate objective is to integrate all the services accruing from various MMPs and provide them on various platforms like mobile, web as well as through service delivery outlets like the Common Service Centres. Integration of various databases is essential for consolidating the entitlements/benefits to a citizen for efficient and targeted delivery of services. DeitY therefore needs to put in place a scheme and stitch together all the databases, with residents' Aadhar numbers as a common link.

6.13.18 Digital India, National Information Infrastructure (NII) and e-Kranti programmes have been initiated by DeitY to help consolidate the initiatives undertaken till date and also to fill the gaps while expanding. However, there is a need to map the activities completed under NeGP and use the experience/learning in formulating the way forward under Digital India/NII. A crucial element in the success of these programmes is the availability of resources both in terms of finances and qualified manpower across the States. IT projects suffer due to the fast obsolescence of technology; hence, it is essential to move at least as fast to implement these projects, so as to reap the benefits of the investments made.

6.13.19 Delivery of services to people in real time is the main objective of NeGP. The States and UTs are central to this, and need to play a crucial role by (i) Leveraging the Common ICT platform; (ii) Promoting the adoption of Aadhaar to facilitate the identification, authentication and delivery of benefits; (iii) The time-bound implementation of State sector MMPs and e-governance initiatives; (iv) Government business process re-engineering using IT; and (v) Ensuring the availability of all databases in digital format.

6.13.20 With a mature IT System in place, cloud-based architecture needs to become the default. This would help in minimizing the huge IT infrastructure costs and implementation schedule, thereby reducing the overall project costs as the Indian IT sector moves from capex + opex-based model to simply an opex-based model.

6.13.21 With a massive rollout of network through NOFN, NKN and service delivery through MMPs to the common man, maintenance of the network & assets so created is a huge challenge and the Government alone would not be fully equipped to take this forward. The expertise and delivery capabilities of private sector need to be used for this purpose. Appropriate PPP models need to be worked out. Possibilities include: CoCo – Company owned and Company operated - service delivery models, with appropriate revenue sharing.

6.13.22 In today's scenario, the security of cyberspace has attained paramount importance. Complex malicious softwares are used by both the State and Non-state actors as cyber weapons and there have been many untoward incidents. The evolving cyber threat landscape and its potential impact on the well-being of the nation's economy and its security necessitate the need for real-time situational awareness and rapid response to cyber security incidents. The establishment of 'National Cyber Coordination Centre' as a priority will help in building safeguards along with counter-measures to ensure security of the IT systems and the information contained therein.

6.13.23 **Implications of Fourteenth Finance Commission and Budget 2015-16:** The Fourteenth Finance Commission has recommended the devolution of 42 per cent of the divisible pool of taxes to the States against 32 per cent earlier. It is expected that the States will now have greater flexibility to use this money. The major programme/scheme in this sector which needs resources from States out of this higher devolution is the National e-Governance Action Plan (NeGAP), as the States will now be vested with its implementation and fast-tracking, depending upon preparedness.

6.13.24 The 2015-16 Union Budget left it to the States to take a call on the NeGAP and decide to continue (or not) with this scheme and its related programmes out of their increased resources resulting from higher devolution. The major issue which emanates is that the infrastructure which has been put in place by the Government such as the State Wide Area Network, State Data Centres, Common Service Centres as well as the capacity created so far, continues to be fully utilized. Moreover, as ICT infrastructure suffers from fast obsolescence, all the concerned (States and UTs) need to quickly evolve a common plan to provide services to the citizens using the infrastructure established. Towards this end, the enactment of the Electronics Services Delivery Bill needs to be taken up immediately.

6.13.25 Financial performance: During 2012-15, an expenditure of Rs. 29,116.65 crore was incurred by Department of Telecommunications (DoT). An outlay of Rs. 22,680.70 crore (B.E.) has been approved for DoT for 2016-17 against Rs. 20,782.82 crore (R.E.) in 2015-16. Thus the total anticipated outlay of the DoT during the Twelfth Plan would be Rs. 72,580.17 crore with a GBS of Rs. 19, 619.88 crore against the Twelfth Plan approved GBS of Rs. 20,825 crore.

C. Transport

6.14 Overall Status of Transport Sector

6.14.1 The Twelfth Plan had identified the main challenges in India's transport sector as: lack of capacity; low transport efficiency; model imbalance due to an unsustainable level of traffic moving by road; lack of transport access to large unserved areas of the country; poor safety standards leading to unacceptable levels of accidents, especially on roads and the lack of integrated transport outlook. The strategy for the transport sector in the Plan addressed these challenges. Looking at capacity first, the most capacity-constrained sector in transport is the rail sector, where in the last four years additional capacity has been added but not at the scale of the Plan targets. Notably, the DFC projects are on a firm footing and should add to new capacity by 2019-20 (though not by the originally planned target of March, 2017). In the road sector, capacity of single lane NHs and State Highways has to be doubled as a priority for which much more needs to be done. The port sector has created capacity, especially in the non-major port sector which is likely to be sufficient up to 2020 but the thrust must continue so that as international trade increases and the Make in India programme picks up, there is no capacity constraint. In aviation, the number of airports has increased but penetration of airlines to many airports including to the north-eastern states is much less than required which points to the need for improving regional connectivity. Growth of passenger number in the aviation sector has been of very high order in the last two years.

6.14.2 There has been no substantial achievement in diverting traffic from road to more sustainable forms of transport i.e. rail and water ways. Growth of rail freight traffic has not kept pace with Plan targets. In fact, in NTKM terms, this is a decline which may be the first instance of negative growth in rail traffic during a plan period. There has been a decline in originating passengers too. Despite the overall decline, the rail passenger demand on many sectors is not being met due to severe capacity constraints. Transport access to unserved areas have been improving especially to the north-east, with railways successfully completing many critical projects and SARDPNE progressing, although at a slower pace than required. However, one transportation challenge with which not much engagement has taken place is that of safety. The Ministry of Road has proposed a new Road Safety Bill while it has faced opposition from some states. Consequently, the work on lead transport agency for safety in the form of the National Road Safety Transport Management Board (NRSTMB) has not progressed despite being suggested by the Sundar Committee in 2007. The main function of NRSTMB would be to take steps to improve road safety in the country.

6.14.3 On the budgetary issues related to transport, railways remain the most underfinanced transport sector relative to its requirements. But greater internal generation from the passenger segment is possible by rationalizing fares. This would reduce the need for hiking freight rates.

6.14.4 The case for an integrated transport policy has been made very strongly in the National Transport on Development Policy Committee (NTDPC) report 2014, but not much progress has taken place on this front. The subsequent sections look at the individual transport sectors.

RAILWAYS

6.15 The Twelfth Plan aimed at increasing the pace of capacity creation and connectivity to hitherto unconnected areas; enhancing rail share in freight traffic by at least 2 per cent; and technological up-gradation. Some major projects which are targeted for completion in the Twelfth Plan are the eastern and western dedicated freight corridors and important connectivity projects in the north eastern states.

6.16 Financial Performance and Investment

6.16.1 The Railways' financial position continue to be under strain. In 2016-17 (the 5th year of the Twelfth Plan), it is estimated that the surplus after accounting for all expenses including dividend would be Rs. 8,480 crore as compared to Rs. 10,506 crore in 2015-16. Operating ratio is estimated to be at 92.00 per cent in 2016-17 against the anticipated operating Ratio of 90.5 percent in 2015-16 on account of implementation of 7th Pay Commission recommendations. The total Plan size envisaged for the rail sector under the Twelfth Plan is Rs. 5,19,221 crore to be contributed by GBS of Rs. 1,94,221 crore, internal resources of Rs. 1,05,000 crore, market borrowings of Rs. 1,20,000 crore and private investment including PPP of Rs. 1,00,000 crore. The actual investments in the first four years are Rs. 50,383 crore in 2012-13, Rs. 53,989 crore in 2013-14, Rs. 58,719 crore in 2014-15, Rs 93,519 crores in 2015-16 and the BE for 2016-17 is Rs 1,21,000 crores. If the investment planned for the year 2016-17 is achieved, the total investment in the Twelfth Plan period would be around Rs 3.78 lakh crore which is 72.7 per cent of the projected outlay for the Twelfth Plan. As can be seen, investment in the fourth year has taken a jump of 72 per cent over the average of the first three years and is expected to move to a further higher trajectory in the final year. This has been made possible through a new source of funding in the form of Budgetary Resources from Institutional Finance under Internal and Extra Budgetary Resources (IEBR) from institutions such as the LIC. If we analyse the sources of funding, then out of the expected Rs. 3.78 lakh crore of investment in the Twelfth Plan, Rs. 1.69 lakh crore is expected from GBS which is 87 per cent of the Twelfth Plan target of Rs. 1.94 lakh crore. Similar figures for other sources of funding are: Rs. 0.68 lakh crore from internal sources which is 64 per cent of target; Rs. 0.75 lakh crore from market borrowings from IRFC which is 63 per cent of the target; around Rs. 0.64 lakh crore from Institutional Financing and PPP which is 64 per cent of the target.

6.17 Operational Performance

6.17.1 The Twelfth Plan targeted a growth of 7.8 per cent CAGR in the originating freight loading and 7.7 per cent in Net Tonne Kilometres (NTKM). Actual growth has been 4.4 per cent in originating freight and 2.15 per cent in NTKM in the first three years. The targets for originating tonnage in 2012-13, 2013-14 and 2014-15 were 1,038 MTs, 1,119 MTs and 1,206 MTs respectively. Against this, the achievements have been lower, at 1,008 MTs, 1,052 MTs and 1,095 MTs respectively. For 2015-16, against a very stiff target of 1186.25 MTs which represented a growth of 8.3 per cent over the previous year, the target had to be revised to 1107 MTs against which the actual achievement was 1102 MTs which is an increase of only 0.6 per cent over 2014-15. The target for the terminal year has been kept at 1157 MTs. These figures represent the challenges that confront the Railways in increasing their freight basket since the lack of growth of freight reflects the sluggish growth in the core sector of the economy comprising commodities such as coal, steel, cement etc. Unless the freight basket is widened to include more of containers and other new categories such as automobiles, the national goal of diverting more freight to rail from road and to take this proportion to 50 per cent by 2032 as envisioned in the NTDPC Report would be very difficult to achieve. This aspect becomes starker if we look at the NTKM figures which show that the NTKM in the first four years of the plan were 650, 666, 682 and 654 billlion respectively and is expected to go up to 694 billion in the final year of the Twelfth Plan. This shows that there has been little growth in the freight output when measured in terms of NTKM during the Twelfth Plan period, between the first year and the fourth year of the plan period. This is because the average distance for which traffic is carried has come down from 642 kms in 2012-13 to 592 kms in 2015-16. The original target of 1,405 MT for originating loading and 927 billion for NTKM for the terminal year of the Twelfth Plan now seems a very high estimate going by the actual performance during this period. However, the 2015-16 budget has envisaged carrying 1.5 billion tonnes by 2019-20 which also is of very high order. In originating passengers, there has been a growth of 0.35 per cent and in Passenger Kilometres (PKM) a growth of 2.6 per cent in the first three years as compared to terminal year of 11th Plan. Originating passenger numbers have declined from 8.42 billion in 2012-13 to 8.22 billion in 2014-15,and have further gone down to 8.18 billion in 2015-16. During this period, PKM has grown from 1,098 billion in 2012-13 to 1,147 billion in 2014-15 but has fallen to 1,143 billion in 2015-16. In 2016-17, the BE numbers for passengers and

PKM are 8.12 billion and 1,137 billion respectively. The target of 11.7 billion passengers and 1,760 billion PKMS in the terminal year of the Plan, incorporating growth of 7.5 per cent per annum and annual PKM growth of 10.63 per cent remains a very high estimate in the backdrop of the actual performance. However, the 2015-16 budget has targeted 30 million passengers per day i.e. 9.950 million per annum by 2019-20 which seems to be a high estimate unless the recent trends are reversed**.**

6.18 Project Performance

6.18.1 In case of network expansion projects i.e. new lines, gauge conversion, doubling and electrification, the performance is below annual targets in the three categories aside from electrification. For electrification, 4,042 kms have been achieved in the first three years, which is nearly 5 per cent more than the target. In the first three years, a total of 1,331 kms of new lines, 1,889 kms of gauge conversion and 2,136 kms of doubling were achieved which are substantially below the Plan targets for these programmes. The main reason for lower achievements in these segments has been slow growth in fund allocation for these categories. However the scenario changed from 2015-16 when higher targets were fixed for completion of 500 kms. of New Line, 800 kms. of Gauge Conversion, 1200 kms. of Doubling and 1600 kms. of Electrification against which the achievements are 813 kms, 1043 kms, 972 kms and 1730 kms. The combined performance of new lines and doubling which is 1785 km in 2015-16 indicates an improvement of 75 per cent over the achievement in these two categories over 2014-15. The targets for 2016-17 in these categories are: 400 for new lines; 800 for gauge conversion, 1600 km for doubling and 2000 km for electrification which indicates a quantum jump for doubling. This is in line with the stress on capacity augmentation in the coming years. The 2015-16 budget has laid specific emphasis on doubling/3rd/4th Line and reducing the renewal of congestion from the high density-network. The Railways have shifted focus by diverting a bulk of their resources to doubling during the period 2015-16 to 2019-20. The targets for this period are: 11,100 km of doubling; 1,900 km of new lines, 3,700 km of gauge conversion and 10,000 km of electrification. Over the remainder of the 12th Plan, it therefore follows that there will be a step-up in doubling and electrification as indicated in the increase step up from 723 kms of doubling in 2014-15 to 972 km in 2015-16. The performance in manufacturing of locomotives and coaches have been according to the annual targets but in case of coaches, there is evidence that demand is more than the supply considering the unfulfilled demand in popular long-distance trains and short distance EMU/DMU type coaches.

6.19 North-East Connectivity

6.19.1 Despite the lower aggregate achievements in network expansion programmes during the first three years of the Twelfth Plan, in 2013-14, the Railways achieved substantial success in meeting the targets for connectivity in the north eastern region. In 2013, the erstwhile Planning Commission recommended a step-up in finances for NER projects, when a review at PM's level revealed higher capacity for projects to absorb more funds than what was sanctioned. Increase in funding since that period has led to higher progress. Presently 30 per cent to 35 per cent of total outlay for railway infrastructure projects for the country is being earmarked for this region, which has yielded rich dividends in terms of completion of many projects within the timelines committed by Railway project managers. The pace of execution of Railway Projects in the North Eastern Region has further picked up considerably in 2015-16. During this financial year a total track of 816 Km. has been commissioned for passenger traffic and a total track of 377 kms. has been commissioned for Freight traffic, thereby surpassing the previous best achievement of commissioning of 224 kms. for Passenger traffic and 447 kms. for Freight traffic during the Financial Year 2014-15. Another important achievement during the financial year 2015-16, is that three important North-East states namely Tripura, Manipur and Mizoram have been brought on the map of BG Network of Indian Railways. All capitals of NER States are targeted to be connected to BG network by 2020.

6.20 Progress of Critical Projects

6.20.1 During the Twelfth Plan, the most important project undertaken by the Railways is the Dedicated Freight Corridor on the Eastern (EDFC) and Western (WDFC) alignments. The original target for completion of the DFCs was end of the Plan but have now been delayed and would now be completed in 2019/2020. The latest status as on 31st March, 2016, of Major Milestones is as given below:-

EDFC:

(i) 82.4 per cent Land acquisition completed; balance would be acquired by June, 2017.

(ii) 66 per cent i.e. 871 kms. of Civil Award completed, balance civil contracts will be awarded by May 2017.

(iii) 31 per cent of Systems contract awarded.

WDFC:

(i) 95.3 per cent Land acquisition completed balance would be acquired by June, 2017.

(ii) 64 per cent i.e. 1267 kms. of Civil Award completed, balance civil contracts will be awarded by October 2017.

(iii) 63 per cent of Systems contract awarded.

6.20.2 High speed Rail Project between Mumbai Ahmedabad has been approved by the Cabinet in its meeting held on 09.12.2015 and is under implementation. Details of the project are being negotiated between Japan and India. The first Joint Management Committee (JMC) Meeting at the level of cabinet ministers was held on 14th February, 2016 at Mumbai and the second one at Tokyo in May, 2016. In addition numerous meetings at the official level have been held to take forward the execution of the project.

6.21 Incomplete Projects

6.21.1 The problem of incomplete projects is a very serious one in the Railways. More than 350 new line, gauge conversion and doubling projects are pending. These would require more than Rs. 2.8 lakh crore at 2014-15 price level for completion. Earlier, the Planning Commission and now the NITI Aayog have insisted on the completion of priority projects and projects which have moved and cleared the land and other statutory clearances. The pressure on Railways to invest in socio-economic and connectivity projects is very high but there has to be proper deployment of adequate resources and progress of already sanctioned projects before new ones are taken for construction. To tackle the problem of completion of already sanctioned projects, the ministry of Railways have been authorized to formulate Joint Venture Companies with various State Governments to mobilize resources for undertaking various rail infrastructure projects in the states.

6.22 Policy Reforms

6.22.1 The Twelfth Plan had set some specific targets in the area of policy reforms for the Railways. It has been recognized that Indian Railways have very low passenger fares, whereas freight rates are comparatively higher due to cross-subsidization between these two segments. In order to rectify this anomaly and to make an institutional arrangement for regular and timely adjustment in fares in line with increase in cost of inputs, the government has decided to set up an independent Rail Development Authority (RDA) to advise the Ministry of Railways on the fixing of passenger and freight fares. Ministry of Railways have circulated a concept Note on RDA and further action is being based on feedback from stakeholders. In order to attract private investment and PPP, the Ministry of Railways has announced a participative policy for capacity augmentation. In August, 2014, the Government also permitted 100 per cent Foreign Direct Investment (FDI) in railways through the automatic route. The Ministry in November, 2014, issued sectoral guidelines covering 17 identified areas for domestic/Foreign Direct Investment (FDI).

6.22.2 The Committee headed by Dr. Bibek Debroy, Member, NITI Aayog for Mobilisation of Resources for Major Railway Projects and Restructuring of Railway

Ministry & Railway Board has submitted its final Report in June, 2015. It contains various recommendations on reforms, which are under consideration.

ROADS

6.23 Plan Targets for Roads

6.23.1 The Twelfth Plan aims to continue with the thrust of upgrading India's road infrastructure to improve mobility and accessibility while reducing the cost of transportation. Some of the main targets of the Twelfth Plan pertaining to the road sector, are: National and State Highways would be upgraded to a minimum of two lanes with paved shoulders by the end of the Plan; all villages will be connected by all-weather roads by the end of the Plan; completion of NHDP phases I and II (Golden Quadrilateral and North-South-East-West Corridors respectively) as well as NHDP III and NHDP IV (inter-district roads and conversion of single to double lanes respectively); specific targets for NHDP V (conversion of GQ to 6-lane roads); completing 1,000 kms of access controlled roads; port and rail connectivity and expansion of the National Highway network.

6.24 Financial Performance

6.24.1 An outlay of Rs. 3,95,598 crore (Rs.1,42,769 from GBS; Rs. 64,834 crore from IEBR; and Rs.1, 87,995 crore from private sector investment has been recommend for the development of roads in the central sector during the Twelfth Plan. The central road sector has made an investment of Rs. 2.32 lakh crore up to the end of the 4th year of plan which includes Rs. 1.03 lakh crore from GBS, Rs. 0.37 lakh crore from IEBR and Rs. 0.92 lakh crore from the private sector. In 2016-17, there has been a substantial increase in the allocation a trend which started in 2015-16. The investment target for 2016-17 stands at Rs. 1.32 lakh crore with GBS of Rs. 46,833 crore; IEBR of Rs. 59,279 crore and private sector investment of Rs. 26,850 crore. If the 2016-17 forecast of investment takes place, the total investment in the central road sector would be Rs. 3.64 lakh crore which is 92 per cent of the Twelfth Plan investment target for the sector. One of the reasons for this increase is the enhancement in the accruals to the Central Road Fund (CRF) from cess on petrol and high-speed diesel from Rs. 2 per litre to Rs. 6 per litre.

6.25 Physical Performance

6.25.1 The length awarded has been 1,916 kms, 3,169 kms, 7,972 kms, and 10,098 kms in 2012-13, 2013-14, 2014-15 and 2015-16 respectively, showing that initially it had been low because of lack of interest in Build-Operate-Transfer (BOT) projects due to a variety of factors which will be elaborated later. The length awarded has shown improvement in 2013-14, 2014-15 and 2015-16 due to more projects being awarded on an Engineering-Procurement-Construction (EPC) basis. The new strategy by MoRTH and NHAI is to award more EPC contracts and on their completion, turn them into operate maintain transfer (OMT) projects. Till market sentiments recover, this could be a viable strategy. Road construction has been 5,732 kms in 2012-13; 4,260 kms in 2013-14, and 4,410 kms in 2014-15 and 6,061 kms in 2015-16. This needs to be stepped up. The two-laning; four-laning and six-laning targets for the Plan period are 14,800 kms, 9,826 kms and 5,590 kms (a total of 30,216 kms) against which the achievement in the first 4 years has been 11,842 kms, 4,218 kms, and 1,465 kms respectively or a total of 17,525 kms, about 58 per cent of the target.

6.25.2 Around 17,000 kms National Highways out of a total length of 76,818 kms were of less than two-lane standards at the inception of the Twelfth Plan. At the beginning of the Twelfth Plan, the targeted NH length at the end of the Plan was around 80,000 kms but this is set to change as is explained subsequently. One of the important goals of the Plan is the dual laning of NH stretches which are single-lane. However, MoRTH notified additional length of roads as NH which increased the notified NH length to around 1,01,010 kms by the end of the fourth year of the Plan and is further expected to go up to nearly 2 lakh kms by end of the plan. As on 31.03.2016, the lane-wise distribution of NHs is: single or intermediate lane 20,700 kms; dual lane 55,603 kms; four or more lanes 24,707 kms. It was proposed to develop about 30,000 kms of NH length to various standards of 2/ 4/ 6 lane during Twelfth Plan, of which around 17,525 kms has been developed by the end of the fourth year. The policy of incorporating more and more roads as National Highways as being targeted presently will lead to a higher proportion of the NH as single lane. It is expected that this number will increase to 60,000 kms if the overall NH length is increased since most of the new NHs would be in single lane category.

6.26 Non-NHDP National Highways

6.26.1 There are about 21,224 kms of NHs, that are not approved under various phases of NHDP, SARDP-NE, etc. These highways have various deficiencies such as inadequate capacity, insufficient pavement thickness, etc. Development of these roads is proposed to be taken up through domestic budgetary resources and multilateral funding, but so far progress has been slow.

6.27 Special Road Development Programmes

6.27.1 The Special Accelerated Road Development Programme in the North East (SARDPNE) is an important programme for road augmentation in the North East. In Phase A, 4,099 kms of roads have to be developed (3,014 kms NHs and 1,085 kms state roads). Additionally, the Arunachal Package has to be implemented, which aims to construct 2,319 kms of road length including the Trans Arunachal Highway. Out of the aforesaid combined length of 6,418 kms of road under these programmes, 4,852 kms (75 per cent) of the work has been sanctioned and 1,987 kms constructed as of March, 2016. It is expected that Phase A would be completed by March, 2017 and Arunachal Package by March, 2018 although this requires a much higher rate of completion than what has been achieved. After a comprehensive review of the progress of these projects in 2013, it was decided to increase the execution capacity by setting up more Project Implementation Units (PIUs). The Ministry has also set up a company, National Highway Infrastructure Development Corporation Limited (NHIDCL) for construction of projects in the North East Region and other Himalayan states which will bring focused attention. Road stretches from state PWDs, NHAI and MoRTH would be handed over to this corporation for faster execution. Special Programme for Development of Roads in the Left Wing Extremism (LWE) affected areas is another important scheme. The Programme covers 33 districts in eight states namely Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha and Uttar Pradesh. This involves a development of about 1,177 kms of NHs and 4,276 kms of State Roads in Left Wing Extremism (LWE) affected areas as a Special Project with an estimated cost of about Rs. 7,300 crore. As on 31st March, 2016, the detailed estimates for 5,469 kms length have been sanctioned at an estimated cost of Rs. 8,585 crore, out of which, works on 5,275 kms length costing Rs.7,861 crore have been awarded. Development in 3,972 kms length including 266 kms NHs has been completed up to March, 2016 and cumulative expenditure incurred so far is Rs. 5,667 crore. Out of 1,622 kms long LWE affected Vijayawada - Ranchi route, development of 594 kms of State Roads in Odisha (549 kms Newly declared NH and 45 kms SH), not covered in any Central or State Scheme has been approved by the Government at a cost of Rs. 1,200 crore during the Eleventh Plan period. So far development of 302 kms has been completed.

6.27.2 The road ministry has conceptualized a "Bharatmala Pariyojana" for construction/development of (i) about 7000 kms State roads along coastal areas/border areas, (ii) about 7000 kms State roads to facilitate connectivity to backward areas, religious & tourist places, (iii) Setubharatam which aims to renew around 1500 bridges and more than 200 ROBs or RUBs (iv) Chardham connectivity and (v) District connectivity. Besides, it is also proposed to include improvement/development of road connectivity to non-major ports handling "Exim" (Export/Import) Cargo.

6.28 Shortfall in Funds for Maintenance

6.28.1 One of the important concerns of the road sector is lower priority accorded to maintenance, which leads to resources on large stretches of NHs being spread too thin. It is consequently difficulty to maintain the NH network in a traffic worthy condition, necessitating premature rehabilitation at a much higher level of investment. Funds provided to MoRTH for maintenance against requirements in the first 4 years of the Twelfth

Plan show that deficit in financing of maintenance activities is almost of the order of 50 per cent.

6.29 Major policy initiatives undertaken by MoRTH during last two years to improve award of projects

6.29.1 MoRTH was empowered through a Cabinet decision to decide on mode of delivery of projects – PPP/EPC. It was authorized to appraise projects up to Rs. 1000 crores – both for PPP and EPC mode in place of earlier Rs. 500 crores. In order to enhance inter-ministerial coordination an Infrastructure Group has been created under in the road ministry headed by the minister to resolve multi-stakeholder issues. Processes have been streamlined like online approval of General Arrangement Drawings (GADs) for ROBs/RUBs. Forest and Environmental Clearances have been de-linked. Stage-I Forest Clearance is now considered as deemed approval for cutting of trees. Segregation of Civil Cost from Capital Cost for NH projects for appraisal & approval has been approved recently by the CCEA to speed up appraisal and approval process leading to faster project award.

6.30 Rural Roads

6.30.1 Rural roads are being improved under the flagship programme of PMGSY. An additional component called PMGSY-II has been launched to consolidate the existing rural road network through up-gradation. The Twelfth Plan allocation for PMGSY is Rs. 1,05,000 crore, out of which in the first four years, Rs. 75,000 crore have been allocated.

6.30.2 Funding pattern has been recently changed from 100 per cent central funding to 60:40. During the first four years of the plan, 31,912 habitations have been connected and 1, 22,260 kms roads constructed. On a cumulative basis, 1, 16,310 habitations, which is 65 per cent of the total eligible habitations (1,78,184 as of 2000), have been connected. The target of completion of PMGSY has been advanced from 2022 to 2019 for connecting 61,874 remaining habitations.

PORTS

6.31 Investment in the Twelfth Plan

6.31.1 The outlay for the ports and shipping sector in the Twelfth Plan includes Rs. 6,960 crore as GBS and Rs. 21,990 crore as Internal and Extra Budgetary Resources (IEBR). In addition, the private sector was expected to invest nearly Rs. 1,70,000 crore in the port sector. In the first four years of the Plan, the investment from GBS and IEBR was Rs. 14,375.07 crore, which is 50 per cent of the total outlay from GBS and IEBR. The Plan outlay of the Ministry of Shipping is Rs. 4,183.14 crore for the year 2016-17 comprising of Rs.1,000 crore as GBS and Rs. 3,183.14 crore as IEBR. Most of the IEBR comes from the internal resources of the ports and is spent on capacity creation, mechanization and dredging projects in the ports. In the first four years of the Plan, the private investment in the major ports sector has been Rs. 40,703 crore.

6.32 Capacity augmentation

6.32.1 In the first four years of the Twelfth Plan, in the major port sector, 118 projects for additional port capacity, capital dredging, mechanization and connectivity were approved or awarded with a total investment of Rs. 53,345 crore. This is a major achievement considering that in the entire Eleventh Plan, only 27 projects were awarded. Some of the major investments cleared during the period were the fourth container terminal at Jawaharlal Nehru Port Trust at a cost of around Rs. 8,000 crore, and LNG terminal at Ennore at a cost of around Rs. 5,000 crore and many other smaller projects. Of the total of 118 projects awarded in the Plan period so far 46 are PPP projects, 63 are ‘own’ projects of the ports and the remaining 9 projects are captive projects awarded to PSUs and others. In 2016-17, 33 number of projects are to be awarded leading to a capacity creation of 102 MTPA.

6.32.2 Physical capacity addition in the major port sector during the Twelfth Plan period is as follows: 58 MTPA was added in 2012-13, 56 MTPA in 2013-14, 71 MTPA in 2014-15, 94 MTPA in 2015-16 and a further 100

MTPA is likely to be added during 2016-17. As a result the, total capacity of Major Ports by the end of March, 2016 was 965 MTPA and with the additional 100 MTPA targeted in 2016-17, the capacity of the major ports at the end of the Twelfth Plan is expected to be 1065 MTPA which is lower than the Twelfth Plan target of 1,229.24 MTPA by the terminal year but sufficient to cater to the demand of the exim cargo at the present levels. Six potential new port locations have been identified under Sagarmala Programme namely Vadhavan (Maharashtra), Sagar island (West Bengal), Paradip Outer Harbour (Odisha), Enayam (Tamil Nadu) and Belekeri (Karnataka).

6.33 Traffic Handled

6.33.1 The Twelfth Plan target for traffic carried by major ports is 943.06 MTs in the terminal year of the Plan. The traffic handled by major ports in 2012-13, 2013-14, 2014-15 and 2015-16 was 545.79 MTs, 555.50 MTs, 581.34 MTs and 606.47 MTs respectively registering an average growth of 3.58 per cent per annum. The major deficit is in iron ore due to bans on its export in some major iron ore producing states. The import of coal which had been going up initially has come down in the last year due to improved availability of indigenous production.

6.34 Dredging

6.34.1 A minimum draft availability of 14 metres in Major Ports has been targeted during the Twelfth Plan period. Plans to undertake capital dredging work to enhance the draft availability at channels and berths have been formulated by each major port. Presently, channels at Paradeep, the outer harbour of Visakhapatnam, Chennai, Kamarajar, Cochin, New Mangalore, Mormugao and Jawaharlal Nehru ports have a draft of 14 metres or above. Project will be taken to increase the draft at Mormugao port and Kamarajar (Ennore) port to 18 metres and at Jawaharlal Nehru port to 15 metres.

6.35 Efficiency Parameters

6.35.1 Efficiency parameters in the major port sector have shown an improvement in the first four years of the Twelfth Plan. One of the factors responsible for this is capacity creation and a focused attention to mechanization through a number of projects particularly in the average vessel turnaround time which has come down from 4 days in 2014-15 to 3.42 days in the current year 2016-17 (till January, 2017). This is targeted to be further brought down to 3 days. Average output per berth increased to 12,458 tonnes in 2014-15 to 14,478 tonnes during 2016-17 (up to Jan'2017). There were however, significant variations in efficiency parameters across individual ports. For instance, the average turnaround time varied from a low of 1.98 days in Cochin during 2016-17 (upto Jan, 2017) to a high of 5.07 days in Paradip. 70 of the 116 recommendations of benchmarking study to international standards already implemented and remaining will be implemented by 2019. This has resulted in further improvement of efficiency and productivity of the ports.

6.36 Coastal Shipping and Inland Water Transport (IWT)

6.36.1 Twelfth Plan has put great emphasis on the development of coastal shipping and inland water transport. Steps being taken in this sub-sector are: New scheme for construction of exclusive coastal berths to promote coastal shipping, wherein ports will be given financial assistance up to 50 per cent of the project cost, faster clearance of coastal cargo through green channel at 8 Major Ports, two more ports expected to create this facility by June, 2015. Cabotage has been relaxed for specialised vessels such as Ro Ro, Ro-Pax, LNG Project carriers etc for 5 years. Major Ports have increased discount on port charges for Ro Ro vessels for 2 years. Bunker duty exemption has been provided for transportation of coastal containers. In IWT, the government has taken up "Jal Marg Vikas" Project on the river Ganga between Allahabad and Haldia, covering a distance of 1,620 km for implementation by the Inland Waterways Authority of India (IWAI), with the technical advice and financial support of the World Bank and at an estimated cost of Rs.5,369.18 crore. Completion of this project by June, 2020, would enable commercial navigation by vessels of dead-weight tonnage of least 1,500 between Haldia and Allahabad. Consultancy studies for the project are under way. The National Waterways Act 2016, has been enforced w.e.f. 12.04.2016. Under this Act, 106 inland waterways have been declared as National Waterways in addition to the existing 5 National Waterways with a view to create necessary infrastructure for navigation.

6.37 Port-led Development (Sagarmala)

6.37.1 A comprehensive programme called Sagarmala has been launched in 2015 by the government for promoting port-led development in India. Main components of the programme are port modernization & new port development, port connectivity enhancement, port-led industrialization and coastal community development. As part of the programme, the National Perspective Plan has been finalized and more than 400 projects have been identified for implementation in coordination with relevant central ministries and state governments. Indian Port Rail Corporation Limited has been set up to provide efficient last-mile rail evacuation systems to Ports and Sagarmala Development Company Limited was incorporated for providing funding support to project SPVs and residual projects under Sagarmala. For systematic development and capacity creation Master Plans have been finalized for all the 12 major ports and 142 port capacity expansion projects at a total cost of Rs. 91,434 Cr have been identified for implementation.Port-led development covering all the Maritime States and Union Territories have been proposed and their perspective plans have been prepared. Twenty nine potential port-linked industrial clusters across three sectors, namely – Energy, Materials and Discrete Manufacturing, have been identified. In the context of Sagarmala, India could begin by creating one Shenzhen-style Coastal Employment Zone (CEZ) on its western coast and another on the eastern coast near deep ports capable of accommodating very large and heavily loaded ships. To be successful, these zones would have to cover a large area (Shenzhen covers an area of 2050 square kilometres) and would need to have some level of existing infrastructure and economic activity.Coastal community development projects mainly in skilling and fishery sector are also being funded under Sagarmala in convergence mode with other Central Ministries.

CIVIL AVIATION

6.38 Twelfth Plan Targets

6.38.1 The Twelfth Plan targets to make India amongst the top five civil aviation countries of the world. This can be achieved by providing safe, secure and affordable air services and by developing world class infrastructure. It was expected that by the terminal year of the Plan, the number of domestic passengers would increase at an average annual growth rate of 12 per cent to reach 209 million, and international passengers to 60 million at an annual average growth of 8 per cent, from 106 million and 38 million respectively in 2011. Domestic cargo would increase to 1.7 MTPA from 0.9 MTPA and international cargo to 2.7 MTPA from 1.5 MTPA by the terminal year of the Plan. In addition to capacity creation, the Plan also envisaged to the improvement of air connectivity to north-east region, other remote areas and tourist destinations to generate employment; to provide better infrastructure for training in order to make available qualified human resources: and to strengthen the regulatory framework for safety and economic aspects by setting up a Civil Aviation Authority.

6.39 Investments

6.39.1 The Twelfth Plan's aim is to enhance capacity creation in airports with a combination of private and public sector participation. Development of airports in remote and difficult areas and regions, which requires special consideration from a socio-economic and connectivity point of view, would be undertaken by the Airports Authority of India (AAI) while private investment would flow into airports at other locations. The approved outlay for Ministry of Civil Aviation (MoCA) in the twelfth Plan is Rs. 33,198 crore which consists of Rs. 16,983 crore as GBS and Rs. 16,215 crore as IEBR. In the first four years of the Plan, the Ministry has anticipated an investment of Rs. 30370.06 crore which is 91.5 per cent of the Plan outlay. This includes Rs.21,707.95 crore of GBS which is 128 per cent of the total Planned GBS outlay, and Rs 8,633.97 crore of IEBR which is 53 per cent of the total planned IEBR. For the terminal year of the plan an amount of Rs. 4417 crore has been provided of which GBS is Rs. 2000 crore. The most important component of the Twelfth Plan through GBS is the provision for Turn Around Plan (TAP) and Financial Restructuring Plan (FRP) of Air India, for which a provision of Rs. 15,096 crore (89 per cent) was made out of the total GBS of Rs.16,983 crore for the Ministry. Accordingly, in the first four years, out of the total GBS utilization of Rs. 21,707.95 crore, the largest share of Rs. 21,080 crore (97 %) is accounted for by Air India. For the fifth year of the plan an amount of Rs. 1713 crore is earmarked for Air India out of the total GBS provision of Rs. 2,000 crore for the Ministry.

6.40 Policy Initiatives

6.40.1 The Ministry of Civil Aviation has drafted the National Civil Aviation Policy 2016 (NCAP – 2016) which aims to move India from the present 10th to the 3rd position globally in the aviation sector. The policy aims to create an eco-system to enable 300 million domestic passengers by 2022 and 500 million by 2027 along with increase in cargo volumes to 10 million tonnes by 2027 and international ticketing to increase to 200 million by 2027 with provisions of safe, secure, affordable and sustainable air travel with access to various parts of India and the world. This is to be achieved through use of technology, effective monitoring, and by enhancing regional connectivity through fiscal support and infrastructure development. The policy has covered all the major themes in the Indian aviation sector such as regional connectivity, safety, air transport operations, international operations, development of airports, security and sustainability of aviation. NCAP 2016 is in the process of approval by the government. To meet the ever growing requirement of professionally qualified personnel and also to create a strong base with a pool of scientific and technical manpower in the sector. Ministry is in the process of setting up of a National Aviation University at the IGRUA Complex, in Fursatganj, U.P.

6.41 Connectivity

6.41.1 The AAI completed development of Kadapah Airport, New Civil Air Terminal at Chandigarh, and the new Integrated terminal building at Tirupati Airport. The major initiative taken by AAI during the 4th year of the Plan include commissioning of the Greenfield Kazi Nazarul Islam Airport at Andal in West Bengal. In addition project proposals for setting up of Greenfield airports at various sites namely, Dholera in Gujarat, Bhiwadi (Alwar) in Rajasthan, Bhgapuram, Dagadarthi and Ovarakallu in Andhra Pradesh, Mopa in Goa, Navi Mumbai, Shirdi and Shindudurg in Maharastra, Shimoga, Hassan and Bijapur in Karnataka, Kannur in Kerala, Pakyong in Sikkim, Holongi (Itanagar) in Arunchal Pradesh, Datia in Madhya Pradesh, Kushinagar in Uttar Pradesh, and Karaikal in Puducheri are at various stages of planning and execution. In order to promote regional and remote area air connectivity, it has been decided to develop airports in Tier-II and Tier-III cities. The five locations where work is under progress are: Hubli and Belgaum in Karnataka; Kishangarh in Rajasthan; Jharsuguda in Odisha and Tezu in Arunachal Pradesh. AAI has envisaged an investment of Rs 13,177 crore during a period of 5 years. There are about 160 non-functional airports and air strips with State Governments which can be revived at an indicative cost of Rs 50 crore to Rs 100 crore each. The AAI in partnership with the State Governments would develop some of these airports under the regional connectivity programme.

6.42 Passenger and Sectoral Growth

6.42.1 Passenger growth has been strong in the first four years of the Twelfth Plan. The figures for 2012-13, 2013-14, 2014-15 and 2015-16 are 159.40 million; 168.92 million, 190.13 million and 224 million. Overall, growth has been 9.6 per cent per annum with domestic passengers increasing from 116.37 million in 2012-13 to 139.33 million in 2014-15 (11.5per cent per annum) and international from 43.03 million to 50.80 million in the same period registering a growth of 9 per cent per annum. Low-cost carriers (LCC), modern airports, Foreign Direct Investments (FDI) in domestic airlines, cutting edge information technology (IT) interventions and a growing emphasis on regional connectivity have helped growth in the aviation industry. With per-capita use of air transport in India amongst the lowest in the world, the long-term growth scenario for the sector is very high.

6.43 Air India

6.43.1 The financial performance of Air India Ltd. is a matter of serious policy concern since in the Twelfth Plan, Rs. 15,096 crore has been earmarked for Air India out of the total GBS of Rs. 16,983 crore. The initial impact on the airline indicates significant improvement, as it has reduced operating losses to Rs. 2,636.19 crore in 2014-15 compared to Rs 3,807.15 crore in 2012-13 and has made an operational profit of Rs 105 crore in 2015-16. This happened mainly due to an increase in load factor and reduction in crude oil prices. A number of in-house measures taken by AI have helped in the process. But despite its superior performance in the last two years, Air India's long-term prospects are still critical since intensification of competition and fluctuation in oil prices are constant threats to financial sustainability.

6.44 PPP in the Transport Sector

6.44.1 The road sector, a leading sector in India's private-public partnership (PPP) programme, has been witnessing a significant slowdown in the Twelfth Plan period. Bidders' response has been poor for projects bid on PPP mode, and thus most of the projects in 2014-15 and 2015-16 have been awarded on the engineering procurement construction (EPC) mode. The main causes for slowdown are: aggressive bidding in the earlier rounds, possibly because the pre-qualification criteria made a large number of applicants eligible for pre-qualification; issues relating to land acquisition and grant of environmental and forest clearances; lack of a prompt dispute resolution mechanism leading to disputes worth over Rs. 21,000 crore, over 870 arbitration cases; and over-leveraged balance sheets. This has led to a situation where it has become very difficult for these developers to arrange project equity for new projects. The problem has been further compounded due to the recent downward trend in the traffic revenues, thereby making several of the projects financially unviable on the Design Build Finance Operate Transfer (DBFOT) model. However, in the last two years, the Ministry of Road Transport and Highways (MoRTH) has come out with a number of strategies to alleviate the situation elaborated in the following para.

6.44.2 The CCEA has allowed private developers to take out their entire equity and exit all operational BOT projects two years from start of operations irrespective of the date of award of the project. This is facilitating infusion of liquidity in the sector by enabling existing developers to release their locked-in equity in completed projects. The CCEA has allowed revival of BOT projects which are languishing in the construction stage through one-time fund infusion by NHAI, subject to adequate due diligence of such projects on case to case basis through an institutional mechanism. This policy would help physical completion of languishing projects bringing relief to highway users in the area. Amendments to the Model Concession Agreement (MCA) for BOT projects have been approved by an empowered Committee of Secretaries (CoS) headed by the Cabinet Secretary in a meeting held in August, 2015 based on stakeholders feedback. This would facilitate streamlined development and operation of highway projects. The CCEA recently approved this which would add to the comfort level of prospective project concessionaires. The policy enables extension of concession period for all languishing BOT (Toll) projects to the extent of delay not attributable to the concessionaire provided, the originally envisaged operation period remains unchanged. Similarly, for languishing BOT (Annuity) projects payment of missed annuities corresponding to the actual period of delay not attributable to the concessionaire shall be restored.

6.44.3 In the port sector, while there is still an appetite for PPP projects and their award and execution continues, there are issues related to tariff-setting. Tariffs for the Major Ports are regulated by the Tariff Authority for Major Ports (TAMP) thus distorting competition with non-major Ports which are free to set their tariffs based on competition. The role of TAMP is being redefined in the new Major Ports Authority Bill, 2016 which has been introduced in the Lok Sabha on 16.12.2016.

6.44.4 In the airport sector, after PPP investments in Hyderabad, Bengaluru, Mumbai and Delhi airports. The next big PPP project in airport sector is Navi Mumbai, which is being developed by the Government of Maharashtra. This project is under the bidding stage and it is expected to be completed by December, 2019.

Another relatively large PPP investment in the airport sector is at Mopa in Goa which is at advanced project preparation stage and likely to be completed by December, 2019.

6.44.5 Alternative models, like the hybrid annuity model in the road sector which was approved recently, needs to be used in more projects. Under this model, 40 per cent the Project Cost is to be provided by the government as 'construction support' to the private developer during the construction period and the balance 60 per cent as annuity payments over the concession period along with interest at market linked rates on outstanding amount to the concessionaire. There is separate provision for O&M payments by the government to the concessionaire. Fifteen projects have already been awarded under the model.

6.44.6 There is an absolute dearth of concessionaire-led PPP projects in the Railways sector although there have been a number of joint ventures with state governments and customers for development of infrastructure. Private investment has come into Madhepura and Marhowra factories for electric and diesel locomotives through JVs with leading international locomotive manufacturing companies. These projects would improve technology in the area of locomotives and through indigenous production are examples of "Make in India".

6.45 Private Investment in Infrastructure

6.45.1 As brought out in section 6.2 above, there has been a significant downward trend in the infrastructure investment during the first three years of the Twelfth Plan. This has been largely due to a sharp decline in the private sector investment. The key issues impacting the slowdown in private investment are related to stalling of projects, infrastructure financing and contractual frameworks for PPPs. These are discussed in the following sections.

6.46 Stalled Projects

6.46.1 The Economic Survey 2014-15 points that the stalling of projects is severely affecting balance sheets of the corporate sector and public sector banks, which in turn is constraining future private investment. This completes a vicious circle, characterized by an investment slowdown leading to less financing back to weak investment. Public-sector stalled projects are mostly in infrastructure whereas private-sector stalled projects are mostly in manufacturing and infrastructure. The survey further mentions that private projects are held up mostly due to market conditions and non-regulatory factors, whereas the Government projects are stalled due to the lack of required clearances.

6.46.2 One sector which has a large number of stalled projects in both public and private sector is the electricity sector. At the end of the third quarter of 2014-15, 80 projects were stalled in the electricity sector, out of which 75 are in generation and 5 in distribution; 54 of these 80 projects are PPP projects. The major reasons for stalling of electricity projects along with suggested remedial measures are discussed below.

6.46.3 The framework for power procurement through competitive bidding notified in 2005 permitted bidders to assume long-term fuel cost and foreign exchange rate risk. Several power producers won the bids through low quotes on the escalable portions of the bid parameters. But later, with a rise in international coal prices and a fall in the rupee, these bids have become unviable. Revised bid documents for addressing these issues have been issued in 2013. Adoption of these revised documents will help in reviving the stalled projects in the sector.

6.46.4 Commissioned electricity generation projects have been stranded due to short supply of coal and gas. This has affected the returns to the developers and repayment of bank debt. There is a need to augment coal mining capacity by introducing PPP in coal mining. The Ministry of Coal, with extensive inter-ministerial consultations, has prepared an MCA for enabling PPP in coal mining. Under this model, the coal mine as well as the coal will remain in the ownership of the public sector, while the private partner will receive a mining charge on the coal mined. The sale of such coal will be undertaken by the public entity which grants the PPP concession. The coal companies need to award PPP projects using the above framework for augmenting the domestic coal production.

6.47 Infrastructure Financing

6.47.1 Constraints in the financing of infrastructure are crucial for the shortfall in private investment across sectors. The key issues in infrastructure financing and some recent initiatives to revive investment flow are brought out in **Box 6.6** below.

Box 6.6: The Financing of Infrastructure

Issues impacting the financing of project

1. Increase in Non-Performing Assets (NPAs) of banks.
2. Shrinkage of equity & debt flows in PPP projects due to stranded and stressed projects.
3. Lack of long-term finance.

Recent Initiatives

The following initiatives have recently been taken or announced, and are expected to augment investment in infrastructure:

(a) The 2015-16 Union Budget announced the setting up of a National Investment and Infrastructure Fund (NIIF) with an annual flow of Rs. 20,000 crore from the government. This will enable the Trust to raise debt, which in turn, could be invested as equity in infrastructure finance companies. The infrastructure finance companies can then leverage this extra equity to raise more debt for funding infrastructure projects.

(b) The Government has approved easing the guidelines for IIFCL allowing it to be the 'lead bank' and primary lender, if required. The Scheme for Financing Viable Infrastructure Projects (SIFTI) which governs IIFCL has been amended in this regard. The change in norms will provide more autonomy to IIFCL to increase its potential to finance PPP projects.

(c) The High Level Committee on Financing Infrastructure in its Report submitted in August, 2014 has given several recommendations with regard to financing of infrastructure. These recommendations need to be taken forward by the Department of Financial Services in consultation with the Reserve Bank of India in a time bound manner.

6.48 Reforming PPP Contracts and Laws

6.48.1 The standardized documents, especially the Model Concession Agreements (MCAs), have helped in the expansion of PPPs in the country. More than 200 PPP projects in the roads and ports sectors have been awarded since 2006 based on these MCAs. The MCAs have addressed the vital issue of assigning both construction and maintenance responsibilities to one entity. Since in many projects, especially in the highway sector, maintenance costs depend significantly on construction quality, a single entity being responsible for both construction and maintenance, helps in reducing the lifecycle costs and restraints the entity to cut corners during construction to increase profits. It is, therefore, suggested that maintenance should be made a part of all publicly funded construction contracts awarded in the infrastructure sectors.

6.48.2 However, in recent times, concerns have been raised regarding the rigidity of the MCAs and a need to introduce flexibility to address unforeseen situations in the future. The Economic Survey 2014-15 identified the following issues in the existing PPP contracts: (i) existing contracts focus more on fiscal benefits than on efficient service provision; (ii) it neglects principles of allocating risk to the entity best able to manage it; (iii) there are no ex-ante structures for renegotiation; and (iv) contracts are over-dependent on market wisdom. The survey suggests that to revive private interest and bank lending in the infrastructure sector, PPP contracts need to be restructured, with the burden shared among different stakeholders. The government constituted a Committee under the chairmanship of Dr. Vijay Kelkar to revisit and revitalize the PPP model of infrastructure development. The Committee has since submitted its Report, which is under the consideration of the Government.

6.48.3 As announced in the 2014-15 Union Budget, the Government is also in the process of setting up a new entity, 3P India, with a corpus of Rs. 500 crore to provide support to mainstreaming PPPs and to enable focused attention on accelerating the delivery of efficient PPPs. The task for restructuring of the PPP contracts could be entrusted to this specialized body.

6.48.4 The following legislative reforms have also been proposed in Union Budget 2015-16 to accelerate the flow of investment in infrastructure sectors:

(i) Introduction of Public Contracts (Resolution of Disputes) Bill

(ii) Introduction of Regulatory Reform Law

6.49 Infrastructure: The Way Forward

6.49.1 Robust physical infrastructure is paramount for realizing the Twelfth Plan objectives of faster, more inclusive and sustainable growth. With the achievements during the first three years of the Plan period and keeping in view the allocation of funds and unfinished tasks, the following way forward for the remaining period of the Plan period is suggested.

i) The difference in average cost of supply and average tariff realized by the power discoms has reached about Rs. 1.25/unit (without subsidy). It has been seen that the tariff which is awarded by the regulatory commissions does not cover the full cost of supply and it is felt that the regulatory commissions are not really functioning in an independent manner. Despite the fact that the full cost of supply is not being awarded by the regulatory commissions, they are not approaching APTEL for relief. This apparently is happening because at times the State Governments take into account political considerations. The discoms need to strictly adhere to APTEL's directive that in case no tariff petition is filed by the discoms, their tariff may be decided by the regulatory commission *suo-moto*.

ii) Given the average load curve of the country, it is stated that the thermal and hydro capacities should be maintained in the ratio of 60:40. Over time, the share of hydro has been falling consistently, and today only about 15 per cent of the capacity is from hydro based generation. Lack of hydro generation means that country is not able to meet our peak load demand in an efficient manner. There are various reasons why hydro generation has been coming down and some of the major ones include geological surprises, law and order problems, problems in relief and rehabilitation of oustees, civil society movement against the construction of large dams, lack of infrastructure for transporting turbines and generators in the north-eastern region and also lack of availability of long term finance for the hydro sector.

iii) The Southern region was connected to the national grid some time ago. However, it has been seen that there is still considerable congestion leading to higher spot prices of electricity in the southern region of the country. At present, the southern region is connected to the national grid by the Raichur – Sholapur line and there are two more lines under construction viz. the Narendra – Kolhapur and Wardha – Hyderabad double circuit lines. These lines would enable an additional evacuation of power to the extent of 1,900 MW. Over and above these two lines, there are some arterial lines which are under construction and which have been held up due to right-away issues. This needs to be expedited quickly so that the current congestion can be removed.

iv) The Ministry of Coal has drawn an action plan to scale up Coal India Limited's production from the current level of about 494 MT to 1 billion tonnes by 2019-20. This needs to be monitored regularly.

v) The Ministry of Coal also needs to work on the Output per Man Shift (OMS) from underground mines which is extremely low for India as compared to other countries which is on account of many factors which include lack of mechanization, the high average age of Indian coal workers etc.

vi) Creation of vibrant gas market for increasing share of gas from current level of 6.57% to 15% in future.

vii) Expansion of Natural Gas infrastructure to Eastern part of country.

viii) Free pricing regime for Domestic gas production.

ix) Expansion of renewable energy capacity to 175 GW by 2022.

x) Setting up of 1,000 MW solar plants as ultra-mega solar projects.

xi) Resolving the issue of capital grants versus generation base in renewable capacity creation

xii) To address the question of domestic content versus imported content in the solar sector.

xiii) Scope of auction based bids for deriving project costs in the solar sector.

xiv) Developing efficient renewable funding mechanisms keeping in view high interest and hedging costs

xv) Fast tracking of the Electronic Delivery of services Bill and its adoption by all states and UTs for service delivery.

xvi) To make available additional spectrum for broadband and to facilitate spectrum sharing and trading

xvii) Expeditious implementation of restructured NOFN- Bharat Net.

xviii) To accelerate speed of execution of transport projects with focus on completion of on-going works. Higher allocations to transport sector requires increase in momentum of fund utilization in prioritized projects, which will yield benefit to the sector through decongestion and capacity enhancement.

xix) Investment in Railways needs to be increased from 0.4 per cent of GDP in Eleventh Plan to 1.0 to 1.2 per cent of GDP on a sustained basis over the next couple of decades. Capacity augmentation and network connectivity should be based on a comprehensive network development plan, as has been accomplished for NHDP.

xx) An urgent action plan, for the two-laning of National and State Highways, with proper funding and time lines for completion is required for reasons of enhancing safety and energy efficiency.

xxi) Rural roads programme would need to be continued based on the district-level core road network plans of the State Governments in order to accomplish universal connectivity.

xxii) On regulatory front in the port sector, there is a need to move major ports to the landlord port model and to transform the port trusts to statutory landlord port authorities. In Railways, the Regulatory authority for tariff fixation and dispute resolution needs to be set up expeditiously.

xxiii) On the road safety front, the Road Safety Bill should be reviewed to separate aspects related to Motor Vehicles Act so that portions related to safety including setting up of NRSTMB are speeded up.

xxiv) Ship-building needs to be promoted through a multi-pronged approach and incentivizing industry.

xxv) In the airport sector, quick moves are needed on building airports in Tier-II and Tier-III cities to enable penetration of airports in the hinterland.

xxvi) Policies for promoting regional connectivity and regional airlines have to be finalized as a priority so that the airports in remote and newly developing areas are sought by airlines. Policies are needed to promote the Indian maintenance, repair and operations (MRO) industry and to review the high taxation regime for aviation turbine fuel.

xxvii) A plan for the progressive divestment of the government's stake in Air India over a period of three to five years needs to be considered.

xxviii) Urgent intervention is required to boost PPP regime in transport sector, especially in road and rail segments.

xxix) In order to reduce negative externalities due to transport sector especially, pollution and carbon emission, there is a need to undertake improvement in vehicle and fuel emission regimes and decision to move to Bharat StageIV norms by 2020 has been taken which needs very strong coordination between motor vehicles and petroleum industry

xxx) In the port and shipping sector in Sagarmala initiative for port-led development and Jal Marg Vikas for navigation in river Ganga has already been initiated and needs to be implemented in time bound manner.

Annexure 6.1

Revised Projections of Investment in Infrastructure in Twelfth Plan

(Rs. in crore at current prices)

Sectors	Eleventh Plan (Actual)	Twelfth Plan (Projections)	Revised Projections of Twelfth Plan					
			2012-13 (Actual)	2013-14 (Anti Exp)	2014-15 (RE/Anti. Exp/ Projections.)	2015-16 (BE / Pro-jections)	2016-17 (/Pro-jections)	Twelfth Plan
Electricity	**6,93,480**	**15,01,666**	**1,93,743**	**1,88,074**	**2,06,615**	**2,38,753**	**2,72,082**	**10,99,266**
Centre	2,14,955	4,40,796	57,729	64,951	64,614	74,673	82,141	3,44,109
States	1,77,155	3,47,043	45,872	57,466	63,212	69,533	76,487	3,12,570
Private	3,01,370	7,13,827	90,142	65,657	78,788	94,546	1,13,455	4,42,588
Renewable Energy	**89,604**	**3,18,626**	**25,480**	**26,826**	**31,564**	**37,963**	**46,582**	**1,68,415**
Centre	10,080	33,003	2,983	1,847	3,888	3,661	4,027	16,405
States	952	5,425	1,420	1,777	1,955	2,151	2,366	9,668
Private	78,572	2,80,198	21,077	23,202	25,721	32,152	40,190	1,42,342
Roads & Bridges	**4,60,286**	**9,14,536**	**1,05,655**	**1,24,049**	**1,26,252**	**1,90,185**	**2,18,183**	**7,64,323**
Centre	1,95,618	3,36,094	29,935	41,393	34,985	89,792	1,07,751	3,03,856
States	1,69,675	2,74,433	48,591	53,064	58,371	64,208	70,629	2,94,863
Private	94,992	3,04,010	27,129	29,591	32,895	36,185	39,803	1,65,604
Telecommuni-cations	**3,79,414**	**9,43,899**	**42,324**	**71,985**	**98,581**	**1,22,043**	**1,18,859**	**4,53,792**
Centre	80,828	72,110	3,840	13,951	18,149	16,887	18,576	71,403
Private	2,98,586	8,71,789	38,484	58,034	80,432	1,05,156	1,00,283	3,82,388
Railways	**1,99,939**	**5,19,221**	**50,383**	**53,989**	**58,719**	**93,519**	**1,21,000**	**3,77,610**
Centre	1,90,849	4,19,221	50,383	53,989	58,719	68,550	81,675	3,13,316
Private	9,090	1,00,000	-	-	-	24,969	39,325	64,294
MRTS	**43,457**	**1,24,158**	**12,392**	**16,337**	**17,271**	**19,812**	**21,794**	**87,605**
Centre	21,786	39,700	5,101	7,959	9,380	11,133	12,246	45,819
States	15,144	31,901	4,615	5,634	4,567	5,024	5,526	25,366
Private	6,528	52,557	2,675	2,743	3,324	3,656	4,021	16,420
Irrigation (incl. Watershed)	**2,28,736**	**5,04,371**	**57,661**	**73,834**	**85,881**	**85,069**	**93,576**	**3,96,021**
Centre	14,040	42,171	3,405	2,805	7,749	6,937	7,631	28,527
States	2,14,696	4,62,200	54,257	71,029	78,132	78,132	85,945	3,67,495

Sectors	Eleventh Plan (Actual)	Twelfth Plan (Projections)	Revised Projections of Twelfth Plan					
			2012-13 (Actual)	2013-14 (Anti Exp	2014-15 (RE/Anti Exp/ Projections.)	2015-16 (BE / Pro-jections)	2016-17 (Pro-jections)	Twelfth Plan
Water Supply & Sanitationn	**1,16,936**	**2,55,319**	**33,027**	**34,647**	**37,455**	**34,040**	**37,357**	**1,76,523**
Centre	46,050	98,382	12,988	11,935	12,100	6,236	6,860	50,119
States	70,722	1,50,582	19,804	22,264	24,491	26,940	29,634	1,23,133
Private	164	6,355	235	448	864	864	864	3,275
Ports (incl. ILW)	**48,846**	**1,97,781**	**9,615**	**15,246**	**11,885**	**13,943**	**16,328**	**67,016**
Centre	6,033	20,670	1,924	3,779	2,505	2,800	3,080	14,088
States	3,243	5,563	1,169	1,021	1,123	1,236	1,359	5,909
Private	39,569	1,71,548	6,522	10,446	8,256	9,907	11,888	47,019
Airports	**35,537**	**87,714**	**5,037**	**4,613**	**5,529**	**5,958**	**6,694**	**27,832**
Centre	11,749	15,041	1,800	1,076	1,642	1,688	2,002	8,208
States	1,030	2,449	-	106	112	118	125	461
Private	22,758	70,224	3,237	3,431	3,775	4,152	4,567	19,163
Storage	**21,430**	**58,441**	**6,411**	**7,496**	**9,089**	**8,808**	**9,966**	**41,769**
Centre	6,059	12,280	2,624	1,906	2,731	1,572	1,729	10,561
States	2,131	4,198	1,396	1,386	1,525	1,677	1,845	7,829
Private	13,240	41,963	2,391	4,203	4,833	5,558	6,392	23,378
Oil & Gas pipelines	**60,080**	**1,48,933**	**8,438**	**7,923**	**13,368**	**14,704**	**16,175**	**60,608**
Centre	32,726	71,594	5,865	5,387	6,923	7,616	8,377	34,168
States	4,070	5,969	405	267	1,559	1,715	1,887	5,833
Private	23,284	71,370	2,168	2,268	4,885	5,374	5,911	20,606
Total	**23,77,746**	**55,74,663**	**5,50,166**	**6,25,020**	**7,09,286**	**8,71,420**	**9,68,186**	**37,24,078**
Centre	8,30,774	16,01,061	1,78,577	2,10,979	2,24,743	3,17,356	3,58,071	12,89,727
States	6,58,818	12,89,762	1,77,529	2,14,016	2,35,047	2,50,733	2,75,802	11,53,127
Total Public	14,89,591	28,90,823	3,56,106	4,24,995	4,59,790	5,68,090	6,33,873	24,42,854
Private	8,88,155	26,83,840	1,94,061	2,00,025	2,49,495	3,03,330	3,34,312	12,81,223
GDPmp	3,38,88,817	6,81,63,208	99,88,540	1,13,45,056	1,25,41,208	1,40,46,153	1,58,72,153	6,37,93,110
Investment as % age of GDPmp	7.02	8.18	5.51	5.51	5.66	6.20	6.10	5.84

Note: GDP data for 2012-13, 2013-14 and 2014-15 have been taken from CSO's Press Note May 29, 2016 and is based on new 2011-12 series. The nominal GDP growth rates of 12% and 13% have been assumed for years 2015-16 and 2016-17 respectively.

Data Sources and Assumptions

The data sources and assumptions underlying the revised Twelfth Plan investment projections are as follows:

1. The Central investment figures for 2012-13 (Actual), 2013-14 (Actual), 2014-15 (RE) and 2015-16 (BE) were compiled from the Union Budgets 2013-14, 2014-15, 2015-16. The States investment figures for 2012-13 (Actual), and 2013-14 (RE) were taken from respective States' Budget proposals. The Central, States and Private investment figures for 2012-13(Actual), 2013-14 (Actual) and 2014-15 (RE) in respect of oil and gas pipelines including terminals and oil and gas storage have been provided by the Ministry of Petroleum & Natural Gas. States and private investment data in respect of metro rail projects (MRTS) for 2012-15 have been provided by Delhi, Jaipur, Chennai, Kochi, Hyderabad, Mumbai metro rail project authorities. Private investment data in respect of roads & bridges for 2012-15 have been provided by NHAI and States of Andhra Pradesh, Tamil Nadu, Haryana, Punjab, Rajasthan, Uttar Pradesh, Madhya Pradesh, Gujarat, Maharashtra, Chhattisgarh, Orissa and Karnataka. The private investment for 2012-13 (Actual), 2013-14 (Actual) and 2014-15 (R.E.) in airport sector were collected from the Ministry of Civil Aviation. Private investment data for 2012-14 in electricity has been provided by the Central Electricity Authority. The private investment data 2012-15 in telecommunications has been provided by the Telecom Regulatory Authority of India. The Ministry of New & Renewable Energy has provided private investment data 2012-15 in the renewable energy sector. The private sector gross capital formation (GCF) in storage was provided by the Central Statistics Office for 2012-13 and 2013-14 has been taken in storage. Further, private investment data in oil and gas storage for 2012-13 and 2013-14 provided by Ministry of Petroleum & Natural Gas has also been included in Storage. Private investment in non-major ports 2012-15 was provided by maritime states. The private investment data 2012-15 in major ports was provided by the Ministry of Shipping.

Projections for Central Sector:

2. For making the revised projections for the Central sector for 2016-17 a 10 % growth over 2015-16 (BE) has been assumed in electricity, renewable energy, MRTS, irrigation (including watershed), ports (including inland waterways), water supply & sanitation, ports, airports and storage. Projected investment in roads & bridges for 2016-17 has been arrived at by assuming a growth rate of 20 % over 2015-16 (BE) to reflect higher Central investment anticipated in the sector. The Central investment data in roads & bridges include investment in Pradhan Mantri Gram Sadak Yojana (PMGSY). For oil & gas pipelines, projections for 2015-16 and 2016-17 have been arrived at by assuming a 10 % annual growth over 2014-15 (R.E.) data.

Projections for State Sector

3. For making the revised projections for the States sector during 2014-17 a 10 per cent growth over 2013-14 (RE) data has been assumed data in electricity, renewable energy, roads & bridges, irrigation (including watershed), water supply & sanitation, storage, ports (including inland waterways). For oil & gas pipelines, projections for 2015-16 and 2016-17 have been arrived at by assuming a 10 per cent annual growth over 2014-15 (R.E.) data.

Projections for Private Sector

4. The projections for private investment (2014-17) in electricity, have been projected by applying 20 per cent growth to the investment figure of 2013-14. The projections for 2015-17 in renewable energy have been made by applying 25 per cent annual growth on the investment figure of 2014-15 to reflect higher private investment envisaged in the sector. The investment projections for 2015-17 in ports have been made by applying 20 per cent growth on the investment figure of 2014-15 to reflect higher private investment envisaged in the sector. The projections for private investment in the airport sector for 2014-17 have been made by assuming a 5 per cent growth over 2013-14 data to cover inflation as no major growth is expected. In case of roads & bridges, based on the past growth trend, a

modest 10 per cent growth over 2014-15 data has been assumed to project investment during 2015-17, as most of the projects now are being awarded with public funds. In Telecommunications sector, the private investment data for 2012-13 and 2013-14 is based on the data provided by Telecom Regulatory Authority of India (TRAI) for the Gross Block and Cumulative Works in Progress (CWIP) of licensed telecom private companies and receipts from spectrum auction. Data for 2014-15, 2015-16 and 2016-17 has been projected assuming a growth rate of 20 per cent keeping in view past trend and increased business and expansion in telecom infrastructure to utilize newly allocated spectrum and thrust on "Digital India" programme. Investment in railways for 2015-16 were provided by the Ministry of Railways and 20 per cent growth rate has been assumed for making projection for 2016-17 keeping in view the low base of private investment and renewed thrust on PPPs in Railways. For making revised projections during 2015-17 for MRTS, a growth of 10 per cent has been assumed over 2014-15 data. Due to non-availability of private investment in water supply & sanitation, investment of Rs. 864 crore as in the report of the High Level Committee on Financing Infrastructure has been assumed during 2014-17. The projections for Central, States, and private investment for oil & gas pipelines for 2015-17 were arrived at by applying 10 per cent growth over 2014-15 investment data which was provided by the Ministry of Petroleum & Natural Gas. The projections for private investment in Storage for 2014-17 have been arrived at by assuming an annual growth rate of 15 per cent over 2013-14 (actual) data.

Annexure 6.2

Integrated Power Development Scheme

i) The issue of financial viability of Discoms has been touched upon earlier in the chapter and the aggregate and technical (AT&C) losses are closely related to it. AT&C loss levels continue to be unacceptably high and stands at nearly 24 per cent. The pace of reduction continues to be very low despite the huge quantum spent on the APDRP scheme between the years 2003 to 2008. The scheme was restructured thereafter in 2008 wherein it was divided into two parts. Part A of the scheme is related to assessing the correct loss levels through IT intervention whereas Part B makes the actual investments. Projects worth Rs. 39,244 crore (Part-A: Rs. 7,028 crore covering 1412 towns and 72 SCADA projects; Part-B: Rs. 32,216 crore covering 1259 towns) are under implementation. As on 31st March, 2015, 19 out of 21 Data Centres have been commissioned. 861 towns have been declared "Go Live" under Part A of the programme. Part B of the projects have been commissioned in 221 towns. Actual reduction in loss levels would be visible as more and more Part B projects are completed. However, it must be understood that reduction in AT&C losses is primarily a managerial function and investments can at best act as a supplement.

ii) The Government of India has launched an Integrated Power Development Scheme (IPDS). Under IPDS, R-APDRP (as approved by CCEA for continuation in Twelfth and Thirteenth Plans) has been subsumed alongwith a separate component relating to IT enablement of distribution network for which CCEA has already approved cost of Rs. 44,011 crore including a budgetary support of Rs. 22,727 crore. This outlay will be carried forward to the new scheme of IPDS. The IPDS scheme has the following components:

a) Strengthening of sub-transmission and distribution networks in the urban areas;

b) Metering of distribution transformers/ feeders/consumers in the urban areas;

c) IT enablement of Distribution sector.

iii) The above components of the IPDS scheme will have an estimated outlay of Rs. 32,612 crore including a budgetary support of Rs. 25,354 crore during the entire implementation period. All Discoms including private sector Discoms and State Power Departments will be eligible for financial assistance under the scheme. In case of private sector Discoms where the distribution of power supply in the urban areas is with them, the projects under the scheme will be implemented through a State Government Agency and the assets to be created under the scheme will be owned by the State Government/State owned companies. These assets will be handed over to the concerned Discom for their use during the license period on mutually agreed terms & conditions. The responsibility of operation and maintenance of these assets would be of the Discom concerned. As on 31.03.2015, IPDS schemes worth Rs 3,268 crore have already been sanctioned for six States.

Annexure 6.3

Deendayal Upadhyaya Gram Jyoti Yojana

1. The pace of rural electrification continues to be a source of concern and as on 31st March, 2012, electrification works in 104,496 un-electrified villages, intensive electrification in 248,553 partially electrified villages has been completed and free electricity connections to 194.25 lakh BPL households have been released under Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) which started in April, 2005. By the end of 31st March, 2015, out of the total 5,97,464 villages in India (Census, 2011), 5,79,012 villages (97 per cent) have been electrified.

2. During 2013-14, CCEA has approved continuation of RGGVY in the Twelfth and Thirteenth Plans wherein the task is to complete spill over works of project sanctioned in Tenth and Eleventh Plans and to cover the remaining villages, habitations (with population 100 & above) and BPL households. The physical targets for Twelfth/ Thirteenth Plans under RGGVY cover electrification of 8,299 un-electrified villages (Spill over from Tenth/ Eleventh Plans projects), electrification of 1.65 Lakh habitations and providing free connections to 3.54 Lakh BPL households. Against the physical targets of Twelfth/ Thirteenth Plans, 273 projects having 9012 un-electrified villages, 2.32 Lakh partially electrified villages, 1.42 Lakh un-electrified habitations, 4.17 Lakh partially electrified habitations and 1.32 crore BPL households have been sanctioned. During the Twelfth Plan (as on 30.04.2015) electrification works in 5,486 un-electrified villages, intensive electrification in 75,446 partially electrified villages have been completed and free electricity connections to 31.64 Lakh BPL households have been released.

3. The CCEA approved the Deen Dayal Upadhyaya Gram JyotiYojana (DDUGJY) in November, 2014 with components (i) to separate agriculture and non-agriculture feeders facilitating judicious rostering of supply to agricultural and non-agricultural consumers in rural areas, (ii) strengthening and augmentation of sub transmission and distribution infrastructure in rural areas, including metering of distribution transformers/ feeders/consumers and (iii) the rural electrification works under RGGVY which had been approved by CCEA in 2013 with estimated cost of Rs. 39,275 crore with budgetary support of Rs. 35,447 crore has been subsumed in DDUGJY. The total project cost of works under DDUGJY is Rs. 43,033 crore with budgetary support of Rs. 33,453 crore. The outlay approved under RGGVY will be carried forward to the DDUGJY in addition to outlay approved for the scheme. The objectives of the DDUGJY are feeder separation (for 24x7 power supply for non-agricultural consumers) and providing access to all rural households. As on 30.04.2015, under DDUGJY, projects with approved cost of Rs. 8,853.12 crore have been sanctioned in the States of Himachal Pradesh, West Bengal, Madhya Pradesh, Tamil Nadu, Uttar Pradesh and Andhra Pradesh.

4. As on 31.03.2015, 18,452 villages are yet to be electrified. The Ministry of Power has prepared a road map for electrification of balance un-electrified villages wherein the Ministry has planned to electrify 3,500 villages in 2015-16, 4,050 villages in 2016-17, 5,100 villages in 2017-18 and 5,802 villages in 2018-19. Against the Annual target during 2015-16, the achievement is 7,108 villages which is 203 per cent. The target for Annual Plan 2016-17 has been revised to 8,360 villages.

Learnings from the Appraisal of Physical Infrastructure Sector:

Power Sector

- The thrust of the Government of India is to provide 24x7 power supply to a common man. For improving access, small decentralized generating plants (based on renewable energy) feeding local grids is considered the ideal solution.
- But the real challenge is to provide last mile connectivity to consumers, develop an efficient distribution system and bring out revenue sustainability by the States by bridging the gap between cost of supply and tariff realization.

- Reduction in very high level of AT&C losses through power sector reform and availing benefits under new Central Sector Schemes namely IPDS and DDUGJY. Carry out energy audit and accounting for identification of high loss areas and to take remedial measures. Completion of 100 per cent feeder & consumer metering and feeder segregation is key to achieve efficiency in the power sector. This will improve the financial health of power utilities and trigger demand of electricity in the country which will results in economic growth.

- The share of hydro power is reducing and is a matter of concern from stability and economic point of view. There is a need to give focus for development of hydro potential, especially in North Eastern Region. This will fill up the gap between demand and supply of electricity.

- Inter-regional transfer of electricity is a constraint. This needs to be augmented to transfer surplus power available in one region of the country to other power deficient regions.

The New & Renewable Energy Sector

The recent report of Expert Group constituted under NITI Aayog on the direction of Ministry of Finance, strongly suggests that in the first place, all non-financial support options should be made available to Renewable Energy e.g. project development, policy support, legislative enablers, and coordinated implementation ecosystem. Such interventions are critical to reach the 175GW RE targets. The ecosystems should also ensure that all direct and indirect incentives should get reflected in the tariff of RE at the procurement end. Further the incentive design and procurement mechanism should be specific to the characteristics of resource and technology under consideration

On the physical progress, solar target would be overachieved while the wind target would be underachieved. The entire expenditure against the Twelfth Plan outlay is estimated to be about 102 per cent of the target.

Coal Sector

The success of coal sector depends upon making more indigenous coal available. It has been observed that the performance of the sector in the first four years of the Plan period indicates that the coal demand/ offtake has outstripped production which has a direct bearing on coal imports. Coal production from captive sources is a matter of concern as a healthy contribution from these sources will release the pressure on CIL to achieve the desired targets in coming years, and at the same time, will also ease the need of coal imports

The Petroleum and Natural Gas Sector

However, consumption of superior kerosene (SKO) has registered negative growth trend of 5 per cent in the same period. Under decontrolled price regime, High-Speed Diesel (HSD) consumption in 2015-16 grew at a CAGR of about 4 per cent over the base year 2011-12, while petrol registered a high growth of about 10 per cent CAGR. This is due to shrinking of the price gap between petrol and diesel and a major shift towards petrol driven cars/two wheelers due to the lowering of petrol prices on account of low crude oil prices in the international market. Overall, the demand for petroleum products 11 per cent in the years 2015-16 which calls for enhancing indigenous refining capacity as the surplus exported products would reduce to zero in next 3-5 years. Overall consumption of petroleum products growth in 2015-16 was 5.7 per cent from the base year 2011-12.

Against the total outlay of Rs. 4,41,688 crore the likely expenditure at the end of the Twelfth Plan will be about Rs. 3,90,939.80 crore, i.e. about 89 per cent of the targeted outlay. There is vast scope for this sector to contribute to the overall growth agenda by major investments in upstream, refining, LNG terminals and pipelines. However, local issues will need to be addressed for these investments to materialize on the ground.

Communications Sector

The Preferential Market Access policy for electronics & IT hardware manufacturing was initiated with intentions of incentivizing and encouraging domestic manufacturing. However, it has yielded mixed results. There is a need to revisit the policy and bring in appropriate changes to reflect the ground realities to support the governments Make in India programme.

Major infrastructure projects in the area of telecommunications - National Optical Fiber Network needs to be fast tracked for completion. The Digital India initiative cannot yield the desired results without robust nationwide broadband network.

Transport Sector:

There have been a number of learnings from the Twelfth Plan in transport sector. It has been seen that private investment in transport has slowed down especially in the road sector which had to be compensated by public investment. The Government has accelerated the public investment in infrastructure creation especially in the road and rail sectors especially during the last two preceding years of the plan. There has also been an aggressive push in the area of project completion but some of the fundamental constraints related to project execution still prevails especially in the areas of land acquisition. In terms of projects of significance, a mention has to be made of the high speed rail between Mumbai and Ahmedabad which was approved in 2015. Sagarmala with its thrust on port-led industrialization and coastal economic zones is another example of large scale project. However, large projects have equally large execution challenges. At this stage, it is not clear how efficiently these can be managed especially in Sagarmala which has dimensions beyond the port sector. In projects which could have been pushed forward but have not yet been moved ahead are the other DFCs in the Railways apart from the Western and Eastern DFCs. A challenge in coming days is the declining trend in rail traffic which needs to be reversed on which there is a national consensus. Another important learning is that a logistics-centric view is required to be taken of the transport infrastructure so that as hard infrastructure is created, the softer aspects of integration and process simplification also need to take place. Process simplification which is not resource intensive has huge benefits if designed well. But this would need all stakeholders to commit to reduction in paperwork and simplification of processes. Typical examples where such interventions can make dramatic impacts are ports-customs interface where our processes are well below international and even regional best practices. An important learning is that capacity creation is not the sole concern especially in the road sector but has now to be combined with asset management, focus on elimination of congestion and improvement of asset quality. Integration of technology especially in toll management of roads is required to be accelerated. Large inefficiencies in inter-state borders can be eliminated to bring in quick gains. Road safety is another area where not much systematic dent has been made during this plan period and a greater involvement of technical expertise including those from international agencies is needed. What is still missing in transport planning at the national scene is the integrated framework especially between the surface based transport modes i.e. rail and road although integration of ports and these sectors is happening thanks to Sagarmala. The challenge in the coming months and years is to look at this more intensively.

7

Environmental Sustainability

7.1 Introduction

7.1.1 The Twelfth Five Year Plan envisaged broad-based improvement in standards of living of all sections of society through a faster, more inclusive and sustainable growth process. In order to attain the vision of ensuring environmental sustainability, various policies and strategies relating to sectors such as Land, Water, Environment, Forestry & Wildlife and Mineral Resources have been envisaged in the Plan document. Progress in each of these sectors, alongwith the challenges being faced, are elaborated in the following sections:

Land Resources

7.2 Land Resources: Challenges and Plan Goals

7.2.1 The sustainable management of diminishing land resources is a major challenge during remaining period of the Twelfth Plan and beyond. It becomes even more important learning that India supports over 18 per cent of the world's human population and 15 per cent of livestock population on only 2.4 per cent land area. The demand for land for multiple uses is increasing leading to a decline in per capita availability for agriculture. It is estimated that per capita availability of agricultural land has declined from 0.48 ha in 1951 to 0.14 ha in 2011[1]. This decline in agricultural land leads to the conversion of forest lands, land under trees and miscellaneous uses for agriculture – a major concern for environmental sustainability. The land use pattern for the period 2002-03 to 2011-12 indicated a growth of 1.08 per cent per annum in non-agricultural uses. Other land related challenges are related to policy reforms like land titling, registration, modernization of land records and bringing additional area under the plough.

7.2.2 Land is a State subject. Therefore, policy initiatives need to be suitably backed by the States taking care of demand for food, fodder, fuels and timber and infrastructure development. Several challenges related to resources for survey/resurvey and digitization have been experienced by the States while implementing the National Land Record Modernization Programme (NLRMP). Inadequate availability of the required high speed bandwidth for connectivity of land record offices; and the lack of availability of a large number of technically capable private vendors for the survey are also challenges faced by the States.

7.2.3 **The Twelfth Plan, as a part of environmental sustainability,** envisaged holistic development of natural resources. Four important programmes – Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), National Mission for Sustainable Agriculture (NMSA), National Initiative on Climate Resilient Agriculture (NICRA) and Integrated Watershed Management Programme (IWMP) are under implementation during the Plan. These include a strong ecological services component, to contribute to environmental sustainability. The MGNREGA, NMSA and NICRA have been discussed in Chapter 8, Rural Transformation. In this chapter IWMP, along with other

[1]Food and Agricultural Organisation, (2014), FAO Statistical Year Book, 2014, Asia & Pacific Food & Agriculture, pp. 175, Regional Office Bangkok.

initiatives related to land use policy, land record modernization, land titling and registration are discussed. The vital activities of IWMP are related to the development of degraded natural resources; rain water harvesting and recharging the groundwater to increase in gross irrigated area from 90 million ha. to 103 million ha, one of the 25 monitorable targets of the Twelfth Plan.

7.3 Integrated Watershed Management Programme (IWMP)

7.3.1 The IWMP aims at restoring the ecological balance by harnessing; conserving and developing degraded natural resources. This prevents soil erosion, encourages rain water harvesting and groundwater recharging and enables multi-cropping and diverse agro-based activities. All these aim at achieving sustainable livelihoods for those residing in the watershed area. A total of 8,214 projects covering an area of 39.07 million ha have been sanctioned till March, 2015. Against the total cost of the sanctioned projects of Rs. 50,739.58 crore, about 22 per cent (Rs 11,032.2 crore) could be provided to the States with over 97 per cent utilization till December, 2014. This is evident from the facts that out of 8,214 projects sanctioned so far, only 119 (1.5 per cent) are in the consolidation phase, while 4,613 (56 per cent) have moved to the work phase and 3,482 (42.5 per cent) are in the preparatory phase. It implies more effort is needed under IWMP for contribution to soil and water development, like augmentation of water resources and increase in cropping/plantations, etc. One of the reasons for less progress and long gestation period has been the initially slow progress in constituting State level implementing agencies. This eventually acquired momentum, with all States having constituted the State Level Nodal Agencies (SLNAs) for implementation of IWMP.

7.3.2 IWMP has now been brought under the umbrella scheme of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) with an allocation of Rs. 1,500 crore for 2015-16. The funding pattern has currently been changed to 60:40 against 90:10 (Centre: State) earlier. States need to fund the programme liberally out of their additional Fourteenth Finance Commission allocation etc., to achieve the target of 25 million ha. area coverage during the Plan. Several new initiatives have also been mainstreamed during the first three years of the Plan to strengthen implementation and monitoring. The additional area targeted to be brought under irrigation through IWMP during 2016-17 as per the approved projects is 6.17 lakh ha. with an estimated cost of Rs. 7,482.02 crore. However, an amount of Rs. 1,500 crore has been allocated for the watershed development component of PMKSY including Neeranchal Project (Rs. 100 crore) during the financial year 2016-17.

7.3.3 **New Initiatives:** The Project Financial Management System (PFMS) has been adopted for IWMP to track the position of funds in all registered accounts, to enable the monitoring of bank balances and transactions of accounts in real time and to maintain records of all funds released under the programme. Besides, concurrent monitoring and evaluation by third party professional organizations has been initiated to monitor the implementation of the programme in the field and to provide regular inputs and reports.

7.3.4 Remote Sensing (RS) and Geographical Information Systems (GIS) are being used for the selection of watersheds, their characterization, prioritization, analysis of natural resources and identification of constraints, etc. National Remote Sensing Centre (NRSC) and other centers are partnering with the Department of Land Resources and States in this activity.

7.3.5 A major concern in watershed projects has been the non-availability of their impact in terms of quantified deliverables. The Mihir Shah Committee on watershed management, constituted by the erstwhile Planning Commission also stressed that watershed should be evaluated on key outcome indicators. To achieve this, the evaluation of watershed projects in 50 districts against key outcome indicators has been initiated using remote sensing and GIS technology. The NRSC is involved for the evaluation for five years i.e. till the completion of the project. The learnings from this impact evaluation will provide a base to extend the remote sensing and GIS based impact evaluation to all IWMP districts.

7.3.6 **Bhuvan geo-portal for IWMP:** This web-based GIS application, or geo-portal, is also in operation for use in the planning, monitoring and management of IWMP projects.

(a) **Bhuvan - 'Shristi' Portal:** This portal provides for use of space images and IT solutions. It can be used for planning, monitoring and management of watershed projects. A host of services covering (i) visualization (ii) download of free satellite data and products of specified period and resolution, (iii) thematic maps of land use, land cover, wasteland etc. are available on the portal.

(b) **Bhuvan: 'Drishti' Mobile App:** A user friendly Android mobile app has been developed under the Technology Development Extension and Training (TDET) programme to facilitate online monitoring of the activities in the field. The application allows for uploading photos along with their GPS locations directly from mobiles to the Bhuvan server for viewing and analysis.

7.4 National Land Records Modernization Programme (NLRMP)

7.4.1 The National Land Records Modernization Programme (NLRMP) was started in 2008-09. NRLMP aims at ushering in the system of conclusive titles, in lieu of the deeds and documents registration system with presumptive titles that prevails at present. The project has been implemented in 457 districts so far. Computerization of Record of Rights (RoRs) has largely been completed in 23 States whereas 19 States and UTs have placed RoR data on their web sites. To reduce the interface with government offices to get these records and to facilitate the hassle-free delivery of land records, 18 States have stopped manual issuance of RoRs.

7.4.2 The States have also enacted Acts to provide time-bound services relating to a number of departments at one place. The Madhya Pradesh Public Service Delivery Guarantee Act -2010, and Mee-seva in Andhra Pradesh are some of the success stories. Integration of Bhoomi-Kaveri is an outstanding example started by Karnataka for providing integrated service to people at one window. Karnataka has enabled banks' access to RoRs which has reduced the time that bank loans take to be sanctioned. Gujarat and Haryana have made progress in resurvey of the land, while Bihar, Odisha, Maharashtra are at various levels of implementation of this activity. Progress made by Gujarat in resurvey and creating updated cadasters brings out that overlaying these cadasters with the maps pertaining to infrastructure and other facilities available in that area could help considerably when it comes to identifying land for development purposes.

7.5 Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation & Resettlement (RFCTLAR&R) Act, 2013

7.5.1 The RFCTLAR&R Act, 2013 came into effect on 1st January, 2014. Consequent upon the difficulties faced by the States and Central Government agencies in the implementation of certain provisions of the Act, it was considered necessary to make changes to it while safeguarding the interest of farmers and affected families in cases of land acquisition. A conference of State Revenue Ministers was organized on 27th June, 2014 to take stock of the administrative preparedness. Suggestions received from the State Governments, Union Territory administrations, Ministries / Departments and other stakeholders were also considered. Based on these deliberations, some amendments were proposed in the Act. Accordingly, the RFCTLAR&R (Amendment) Ordinance, 2014 was promulgated on 31st December, 2014. The replacement Bill was introduced in the Lok Sabha on the 24th February, 2015 but could not be passed by Parliament. To give continuity to the provisions of the said Ordinance and to expedite the process of land acquisition, the RFCTLAR&R (Amendment) Ordinance, 2015 (No. 4 of 2015) was promulgated on 3rd April, 2015. The ordinance was allowed to lapse on 31st August, 2015.

7.6 Land Reforms

7.6.1 The following key reforms have been initiated during the Plan which need to be expedited:

7.6.2 **Land Titling Bill**: Moving from presumptive titling to conclusive titling, the Bill includes titling in a modular way. To begin with, the titling may be voluntary. It is also envisaged that the provisional entries will become conclusive after three years. The Bill provides for establishment of Central Land Titling Authority in each State/UT with the powers of a civil court. The draft regulation under Article 240 of the Constitution on land tilting for implementing in Union Territories has also been formulated and discussed with UTs. Lakshadweep has shown its readiness to implement land titling.

7.6.3 **National Land Reforms Policy**: The draft National Land Reforms Policy covering, land use plan; the protection of lands belonging to Scheduled Castes, Scheduled Tribes and other marginalized communities; homestead rights; common property resources; land acquisition; modernization of land records; and so on, has been formulated. The policy suggests measures for effective and speedy resolution of land disputes. A robust GIS based land record system has been envisaged for transparency and good governance with Gram Sabhas playing a larger role in land administration.

7.6.4 **National Land Use Policy:** The draft National Land Use Policy envisages identification of non-cultivable land and its strategic development. It focuses on the issues of unregulated shifts of land, reducing per capita land resource and meeting the demands of rural and agricultural sectors and protecting lands under natural resources while meeting the demands of urbanization, industrialization, mining, transport and so on.

7.6.5 **Registration (Amendment) Bill, 2013:** The Registration (Amendment) Bill, 2013 was introduced in the Rajya Sabha on 8th August, 2013. This includes (a) power of attorney to be compulsorily registered; (b) registration of documents, relating to transactions prohibited by Central/State Acts, to be refused; (c) registration anywhere in the State or UT; (d) facilitation of electronic registration of documents; and (e) the refund or recovery of registration fees. The Parliamentary Committee has submitted the Bill in Parliament after review.

Water Resources

7.7 Water Resources: Scenario and Challenges

7.7.1 India has only 4 per cent of the world's water resources. Even with this limited availability, there are limits on the utilizable quantities of water, owing to its uneven distribution in time and space. As much as 75 to 85 per cent of the run-off in Indian rivers occurs in four months of the year. The Working Group[2] for the Twelfth Plan had estimated that the demand gap between water availability and requirements could be of the order of 250 Billion Cubic Metres (BCM) for irrigation by 2050 (paragraph 1.4 (a), page 11). Even if a fair fraction of this additional demand is borne by groundwater, the extra burden on surface irrigation will be of the order of 150 BCM to achieve self sufficiency by 2050.

7.7.2 Per capita water availability has been steadily declining since 1951, due to the growing population while water resources remained constant or depleted. An annual per capita water availability in the range of 1,000 and 1,700 cubic metres is termed as a water-stressed condition, and per capita availability below 1,000 cubic metres is termed as a water-scarce condition. As per 2011 census, the per capita water availability is 1,544 cubic metres. There are conflicts among water users and various water uses at village, district, State and National levels. There are also competing demands for drinking, agriculture, industries including power, as also for sustaining the ecosystem. Effect of climate change on water resources may aggravate the scarcity. Growing scarcity of water manifests in the form of acute problems at the local level, leading to inequity in access

[2] Report of the Working Group on Major and Medium Irrigation and Command Area Development for the Twelfth Plan, Planning Commission.

for drinking and irrigation. Over-exploitation of groundwater leading to alarming decreases in its levels leads to an increase in water disputes, which may take the shape of social unrest.

7.7.3 Other issues like the increasing pollution of fresh water sources; low water-use efficiency, especially in agriculture; recurring floods and droughts; the non-maintenance of water infrastructure leading to its deterioration and resulting in inequitable access; variability of water resources due to climate change etc. are equally worrying. Improving water-use efficiency through new demand management initiatives like "more crop, per drop"; increasing water availability (*har khet ko pani*); ensuring participatory groundwater management based on scientific inputs; undertaking water sector reforms; re-cycling of water; enforcing the Pollution Control Act; and having a national legislative framework for water governance are to be pursued vigorously to meet these various challenges.

7.7.4 Given the huge public investment of Rs. 3,49,626 crore (at current prices) over the first eleven Five Year Plans, the irrigation potential created through various major and medium irrigation projects increased from 9.72 million ha. at the end of the pre-Plan period (1950) to 47.41 million ha. by the end of the Eleventh Plan (2012). However, the created potential has not been fully utilized. There was a gap of around 23.30 million ha. between the irrigation potential created and utilized till the end of the Eleventh Plan.

7.8 Water Resources: Twelfth Plan Strategy

7.8.1 The Plan visualized a fundamental change in the approach to water development. It focused on principles, the approach and strategies for water management in India. Such strategies included water governance and the participation of multiple stakeholders, together with multi-disciplinary development actions for water resources management and the maintenance of existing infrastructure. It called for initiating action on the following elements[3]:

i. Narrowing the gap between Irrigation Potential Created and Irrigation Potential Utilized (IPC and IPU).

ii. Improving water-use efficiency by 20 per cent.

iii. Integration of command area development (CAD) works with major and medium irrigation (MMI) and channelizing MGNREGA funds to improve the canal system and CAD work.

iv. Integrating the repair, renovation and restoration (RRR) of water bodies with IWMP.

v. National Groundwater Management Programme- aquifer mapping.

vi. Broad-basing of human resources (multi-disciplinary HR involvement).

vii. Structural and non-structural measures for flood management.

viii. Redesigning management information system (MIS) for strengthening data base and monitoring.

ix. A new institutional and legislative framework for the water sector.

7.8.2 The National Water Policy, 2012 was adopted in December, 2012 by the National Water Resources Council, chaired by Prime Minister and with the participation of Chief Ministers. The policy proposed a national legal framework for general principles governing the exercise of legislative and/or executive (or devolved) powers by the Centre, the States and the local governing bodies. A brief on the National Water Policy, 2012 is in **Box 7.1**.

[3] 12th Plan, Vol 1, Planning Commission, pp 144.

Box 7.1: National Water Policy, 2012

The National Water Policy, 2012 expresses several concerns about water resources management in the country. These include water resource governance; variation in the availability of water; access to safe water in terms of quantity and quality; straining relationships due to water disputes; sub-optimal maintenance of water infrastructure; and so on. The Policy advocates a number of suggestions in the following areas:

- (i) A national framework law
- (ii) Uses of water
- (iii) Adaptation to climate change
- (iv) Enhancing water available for use
- (v) Demand management, water-use efficiency and water pricing
- (vi) Conservation of river corridors, water bodies and infrastructure
- (vii) Project planning and implementation
- (viii) Management of flood and drought
- (ix) Water supply and sanitation
- (x) Institutional arrangements
- (xi) Trans-boundary rivers
- (xii) Data-base and information system
- (xiii) Research and training needs

A Committee constituted by the Ministry of Water Resources, River Development and Ganga Rejuvenation has already prepared a roadmap for implementation of the policy, and it has been shared with all stakeholders for wider consultation.

7.9 Water Resources: Schemes/Programmes

7.9.1 To bridge the gap between the IPC and IPU, Command Area Development works (taken up below the irrigation outlet of an irrigation project) have now been integrated with the Accelerated Irrigation Benefits and Flood Management Programme. The Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD&GR) has already initiated the process for constitution of the National Bureau of Water Use Efficiency under the National Water Mission. The proposed Bureau will have the overall responsibility of improving water-use efficiency across various sectors – irrigation, drinking water supply, power generation, industry etc. – in the entire country.

7.9.2 The scheme of Repair, Renovation and Restoration of Water Bodies is revamped and approved for Rs. 6,235 crore to cover 10,000 water bodies with a command area of 6.235 lakh ha. The Integrated Watershed Management Programme (IWMP) has been combined with this scheme to ensure catchment area treatment of the restored water bodies, which would avoid siltation and maintain the capacity created.

7.9.3 The Government of India has launched a Ground Water Regulation and Management Scheme during 2013-14 with an estimated cost of Rs. 3,319 crore. It envisages groundwater management through aquifer mapping in three dimensions along with their characterization on 1:50,000 scale covering 8.89 lakh sq. kms. and with further detailing up to 1:10,000 scale for vulnerable areas. This would be followed by the formulation of aquifer management plans, quantifying water availability and water quality, to facilitate sustainable management through a participatory management approach.

7.9.4 The Flood Management Programme of MoWR, RD & GR launched in the Eleventh Plan has been continued in the Twelfth Plan with a provision for Central Assistance of Rs. 10,000 crore to States. It has a separate component of Rs. 1,000 crore for catchment area treatment to address the issue of high rates of run-off and erosion. The Flood Forecasting Scheme is also being revamped to increase the number of flood forecasting stations and inflow forecast stations to cover dams and reservoirs. A total of 787 Hydrological Observation & Flood Forecasting stations are proposed to be set-up or modernized by providing automatic data acquisition and real-time data transmission systems.

7.9.5 The MoWR, RD&GR has already put in place an India Water Resources Information System into the public domain. India-WRIS Web GIS (Version 4) is a 'Single-Window' solution providing comprehensive, authoritative and consistent data and information on India's water resources along with allied natural resources in a standardized national GIS framework.

7.9.6 The status of proposed targets and achievements in the water sector are in **Table 7.1.**

"Aviral and Nirmal Dhara" of the Ganga river, and to ensure its ecological and geological integrity.The programme covers the entire Ganga River Basin and major tributaries located in the States of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Madhya Pradesh, Chhattisgarh and Rajasthan. The programme also includes liabilities under other ongoing Centrally Sponsored Schemes namely Ganga Action Plan-II, Yamuna Action Plan-II & III

Table 7.1: Monitorable Targets, Sub-sectoral Targets and Achievements

Component	**Target (by March, 2017)**	**Achievement by March, 2014**
Increase in Gross Irrigated Area	From 90 million ha. to 103 million ha.	The latest gross irrigated area reported by the Ministry of Agriculture is 91.53 million ha.
Irrigation potential creation from ongoing and new Major and Medium Irrigation projects	7.9 million ha.	The likely achievement is 2.01 mha during the first two years of the Plan.
Improving irrigation efficiency of Major and Medium Irrigation commands	By 20 per cent	Benchmarks for improving the water use efficiency is under formulation by the MoWR,RD&GR.
Completing CAD works in respect of Major, Medium and Minor Irrigation projects	10 million ha.	Area of 0.553 million ha. covered.
Aquifer mapping	8.89 lakh sq. kms.	Data gap assessment in 90,000 sq. km. and data generation in 54,000 sq. kms. is under progress.

The budget allocation provided to the MoWR, RD&GR for the period 2012-16 is Rs. 19,844 crore against which the expenditure incurred is Rs. 13,241.97 crore. Further, budget allocation of Rs. 5,500 crore has been made during the year 2016-17.

7.10 New Initiatives during the Twelfth Plan

7.10.1 **'Namami Gange',** an integrated Ganga conservation mission under the National Ganga River Basin Authority, was launched in 2014-15 with an estimated cost of Rs. 21,272 crore. Its objective is an

and ongoing projects under part of National River Conservation Plan (NRCP) pertaining to the Ganga River Basin. Central Liability under these on-going projects is Rs. 7,272 crore (included in the total cost).

7.10.2 In the Union Budget 2014-15, a provision of Rs. 2,037 crore was set aside for Namami Gange. Against this provision, a sum of Rs. 342.40 crore was released during the year 2014-15, whereas in 2015-16, the allocation is Rs. 2,100 crore. The overall targets to be achieved during the period 2014-2019 are given in **Table 7.2**.

Table 7.2: Targets of Namami Gange

Targets	Target to be achieved by 2018-19
Creation of Sewage treatment capacity	
Through MoUD	1500 mld
Through NMCG	1000 mld
Creation of Sewerage Network	
Through MoUD	5000 Km
Through NMCG	3000 Km
Creation of online real-time water quality monitoring network	130 stations
Creation of CETPs/ETP for critical industry clusters	5 Nos.
River front management	15 locations
Improved sanitation access in rural areas through MoDWS& NMCG	1649 GPs
Establishment of National Ganga Monitoring Centre	
Afforestation along river banks and in upper reaches	

7.10.3 During the three year period 2014-2017, the Budget provision for the programme was Rs. 5,750 crore (Rs. 2,150 crore for 2016-17) out of which the expenditure incurred up to March, 2016 is Rs. 1,000 crore. As on 31.12.2015, a total of 80 schemes covering 50 towns in 5 States have been sanctioned to create sewage treatment capacity of 738.23 Million Litre per Day (MLD). Against this, the capacity created up to December, 2015 is 126.50 MLD and projects are in advanced stage of completion for capacity creation of 62.90 MLD. In order to address the issues arising during implementation of the Ganga rejuvenation and other river development/rejuvenation works at the States and the Central level, NITI Aayog may offer a platform for resolution of inter-sectoral and inter-departmental issues which will accelerate the implementation of these works.

7.10.4 **Pradhan Mantri Krishi Sinchayee Yojana:** The Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), approved with an outlay of Rs. 50,000 crore on 1st July, 2015, will provide end-to-end solutions in irrigation supply chain, viz. water sources, distribution network and farm level application. This Programme will mainly focus on ensuring water access to every agriculture farm ("Hark Khet Ko Pani") and enhance agricultural productivity through increased availability and efficient use of water. PMKSY has four components: (1) Accelerated Irrigation Benefits Programme (major and medium irrigation including national projects); (2) "Har khet ko pani" (Minor Irrigation, Repair, Renovation and Restorationof Water Bodies, and CAD) both under MoWR, RD & GR (3) "Per drop more crop", micro irrigation, under the Department of Agriculture, Cooperation and Farmers Welfare; and (4) Watershed Development under the Department of Land Resources. The budgetary allocation for the programme in the year 2015-16 was Rs. 5,300 crore covering all its components. During the two year period 2015-2017, the Budget provision for the programme is Rs. 11,017 crore. The assistance provided to the States up to March 2016 is Rs. 7,279.13 crore. The physical target as per approved programme for the period 2015-2020 is about 7.5 lakh ha under AIBP, about 2.0 lakh ha under minor irrigation (surface), about 15 lakh ha under Command Area Development and Water Management, about 2.5 lakh ha under minor irrigation (groundwater), about 1.5 lakh ha under Repair, Renovation and Restoration of Water Bodies, about 10 million ha under per drop more crop and about 11.5 lakh ha under Watershed Development. The targets particularly under AIBP and CAD&WM are being revised upwards.

7.10.5 A committee has been constituted under the Chairmanship of Member (Agriculture), NITI Aayog to develop a comprehensive road map for PMKSY. The draft road map for PMKSY has been prepared which is likely to be finalized soon. Implementation of Last Mile Connectivity projects so as to fully utilize already created irrigation potential has been accorded high priority in addition to prioritized Major and Medium irrigation projects under AIBP. About 22 prioritized projects under AIBP were inspected by the officers of NITI Aayog, MoWR,RD&GR and the concerned State Governments for assessing their physical progress and formulating suitable strategies to ensure their completion at the earliest. The status of remaining prioritized projects is also being assessed. Further, NITI Aayog has given its observations on the proposal of the MoWR,RD&GR for covering more and more areas under assured irrigation. The observations of NITI Aayog are aimed at extending irrigation coverage with increased water use efficiency.

7.10.6 A study has been initiated by NITI Aayog with World Bank assistance to develop a framework for development and sustainable management of water resources in India. The study may capture good practices across various States and also from other countries. Learnings from good practices may be useful in formulation of suitable strategies for addressing various issues affecting water sector.

7.10.7 The Inter-State River Water Disputes Act, 1956 was enacted for adjudication of disputes related to waters of inter-State rivers and river valleys. Amendments have been proposed to the Act with a view to further streamlining the settlement/adjudication process of inter-State river water disputes. The proposed amendments will facilitate strengthening of institutional arrangements for timely settlement of water disputes. Consultation with the States and other stakeholders on the proposed amendments were held by NITI Aayog and their observations were compiled and forwarded to MoWR,RD&GR for incorporating in the proposed amendments suitably.

7.11 Water Resources: Recommendations

7.11.1 **Policy-related Recommendations:**

(i) The extension, renovation and modernization (ERM) of irrigation projects is to be given priority. ERM projects yield quick returns and improve water-use efficiency while requiring lower investment per hectare of irrigation development vis-à-vis new projects. States can, therefore, be encouraged to take up ERM/water sector restructuring projects. A new initiative by Karnataka in the ERM of Narayanpur Left Bank Canal project is covered in **Box 7.2.**

Box 7.2: Mobile-based Governance in Water Management

The Narayanpur Left Bank Canal System is a lifeline canal network under the Upper Krishna Project in Northern Karnataka. It aims to irrigate 4,70,000 ha annually. The command is spread over the perennially drought-prone districts of Gulbarga and Bijapur. The new extension, renovation and modernisation project is being implemented by the State with an estimated cost of Rs. 4,103.50 crore for improving the overall water use efficiency from 31.75 per cent to 53.44 per cent. The project proposes to put in place a telemetry system at an estimated cost of Rs. 490 crore consisting of

(i) Automated canal system management using telemetry and supervisory control and data acquisition (SCADA).

(ii) Database system.

(iii) Geographical Information System (GIS).

Deviations between water requirement data and water flow data are communicated to the officers and operators through SMS on their mobile phones to bring the flow to the limits as per the water requirement.

(ii) The National Water Policy lays emphasis on volumetric supply of irrigation water. The FFC has also recommended that all States, irrespective of whether Water Regulatory Authorities are in place or not, should adopt the Policy's recommendations and commence the volumetric measurement of the use of irrigation water. It is worth mentioning that any investment that may be required to meet this objective should be borne by the States, as the benefits – both in environmental and economic terms – will exceed the cost.

(iii) The ultimate irrigation potential under the major and medium irrigation sector was assessed as 58.465 million ha by the Second Irrigation Commission in 1972. Keeping in view the changes in land-use over the last four decades, the state-wise inventory of these projects needs to be freshly assessed, in order to know the actual irrigation benefit from these projects. The MoWR, RD& GR should expedite the pilot census of these projects proposed under the Central Sector Scheme Water Resources Information System.

(iv) For sustaining sub-surface storage of water in rivers, sand mining in rivers should be strictly monitored and regulated. Sand mining should not be permitted in areas with over-exploited groundwater. In areas where groundwater exploitation has reached critical and sub-critical levels, sand mining should be restricted to only local uses.

(v) The National Water Policy outlines the pricing of water for its efficient use and to reward its conservation. It also envisages setting up independent Water Regulatory Authorities (WRAs) in States after consultations with stakeholders. The Thirteenth Finance Commission had recommended the setting up of WRAs and earmarked Rs. 5,000 crore to States as an incentive for their creation. The suggestion has been reiterated by the Fourteenth Finance Commission. Further, WRAs already established need to be made fully functional at the earliest. Brief details of the existing WRAs in Maharashtra and Jammu & Kashmir are provided in **Box 7.3.**

(vi) A Special Purpose Vehicle (SPV) needs to be set up to implement the aquifer mapping and management scheme.

Box 7.3: Water Regulatory Authorities

(A) Maharashtra and Jammu &Kashmir have functional Water Regulatory Authorities. The Maharashtra Water Resources Regulatory Authority was established in August, 2005 under the Maharashtra Water Resources Regulatory Authority Act, 2005 and became operational in mid-2006.

The three main functions of the Authority are:

(i) To determine, regulate and enforce the distribution of entitlements for the various categories of use and the distribution of entitlements, within each category of use.

(ii) To establish a water tariff system for levying water charges on various categories of water users with a view to establishing a stable and self-sustainable management of service delivery to such users.

(iii) To review and clear water resources projects, with a view to ensuring that a project proposal is in conformity with the Integrated State Water Plan (ISWP).

(B) The Jammu & Kashmir State Water Resources Regulatory Authority has been constituted under the Jammu and Kashmir State Water Resources (Regulation & Management) Act, 2010. It became operational on 15th October, 2012. The broad mandate of the Authority has been spelt out under Section 145 of the Act, and it is essentially responsible for regulating water resources within the territorial jurisdiction of the Jammu & Kashmir State, ensuring judicious, equitable and sustainable management, allocation and utilization of these resources, fixing the rates for use of water, and all matters connected therewith or incidental thereto.

7.11.2 **Scheme-related Recommendations:**

i. The online system to monitor projects under the Accelerated Irrigation Benefits Programme (AIBP) may be fully operationalized at the earliest and placed in the public domain for use by all stakeholders, including the public.

ii. The planning and implementation of ground water management schemes based on aquifer mapping requires skills at the local level.Therefore, capacity building of workers engaged at the local level needs to be taken up as part of the Skill Development Mission on a continuous basis.

7.11.3 **Interlinking of Rivers:**Inter-basin water transfer from water surplus to water-deficit areas has been envisaged in the National Perspective Plan formulated for development of water resources. The MoWR, RD&GR is undertaking the task of inter-linking of rivers through the National Water Development Agency (NWDA). The NWDA has identified 30 links (16 under peninsular rivers and 14 under Himalayan rivers) for the preparation of the feasibility reports. Out of these, feasibility reports of 16 links have already been prepared. The DPRs for Ken-Betwa Link (Phase I and Phase II) Damanganga - Pinjal Link and Par-Tapi-Narmada Link have been completed.

Environment, Forestry and Wildlife

7.12 Environment, Forestry and Wildlife: Indicators and Importance

7.12.1 Globally, the environment has emerged as a major area of governance bringing the scientific, the socio-economic and the political dimensions in a single crucible. The sustainability of economic development itself crucially hinges upon protection of the environment. For India, arresting the pace of environmental degradation poses a formidable challenge due to the need to maintain high economic growth, increasing trends of urbanization, population growth, industrialization, unmet basic needs, life style changes and biotic pressures on available natural resources. However, some positive factors such as strong base in science and technology and well-developed institutional infrastructure have also emerged having potential to drive new paradigms and a holistic approach as demanded by the environmental governance today. In the Twelfth Plan, strategies for achieving environmental sustainability with proper use of available assets have been indicated. Core indicators have also been identified to track the progress of achieving a clean and healthy environment.

7.12.2 Three "Core Indicators" identified in the Plan for the sector on "Environment and Sustainability" are as under:-

i. Increase in green cover (as measured by satellite imageries) by 1 million ha every year during the Twelfth Five Year Plan.

ii. Addition of 30,000 MW of renewable energy capacity in the Twelfth Plan.

iii. Reduction in emission intensity of GDP in line with the target of 20 to 25 per cent reduction over 2005 levels, by the year 2020.

7.12.3 The Forest cover plays an important role in the maintenance of a clean and healthy environment. Therefore, conservation of forests needs to be given priority. The Fourteenth Finance Commission (FFC) has also given considerable importance to forest cover in the devolution formula. It has proposed a new horizontal formula **(Table 7.3)** for the distribution of States' share in divisible pool among the States. There are changes both in variables included and those excluded as well as the weights assigned to them. Relative to the Thirteenth Finance Commission, the FFC has incorporated two new variables: 2011 population and forest cover.

Table 7.3 Horizontal Devolution Formula in the recent Finance Commissions

Variable	Weights accorded	
Criteria	13th FC	14th FC
Population (1971)	25	17.5
Population (2011)	0	10
Fiscal capacity/ Income distance	47.5	50
Area	10	15
Forest cover	**0**	**7.5**
Fiscal discipline	17.5	0
Total	**100**	**100**

Source: Finance Commission Reports

7.12.4 Forest cover has been given a weightage of 7.5 per cent in the devolution formula. This may motivate the States to enhance not only the extent but also the quality of forest cover, as the weightage is for moderate dense and very dense forests.

7.13 Environmental Programmes

7.13.1 In order to address the emerging challenges for ensuring environmental sustainability, the Twelfth Plan puts emphasis on adopting sound practices of environmental management, based upon scientific principles. For this, 18 Plan schemes (13 Central Sector and 5 Centrally Sponsored Schemes) are under implementation. Emphasis has been placed on convergence and dovetailing of different schemes for timely delivery of outcomes.

7.13.2 To resolve inter-sectoral issues, the Plan envisages establishing – at the Central and the State levels – inter-ministerial standing committees and working groups in specific domains within broad areas like air quality control and waste management.

7.13.3 To effectively regulate environmental pollution, it has been proposed to amend the Environment

(Protection) Act, 1986, and upwardly revise the penalties therein. An enabling provision for civil administrative adjudication to fast-track the levy of penalty has also been proposed. The setting up of a multi-disciplinary National Environment Assessment and Monitoring Authority (NEAMA) to strengthen the process of granting environmental clearances and monitoring there of has also been envisaged.

7.13.4 The Central and the State Governments need to invest more in strengthening the mechanisms implementing rules notified under the Environment (Protection) Act, 1986, including the CRZ Notification and the Marine Fishing Regulation Act.

7.13.5 The Plan also envisages strengthening the Botanical Survey of India (BSI) and the Zoological Survey of India (ZSI) in terms of manpower and infrastructure. They would thus be able to scale up their mandated tasks of inventorisation of India's flora and fauna. Further, the mandate of different institutes engaged in forestry, biodiversity and wildlife research is required to be broadened to accommodate emerging needs for collaborative multidisciplinary research.

7.13.6 A national information grid for biodiversity, ecology and environment data, so as to enable effective monitoring and sustainable management of natural resources, has been proposed in the Plan.This is expected to be an open, transparent and comprehensive web-based information system covering various landscapes such as forests, mountains, deserts, and coasts, as well as the territorial waters of the country's Exclusive Economic Zone.

7.13.7 To develop the Non Timber Forest Produce (NTFP) sector in a holistic way and coordinate various activities for sustainable management, an autonomous agency with branches in all States/UTs has been envisaged. Enrichment, protection and sustainable management of NTFP resources have the potential to provide livelihood support to the needy people and also to contribute substantially in maintaining ecological stability.

7.13.8 Scientific and socio-economic issues related to wildlife conservation, including strengthening of veterinary care for wild animals, are also priority areas in the Plan. Animal Welfare Boards are planned to be setup in all the States, including Societies for Prevention of Cruelty to Animals (SPCAs), under the Prevention of Cruelty (Establishment of Societies for the Prevention of Cruelty to Animals) Rules in all districts of the country.

7.14 Environment

7.14.1 The Forest Survey of India, Dehradun carries out survey and assessment of the forest resources in India and monitors changes in the forest cover. The findings are published biennially as the "India State of Forest Report". As per the India State of Forest Report, 2013[4] (the latest in the series), the total forest and tree cover of the country is 7,89,164 sq. kms. which is 24.01 per cent of its total geographical area.

7.14.2 As per the latest assessment report of 2013, there is an increase of 5,871 sq. kms. in forest cover as compared to the 2011[5] assessment. Although an increase in forest cover has been reported, more efforts are needed to achieve the goal, as envisaged in the National Forest Policy of 1988, to have a minimum of one-third of the total land area of the country under forest or tree cover.

7.14.3 Against the target of an additional 30,000 MW of renewable energy capacity during the Twelfth Plan, 10,892 MW has been achieved upto March, 2015. The emission intensity of GDP is expected to decrease with an increase in forest cover, the addition of renewable energy capacity, and measures being taken up for sustainable development.

[4] Forest Survey of India, (2013): India State of Forest Report, 2013, Dehradun.
[5] Forest Survey of India, (2011): India State of Forest Report, 2011, Dehradun.

7.14.4 The draft Compensatory Afforestation Fund Bill, 2015 and the proposal to introduce the said bill in Parliament were approved by the Union Cabinet on 29th April, 2015. The proposed legislation seeks to provide an appropriate institutional mechanism, both at the Centre and in each State and UT, to ensure the expeditious utilization of amounts realized in lieu of forest land diverted for non-forestry purpose. It contains provisions to ensure the utilization of these amounts in an efficient and transparent manner. The proper and timely utilization of these amounts will mitigate the impact of diversion of such forest land for non-forestry purposes.

7.14.5 The efficient use of available resources through the convergence of various on-going schemes has been emphasized, to overcome environmental challenges. Convergence guidelines of Green India Mission (GIM) with MGNREGS and Compensatory Afforestation Fund Management and Planning Authority (CAMPA) have been issued by the Central Government in 2015 to address climate change concerns effectively. Further, efforts are on to bring about convergence with other complementary missions and programmes.

7.14.6 In order to ensure efficiency, transparency and accountability in the process of granting environmental, forest and wildlife clearances, a single-window system of online submission and monitoring (at http://efclearance.nic.in) has been introduced. The status of proposals at various levels is displayed on this web portal. On 2nd July, 2015, an online system for submission of applications for category 'B' projects to State Environment Impact Assessment Authorities (SEIAAs) was also launched by the MoEF&CC. This system is expected to ensure transparency and speed up the clearance process while maintaining its rigor.

7.14.7 A proposal has been moved for the upward revision of penalties, and the inclusion of an enabling provision for civil administrative adjudication to fast-track the levy of penalties, under the Environment (Protection) Act.

7.14.8 Guidelines have been issued under Forest (Conservation) Act, 1980 for the simplification of the clearance process for projects involving the linear diversion of forest land– such as the laying of new roads, the widening of existing highways, transmission lines, water supply lines, railway lines, and so on. The simplified process for obtaining Forest Clearances (FCs) will expedite the implementation of such projects, leading to faster and sustainable growth.

7.14.9 Monitoring emissions and effluents from polluting industries throughout the country through a real-time effluent quality monitoring system is being implemented by the MoEF&CC. Guidelines for an online continuous monitoring system for effluents have been issued by the Central Pollution Control Board. The online monitoring system will provide continuous measurement of data for long periods of time at the monitoring sites of interest. Further, the **Central Pollution Control Board** is executing a nation-wide programme of ambient air quality monitoring, known as National Air Quality Monitoring Programme (NAMP). The network for NAMP consists of 580 operating stations covering 244 cities and towns across the country[6].

7.14.10 Revision of waste management rules related to e-waste, solid waste, plastic waste, hazardous waste and bio-medical waste has been taken up by MoEF&CC. Notifications of these rules are targeted during the year 2016-17. Revised rules will make waste management more scientific and effective thereby contributing significantly to "Swachh Bharat".

7.14.11 India successfully hosted the eleventh Conference of the Parties (CoP-11) to the Convention on Biological Diversity (CBD) in October, 2012, at Hyderabad. During India's two-year presidency of CoP-

[6]Annual Report of the MoEF&CC, 2014-15, pp 112.

11, a number of additional activities relating to biodiversity conservation, some of them quite unique, were taken up within as well as outside the government set-up. These include: the setting up of a commemorative pylon, botanic garden and biodiversity museum complex in Hyderabad, India's contribution to South-South cooperation, and running of the Science Express Biodiversity Special train.

7.14.12 As president of CoP-11, India played a proactive leadership role in ensuring the success of the Nagoya Protocol on "access to genetic resources and fair and equitable sharing of benefits arising from their utilization" by achieving the required number of ratifications. The Protocol came into force in October, 2014. It is a major step towards achieving the first of the global Aichi Biodiversity Targets. Recognizing the pivotal role played, India was invited by the global biodiversity community to preside over the first meeting of the Parties being hosted by the Republic of Korea.

7.14.13 The discharge of untreated sewage from urban areas is one of the major sources of pollution of rivers. Creation of additional sewage treatment capacity to bridge the gap between sewage generation and existing treatment capacity is needed, and this mammoth task requires the involvement of all stakeholders – the Central Government, State Governments, local bodies, implementing agencies, NGOs, and the general public. The proper treatment and disposal of sewage generated in urban areas is basically the responsibility of the concerned State Governments and local bodies. However, the Central Government has been supplementing the efforts of State/UT Governments in the creation of sewerage infrastructure and abatement of pollution in rivers by providing financial assistance through appropriate schemes of various ministries (MoEF&CC, MoUD and MoWR, RD & GR). Under the Centrally Sponsored Scheme 'National River Conservation Plan' (NRCP), financial assistance is provided to the State Governments for pollution abatement in identified stretches of various rivers. In the Twelfth Plan, there is a provision of Rs.1,500 crore for the NRCP, with the target of creating 632 million litres a day (MLD) sewage treatment capacity. Against this, Rs.388.38 crore could be made available during the first three years of the Plan period and a treatment capacity of 423 MLD was created. An amount of Rs. 102 crore has been allocated during the year 2016-17 for creation of sewage treatment plants and other works for abatement of pollution in rivers.

7.14.14 Assistance is also being provided for the conservation and management of identified lakes and wetlands under another scheme, the 'National Plan for Conservation of Aquatic Eco-Systems (NPCA)'. The NPCA has been initiated after merging two schemes, namely the National Wetland Conservation Programme (NWCP) and the National Lake Conservation Plan (NLCP), so as to provide a common programmatic framework for the scientific management of lakes and wetlands.

7.14.15 The National Mission for a Green India (GIM), one of the eight missions under the National Action Plan on Climate Change (NAPCC), has been approved by the Cabinet Committee on Economic Affairs (CCEA) in February, 2014. Project proposals (Perspective Plans) submitted by six States under GIM have been approved by the M/oEF&CC. The Ministry is working closely with State/UT Governments to get the remaining project proposals for treatment of landscapes identified as per the mission guidelines. During the year 2016-17, an amount of Rs. 185.01 crore has been allocated for taking up various activities including treatment of identified landscapes (about 6000 ha.) under GIM.

7.14.16 Twenty-eight States and five Union Territories have prepared their State Action Plans on Climate Change (SAPCCs). Out of these, SAPCCs of thirty-two States and UTs have been endorsed by the National Steering Committee on Climate Change at the MoEF&CC. It is necessary to put SAPCCs in place for all States/UTs, as the proper implementation of schemes planned as per approved SAPCCs will help the States/UTs substantially in effectively addressing climate change concerns.

7.14.17 NITI Aayog has been actively involved in formulation of strategies for sustainable development of islands. It actively particpated in the Inter-Ministerial consultations for finalising the selecton islands for holistic development. The NITI Aayog proposes to steer the holistic development of islands on a sustainable basis for which the process of short-listing of islands is underway.

7.15 Environment: Recommendations

7.15.1 The M/oEF&CC may take the initiative to set up a high-powered body called the National Environment and Forestry Council (NEFC), with the Prime Minister as Chairperson, the Minister of Environment, Forest and Climate Change as Vice Chairperson, aided and advised by a group of experts. This body may also have representation from the Ministries of External Affairs, Science and Technology, Agriculture, Commerce, Urban and Rural Development, Tribal Affairs and so on. Such a high-powered body would provide useful and valuable guidance for environmental sustainability. Similarly, State Environment and Forestry Councils (SEFCs) may also be set up in each State to align the working of different departments with that of the Environment and Forest department, so as to ensure environmental sustainability while implementing various development projects.

7.15.2 Several steps have been taken by the MEF&CC for streamlining the process of granting Environment Clearances (ECs) and Forest Clearances (FCs). The report submitted by the High Level Committee constituted by the MoEF&CC to review various Acts related to environment, forest and wildlife provides useful inputs in making the process of granting clearances more transparent and effective. Therefore, suitable decisions on the recommendations made by the committee, including the umbrella Act on environment, may be taken in consultation with all stakeholders – the States/UTs, NGOs, technical institutions and the public.

7.15.3 A National Environment Restoration Fund (NERF) may be created by the MoEF&CC from voluntary contributions and user fees for access to specified natural resources. Penalties levied for violation of environment-related Acts may also be deposited in the NERF. The NERF may be used for cleaning up of polluted rivers and sites contaminated with toxic and hazardous waste.

7.15.4 The principles of "Participatory Forest Management" being practiced in various States and UTs may be strengthened further by taking up suitable capacity-building measures. Emphasis may be given on improving the socio-economic status of village-level Joint Forest Management Committees (JFMCs) through value addition to sustainably-extracted forest produce and marketing of value-added forest products – in particular, NTFPs (Non-Timber Forest Products). Increase in the share of value-added NTFPs, particularly bamboo-based products, in the national and international markets may bring substantial economic benefits to many members of village-level JFMCs.

7.15.5 For international cooperation, efforts may be made to utilize the SAARC platform to facilitate sustainable development and technology transfer among member countries.

7.15.6 Continuous efforts may be made by the MEF&CC and other stakeholders to achieve the 13 monitorable targets and 14 goals indicated in the Twelfth Five Year Plan for the sector on Environment, Forestry and Wildlife.

7.16 The Sustainable Development Goals

7.16.1 The 30-member Open Working Group mandated by the Outcome Document – "The Future We Want" – of the UN Conference on Sustainable Development (Rio+20) held in June, 2012, at Rio in Brazil, came out with a set of 17 SDGs in July, 2014. The SDGs cover a broad range of sustainable development issues and also include the means of implementation, as the focus of one of the goals. Details are in **Box 7.4**.

Box 7.4: Sustainable Development Goals

1. End poverty in all its forms everywhere.
2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
3. Ensure healthy lives and promote well-being for all at all ages.
4. Ensure inclusive and equitable quality education and promote life-long learning opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure availability and sustainable management of water and sanitation for all.
7. Ensure access to affordable, reliable, sustainable, and modern energy for all.
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all.
9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
10. Reduce inequality within and among countries.
11. Make cities and human settlements inclusive, safe, resilient and sustainable.
12. Ensure sustainable consumption and production patterns.
13. Take urgent action to combat climate change and its impacts.
14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels.
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.

7.16.2 These SDGs have been integrated into the UN's development agenda for 2016-2030. Now, it is required to put in place a mechanism to monitor progress with respect to each goal, and related targets accepted. Further, the indicators being evolved to achieve these goals and targets at the National and State levels need to be firmed up expeditiously.

Mineral Resources

7.17 Mineral Resources: Introduction

7.17.1 Minerals are broadly grouped into major minerals, comprising atomic minerals; fuel minerals (petroleum, natural gas, coal & lignite); metallic minerals (iron ore, copper ore, manganese ore etc.); non-metallic minerals (limestone, rock phosphate etc.) and minor minerals. The Central Government has powers to frame rules for the grant of mineral concessions and deciding royalty rates etc. in respect of major minerals; State Governments have powers in respect of minor minerals. India produces 89 minerals which include three atomic minerals, four fuel minerals, 10 metallic minerals, 17 non-metallic minerals and 55 minor minerals.

7.17.2 The mining and quarrying sector (including petroleum, natural gas, coal, major and minor minerals, but excluding atomic minerals), with a 2.13 per cent share in GDP during 2013-14, contributed significantly to growth, development and sustainability of the manufacturing and infrastructure sectors. Extraction and management of minerals is integral to the country's overall development strategy. The value-wise contribution of the sector to GDP was Rs. 2,22,716 crore during 2011-12, which marginally decreased in two years to Rs. 2,22,652 crore during 2013-14.

7.17.3 The key objectives for the sector under the Twelfth Plan are (a) raw material security for all user industries (b) enhanced co-production of by-product metals – Technology Metals, Energy-Critical Metals & Rare Earth Elements (c) ensuring sustainability of the environment. To achieve these objectives, the strategy to be adopted includes the strengthening of institutions, encouraging R&D and technology development, creating infrastructure, skill development, ensuring full and productive coverage of survey and exploration activities, the development of a database of mineral resources, ensuring the availability of financial resources, ensuring the environmental sustainability of mining and suitable policy changes in line with the overall strategy.

7.18 Mineral Resources:Appraisal Status

7.18.1 Even before the beginning of the Twelfth Plan, the mining sector was concerned with large-scale illegal mining and lack of transparency. To overcome these problems, an enabling environment based on sound principles of transparency and efficiency was needed to provide a fair level playing field to both domestic and foreign investors. Accordingly, the Mines and Minerals (Development & Regulation) Act, 1957(MMDR) was amended in January, 2015.The salient features of it now include:

a) Auction of mineral concessions to realize fair value and remove discretion in the grant of mineral concessions. The States will receive production-linked revenue at a certain percentage of the value of mineral (value of mineral to be taken as notified by the Indian Bureau of Mines) quoted by the successful bidder during auction.

b) Longer lease periods: Mining leases will now be granted for 50 years instead of 30.There will be no renewal of mining leases; after the expiry of the lease period, it will be auctioned.

c) District Mineral Foundations are to be established for the benefit of persons and areas affected by mining. Those mining leases granted before the amendment of the Act are required to pay to these foundations an amount not exceeding the royalty, whereas the mining leases granted thereafter need to pay an amount not exceeding 1/3rd of the royalty.

d) Boosting exploration: A National Mineral Exploration Trust for regional and detailed exploration is to be created, to be funded by a sum equivalent to 2 per cent of the royalty.

e) Sustainable Development Framework: The Central Government has been empowered to issue directions/guidelines for implementation and evaluation of a sustainable development framework for minimizing and mitigating adverse environmental impacts particularly in respect of ground water, air, ambient noise and land.

f) Easy transferability of mineral concessions to encourage private sector participation.

g) Deterrents against illegal mining, including stringent punishments and a provision for special courts.

7.18.2 To enable a smooth transition to the new mining regime, the Mineral Auction Rules, 2015, prescribing procedures for the auction of mineral areas by the State Governments, have been notified on 20th May, 2015. The Mineral (Evidence of Mineral Contents) Rules, 2015, prescribing parameters for considering the evidence of mineral contents in the area for the auction process, have also been notified on 17th April, 2015.The National Mineral Exploration Trust Rules, 2015, the Mineral (Non Exclusive Reconnaissance Permits) Rules, 2015, and the Mines and Minerals (Contribution to District Mineral Foundation) Rules, 2015 have also been notified. The Mineral (Mining by Government Companies) Rules, 2015 and the Mineral (other than Atomic and Hydrocarbons Energy Minerals) Concession Rules, 1960 have been put in the public domain seeking suggestions of the stakeholders. The Mineral Conservation and Development Rules (MCDR), 1988 also need to be amended in line with recent changes. The State Governments are in the process of framing rules for setting up District Mineral Foundations. The capacity of State Governments also needs to be strengthened to deal with the transition to the auction regime without any disruption in the production of important minerals.

7.18.3 The MMDR Amendment Act, 2015 provides to grant, through auctions, mining leases for areas having adequate evidence of mineral content; and composite licences (prospecting licence-cum-mining lease) for areas having inadequate evidence of mineral content.The composite licence holder will initially undertake prospecting work to locate mineral deposits prior to the grant of mining lease. All mineral concessions granted through auctions will be easily transferrable, enabling those entities who are interested only in prospecting operations to transfer the concessions after finding mineral deposits to other entities interested in mining. This mechanism will promote specialised operators for mineral exploration and mining, attracting investment into the sector. To give impetus to investment in regional exploration, where a vast amount of work still needs to be done – and as recommended in the High Level Committee Report[7] on National Mineral Policy – a provision has been made in the MMDR Act, 2015 to grant Non Exclusive Reconnaissance Permits. The holder of such permits shall not be entitled to make any claim for the grant of any prospecting licence-cum-mining lease or a mining lease.

7.18.4 The States have been further empowered through a notification dated 10th February, 2015, wherein 31 minerals, hitherto major minerals, were declared as minor minerals. As opposed to major minerals, the regulatory and administrative jurisdiction of minor minerals falls under the purview of State Governments. These include the powers to frame rules for the grant of mineral concessions, prescribe rates of royalty, contribute to District Mineral Foundations etc. These 31 minerals account for over 55 per cent of the total number of leases and nearly 60 per cent of total leased area. With this decision, the number of minor minerals increases to 55.

7.18.5 The revision of rates of royalty and dead rent of all major minerals other than minor minerals, coal, lignite and sand for stowing, as per provisions of MMDR Act, 1957, was notified on 1st September, 2014. With this decision, the royalty to mineral-rich States would increase by 41 per cent from Rs.9,406 crore (2011-12) to an estimated Rs.13,274 crore.The biggest beneficiary of royalty revision is Odisha, with an estimated increase of more than 50 per cent, mainly due to increase in royalty rates of iron ore from 10 to 15 per cent.The biggest beneficiary States are also those having sizeable tribal populations, as illustrated in **Table 7.4**.

Table 7.4: Royalty Revision for States(Rs. crore)

States	Revenue prior to revision	Revenue after revision	Percentage increase
Odisha	3249.54	4879.92	50.17
Chhattisgarh	1346.31	1976.02	46.77
Jharkhand	645.91	944.38	46.21
Maharashtra	136.38	177.29	30.00
Jammu & Kashmir	1.59	1.97	23.90

(Source: CCEA decision Press Release dated 21st August, 2014)

7.18.6 The royalty rates for major minerals are decided by the Central Government; any upward revision in royalty can be done only once in a period of three years. The current revision, from 1st September, 2014, is after five years, the earlier revision being from 13th August, 2009. Revisions to royalty rates need to be timely, in order to address States' concerns.

7.18.7 To strengthen Geological Survey of India (GSI) on geo-spatial and multi-disciplinary work, Online Core Business Integrated System (OCBIS) was approved during 2013, to facilitate web-based activities. After implementation of the OCBIS project, GSI will be able to align itself towards national data-sharing policies and meet the stakeholders' demands. The system will be developed in five years at a cost of Rs.231.14 crore.

7.18.8 To strengthen the Indian Bureau of Mines (IBM) and State Governments, the Mining Tenement System (MTS) was approved during 2013 to develop an online National Mineral Information System for investors by linking Central and State organizations engaged in the administration of mineral resources. The MTS would be linked to geographical information database (GIS) as well as contain text information. Coordinated by the IBM, the system is likely to be developed in seven years at the cost of Rs.96.41 crore.

7.18.9 To give an impetus to mineral development, an allocation of Rs. 2,724.58 crore (GBS) has been made for the Ministry of Mines during the period of the

[7] Report of the High Level Committee on National Mineral Policy, erstwhile Planning Commission.

Twelfth Five Year Plan against the approved outlay of Rs. 2,332 crore for the Twelfth Plan.

7.19 Mineral Resources: Recommendations

7.19.1 The Fourteenth Finance Commission has viewed that mining puts a burden on the local environment and infrastructure, and therefore it is appropriate that some of the income from royalties be shared with the local body in whose jurisdiction the mining is done. This would help the local body ameliorate the effects of mining on the local population. The Fourteenth Finance Commission also observed that royalty or cess on royalty on minor minerals is shared by some States with local bodies, mainly panchayats. In one State, the royalty on sand had been removed and regulation of sand mining had been entrusted to panchayats. In a few States where royalties were shared, State Finance Commissions (SFC) have observed that the full amounts of their share were not being released to the local bodies. Another SFC noted that the revenues from royalty on minor minerals had not grown in proportion to the increase in the consumption of materials. The SFC of another State pointed out that only Class C municipalities were allowed a share of the cess on royalty. The Fourteenth Finance Commission has also recommended that sharing of royalty revenue will enable the local bodies to work for the betterment of those affected by mining.

7.19.2 Paragraph 8 of the National Mineral Policy 2008, Foreign Trade, mentions that efforts shall be made to export minerals in value-added form as far as possible. Therefore it is desirable that the export of minerals like iron ore without value addition may be restricted. The value addition to minerals will significantly contribute to 'Make in India' and also create additional employment opportunities.

7.19.3 Minerals being finite and non-renewable, India's raw material security is crucial. The Reserve to Annual Production ratio of important minerals like Chromite, Lead & Zinc is critically low, and for other minerals the situation is not too comfortable either. Intensive survey and exploration of new reserves and deep-seated minerals is required. India's expenditure on exploration is presently very low as compared to other mineral-rich countries. There is a need to expand the resource and reserve base:

i. By stepping up exploration and aiding international acquisition of strategic minerals, and

ii. Through an inventory of existing mineral waste & rejects, and encouraging research and development for their utilization.

iii. An inclusive database of mineral resources depicting resource stock to average (moving) annual extraction needs to be established and placed in the public domain (except for some sensitive minerals). All such pre-competitive data must be available to facilitate entrepreneurs' investment decisions.

iv. The integration of data provided by GSI, IBM and State Directorates also needs to be ensured for availability of comprehensive up-to-date information.

7.19.4 There exists a large indigenous R&D network in the mineral sector, with reasonably strong technical capabilities. This has to make a concerted effort towards technology development in mineral processing – in particular for improved processes for beneficiation, elemental analysis of ores, and so on. Emphasis must also be placed on higher value addition in the sector, and curbing of non-value-added exports.

7.19.5 Greater attention should be devoted to the survey, exploration and mapping of potential sources of rare earths elements and metals, scaling up R&D in extraction, re-cycling and reuse technologies, and finding alternative materials for use. A consortium approach involving academic institutions, government institutions and R&D establishments is essential in order to overcome stiff competition from international competitors. It is also necessary to explore possibilities for international collaboration in rare earth mining and the production of associated finished products like Magnets. Rare Earths are a strategic resource, and therefore it is necessary that the complete life-cycle of rare earths – from mining to end product –be within the country. GSI has found initial occurrences of rare earths in various parts of the country. The Department of Atomic Energy (DAE) explores rare earths predominantly in potential areas of prescribed substances. In India, Monazite is the principal source for rare earths. Apart from Monazite, a prescribed substance, rare earths also occurs in Bastnasite and Xenotime minerals. India has vast resources of Monazite, this mineral contains light rare earths only; Xenotime, however, contains heavier rare earths also, which have more demand. A large area of the country has not been explored for rare earths. Therefore, a major programme of exploration for rare earths is needed. Since GSI does not have much expertise in rare earth exploration, they may coordinate and work together with DAE.

7.19.6 The Environment Management Plan (EMP) for mines needs approval from multiple agencies. This issue has also been highlighted at para 3.47 of the High Level Committee Report on National Mineral Policy; "An EMP has to be prepared under the MCDR and got approved by IBM. However, this EMP is not acceptable to the MoEF&CC. The miner has to prepare two EMPs separately – one for IBM and another for MoEF&CC. This Committee suggests that IBM and MoEF&CC should prepare guidelines for a composite EMP so that IBM can approve the same in consultation with MoEF&CC's field offices."

Environmental Sustainability: The Major Learnings and Way Forward

7.20 Land Resources

a. Several policy-related issues, in particular those related to land leasing and establishment of community land banks, have so far been non-starters, or have seen slow progress. These must be addressed on priority in the remaining period of the Twelfth Plan.

b. Land titling, registration, land leasing laws, and the modernization of land records should be pursued vigorously.

c. The development of waste lands and culturable waste land along with efficient rainwater use may be promoted, to solve the twin purpose of creating an additional land bank for farming or plantations and higher irrigation coverage.

7.21 Water Resources

7.21.1 Appraisal of XII Five Year Plan (Water Sector) has provided useful learnings for better management of water resources available in the country. A need to expand irrigation coverage and also to improve on-farm water use efficiency is strongly felt. Participation of farmers in use and maintenance of irrigation infrastructure needs to be promoted. Based upon learnings of the XII Five Year Plan appraisal, the following strategies are recommended:-

a. Improve water use efficiency by taking up more Extension, Renovation and Modernization projects in the major & medium irrigation sector.

b. Water sector reforms to be deepened through the constitution of Water Regulatory Authorities and volumetric measurement of irrigation water.

c. Persuade States for enacting the National Water Framework Law as envisaged in the National Water Policy, 2012.

d. Reassess the ultimate irrigation potential under major and medium irrigation projects.

e. Establish an online monitoring system for projects under Accelerated Irrigation Benefits Programme.

f. Build consensus for implementation of Inter-Linking of Rivers projects where DPRs have been prepared.

g. Set up a dedicated SPV for implementation of the National Project on Aquifer Management.

h. Skill development of local authorities and resource persons to manage ground-water based on aquifer mapping.

i. Regulate sand mining in blocks with over-exploited and critical groundwater to sustain sub-surface storage.

7.21.2. Better irrigation facilities are expected through convergence of various ongoing schemes in the irrigation sector. During the first three years of the Twelfth Plan, programmes for development of water resources were being implemented separately by various central Ministries/ Departments. In order to provide maximum benefits to the farmers, PMKSY was adopted as an integrated approach for expanding irrigation coverage with increased water use efficiency. The approved programme has four components namely (i) Accelerated Irrigation Benefits Programme, (ii) Har Khet Ko Pani, (iii) Per drop More Crop and (iv) Watershed Development being implemented with participation of three Central Ministries/Departments i.e. Department of Land Resources, Ministry of Water Resources, River Development and Ganga Rejuvenation and Department of Agriculture, Cooperation and Farmers Welfare.

7.22 Environment, Forests and Wildlife

The appraisal of Twelfth Five Year Plan (Environment, Forest and Wildlife sector) indicates that implementation of the following strategies may facilitate achievement of the core indicators identified in the Plan for the sector on 'Environment and Sustainability:-

a. Expedite the setting up of a National Environment and Forestry Council for sustainable development.

b. Early decision on the report submitted by the High Level Committee constituted by the MoEF&CC to review various Acts related to forest, wildlife and environment.

c. Create a National Environment Restoration Fund (NERF) from voluntary contributions and user fees for access to specified natural resources.

d. Strengthen the Participatory Forest Management practices in States.

e. Utilize SAARC platform to facilitate sustainable development and technology transfer among member countries.

7.23 Mineral Resources

The appraisal of Twelfth Five Year Plan (Minerals sector) indicates that implementation of the following strategies may facilitate sustainable development of mineral resources in the country:-

a. Detailed exploration of mineral resources needs to be accorded high priority.

b. Export minerals in value-added form to augment employment opportunities under the Make in India initiative.

c. States to share royalty with local authorities.

d. State Governments to frame rules for District Mineral Foundations.

8

Agriculture and Rural Transformation

8.1 Introduction

8.1.1 Agriculture remains the principal source of livelihood for 48.9 per cent of the workers as per the 68th Round of National Sample Survey Organisation (NSSO), 2011-12. Accordingly, any strategy for faster, more inclusive and sustainable growth must necessarily address the issues faced by rural India which comprises of 833 million people, i.e. 68.8 per cent of total population of India (Census 2011). Recent data shows that 109.8 million rural people had come out of poverty during the period 2004-05 to 2011-12, which brought down rural poverty ratio from 41.8 per cent to 25.7 per cent (as per Tendulkar methodology). Agricultural sector growth rate had improved appreciably to over 4 per cent in the Eleventh Plan and production of foodgrains increased by nearly 30 per cent, notwithstanding near 13.7 per cent fall in the agricultural workforce during 2004-05 to 2011-12. India has transformed from a food deficit country to a major exporter of agricultural commodities such as rice, wheat, oil meals and cotton. Various schemes and programmes launched during the previous Plan periods have contributed to this growth, though much more remains to be accomplished so as to bring out a large segment of population out of the poverty net and improve the standards of living of rural populace.

8.1.2 The rural transformation goal broadly encompasses the strategies aimed at improving the economy and overall quality of life of people in the rural areas. These initiatives essentially address the issues of enhancing farm profitability, improving means of livelihood and creating and strengthening support services - both physical and social. The objectives are not only to address the issues of food security and climate change, but also to raise income of agricultural and rural workers, vanish poverty and reduce inequality. This calls for promoting technology and investments in agriculture, ensuring fair price of farm produce, promoting value addition in agriculture, strengthening supply chains, improving sources of non-farm income and development of rural infrastructure and support services in the areas of health, education, roads, skilling, employment, power, tele-communications, housing, drinking water, sanitation, social safety nets and so on.

8.1.3 During the Eleventh Five Year Plan (2007-12), a series of new programmes and initiatives were put in place such as the Backward Regions Grant Fund, Integrated Watershed Management Programme, National Horticulture Mission, National Food Security Mission, Rashtriya Krishi Vikas Yojana (RKVY), Sarva Shiksha Abhiyan etc. The Panchayati Raj Institutions have been successfully involved in implementing some of these programmes including the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). Some of these programmes continued during the Twelfth Plan and were reoriented to meet growing needs of the fast-changing economy in rural areas. These include providing employment through the MGNREGA and National Rural Livelihoods Mission (NRLM); housing via the Indira Awaas Yojana (IAY); sanitation through the Total Sanitation Campaign; provision of drinking water via the National Rural Drinking Water Programme; social security through the National Social Assistance Programme; watershed development via the Integrated Watershed Management Programme; road connectivity through the Pradhan Mantri Gram Sadak Yojana (PMGSY) and electrification via the Rajiv Gandhi

Grameen Vidyutikaran Yojana (covered in Chapter on Physical Infrastructure).

8.1.4 Over the period, there has been a fundamental shift in the policies designed for the rural areas. The old paradigm largely focused on agricultural growth, while the new approach envisaged during the Twelfth Plan has a multi-sectoral approach including focus on generation of non-farm employment, rural tourism, usage of Information and Communication Technology(ICT), self-employment opportunities, micro finance and financial inclusion. While the old paradigm for agriculture development emphasized more on price support and subsidies, the new approach emphasizes more on creating investments. It also envisages active participation of Governments at all levels (national, regional, local), as well as other stakeholders such as Non-Governmental Organisations (NGOs), Farmer Producer Organisations (FPOs), Self Help Groups (SHGs) and so on. In the old approach, focus was mainly on wage employment and income generation. In the new approach, emphasis is largely on livelihoods, creation of durable assets, skill development and promotion of self-employment ventures.

8.1.5 This Chapter is divided into two parts. First part covers the agricultural sector, including food security, while the second part contains measures taken in pursuit of overall rural development. Also indicated are the achievements with regard to budgetary allocations of the relevant Ministries as well as the initiatives that need to be taken in the remaining period of the Twelfth Plan.

8.2 Agriculture

8.2.1 Agriculture sector contributed 17.4 per cent to the overall Gross Value Added at current prices in 2014-15 (as per the new series based on 2011-12 prices) against 18.0 per cent (at current prices) in proportion to GDP during the Eleventh Plan. It is the major source of livelihood for the rural population and an important source of raw material for a large number of industries. Accelerating the growth of agriculture is, therefore, necessary to achieve a higher overall GDP growth rate during the Twelfth Plan, besides increasing income of rural masses and ensuring food and nutritional security.

8.2.2 The major challenges in agriculture include low and uneven productivity, rising stress on natural resources, uneconomic size of landholdings, disconnect between price received by farmers and those paid by consumers, price volatility, inadequate rural infrastructure, including marketing infrastructure, natural hazards, limited risk coverage as well as low credit support and climate change. These would need to be addressed through appropriate policy reorientation, investment and incentivization of innovations, technologies, inputs and institutional reforms. The key growth drivers identified in the Twelfth Plan for agriculture and allied sector included (a) improving viability of farming and returns on investment that depend on scale, market access, prices and risk; (b) development and dissemination of appropriate technologies that depend on quality of research and level of skill development; (c) plan expenditure on agriculture and infrastructure which together with policy must aim to improve productivity, functioning of markets and more efficient use of natural resources; and (d) governance in terms of institutions that make possible better delivery of services like credit, insurance, animal health and of quality inputs like seeds, fertilizers, pesticides and farm machinery. Besides, the emphasis is on correcting regional imbalances by extending green revolution to low productivity areas such as the eastern region. This appraisal of the Plan indicates that progress in many areas is on course but certain areas need concerted action.

8.2.3 Economic Survey 2014-15 had expressed concern that a deeper shift in the agricultural sector may be underway calling for greater attention towards this sector, adding that the decade long shift in terms of trade in favour of agriculture may have come to an end, particularly after 2010-11, with agricultural commodity prices showing a slow decline after several years of improvement. As a result, rural incomes may come under pressure and with fiscal limitations, there may be a need for more targeted support in favour of small, marginal farmers and agricultural labourers. The Plan schemes as well as subsidy regime may need to be targeted towards more vulnerable section of population. The Survey also highlights other major concerns in the agriculture sector, which include risk of high level of food inflation, seasonal and short-term price spikes in some commodities like onions, tomatoes, and potatoes which have become more severe, long lasting; thereby causing economic instability in the system. It has indicated that the strategy of price-led growth in agriculture is not sustainable; also there is little room for increasing production through expansion in cropped area. Hence, there is a need to rely more on non-price factors that contributes towards higher productivity. Many of the concerns of the previous years have continued for which the Economic Survey 2015-16 has recommended bringing a new paradigm in the approach towards agriculture by increasing productivity by getting "more from less" especially in relation to water via micro irrigation; prioritizing the cultivation of less water-intensive crops, especially pulses and oil-seeds, supported by a favourable Minimum Support Price regime backed by a strengthened procurement system; and re-invigorating agricultural research and extension in these crops.

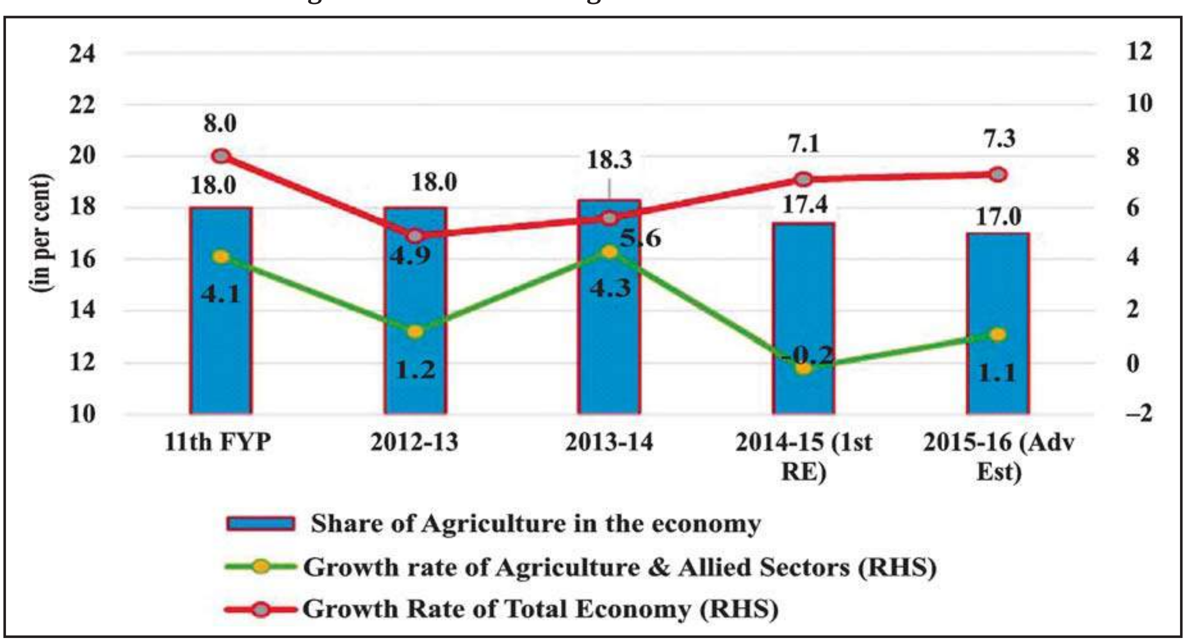
8.2.4 In pursuance of decision taken in the first meeting of the Governing Council of NITI Aayog, held on February 8, 2015, a Task Force on Agriculture Development has been set up under the Chairmanship of the Vice Chairman of NITI Aayog. Similar Task Forces have also been set up in the respective States. The objective of the Task Force is to recommend strategies for re-invigorating agriculture, strategies for reforms, innovation and technology diffusion and identify successful experiments for replication. Based on the deliberations within the Task Force and reports received from various States, an occasional paper on "Raising Agricultural Productivity and Making Farming Remunerative for Farmers" was prepared and made public. NITI Aayog has also held discussions with all States/ UTs to seek their views on the paper before finalising the Report, which has been submitted to the Government.

8.2.5 The Union Budget 2016-17 has laid significant emphasis on agriculture and rural development through reorientation of Government interventions in the farm and non-farm sectors so as to double the income of the farmers by 2022. These include facilitating optimal utilisation of our water resources; creation of new infrastructure for irrigation; conserve soil fertility with balanced use of fertilizers; and provide value addition and connectivity from farm to markets.

8.3 Growth in the Agriculture Sector

8.3.1 The target of 4 per cent growth in agriculture sector had been retained in Twelfth Plan, (**Figure-8.1**).

Figure 8.1 : GVA and Agriculture Sector Growth

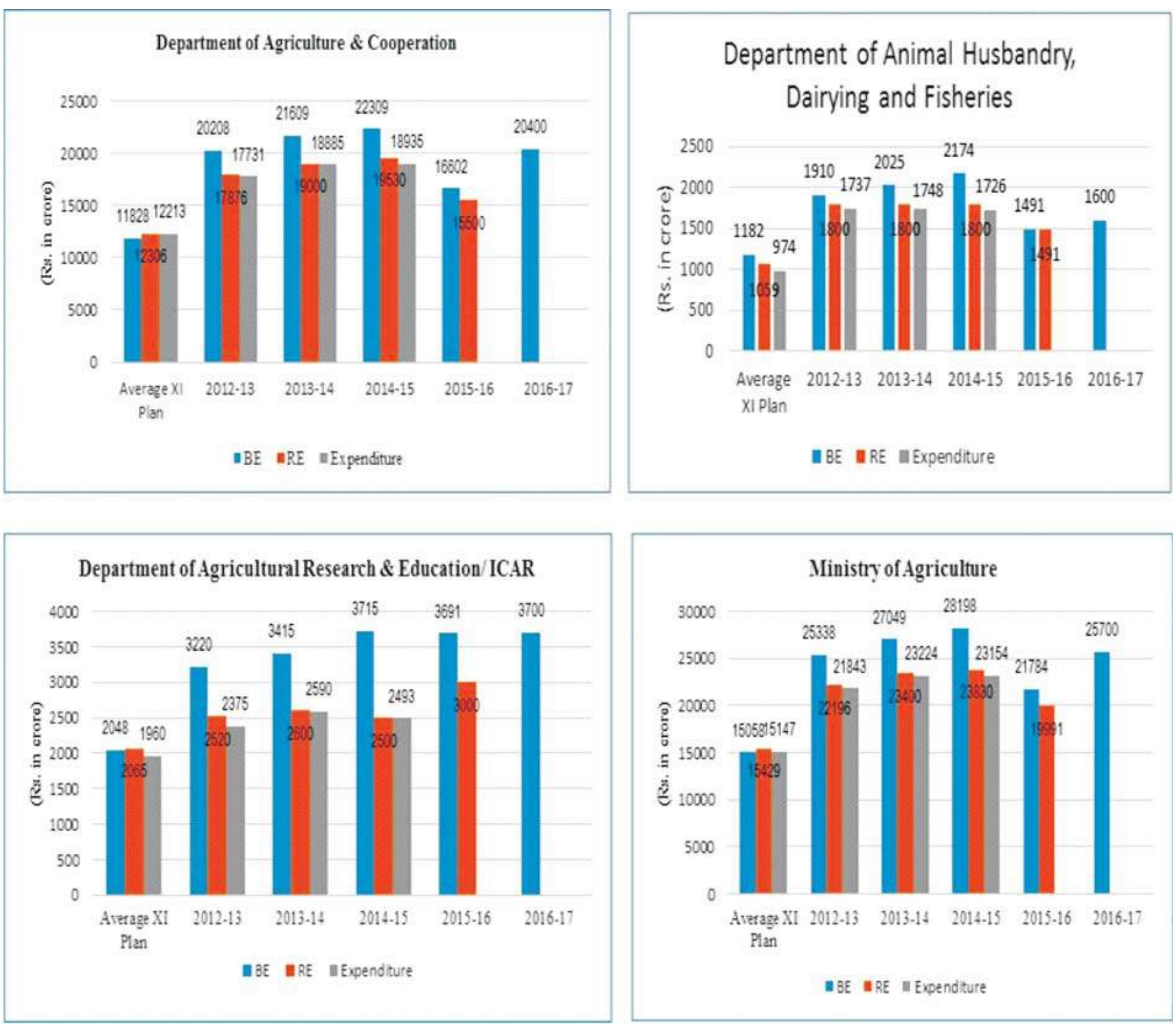


as in the Eleventh Plan. This target was surpassed during the Eleventh Plan with average annual agricultural growth rate at 4.1 per cent, the highest achieved in any Plan period. In 2012-13, the GDP growth in agriculture & allied sector stood at 1.2 per cent, which improved significantly to 4.3 per cent during 2013-14. In 2013-14, the upbeat performance was recorded in foodgrains, oilseeds, fruits and vegetables, other crops, livestock products (primarily milk), and forestry and fisheries. However, during 2014-15, due to below normal monsoons/ drought in some parts of the country, and freak weather in rabi season, the crop output declined sharply, thereby causing agricultural output to decline by 0.2 per cent before rising by 1.1 per cent in 2015-16 (as per Advance Estimates).

8.4 Investments in Agriculture

8.4.1 As per the National Accounts Statistics released by CSO (2004-05 series), the total investment in agriculture & allied sector increased at an impressive rate of 11.6 per cent on an average during Eleventh Plan mainly on account of private investment growing at 15.0 per cent. As a percentage of agricultural GDP, public investments in agriculture stood at 2.8 per cent in the Tenth Plan which increased to 3.1 per cent in the Eleventh Plan and remained at the same level in 2012-13. In the same period, the private investment increased from 15.9 per cent of agricultural GDP in Eleventh Plan to 18.1 per cent in 2012-13. In order to attain 4 per cent agricultural growth, higher increase

Figure-8.2: Expenditure Pattern of Ministry of Agriculture (Rs. crore)



in investment in agriculture is required both from public and private sector.

8.5 Expenditure Pattern – Ministry of Agriculture

8.5.1 The Gross Budgetary Support (GBS) for the Twelfth Plan for Ministry of Agriculture including Rashtriya Krishi Vikas Yojana (RKVY) stands at Rs.1,74,478 crore. The total allocation (RE) for 2012-13 to 2014-15 to the Ministry of Agriculture was Rs.69,426 crore, which is about 40 per cent of the total GBS for agriculture. An *inter-se* comparison within the Departments of the Ministry **(Figure 8.2)** indicates that lower funds were made available in case of research compared to the Eleventh Plan allocation. One of the reasons for this was the slow progress of finalization of new and promising projects. However, to impart thrust to new technologies, productivity enhancement, marketing and processing infrastructure and risk adaptation & mitigation, appropriate allocation would be required for these areas in the remaining period of the Twelfth Plan.

8.5.2 It is also important to note that pursuant to higher devolution of resources to States based on the recommendations of the 14th Finance Commission, the fund sharing pattern between Centre and States for many schemes for agriculture and rural development have changed. The major schemes of Ministry of Rural Development viz. Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and Pradhan Mantri Gram Sadak Yojana (PMGSY) would continue to be fully supported by the Union Government. However, higher State contribution has been put in place for schemes like Rural Housing, National Rural Livelihood Mission (NRLM) and National Social Assistance Programme (NSAP). Similarly changed funding pattern has been effected for Agriculture schemes like Rashtriya Krishi Vikas Yojana, National Food Security Mission, Mission for Integrated Development of Horticulture, National Mission for Sustainable Agriculture, National Mission for Agriculture Extension and Technology and National Livestock Mission.

8.6 Changing Composition of Agriculture Sector

8.6.1 Responding to the market signals emerging from rising disposable incomes, urbanization and change in dietary preferences of the people, the farmers have been allocating higher share of their resources to the high value crops and livestock. Consequently, between 1993-94 and 2012-13 within agriculture sector, the share of foodgrains in Gross Value of Output declined by 6.0 percentage points, while the shares of horticulture, livestock and fisheries increased by 5.2, 4.2 and 0.9 percentage points respectively. This manifests the changing consumption pattern, with perceptible shift towards fruits, vegetables and livestock products in the food basket. The rise in prices of these items over the last few years also shifted terms of trade in their favour exerting positive influence on their growth. This trend is expected to continue for long calling for appropriate policy support and strengthening of supply chain, especially in case of perishables, and for setting up post-harvest infrastructure, such as cold storages and warehouses. Marketing reforms in the agriculture sector are also pertinent as discussed subsequently in this Chapter.

8.7 Demand and Supply Dynamics

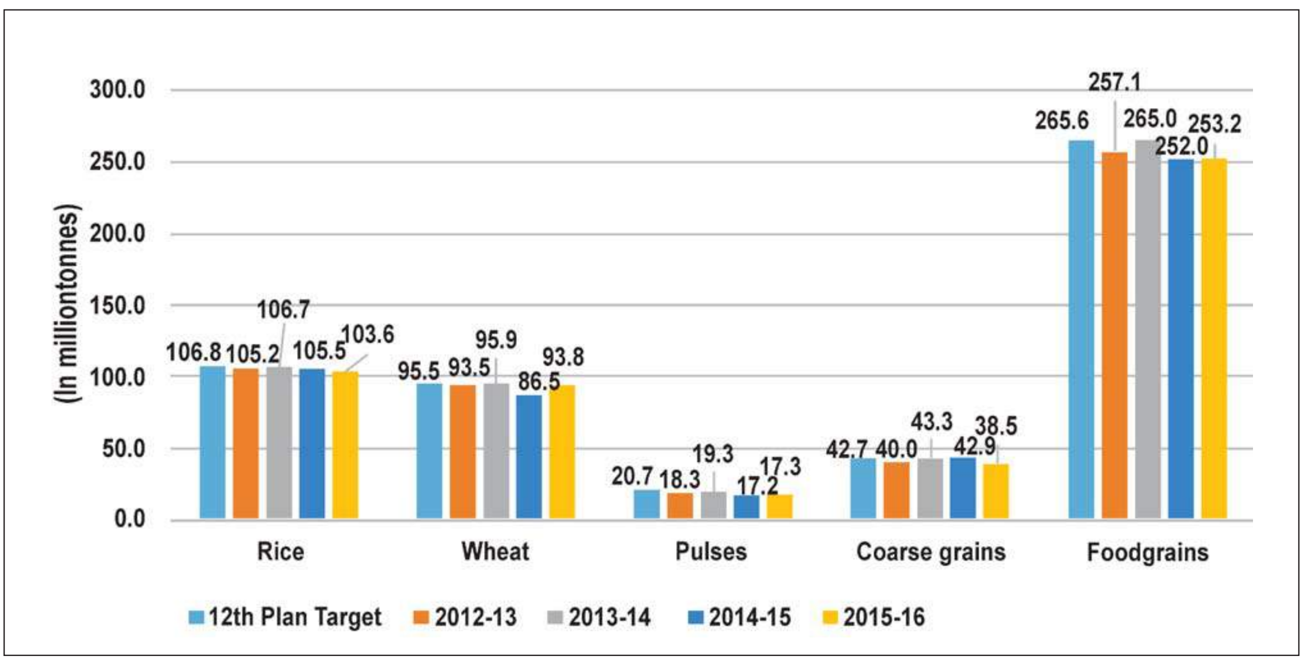
8.7.1 The demand of foodgrains by 2016-17 and 2020-21 had been projected at 257 and 277 million tonnes respectively by the Twelfth Plan working group on Crop Husbandry, Demand and Supply Projections, Agricultural Inputs and Agricultural Statistics. Given the present level of cereal production, it seems attainable except some deficiency in pulses. The projection for oilseeds to meet demand for vegetable oils by the working group was 59 million tonnes for 2016-17 and 71 million tonnes for 2020-21. A major deficiency is likely to happen in the case of vegetable/ edible oils where domestic consumption increased to 21.71 million tonnes in 2014-15 and which was met from imports to the extent of nearly 59 per cent, costing about Rs.55,800 crore. Therefore, there is an urgent need to provide a focused development and policy support to this sector.The foodgrain production for the year 2015-16 is expected to be at 253.16 million tonnes which is about 1.14 million tonnes higher than 2014-15. The oilseeds production is estimated at 26.34 million tonnes during 2015-16, lower by 4.3 per cent compared to 27.51 million tonnes of 2014-15. The horticultural production is estimated at 282.49 million tonnes in 2015-16, marginally higher over 2014-15. Milk production is estimated at 145.7 million tonnes in 2014-15, higher by 5.87 per cent over the previous year. The vegetable and fruits production and consumption in the dietary system have increased and so is the case of animal and animal products, though high malnutrition still prevails due to lower intake of food especially by low income group people. With rising disposable incomes, demand for fruits & vegetables, milk, eggs, meat, edible oils and protein based foods is expected to rise faster than the foodgrain demand.

8.8 Crops Sector Initiatives

8.8.1 The target growth for foodgrain production for the Twelfth Plan period is 2-2.5 per cent. Buoyed by favourable South West Monsoons 2013, the foodgrain production during 2013-14 reached an all-time high record of 265 million tonnes. Subsequently, the production declined in 2014-15 on account of drought and unseasonal rains/ hail storms and is expected to grow only marginally in 2015-16. Nevertheless, the foodgrain production in the first four years of the Twelfth Plan has been much higher than the average production of the Eleventh Plan and also very close to the projected demand of 257 million tonnes in the year 2016-17.

8.8.2 The National Food Security Mission (NFSM) launched in 2007-08 has reportedly given tangible outcomes with 35 million tonnes increase against the target of 20 million tonnes (mt) of target crops (rice, wheat and pulses) compared to pre-NFSM year. NFSM, during Twelfth Plan targets to achieve 25 million tonnes of additional foodgrains production (10 mt rice, 8 mt wheat, 4 mt pulses and 3 mt coarse cereals) by 2016-17, with major revamping for broadening its scope. The target for the Twelfth Plan works out to 265.6 million tonnes of foodgrains while the estimated foodgrain production during 2013-14 was close to the target **(Figure-8.3)**. Higher incentives are being given to States under NFSM to enhance pulses production. Rs.500 crore has been allocated in 2016-17 to the same.

Figure-8.3: Achievements against Targets of Foodgrains Production during Twelfth Plan



8.8.3 The National Food Security Mission (NFSM) has performed well in the irrigated areas though impact on productivity in many districts has been lower than expectations. During Twelfth Plan, larger focus is on pulses and coarse cereals, which are predominantly grown under rainfed conditions. To make the impact of NFSM sustainable, it needs to move away from package demonstrations of established technologies and known practices to new technologies related to conservation and water positive agriculture, with concurrent backup of research. The value chain integration of small producers through FPOs, for sustaining the pulses and oilseeds production is essential. The focus on nutri-grains should get sharper under strategic research component of NFSM, along with climate resilient technologies.While efforts to develop high protein maize, and micronutrient rich rice and wheat, etc. are going on with a strong success in high protein maize, the efforts to popularize these have been limited. The first pilot on nutri-cereals was initiated in 100 high malnutrition laden districts in 2012-13 on bio-fortified food crops. Its procurement was tied up with Small Farmers Agri-business Consortium (SFAC), for supply to Mid-Day Meal Programme. Such pilots need to be scaled up under National Food Security Mission, though it entails great deal of support from National Agricultural Research System.

8.8.4 The special efforts to enhance productivity of rice based cropping systems in eastern States (Assam, Bihar, Chhattisgarh, Jharkhand, Odisha, Eastern Uttar Pradesh and West Bengal) should continue under the Bringing Green Revolution to Eastern India (BGREI) programme. A record production of 54.93 million tonnes of rice in implementing States during 2015-16 was achieved. However, these States should focus more on creating assets especially water storage and lifting devices, for higher surface water retention and utilization to sustain growth in productivity. Interventions should be for utilization of surface water potential, well integrated with recently launched Pradhan Mantri Krishi Sinchai Yojana (PMKSY) rather than merely on demonstration of well adopted technologies. The procurement system of rice and alternative crops like oilseeds and pulses should also be strengthened in the region to provide remunerative returns to farmers.

8.8.5 The envisaged growth in oilseeds during the Twelfth Plan is 5 per cent. The restructured National Mission for Oilseeds and Oil Palm (NMOOP) has been launched to achieve 35.51 million tonnes of oilseeds by 2016-17, with flexibilities for introducing innovative measures; and by involving private sector. A major issue in oilseeds sector, besides low productivity, is low recovery of oil from oilseeds. NMOOP, besides focusing on critical inputs for productivity gains, should also promote efficient tools/techniques for oil extraction, as being done for tree borne oilseeds(TBOs). The oilpalm and other TBOs should be promoted with higher investments. These crops are also very helpful in utilization of waste lands, as well as to fetch higher yield of edible oil. The oilseed programme needs to be funded more to enhance domestic production to meet burgeoning needs and reduce imports.

8.8.6 Several ongoing schemes on horticultural development have been subsumed under Mission for Integrated Development of Horticulture (MIDH), with greater flexibility to States for achieving envisaged growth of 5 per cent in horticulture during Twelfth Plan. The availability of fruits and vegetables has increased from 158 gram to 190 gram and 309 gram to 349 gram, respectively during 2007 to 2013. The vegetable clusters programme started as a sub-scheme of RKVY has proved effective in linking small farmers to value chain and should be made a major initiative under MIDH. The specific areas like accreditation of nurseries and quality planting material, higher productivity along with quality enhancement should get priority, besides creation of infrastructure for reducing post-harvest losses.The National Horticulture Mission (NHM) will be co-terminus with the Twelfth Plan, hence institutional strengthening should be the core agenda to carry forward the horticultural development by the States. The Schemes of National Horticulture Board (NHB) and Coconut Development Board (CDB) which are part of MIDH need to be continued beyond Twelfth Plan to achieve their full mandate and goals.

8.8.7 Rashtriya Krishi Vikas Yojana (RKVY) has undoubtedly been a star performer in terms of flexibility accorded to States. The scheme has yielded significant results in majority of States boosting agricultural growth. Several out of the box initiatives for infrastructure development, like rural godowns in U.P., public private projects for production of pulses in Maharashtra, agricultural marketing in Andhra Pradesh and Karnataka, farm ponds (*diggies*) in Rajasthan, etc. were taken up, which proved quite rewarding. However, in majority of the States, the formulations of the projects could not align with the problems identified under RKVY. The larger investment in finding out permanent solutions for water scarcity, through water positive infrastructures/ interventions were somehow missing, though 15 percent funds were given to States on the basis of higher unirrigated areas. The identification of projects, were largely not based on well-studied/analysed information as demanded in the form of Comprehensive District Agricultural Plan (C-DAP) and State Agricultural Plan (SAP). The sectoral imbalance in allocation,being tilted towards crops and less for animal husbandry and fisheries, has been yet another concern raised by majority of States. The investment under RKVY should move away from recurring expenses on established technologies, towards innovations and investmenton infrastructure for marketing, storage and processing of food crops, milk and milk products, meat, egg, fish, etc. Accordingly, the institutional set up needs to be strengthened in many States.

8.8.8 Crop Diversification has been much talked about since 1990s, especially in original green revolution areas. Responding to the market signals, farmers have shifted areas away from foodgrains to more remunerative commercial and horticulture crops. Present increase in the cultivated land has been on account of cropping intensity, while net sown area has declined slightly. The double cropping increased by about 63.21 million ha since 1950-51, primarily by rice and wheat (33.33 million ha), oilseeds (15.75 million ha), pulses (7.13 million ha), while coarse cereals reduced by 11.05 million ha. The area under other crops that largely include horticulture/plantation crops, spices, fodder, etc. increased by 7.10 million ha. Although a silent diversification, primarily driven by market forces, did take place but no dedicated instrument for designed diversification is in place. It holds promise, in view of the depleting natural resources, but requires efficient marketing systems and support services (post-harvest management, processing and value chain).

8.8.9 With adequate reserves of rice and wheat, it is possible to focus on designed diversification from rice and wheat in North Western States to low water demanding crops and activities. The integrated farming, including crops, livestock/fish culture and allied business, is the appropriate way to deal with the situation. A special plan on crop diversification was initiated under RKVY during 2013-14 in Punjab (20 districts), Haryana (10 districts) and Western U.P. (15 districts) to shift area from paddy to alternative crops to arrest the depletion of ground water and restoration of soil fertility; the learnings of which may provide a base for further expansion of the diversification plans. Pooling of resources and synergy amongst programmes of rural development (land and water issues), agriculture (production, marketing and input support), post-harvest industries (processing, abattoirs), water resources, etc. will be a prerequisite for significant success in this endeavour. The immediate need is to improve the marketing and storage facilities for alternative crops in these States. Reforms in marketing, land leasing, tenancy laws and risk management are crucial to change the mindset of farmers to make more investments in alternative crops/ enterprises (oilseeds, pulses, horticulture and livestock), especially in rainfed regions.

8.9 Price Support for Agricultural Commodities

8.9.1 The Minimum Support Prices (MSPs) of various rabi and kharif crops have risen sharply during the Eleventh Plan and the first year of the Twelfth Plan. These have helped farmers to get remunerative returns for their efforts. Over and above, many State Governments announced additional bonus on procurement of wheat and rice. While increasing production, this also led to higher procurement and consequent increase in central pool stocks of wheat and rice, much above the buffer norms, as also the requirement under the National Food Security Act (NFSA). Sharp increases in MSPs, higher central pool stocks and lower open market availability also led to rise in prices of certain food items particularly during 2012-13 and 2013-14. While Government tried to moderate open market prices of food items by enhancing sales under Open Market Sales Scheme (OMSS) during 2013-14, such initiatives need to be used more as an exception rather than rule. This also has implications on fiscal deficit as difference between economic cost of cereals and issue prices under OMSS and Public Distribution System (PDS) is large and widening. Going forward, it would be pertinent that there is careful calibration of MSPs to balance the interests of farmers and consumers. The emphasis should be such that open market prices are higher than the MSPs so that dependence on Government procurement is limited. Besides, in many States, it has been observed that procurement by central agencies is limited or non-existent while market prices of many commodities often fall below MSP. For such regions, it is imperative that price support system be strengthened so that farmers need not resort to distress sale.It must be ensured that the farmers get a larger pie of the prices paid by the ultimate consumers.

8.10 Livestock and Fishery

8.10.1 Livestock contributes 29 per cent of Gross Value Added in the agriculture sector and provides self-employment to about 15.6 million people. The average growth of livestock output was 4.8 per cent per annum during the Eleventh Plan. The Twelfth Plan envisaged a growth of 5-6 per cent in this sector, comprising of 5 per cent in milk production, 2-3 per cent in rural poultry, 11 per cent in commercial broilers, 7 per cent in layers and 6 per cent in fisheries. To achieve such growth rates, some of the major initiatives like enhancing the artificial insemination from 25 to 50 per cent, 100 per cent high genetic merit bull replacement, enhancing the inland fisheries productivity from present level of 1mt/ha to 3-4 mt/ha through judicious use of inputs, etc. are required. Major issues in livestock sector are access to feed, fodder and all the more drinking water which is becoming increasingly scarce in rainfed areas that support about 75 per cent of the livestock population. The ongoing programmes of Department of Animal Husbandry, Dairying and Fisheries have been revamped under three Centrally Sponsored Schemes-National Livestock Mission, National Programme for Bovine Breeding and Dairy Development (NPBBDD) and Livestock Health and Disease Control and a Central Sector Scheme-National Fisheries Development Board (NFDB), with more flexibility to States through cafeteria of interventions. These programmes have started delivering good results and need to be continued in the remaining period of Twelfth Plan with more balanced state-wise distribution of assistance, instead of going entirely by demand driven approach. While enhancing the allocation to this sector will be a strong case to be considered, there is a need to strengthen institutions and marketing, processing (abattoirs), quality and sanitary standards for the sector. The conservation of indigenous breeds, processing and value addition in milk and milk products and strengthening of milk cooperatives require utmost priority. Rashtriya Gokul Mission launched in 2014-15 is an important initiative for conservation of indigenous breeds.

8.10.2 Timely availability and reliability of data is an important concern. The data released with some delay serves limited purpose for appropriate policy decisions. It is, therefore, pertinent that immediate action for streamlining the procedures of data collection are taken by the concerned departments, with suitable blending of remote sensing and satellite information to synchronize the estimates for crops, fruits and vegetables, etc.

8.10.3 The National Fisheries Development Board (NFDB) has been set up as a special purpose vehicle for development of fisheries sector in the country. However, the programmes and broader contours of the NFDB need to be balanced. There is also a need to focus on specific areas of fisheries information system including reliable data base, comprehensive fisher-folk safety net, infrastructure in the domestic wholesale and retail fish markets, setting up of modern fish processing plants, re-engineering of the value chain and value addition for higher income and investment in infrastructure through Public Private Partnership (PPP) mode. With marine fisheries facing serious constraints, the main source of future growth in fisheries sector has to be inland fisheries.

8.11 Rainfed Agriculture

8.11.1 The ultimate irrigation potential is 139.91 million ha while the gross cropped area (GCA) was 195.25 m ha in 2011-12. This indicates that even with full utilization of the Irrigation potential about 28 per cent of gross cropped area would remain rainfed, if GCA stagnates at 2011-12 level. The National Mission for Sustainable Agriculture (NMSA) launched during the Twelfth Plan, aims at mainstreaming rainfed technologies including agro-forestry through location specific integrated/ composite farming systems. It seeks to transform Indian agriculture into a climate resilient production system through suitable adaptation and mitigation measures. NMSA has a strong component of on-farm water management for efficient water application tools and other practices to enhance the on-farm water use efficiency and micro-irrigation which has been extended to non-horticultural crops also. A target of 3.64 million ha under micro-irrigation has been kept under NMSA for Twelfth Plan. However, major investment in research and development that enhances water use efficiency is required. A pilot on management and sharing of resources of commons through stronger involvement of communities, civil society groups and reputed NGOs is envisaged in 29 blocks (one in each State) along with leveraging of funds from other schemes like MGNREGS, Integrated Watershed Management Programme (IWMP) etc. A strong mechanism for research backup in NMSA needs to be built up to assess the impact of climate change and respond appropriately. Specific focus on improving the productivity of problem soils and suitability to farming, preferably under PPP model as successfully implemented in some States, needs to be mainstreamed.

8.11.2 Agroforestry integrates trees and shrubs on farmlands and rural landscapes to enhance productivity, profitability, diversity and ecosystem sustainability. National Agroforestry Policy, 2014 will help in developing policies related to harvesting and marketing of farm forestry produce, which have been important factors in promotion of farm forestry and restoring ecological services (carbon sequestration) and improving the income and livelihoods of rural households, especially the small farmers.

8.12 Linking Small Farmers to Value Chain

8.12.1 The Twelfth Plan emphasised on encouraging formation of Farmers Producers Organization (FPOs) to create enabling environment to successfully deal with a range of challenges that small and marginal farmers confront today. Small Farmers' Agribusiness Consortium (SFAC) was mandated to lead a national pilot project, to promote FPOs as a demonstration of the benefits of building institutions of producers and their integration in agri-value chains. Since inception in 2011, the FPO project has helped to mobilize approximately 8.98 lakh farmers in about 910 FPOs by September, 2015. Farmers have responded enthusiastically to the message of aggregation and in implementing the pilot project. The vital ecosystem put together to support FPOs includes equity grants, credit guarantee fund for facilitating loans to FPCs, inclusion of dairy and poultry as eligible activities, nomination of SFAC as procurement agency to buy pulses and oilseeds under price support operations, inclusion of FPOs under Gramin Bhandaran Yojana and making them eligible for grants under RKVY for building critical infrastructure.These initiatives need to be scaled up in the remaining period of the Twelfth Plan.

8.13 Technology and Research

8.13.1 The future growth in agriculture will primarily be knowledge and technology driven. This demands more investment in agricultural R&D, innovations and institutions to bring about significant change in technologies for resource conservations and productivity enhancement. During Eleventh Plan, the investment on Agri-R&D was about 0.7 per cent of agri-GDP which needs to be enhanced to 1 per cent of agriculture GDP by end of the Twelfth Plan.There has been slow progress in finalizing the new and existing projects for research during the first three years of the Twelfth Plan which needs a serious review. Besides, reforms in Agri-R&D should be the major agenda for the remaining period of Twelfth Plan and beyond. Despite low participation in agriculture R&D, private sector has come out with some impressive technologies like Bt cotton and hybrids in maize and vegetables. Private sector need to be facilitated and encouraged to invest more in R&D in the country.

8.13.2 The multiplicity of institutions with overlapping activities in agriculture research and structural reorientation of Krishi Vigyan Kendras (KVKs), etc. are some of the core issues that require immediate attention. KVKs should promote village level knowledge and entrepreneurship models through shared investment to empower the farmers not only as users of technology but also as producers of knowledge. In order to improve the efficiency and performance of KVKs, a national level competition has been proposed in Union Budget 2016-17 to be held among 668 KVKs with a total prize money of Rs.50 lakh. Similarly, agriculture extension in the States needs overhauling to appreciate the technological development and its dissemination amongst farmers, with a proper feedback to research system on adoption of the technologies. National Mission for Agriculture Extension & Technology (NMAET) needs to catalyse focus on technology in agri-extension. A large number of new varieties are developed each year through public funding every year but often not adopted by the farmers due to lack of confidence in the variety, poor dissemination, issues in varietal identification, breeder seed production and further multiplication and distribution.

8.13.3 Transformation in agricultural education to make it more inclusive for rural entrepreneurship and having strong organic linkages with Higher Education Programmes of Ministry of Human Resources is also required. Several ambitious programmes and institutions of upstream research have been commissioned during Twelfth Plan, but are yet to take off due to limited resources available. These programmes along with other initiatives such as Agriculture Technology Forecast Centre (ATFC), Agri-Innovate India etc. need to be implemented on priority. The proliferation of State Agricultral Universities (SAUs) and disintegration into Veterinary and Horticultural universities need a thorough review by the States, under the guiding principle of integrated farming practices adopted by the farmers. The focus also needs to shift from incremental research to transformational research.

8.13.4 One of the problems of slow progress of agriculture in eastern region has been low outreach of the institutions and technologies leading to lower productivity in spite of abundant natural resources. The establishment of Institutions of excellence on the pattern of IARI in Assam and Jharkhand for spearheading research in Agriculture is an important move. The State Agricultural Universities are also proposed to be established in Andhra Pradesh and Rajasthan; and Horticulture Universities in Telangana and Haryana for better outreach but their linkages with industry and other stakeholders to conduct user centric research need to be prioritised.

8.14 Inputs and Mechanisation

8.14.1 Between 2007-08 and 2013-14, the quality seed distribution registered an increase ranging from 48 per cent in cereals to 360 per cent in potatoes. The phenomenal growth could be due to incentivization of seed distribution during the Eleventh Plan period. The growth in total breeder seed production has been impressive. However, segregation into breeder seeds of newly released varieties and of the seeds already grown by the farmers, is a case to be studied to distinguish between old and new varieties. A mismatch between supply of indented breeder seeds of Central and State released varieties and the multiplication into certified seeds raises issues on the multiplication capacity of seed producing agencies at national and states levels, which needs to be rectified in the remaining years of Twelfth Plan. Further, the seed sector requires reforms like indenting procedure, multiplication, certification and marketing. The public sector technology generation processes, including of the varieties should be reoriented to effectively meet demand by farmers, as has been the case of private sector. Seed is a critical input for enhancing productivity, hence efforts are essential in ensuring its timely availability. A suitable blend of new variety seeds, in the Seed Replacement Rate (SRR) is the most desired but has been largely missing. The participatory seed production programme with adequate pricing and marketing facilitation, is also required to infuse new varieties in the seed chain. In addition, comprehensive and authentic database on seed production and distribution in India, by public and private sectors needs to be built for the benefit of all the stakeholders. Massive research is also required in modifying seed varieties including genetically modified ones which have been a good success in many countries besides our own experiences in BT cotton.

8.14.2 Under the amended New Policy on Seed Development (NPSD), some vital initiatives have been taken. These include permitting 100 per cent Foreign Direct Investment (FDI) under the automatic route and simplifying the procedure for inclusion of new varieties in the Organisation for Economic Cooperation and Development (OECD) Seeds Scheme. The thrust is also on creating a seed bank. A Seed Rolling Plan for the period up to 2016-17 is also in place for all the States since 2013-14 for identification of good varieties for the seed chain, and agencies responsible for production of seeds at every level.

8.14.3 The consumption of fertilizers has increased from 20.34 million tonnes in 2005-06, to 26.75 million tonnes in 2015-16. The average consumption of fertilizers has also increased from 105.5 kg. per ha. in 2005-06 to 130.66 kg per ha in 2015-16. However, India's consumption is much lower than that of Pakistan (205 kg per ha) and China (396 kg per ha). The fertilizer use has also been highly skewed towards nitrogenous fertilizers leading to serious imbalance among Nitrogen, Phosphorous and Potassium (N, P and K) in some States of the country. With a view to encourage balanced use of fertilizers, Government had introduced Nutrient Based Subsidy (NBS) policy from April 2010, under which a fixed rate of subsidy was announced on nutrients (N, P, K and S), but urea had been kept out of the NBS. Consequently, the price of urea is much lower than that of other fertilizers, which has resulted in excessive use of urea, thereby distorting the balanced application norms even more. The Twelfth Plan document had strongly emphasized to move towards a Nutrient Based Subsidy regime for urea. However, the same has not been implemented so far. It is desirable that the same is implemented in the remaining period of the Twelfth Plan. The Medium Term Fiscal Policy Statement, released as part of Union Budget 2015-16, has also emphasized pricing reforms of urea sector, from the viewpoint of not only the size of subsidy bill, but also balanced use of N, P and K nutrients. Besides, the issue of gas availability for production of urea also needs to be sorted out at the earliest.

8.14.4 The Shanta Kumar Committee on restructuring of Food Corporation of India has submitted its Report to the Government in January, 2015. The Committee has emphasized that in the long run urea prices may need to be de-controlled while subsidy could be given directly to farmers using Aadhaar-based authentication/ Direct Benefit Transfer mechanism. This is also expected to help in checking diversion of urea to non-agricultural uses as well as to neighbouring countries. The Committee has recommended a flat subsidy of Rs.7,000 per ha to farmers followed by deregulation of the fertilizer sector. With a view to improve the quality of service delivery to farmers, the Union Budget 2016-17 has proposed to introduce DBT on pilot basis for fertilizer in a few districts across the country.

8.14.5 Farm mechanization is essential to face the decline in availability of labour in agriculture, economise the farming and labour usage in agricultural operations. States with higher farm power availability have, in general, better productivity. However, decreasing trend in operational land holdings, high cost and lower credit worthiness of small holdings reduces benefits of farm mechanization. Use of farm machinery is also dependent on the availability of other infrastructural services in the rural areas. Recognizing the need to spread the benefits of agricultural mechanization among all strata of farmers, promotion of 'Custom Hiring Centre' (CHC) for agricultural machinery, is implemented under National Mission for Agricultural Extension & Technology. The major challenge in CHCs will be maintenance of machinery, equitable distribution of services to all users and collection of user charges to facilitate upkeep, up-gradation and further additions. Apart from field operations, the post-harvest engineering should also get larger focus.

8.15 Irrigation

8.15.1 The indiscriminate and excessive usage of water resources is leading to alarming reduction in the water table in the Punjab and Haryana region, which is a matter of concern. Currently 66.10 million ha i.e. 47 per cent of net cropped area is irrigated in the country. An irrigation potential of 85.03 lakh ha is estimated to have been created by States from major/medium/minor irrigation projects under the AIBP till March 2013. Multiple programmes are operating for development of surface, groundwater resources and also enhancing the application use efficiency of the irrigation water but without any convergence for resource sharing and bringing synergy. A strong case exists to develop a matrix for convergence amongst different programmes and departments based on comprehensive information of all water bodies and reservoirs. In this context, Union Budget 2016-17 has also proposed fast tracking of 89 irrigation projects under AIBP which will help to irrigate 80.6 lakh hectares. Of these 23 projects are proposed to be completed before 31st March, 2017.

8.15.2 Pradhan Mantri Krishi Sinchai Yojana (PMKSY) has been announced in 2015-16. The PMKSY aims to ensure access to protective irrigation to all agricultural farms through water harvesting and recycling with increased water application efficiency to achieve maximum water productivity i.e., *per drop more crop*. The focus of PMKSY is on end-to-end solution in irrigation supply chain, viz. water sources and distribution network and farm level applications. The PMKSY will provide an overarching management and governance for convergence amongst the programmes of agriculture, water resources, land resources and other departments dealing with water and energy. An allocation of Rs. 7,299 crore was provided in 2015-16 to support micro-irrigation, watershed development and PMKSY-AIBP. The States have been urged to contribute on this further. A total of 28.5 lakh ha is expected to be brought under irrigation under this scheme.

8.15.3 The Union Budget 2016-17 has proposed a dedicated Long Term Irrigation Fund in NABARD with an initial corpus of about Rs.20,000 crore. Simultaneously, a major programme for sustainable management of ground water resources has been prepared with an estimated cost of Rs.6,000 crore and proposed for multilateral funding. In addition, at least 5 lakh farm ponds and dug wells in rain fed areas and 10 lakh compost pits for production of organic manure are proposed to be taken up by making productive use of the allocations under MGNREGA.

8.16 Improvement in Soil Resources

8.16.1 Recently, Government has launched a Central Sector Scheme on soil health card with a proposed allocation of Rs.569 crore. The programme for Soil Health cards aims at better productivity and more income to farmers through augmentation of capacity of soil analysis and preparation of soil fertility status of individual farms and consequently rationalising the use of fertilizers.The target is to cover all 14 crore farm holdings by March 2017. Besides, 100 more Mobile Soil Testing Laboratories will be established. Union Budget 2016-17 has also proposed to provide soil and seed testing facilities at 2,000 model retail outlets of fertilizer companies during the next three years.

8.17 Organic Farming

8.17.1 Organic farming attempts to reduce or eliminate external agricultural inputs, especially synthetic ones and relies on ecosystem management. The intensive uses of inorganic fertilizers, pesticides and other inputs for maximizing agri-production were necessitated to meet the consumption requirement of growing population. However, indiscriminate use of chemical inputs has become serious hazard to human life. Growing concern about sustainable production with eco-friendly inputs use, has brought organic farming in sharp focus which offers an attractive opportunity to small farms, also in view of the premium price tag, provided the marketing and quality organic input supply are ensured. The Organic Farming has been identified a priority area for the North Eastern Region where large agricultural produce are luckily organic by default. To sustain organic farming, higher investment for secondary processing and capacity building with input support is required. Towards this end, the Government has launched two important schemes. First, the 'Parmparagat Krishi Vikas Yojana' which will bring 2 lakh acres under organic farming over a three year period. Second, a value chain based organic farming scheme called "Organic Value Chain Development in North East Region" has been launched.

8.18 Climate Change Challenge

8.18.1 Recent studies at Indian Agricultural Research Institute (IARI) indicated the possibility of loss of 4-5 million tonnes in wheat production with every rise of 1^{o}C temperature throughout the growing period even after considering carbon fertilization (but no adaptation benefits). Increase in temperature in future is likely to reduce fertilizer use efficiency, aggravate the heat stress in dairy animals adversely affecting their productive and reproductive performance, and limit effective area where high yielding dairy cattle can be economically reared. Increasing sea and river water temperature is likely to adversely affect fish breeding, migration, and harvests.

8.18.2 National Initiatives on Climate Resilient Agriculture (NICRA) was launched in February, 2011 to undertake strategic research and demonstration of proven climate resilient technology. It has made some achievements, like collection of real time data on crop and weather and district level contingency plans and agro-advisory mechanism and pilot testing of block level agro advisory system, linked to real time weather monitoring in Belgaum district of Karnataka. Weather indices for wheat, cotton and groundnut have also been developed for improving the weather insurance products. First ever district-level vulnerability atlas, presenting relative vulnerability of 572 rural districts of India in terms of sensitivity, exposure and adaptive capacity to prioritize investments and plan for research on adaptation interventions, has also been developed. NICRA and NMSA are two important programmes in Research & Development for implementing the national adaptation plans in agriculture and need to be continued. In addition, the Earth System Science Organization (ESSO) issues agro-meteorological advisories in 12 languages to 600 districts and is subscribed to by over 4.8 million farmers, while Gramin Krishi Mausam Sewa is providing these advisory services at block level. The newly launched Kisan TV channel should provide a platform to disseminate these advisories countrywide. However, the response to climate change induced calamities, available in terms of relief measures are largely confined to input subsidy and to a limited extent in the form of crop insurance. These are perceived to be grossly inadequate and require some long term planning with multi-pronged approach. Accordingly, transparent relief measures need to be put in place as a social service. The farmers' database needs to be linked with Aadhaar seeded bank accounts and a minimum specified sum of cash needs to be transferred into these accounts in the event of natural calamity.

8.19 Agricultural Wages, Credit and Insurance

8.19.1 Agriculture is labour intensive as about 40 per cent of the total variable cost of cultivation is accounted for by labour and hence availability of labourers to work in agriculture is crucial to sustain farming activities. Agricultural wages are low due to productivity itself being low. In recent years there has been a perceptible change in this trend due to economic growth and adoption of employment generation programmes besides increase in wages under the Minimum Wages Act. However, agricultural wages, in general, are still lower than the industrial wages. With skill development, this gap will narrow down, putting further pressure on availability and cost of agricultural labour. This strengthens the necessity for agricultural mechanization in a manner that is inclusive and suitable for small farmers who comprise about 85 per cent of total land holdings in the country.

8.19.2 The target of doubling of the flow of agricultural credit in three years with base year as 2004-05 was achieved in two years. Agricultural credit flow further increased consistently to reach Rs.7.3 lakh crore in 2013-14. The target for 2014-15 was set at Rs. 800,000 crore and for 2015-16, it has been further upscaled to Rs. 8,75,000 crore, against which actual credit reached to over Rs.9 lakh crore. A number of other initiatives for enhancing flow of credit to agricultural sector have been put in place. The Kisan Credit Card Scheme has been made broad-based to include term credit and consumption needs, besides some risk cover against accidental death. The interest subvention scheme for short-term crop loans upto Rs.3 lakh, has been continued and a farmer who repays the loan on time, becomes eligible to get crop loan at 4 per cent rate of interest. Post-harvest loans are also being granted against Negotiable Warehouse Receipts (NWRs) with benefit of interest subvention. In the Union Budget 2015-16, Rs.25,000 crore has been allocated towards Rural Infrastructure Development Fund (RIDF); Rs.15,000 crore for Long Term Rural Credit Fund; Rs.45,000 crore for Short Term Co-operative Rural Credit Refinance Fund and Rs.15,000 crore for Short Term RRB Refinance Fund. For micro and small units, particularly in the informal sector, Micro Units Development Refinance Agency (MUDRA) Bank has been set up with a corpus of Rs.20,000 crore. The Bank would refinance Micro-Finance Institutions through Pradhan Mantri Mudra Yojana. These initiatives expected to ease the credit flow for agricultural and rural sectors need to be effectively implemented during the remaining period of the Twelfth Plan.

8.19.3 As a major initiative of the Government, Pradhan Mantri Jan Dhan Yojana (PMJDY) was launched in August, 2014. The objective of the scheme is to ensure access of people to various financial services like basic savings bank account, need based credit, remittance facility, insurance and pension to the excluded sections i.e. weaker sections and low income groups. PMJDY is a National Mission on Financial Inclusion encompassing an integrated approach to bring about comprehensive financial inclusion of all the households. The Plan also envisages channelling of all Government benefits to the beneficiaries' accounts and benefitting from the Direct Benefits Transfer (DBT) scheme of the Union Government. The scheme would address technological issues like poor connectivity and facilitate on-line transactions. By 16th March, 2016, about 21.3 crore bank accounts have been opened under the scheme with outstanding balance of Rs. 34,842 crore while 17.6 crore RuPay Debit cards have been issued. This scheme is expected to go a long way in empowering people and improving efficiency in delivery of benefits. The Economic Survey 2014-15 and 2015-16 have highlighted the importance of "JAM" (Jan Dhan Yojana, Aadhaar and Mobile numbers) trinity to effectively target the public resources to the people who need them the most.

8.19.4 The multiplicity of insurance schemes (National Agricultural Insurance Scheme, Modified National Agricultural Insurance Scheme, Weather Based Crop Insurance Scheme and Coconut Insurance Scheme) has been revamped into National Crop Insurance Programme. While it will add value and address problems more effectively, still this instrument available for risk management needs to be made more extensive, efficient and effective to cover the risk of individual farmers, more so of non-loanee farmers in the vulnerable areas. States are reluctant to notify a smaller unit area (such as a village) because of increased requirements of the minimum number of crop cutting experiments that have to be undertaken, which is both costly and time consuming. In order to address the problems faced by the farmers especially regarding insurance, a new Pradhan Mantri Fasal Bima Yojana (PMFBY) has been launched in January, 2016 which needs to be implemented across all States/ UTs at the earliest.

8.19.5 In order to achieve comprehensive social security for all, especially the poor, Government has launched three schemes viz. Pradhan Mantri Suraksha Bima Yojana, Pradhan Mantri Jeevan Jyoti Beema Yojana and Atal Pension Yojana. The premiums charged under these schemes are very nominal. The enrolments under the schemes have been very encouraging and can be further expanded to cover a large segment of the population.

8.20 Agricultural Prices and Marketing

8.20.1 Wide gap between the prices received by the farmers and paid by the consumers in the agricultural produce markets is an unfortunate reality. Imperfect market conditions, restrictions on the movement of agricultural commodities due to regulatory issues, infrastructural constraints, transport bottlenecks and local taxes push up retail prices. Direct marketing by farmers and contract farming are some of the options for reducing large price spread between farm harvest prices and retail prices. It is necessary that direct marketing and contract farming are promoted to facilitate enhanced share of producers in consumer's rupee. Contract farming also has considerable potential in terms of farmers' access to modern technology, quality inputs and marketing support through contractual agreement between processing and/or marketing firms for production support at predetermined prices. Price volatility in select commodities has been a matter of concern, which needs to be addressed through a structured programme on price stabilization and by giving more space to producers for storage, technical backstopping and direct marketing.

8.20.2 Reforms in agricultural marketing were initiated to ease restrictive and monopolistic approach of State Governments to agricultural markets, reduce intermediaries in supply chain and enhance private sector investment, especially in post-harvest marketing infrastructure. However, many States are yet to adopt the model Agricultural Produce Marketing Committee (APMC) Act suggested by the Central Government in 2003. Much needed provision for permitting the out-of-mandi transactions and the matter of exemption of market fee on horticultural perishables, being pursued by the Centre with States, do not find place in the amended statutes in several States. The Committee of State Agriculture Ministers, constituted by the Ministry of Agriculture for suggesting improvements in Agriculture Marketing, has recommended that reforms and strengthening of agricultural marketing system be implemented on priority. Another Committee on Encouraging Investments in Supply Chains set up by the erstwhile Planning Commission had recommended exempting perishables from the purview of APMC, provide freedom to farmers and make direct sales to aggregators and processors, introduce electronic auction platforms, and replace licensees of APMC markets with open registration backed by bank guarantees so as to ensure wider choice to growers and to prevent cartelisation by traders. With a view to create National Agriculture Market (NAM), a Central Sector Scheme on Promotion of NAM through Agri-Tech Infrastructure Fund (ATIF) has been launched with an outlay of Rs. 200 crore for 2015-16 to 2017-18. The scheme would initially incentivize the States by way of financial support for equipment infrastructure @ Rs.30 lakhs per Mandi to enable transactions on e-platform. So far 16 States have given proposals to cover 250 Mandis. The Unified Agricultural Marketing E Platform was dedicated to the nation on the birthday of Dr. B.R. Ambedkar on April 14, 2016.

8.20.3 The agricultural produce marketing systems suffer from major distortions and multiplicities of levies, Mandi taxes,VAT, etc. These are neither transparent nor uniform across the States and are major impediments for farmers in realizing remunerative price. Karnataka has developed a model and integrated 155 main market yards and 354 submarket yards into a single licensing system with automated auction and post auction facilities. The National Agricultural Market has also been envisaged by the Government through Agri-Tech Infrastructure Fund with an outlay of Rs.200 crore. This includes provision for the DAC to supply software free-of-cost to the States/UTs and for cost of related hardware/ infrastructure to be subsidised by the Centre up to Rs. 30 lakh per mandi (other than for private mandis). The scheme will put in place the e-market platform for 585 markets in the country. The ATIF is aimed at implementation of agricultural marketing reforms by initiating appropriate e-market platforms in States with a view to move towards a National Market. Reform of the agricultural marketing through implementation of e-marketing platform aims to provide greater farmer satisfaction through better prospects for marketing of the produce, improved access to market related information and better price discovery under more efficient, transparent and competitive marketing platform with access to increased number of buyers from within the State and outside, through transparent auction processes. It would also increase the farmers' access to markets through warehouse based sales and thus obviate the need to transport such produce to the mandi.

8.20.4 Price fluctuations, relatively in off season, have been a matter of concern, as it takes the prices away from the purchasing capacity of average consumers. Till recently, such fluctuations were more common in perishables or semi perishables like onions, tomatoes and potatoes. Of late, steep fluctuations have been experienced even in the case of pulses. A Price Stabilization Fund (PSF) has been established for procurement and distribution of perishable Agriculture and Horticultural Commodities. The Fund aims to provide working capital and other expenses for procurement and distribution of perishable agricultural and horticultural commodities and to protect the interests of farmers as well as consumers.The Market Intervention Scheme of the Department of Agriculture can also be broadbased for more effective impact for the benefit of both farmers and consumers.

8.21 Agricultural Trade

8.21.1 India is one among the 15 leading exporters of agricultural products in the world with significant exports of cotton, rice, meat, oil meals and sugar. Export competitiveness has also been developed in specialized agricultural products like basmati rice, guar gum and castor. In the 9th WTO Ministerial Conference held in Bali, Indonesia during 3-7 December, 2013 India had emphatically argued that procurement of foodgrains with the objective of supporting resource poor farmers should not be construed as Aggregate Measure of Support (AMS), and this stand was supported by a number of developing countries.

8.21.2 Foreign Direct Investment (FDI) Policy in Agriculture aims at attracting investments in technology, machinery, equipment, seeds/planting material, warehousing and cold storages and other infrastructure logistics; and complements public and private investments necessary to bring knowledge, technologies and services to farmers. The investments are made in the development and production of seed and planting material, horticulture and nursery services, agriculture machinery, plant protection services, cattle breeding and livestock rearing, cold storage and warehousing, which need to be encouraged further. In order to encourage food processing, reduce wastages of fruits and vegetables and create employment opportunities, Union Budget 2016-17 has allowed 100 percent FDI through FIPB route in marketing of food products produced and manufactured in India.

8.21.3 A major issue often raised by farmers is inconsistency in the trade policy for agriculture. Many a times in the past when prices of certain agricultural commodity escalate sharply, Government had resorted to export bans which devoid the farmers of the opportunity to reap the benefits. Instead of switch-on switch-off policy, it may be more prudent that tariff and other policies, such as Minimum Export Prices, may be adopted to the extent possible.

8.22 Land Policy and Reforms

8.22.1 The progressive fragmentation of land has made small holdings unsustainable which has been further aggravated due to degrading quality of land and water and increased incidences of extreme climatic events. Agricultural land is also getting diverted to meet the requirement of growing economy for housing, infrastructure and industry. Therefore, higher agricultural production has necessarily to come from increased land and water productivity. A prudent land use policy is required to make sustainable growth in agriculture with adequate water availability and soil health maintenance at levels that are conducive to pursue agricultural activities with higher level of productivity.

8.22.2 Land degradation is the major threat not only to food security but also to the environment. According to ICAR estimates, about 120.4 m ha[1] land in the country is affected by various kind of land degradation; majority of which is accounted by water and wind erosion.

8.22.3 Implementation and strengthening of laws relating to land leasing and tenancy, computerization of land records, titling and formulation of policy on diversion of agricultural land for non-agricultural uses, updating land and soil survey maps, finalization of an enabling framework for involvement of private sector in natural resource management, and encouraging PPP in land and watershed development programmes are, thus, urgently required. The Department of Land Resources, Ministry of Rural Development has prepared the National Land Utilization Policy, 2013 to order and regulate the land use in an efficient and rationale manner. NITI Aayog had constituted an Expert Group to prepare a model Land Leasing Act to enable the states to enact their own leasing Act based on the model. The Expert Group has

[1]ICAR/ NAAS publication (2010) Degraded and Wasteland of India: Status and Spatial Distribution. Page 31

submitted its Report; action on the recommendations of the Group is under active consideration.

8.23 National Food Security Act (NFSA), 2013

8.23.1 In continuation of rights based approach followed for various other initiatives, the National Food Security Act (NFSA), 2013 has been enacted with the objective of providing food and nutritional security, in human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices. The NFSA aims at providing coverage to almost two-thirds of the population (upto 75 per cent of the rural population and 50 per cent of the urban population), that is entitled to receive 5 kg. foodgrains per person per month at highly subsidized prices of Rs.3, Rs.2, Rs.1 per kg for rice, wheat and coarse grains respectively under the Targeted Public Distribution System (TPDS). Under this Act, the poorest of the poor households would continue to receive 35 kg. foodgrains per household per month under Antyodaya Anna Yojana scheme. Special focus is given on nutritional support to women and children. The identification of households eligible for subsidised grains under NFSA is expected to be carried out by the States/UTs, which may frame their own criteria or use Social Economic and Caste Census data. In case of non-supply of foodgrains or meals to entitled persons, the Act has provisions for payment of food security allowance. As at the end of April, 2016, 33 States/ UTs have implemented the NFSA and there is a need for other States (Nagaland, Kerala and Tamil Nadu) to suitably implement the same at the earliest.

8.23.2 The NFSA *inter alia* contains reforms in TPDS in the form of doorstep delivery of foodgrains to the TPDS outlets, application of Information and Communication Technology (ICT) tools including end-to-end computerization in order to ensure transparent recording of transactions at all levels and to prevent leakages, diversions, etc. The Act also emphasizes on full transparency of records, preference to public institutions or public bodies such as Panchayats, self-help groups, co-operatives in licensing of fair price shops and management of fair price shops by women or their collectives diversification of commodities distributed under the Public Distribution System. These reforms are considered essential and need to be implemented vigorously by all the States/ UTs.

8.23.3 During the Twelfth Plan, end-to-end computerization of TPDS is being undertaken in all States/ UTs. In October, 2012, Government approved the implementation of Component-I of a Plan Scheme which comprises activities, namely, digitization of ration cards/ beneficiary and other databases, computerization of supply-chain management, setting up of transparency portal and grievance redressal mechanisms for implementation in all States/UTs during Twelfth Plan. The Department of Food and Public Distribution has issued guidelines for Fair Price Shop (FPS) Automation which also includes technical specifications of Point of Sale (PoS) device and Mobile Terminals. NIC has developed Android based 'App', which also has been made available on DeitY's AppStore. Thirty States/ UTs/ NIC have already been sanctioned funds under the scheme and its implementation needs to be expedited.

8.23.4 While implementation of ICT in PDS needs to be pursued vigorously across all States/ UTs, it is imperative that the digitised database is also seeded with Aadhaar number of each beneficiary for which Central Government has already requested the States/ UTs. This will help removing the fakes and duplicates from the system, thus channelizing benefits of large amount of subsidy given by the Government only to the deserving people. This would help containment of food subsidies in the long run, thus making NFSA more sustainable. In this context, Union Budget 2016-17 has announced providing automation facilities to 3 lakh Fair Price Shops by March, 2017. An option of introducing Direct Benefit Transfer (DBT) on pilot basis has also been introduced for UTs and States (in a few districts).

8.24 High Level Committee on Reorienting the Role and Restructuring of Food Corporation of India

8.24.1 A High Level Committee (HLC), set up by the Government under the chairmanship of Shri Shanta Kumar to look into the role and restructuring of Food Corporation of India submitted its report in January, 2015. It has recommended that FCI may handover all procurement operations of wheat, paddy and rice to States such as Andra Pradesh, Chhattisgarh, Haryana, Madhya Pradesh, Punjab and Odisha since they have sufficient experience and infrastructure for procurement. In these States, FCI may accept only the surplus (after deducting the needs of the States under NFSA) to be moved to deficit States. Simultaneously, FCI may move on to help such States where farmers suffer from distress sales at prices much below MSP, and which are dominated by small holdings, like Eastern UP, Bihar, West Bengal, Assam etc. This is the belt from where second green revolution is expected.The Committee has also recommended reduction in statutory levies on procurement by the State Governments. It has added that the implementation of NFSA may be deferred in States which have not undertaken computerisation.In a major recommendation, the Committee has suggested reducing NFSA coverage from 67 per cent to 40 per cent. The issue prices of Rs.3/2/1 per kg. are also suggested to be restricted to Antyodaya Households while other households may be offered foodgrains at 50 per cent of MSP. The Committee has proposed introduction of the concept of direct cash transfers with large cities to begin with. There is a need to examine these recommendations and take suitable mid-course corrections, else the subsidy burden of NFSA is likely to become unsustainable.

8.25 Rural Development

8.25.1 Rural transformation touches every segment of the rural population. The Government has launched several rural development programmes with focus on the more inclusive growth objective of the Twelfth Plan. The objective of these programmes is upliftment of the rural population which was left behind in the journey of progress, and over time, got pushed down to the lower rungs of the economic ladder. The Plan has adopted livelihoods approach to reduce poverty as one of its thrust areas. These schemes either deliver benefits directly to the poor and the excluded groups, or increase their ability to access employment and income-opportunities generated by the growth process. These schemes have assumed greater significance as their objectives are also reflected in the new Vision of the Government which emphasizes cooperative federalism with Centre and States working together as ‘Team India’.

Livelihood and Social Sector Programmes in the Twelfth Plan

8.26 Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

8.26.1 The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) guarantees not less than 100 days of wage employment in a financial year to every rural household whose adult members volunteer to do unskilled manual work. The scheme was launched in 2006-07 in 200 selected districts, and gradually extended to the whole country by 2008-09. The Union Budget for 2015-16 had announced that the Union Government would continue to fully support MGNREGA, describing it as one of the national priorities. The underlying objective of the scheme is to enhance the livelihood security of the poor households in rural areas. Besides this, MGNREGA’s goals include rejuvenating natural resource base, creating productive rural assets, stimulating local economy by providing safety net to rural poor, ensuring women empowerment and strengthening grassroot level democratic institutions. More than three-fourth of works taken up under MGNREGA are related to water conservation and other activities for enhancement of agricultural productivity, thereby, multiplying job opportunities in the agriculture sector and enhancing the farmers’ income. An allocation of Rs.38,500 crore (BE} has been made for the scheme during the current financial year 2016-17.

8.26.2 The volume of wage employment under the scheme had grown from 143.59 crore person-days in 2007-08 to 235.15 crore person-days in 2015-16. At the beginning of Twelfth Plan, there were more than eight crore muster rolls and over 12 crore job cards placed online. Notably, a large number of MGNREGA workers are small and marginal farmers whose land productivity has declined significantly. As against the norm of 33 per cent, women’s participation in the scheme was 55.6 per cent in 2016-17 (as on Sept. 2016) while SC & ST participation rate stood at 20.57 and

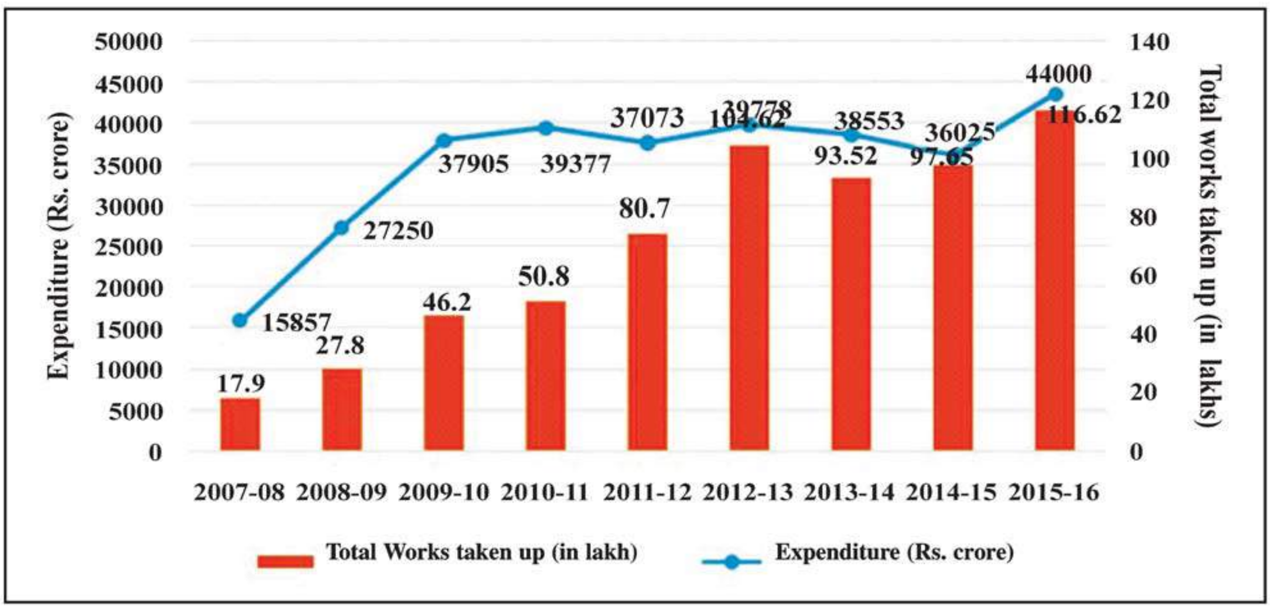
17.34 per cent respectively **(Table-8.1)**. Even though the expenditure under the scheme has remained by and large stable over last few years, there has been a good growth in the number of new works undertaken (**Figure-8.4**).

Table-8.1: Physical Progress under MGNREGA during Twelfth Plan (2012-17)

Sl.No.	Indicator	2012-13	2013-14	2014-15	2015-16	2016-17
1	Person-days (No. in Cr.)	230.41	220.35	166.20	235.15	39.26
2	Average person-days per Household (in No.)	46.20	45.97	40.17	48.85	43.58
3	Women Participation Rate to total (%)	51.30	52.82	54.88	55.26	53.07
4	SC participation to total (%)	22.22	22.81	22.40	22.29	20.57
5	ST participation to total (%)	17.79	17.52	16.97	17.80	17.34

Source: Programme MIS (www.nrega.nic.in)

Figure-8.4: Total Expenditure and Works undertaken under MGNREGA



8.27 The Twelfth Plan Recommendations and Achievements – MGNREGA

8.27.1 The achievements under MGNREGA during the first 4 years of Twelfth Plan have been quite encouraging. The fourth year of the plan witnessed a record high in the number of works taken up. MGNREGA 2.0 guidelines have been formulated with almost 30 new works added in the schedule under the list of permissible works. Rules of compensation have been framed by 7 States while 9 States are issuing dated receipts for demand of work. As on September, 2016, only 45 per cent payments were generated within 15 days of the closer of the muster roll, which is a matter of concern. All States have set up Employment Guarantee Councils and have institutional architecture at Gram Panchayat (GP), Cluster of GPs and Block levels. Almost all States have set up the institution of Ombudsman. Independent Social Audit Units have been operationalised in 15 States while 20 States have more than 33 per cent women participation.

8.27.2 A number of strategic initiatives have been taken to improve the efficiency in implementation of MGNREGA. In order to ensure transparency and accountability, social audits are mandated for twice a year. Provisions for concurrent social audit involving Bharat Nirman Volunteers, village social auditors, Self Help Groups and youth organisations are available. Emphasis is to cover more vulnerable people under the scheme, with a special Schedule of Rates. The focus of new works allowed under MGNREGA is also on land and homesteads owned by SCs/ STs, small & marginal farmers, IAY beneficiaries and Forest Rights Act beneficiaries. In an important development, MGNREGA has been notified by the Ministry of Finance under Direct Benefits Transfer (DBT) scheme for 300 districts in the country.

8.27.3 Nevertheless, there are certain areas of concern under the Scheme. As against guarantee of at least 100 days of wage employment to every household in a financial year, MGNREGA's average achievement has been less than 50 days of work in a year, except in 2009-10 when it touched about 54 days of work. The average days of work for a household were 45.97, 40.17, 44.85 and 43.58 during 2013-14, 2014-15, 2015-16 and 2016 -17 (Sept. 2016) respectively. Only 6.02 per cent and 10.07 per cent worker households completed 100 days of work in 2014-15 and 2015-16 respectively. Expenditure on agriculture and allied works at the all-India level was 52.81 per cent during 2014-15 and 63.11 in 2015-16 and there were 16 States still below the prescribed limit of 60 per cent as on March, 2016.

8.27.4 A major reason for divergence between the Twelfth Plan recommendations and achievements is the gap between the projection of labour availability and the actual demand that is put forward. The implementing agencies do not have adequate capacity and institutional mechanism for the exercise and need capacity building. To address delay in wage payments, fake rolls and ghost workers, Electronic Fund Management System (e-FMS) and the Electronic Muster Roll (e-MR) have been put in place to achieve real time transactions and to stop leakages. The other issues of concern are poor quality and productivity of assets, while transparency, accountability and grievance redressal mechanisms need to be improved. There is a need to extend various initiatives (including the use of IT) taken during the first four years of the Twelfth Plan in all the States. By March, 2016, unemployment allowance rules need to be notified in the remaining 16 States while eFMS system needs to be started in the remaining 9 States.

8.28 National Rural Livelihood Mission (NRLM)

8.28.1 NRLM was launched in June, 2011 after restructuring the Swarnajayanti Grameen Swarozgar Yojana (SGSY). The scheme focuses on rural poor households and provides them continuous nurturing and support, till they come out of abject poverty. It seeks to reach 8 to 10 crore rural poor households and organise one woman member from each such household into affinity-based women Self-Help Groups (SHGs) and federations or higher levels by 2024-25. While doing so, the scheme envisages coverage of vulnerable sections such as SC/ST (50 per cent), minorities (15 per cent), disabled (3 per cent), etc. identified through the process of Participatory Identification of Poor (PIP) approved by the Gram Sabha. The women-centric Mission supports the poor households in key livelihoods viz. agriculture, non-farm activities, micro-enterprises, skilling and placement, so that they are provided a sustainable basket of livelihoods. The Mission has a clear "exit" strategy – after 10 years for intensive blocks covered under the programme – and thereafter it expects the women SHGs to take over management of affairs entirely. By 2016-17 (as on Sept..2016), 29 States and four Union Territory have transited to the Mission coverage. The uncovered parts of the country are progressing towards coverage.

8.28.2 The 2015-16 Budget has included the Scheme among those in respect of which the Centre-States funding pattern is being modified in view of the larger devolution of tax resources to the States as per the recommendations of the 14th Finance Commission, whereby in this Scheme, the revenue expenditure is to be borne by the States. In October, 2015 as per recommendations of the Sub Group of Chief Ministers on Rationalization of the Centrally Sponsored Schemes, the funding pattern between Centre and State has been revised to 60:40 w.e.f. April 1, 2015. Subsequent to the changed funding pattern, the availability of funds should not decrease. The Scheme is now part of the National Livelihood Mission (NLM)-(Rural and Urban) and the budgetary allocation of Central share for the National Livelihood Mission (Rural) was Rs.2,505 crore in 2015-16 while Rs.3,000 crore has been allocated for the mission during FY 2016-17.

8.28.3 The Mission has four distinct components – Organising rural poor into SHGs, their training & capacity building and credit linkage; the Mahila Kisan Sashaktikaran Pariyojana (MKSP); Rural Self-Employment Training Institute (RSETI); and Deen Dayal Upadhyaya Grameen Kaushalya Yojana, the placement linked skill development programme. Directed at strengthening the existing livelihoods of the poor, the MKSP projects are designed to enhance skill base of women engaged in agriculture and related activities. Currently, it is being implemented in 119 districts spread over 17 States, supporting 30 lakh Mahila Kisans. The RSETIs, established in each district in coordination with public sector banks and State Governments, offer short-time residential training (in 65 vocations at present) to rural youth from poor households. During 2014-15, the number of youth trained by the RSETIs is 3.84 lakh as against the target of 3.53 lakh and trainees who have become self-dependent is 2.2 lakh. Similarly, during 2015-16, 4.34 lakh youths have been trained in RSETIs against the target of 3.75 lakh. Since the inception of the scheme in 2011, 20.46 lakh youth have been trained and 11.81 lakh youths have been settled till September, 2016.

8.28.4 To enhance the employability of rural youth, the Government has launched the Deen Dayal Upadhyay Grameen KaushalyaYojana (DDU-GKY). An amount of Rs.600 crore has been proposed for the scheme in the Union Budget for 2016-17. A dedicated Division under the Ministry of Rural Development viz. 'Rural Skills Division', is implementing DDU-GKY placement linked skill development programme in partnership with public, private, non-government and community organisations. Mandatory placement is assured to 70 per cent of the trained candidates, who get a minimum salary of Rs.6,000 per month after three-months training. DDU-GKY (erstwhile Aajeevika Skills) is an important component of the National Skill Development Policy.The skilling programme for rural youth has now been refocused and re-prioritized to build the capacity of rural poor youth to address the needs of domestic and global skill requirements.

8.29 Twelfth Plan Recommendations and Achievements – NRLM

8.29.1 The Twelfth Plan had set the target of covering 600 intensive districts, 4,200 intensive blocks, 3.3 crore households and 26.4 lakh SHGs under the scheme. As against this, by September, 2016, NRLM has been extended to 524 Intensive Districts, 3082 Intensive blocks, 304.3 lakh households and 30.58 lakh SHGs. The Plan target for supporting skill development of rural youth was fixed at one crore. The achievement till September, 2016 has been 30.58 lakh only, indicating that the target is unlikely to be achieved.

8.29.2 The DDU-GKY Implementation Programme aims at social inclusion of the poor through mandatory coverage of 50 per cent SC/ST, 15 per cent minorities, 33 per cent women and 3 per cent differently abled persons. Scheme has special emphasis on areas such as Jammu & Kashmir (Himayat–special scheme for placement linked skilling of youth), 27 most-affected Left-wing Extremist (LWE) districts across 9 States (Roshni) and North Eastern States (10 per cent budgetary allocation).

8.29.3 Some of the constraints affecting implementation of NRLM in some States include transition from the SGSY; issues related to establishment of the Mission architecture & human resources, and availability of social capital. Seventeen States transited to NRLM in 2012-13, five in 2013-14 and the remaining, except Goa, in 2014-15. The States including Andhra Pradesh, Bihar, Madhya Pradesh, Odisha, Rajasthan and Tamil Nadu, had experience in implementing similar schemes, and together with Kerala transited to NRLM faster than other States. There is a need to cover remaining districts as envisaged in the Twelfth Plan. Besides, the uneven distribution of SHGs among the States continues to be a challenge to be addressed.

8.30 The Prime Minister's Rural Development Fellows Scheme (PMRDF)

8.30.1 The Prime Minister's Rural Development Fellows Scheme, an initiative of the Ministry of Rural Development, in collaboration with State Governments, was launched in September, 2011. At present, there are 99 PMRD Fellows placed in 76 districts across 18 States (10 Integrated Action Plan (IAP) States, 7 North-Eastern States and Jammu & Kashmir). Out of 99 fellows, 73 Fellows are in the IAP districts. Notably, there is an acute scarcity of professional human resources at the district level, particularly in the underdeveloped regions of the country. The Fellowship has the twin objective of engaging young professionals to work with District Collectors in improving the development programmes, as well as to raise a cadre of development facilitators, who will be available as a ready resource for rural development activities over a long term. During the two-year duration of the Fellowship, PMRD Fellows work closely with District Collectors of backward and remote districts in improving programme delivery and interface with marginalized sections, thereby reducing the developmental and governance deficits.

Basic Amenities

8.31 Rural Housing

8.31.1 As per the Working Group on Rural Housing for the Twelfth Five Year Plan, the total housing shortage in rural India was estimated at 40 million units at the beginning of the Twelfth Plan. To help rural families below the poverty line (BPL) in meeting their housing requirements, Government is implementing Indira AwaasYojana (IAY) since 1996. In the first four years of the Twelfth Plan, 69.82 lakh houses have been constructed with an expenditure of Rs.42,034 crore (Central releases). The IAY has a Central allocation of Rs.10,025 crore for 2015-16 and Rs.15,000 crore (BE) has been allocated for the financial year 2016-17. From the year 2015-16, the Scheme is part of the Housing for All (Rural and Urban) scheme, to be funded as per the changed Centre-State funding pattern of 60:40. Due to higher devolution of Central tax resources to States as per the 14th Finance Commission's recommendations, the overall expenditure on the Scheme under the changed funding pattern should not decrease as the States are expected to contribute larger funds for the Scheme. The scheme has been renamed as Pradhan Mantri Awaas Yojana (Gramin). Under the PMAY (Gramin) in the next three years from 2016-17 to 2018-19, there is a target for construction of 1 crore houses in rural areas. Further, Rs.81,975 crore would be required to construct these houses.

8.31.2 Based on the Twelfth Plan recommendations, the per unit financial assistance under the scheme was increased from Rs.45,000 to Rs.70,000 for plains, and from Rs.48,500 to Rs.75,000 for hilly, IAP and difficult areas w.e.f. 1st April, 2013. The unit cost has been further increased to Rs. 1,20,000 in plain areas and Rs. 1,30,000 in hilly states/ IAP districts/ difficult areas w.e.f. April, 2016. The unit cost of homestead plots has also been enhanced from Rs.10,000 to Rs.20,000. The difficult areas have also been re-defined. In congested localities, where land is costly, provision for multi-storeyed building has also been made. Under the scheme, priority is given to manual scavengers, bonded labourers, women in difficult circumstances, widows of defence, paramilitary and police personnel killed in action, mentally and physically challenged persons, households with single girl child, etc. Construction of toilets with IAY houses is now mandatory.

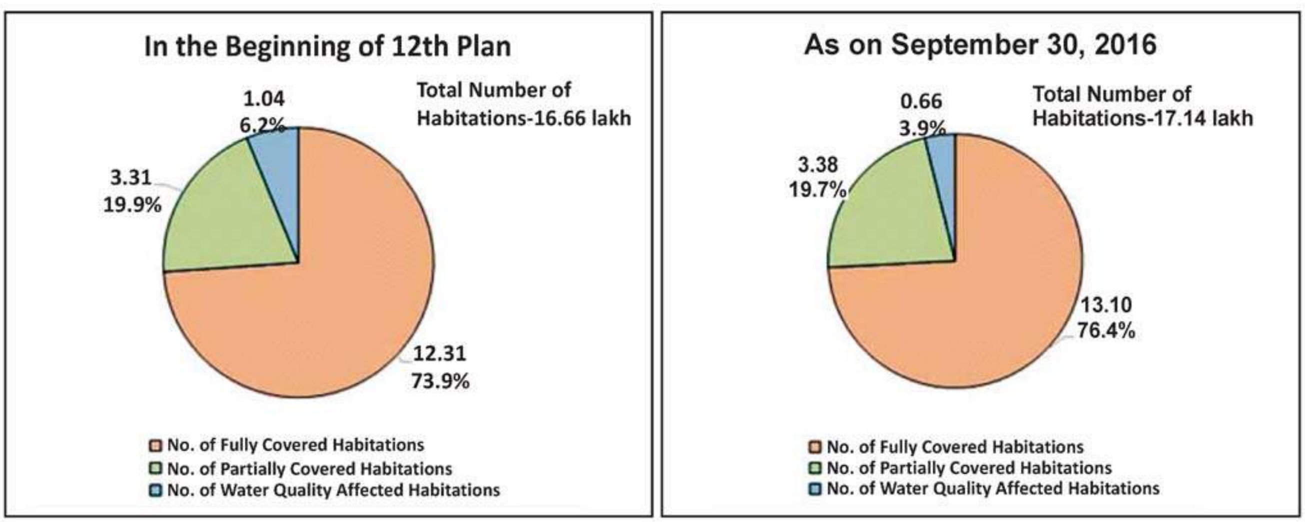
8.31.3 The scheme seems to be progressing well but there are problems of effective monitoring at the implementation stage. One major challenge is the selection of beneficiaries and since Socio Economic Caste Census (SECC) is now completed, it would be desirable that the SECC findings are used to identify the beneficiaries. There are also issues like catering to housing needs for other segments of rural population, besides the BPL rural poor. There are gaps in reporting by the States on completion of the houses against the physical targets and the updated progress is not reflected in the MIS. The trend of PMAY (Gramin) houses constructed over the past eight years beginning Eleventh Plan shows that the States have to come forward with larger resources to meet the objectives of 'Housing for All by 2022' in the rural areas. Proposals for manual scavengers also need to be prepared by the States on priority. There is need for more effective convergence of PMAY (Gramin) and other Central/State schemes. Dissemination of appropriate building technologies, capacity building at various levels and grievance redressal are other areas that need to be addressed during the remaining period of Twelfth Plan.

8.32 Drinking Water

8.32.1 Out of the total 17.14 lakh habitations, as many as 13.10 lakh habitations approximately (76.43 per cent) were fully covered with 40 litres per capita per day (lpcd) safe drinking water at the end of September, 2016. The rest are either partially covered or have chemical contamination in drinking water sources. Census 2011 reported 84.2 per cent rural households as having improved drinking water sources like tap water, hand pumps, covered wells and tubewell/ borehole. Accordingly, such schemes in rural areas aim at ensuring safe drinking water for the remaining 15.8 per cent of rural households.

8.32.2 Though the long-term objective is to provide 70 litres per capita per day (lpcd) of drinking water to all households, the Twelfth Plan has proposed an interim goal of 55 lpcd[1]. As per the monitorable targets of Twelfth Plan, it is targeted that at least 50 per cent of rural population in the country (as against 35 per cent at the beginning of the Plan period) will have access to 40 lpcd piped water supply within their household premises or within 100 metres radius (and within 10 metres elevation in hilly areas) from their households without barriers of social or financial discrimination by 2017. Achievement under coverage of rural population with piped water supply was 50.80 per cent upto September, 2016. For rural population, it is envisaged that by 2017 at least 35 per cent of households would have individual connections (as against 13 per cent at the beginning of the Plan period). Against this, the achievement is 15.19 per cent as on September 30, 2016. During 2016-17 (till September 30, 2016), against the target of 56,835 habitations, 27,165 habitations have been reported to be covered.

Figure 8.5: Status of Rural Habitations Covered w.r.t. 40 lpcd Drinking Water Supply



8.32.3 With regard to achievements on drinking water in rural areas, there has been considerable success in the Eleventh and Twelfth Plans. However, in order to achieve the envisaged targets, some more concerted efforts need to be made. A major constraint for performance with regard to individual connections for piped water supply is the lack of inclination amongst the users to pay connection charges. A large number of households have been resisting payment of water charges and in turn avoid taking regular connections, preferring to depend on public stand-posts. Therefore either connection charges may be abolished or States may demand the connection charges in equal instalments over a period of 36-48 months, along with the monthly user

[1] Twelfth Plan Document Vol. II page 301

charges. With regard to water quality, the Plan document envisaged funding to States having quality affected habitations over and above normal National Rural Drinking Water Programme (NRDWP) allocation with highest priority to arsenic and fluoride affected habitations. 5 per cent allocation is being earmarked for dedicated funding in this regard.

8.32.4 The current Central outlay alone under NRDWP for the Twelfth Five Year Plan for Ministry of Drinking Water and Sanitation is Rs.68,786 crore. Expenditure of Rs. 38,005.51 crore has been reported by the States against the central releases of Rs.35,833.43 crore in the first four years and eleven months of the Twelfth Five Year Plan i.e. upto Feb 8, 2017. In the light of higher devolution of funds to the States on the recommendations of the 14th Finance Commission, the States are expected to provide higher allocation for the sector, otherwise either target will have to be reduced or the programme may need to be confined to only drought /desert-prone areas, water quality affected areas etc.

8.33 Sanitation

8.33.1 With an aim to make India 'clean' by October, 2, 2019, Mahatma Gandhi's 150th birth anniversary, Swachh Bharat Mission has been launched by the Prime Minister on October 2, 2014. Its goal includes elimination of open defecation, which is estimated at a high 67 per cent households in rural areas and 12.5 per cent in urban areas (Census 2011). The Swachh Bharat Mission has 2 sub missions - the Swachh Bharat Mission (Gramin) [SBM(G)] for rural areas through the Ministry of Drinking Water and Sanitation (MDWS), and the Swachh Bharat Mission (Urban) for urban areas under the Ministry of Urban Development. Accordingly, the Nirmal Bharat Abhiyan (NBA) has now been restructured into "Swachh Bharat Mission (Gramin) [SBM(G)]".

8.33.2 Under the programme, focus is on providing access to toilet facilities (individual household latrines and community toilets) to the rural population; carrying out extensive Information, Education and Communication (IEC) and Behaviour Change Campaign, with effective use of mass media, Inter Personal Communication (IPC) at the household level to change mind-set about sanitation and implementing Solid and Liquid Waste Management (SLWM) activities in rural areas to maintain cleanliness and hygiene in villages. According to Census 2011, only 32.7 per cent of total rural households had latrine facilities. The target for MDWS is to construct 1.5 crore Individual Household Latrines (IHHL) in 2016-17. As reported by IMIS website of MDWS, 938 lakh households, which is 51.76 per cent of total rural households of 1813 lakh in the country are reported to be covered under IHHL by March, 2016, out of which 176 lakh IHHLs have been constructed since the launch of SBM (G). Under the Swachh Bharat Mission (SBM) (Gramin), a household is provided a financial assistance of Rs.12,000 for a toilet (IHHL).The amount was shared by the Centre and the concerned State Government in 75:25 ratio till 2014-15. However, the Centre: State funding pattern has been changed to 60:40 for all the Sates except for 8 NE States, 3 Himalayan States where it is 90:10 since 2015-16. In urban areas, the unit cost of a household toilet is Rs.15,000-20,000, and the Central Government incentive for the construction of such toilet unit under the Swachh Bharat Mission (SBM) (Urban) was Rs.4,000 till 2014-15.

8.33.3 Apart from the above, Ministry of Rural Development will also undertake IHHL construction under MGNREGA (standalone) as well as IAY. All schools and Aanganwadi Centres are to be provided toilets which would be done through Ministry of HRD and Ministry of WCD, respectively. Besides, initiatives are also being taken by PSUs and corporates under Corporate Social Responsibility (CSR). With regard to sanitation, the major goal of the Twelfth Plan is to ensure that 50 per cent of the Gram Panchayats attain Nirmal Gram status by the year 2017. At the end of March 2016, out of 2.51 lakh Gram Panchayats, about 23045 (9.17 per cent) have been declared open defacation free (ODF).

8.33.4 The current Central outlay for rural sanitation for the Twelfth Five Year Plan under MDWS alone is Rs.37,159 crore. Out of this, Rs.14,098.10 crore have been utilised against a total budget allocation of Rs.14,175 crore during the first four years of Twelfth

Plan. The BE for SBM (G) during 2016-17 is Rs.9,000 crore. The balance funds required, in addition to the budgetary allocation for the Twelfth Plan, to achieve Swachh Bharat (Gramin) targets of the Plan have been proposed to be made available via contributions to the Swachh Bharat Kosh; Swachh Bharat Cess and through commitments under CSR. No additional requirement of funds during the Twelfth Plan has been contemplated from budgetary sources by the Ministry of Drinking Water and Sanitation. Further, since 14th Finance Commission provides for significantly higher devolution of funds to Local bodies, it is desirable that more funds are spent by these bodies to improve the status of basic services such as water supply, sanitation, sewerage, solid & liquid waste management, etc. in their respective areas.

8.34 Provision of Urban Amenities in Rural Areas (PURA)/ Rurban

8.34.1 PURA's objective was to bridge the rural-urban divide through provision of livelihood opportunities and urban amenities in rural areas. Started in 2004-05 on a pilot basis for three years, the scheme was restructured in 2010, with the implementing agency function shifted from the DRDA to private sector entities under the Public Private Partnership (PPP) framework. Amenities provided by the Ministry of Rural Development Schemes were water and sewerage, construction and maintenance of village streets, drainage, solid waste management, skill development and development of economic activities. The amenities provided under non-MoRD schemes were village street lighting, telecom and electricity. There are add-ons, and people-centric revenue earning projects which include village based tourism, integrated rural hubs, rural market, besides common service centres and warehousing for agriculture. PURA has been discontinued during 2014-15 and a new programme RURBAN with similar objectives announced by the Government. However, the ongoing projects under PURA will be pursued till their completion.

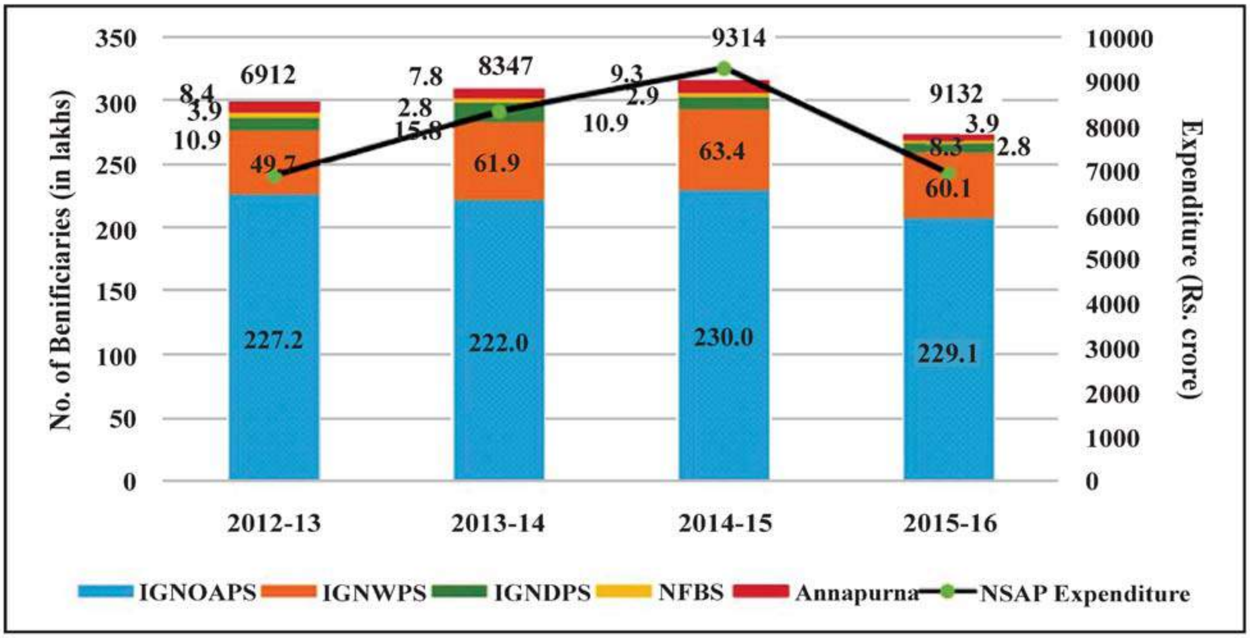
8.34.2 The Government of India launched the Dr. Shyama Prasad Mukherji RURBAN Mission on 21tst February, 2016 (approved by Union Cabinet on 16 September 2015) to deliver integrated project-based infrastructure in the rural areas. The RURBAN Mission aims at providing basic amenities in rural areas and check migration to cities. The scheme envisages development of economic activities, skill development and helping rural areas get efficient civic infrastructure and associated services. The preferred mode of delivery would be through PPPs using various scheme funds. The Mission will be linked to e-governance to achieve targets in a time-bound manner. Best practices of cooperatives, NGOs and other sectors can also be dovetailed into the scheme. The scheme has an allocation of Rs.300 crore (BE) during 2015-16 and the same amount has been allocated for the mission in FY 2016-17.

Social Security

8.35 National Social Assistance Programme(NSAP)

8.35.1 The NSAP has been in operation since 1995 to provide social security to the vulnerable sections of the society like old persons, widows and disabled falling in the BPL category. Implemented throughout the country, the programme has five components such as Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Indira Gandhi National Widow Pension Scheme (IGNWPS), Indira Gandhi National Disability Pension Scheme (IGNDPS), National Family Benefit Scheme (NFBS) and Annapurna Scheme. The NSAP was transferred to State Plans in 2002-03 and funds were released as Additional Central Assistance to the States. On 1st April, 2014, the NSAP Schemes were converted back to Centrally Sponsored Schemes and funds being released to the Consolidated Funds of the States. There is no change in the funding pattern of the Scheme in the 2015-16 Union Budget, and it would continue to be fully supported by the Union Government. The Ministry of Rural Development (MoRD) issues Guidelines and monitors expenditure but selection of beneficiaries and disbursal of payments is done by the State Governments. The number of beneficiaries and total expenditure under NSAP during the first four years of the Twelfth Plan is given in **Figure 8.6**.

Figure-8.6: Number of Beneficiaries and Expenditure under NSAP



8.35.2 The Twelfth Plan allocation for NSAP was Rs. 48,642 crore and the expenditure reported during 2012-13 to 2016-17 (September 2016) was Rs. 35,948 crore. During 2015-16 the allocation at BE stage was Rs.9,082 crore and expenditure reported was Rs. 6,930 crore. An allocation of Rs. 9,500 crore has been made during the current financial year 2016-17.

8.35.3 Keeping in view the emphasis of the Government on Direct Benefits Transfer, an attempt is being made to link NSAP beneficiaries to UID/DBT/biometrics. As on Sept., 2016 about 150 lakh beneficiaries have been covered by Aadhaar seeding out of 305 lakh digitized data of beneficiaries. Disbursements are made through banks or post offices, and 185 lakh beneficiaries have their bank accounts and 24.16 lakh beneficiaries have post office accounts. The amount for widows and disabled pension has been enhanced from Rs.200 per month to Rs.300 per month and on attaining the age of 80 years, beneficiaries under IGNWPS and IGNDPS are migrated to IGNOAPS for getting a higher amount of pension of Rs.500 per month.

8.35.4 A major issue under the scheme is proper identification of beneficiaries based on the Socio-Economic Caste Census (SECC), 2011, which has now been completed. The scheme does not cover a large number of potential beneficiaries as their number has gone up due to reasons like increase in life expectancy. The scheme is based on Census 2001 and needs to be reviewed in the light of Census 2011 or SECC-2011. The MoRD guidelines issued for NSAP in October, 2014 stipulate inclusion of categories like manual scavengers, persons affected by leprosy, AIDS/HIV, Cancer, TB and other serious ailments deserve special attention. Similarly transgenders, dwarfs, bonded labourers, women victims of crime and harassment, deserted women also deserve to be addressed on priority. Categories like HIV infected widows, divorced/ abandoned/ separated women, single women can also be added.

8.36 Pradhan Mantri Gram Sadak Yojana (PMGSY)

8.36.1 Rural Connectivity is a critical component in the socio-economic development of rural areas as it can provide amenities like education, health and marketing etc. The Government of India, as a part of its poverty reduction strategy, had launched Pradhan Mantri Gram Sadak Yojana (PMGSY) in the year 2000 as a Centrally Sponsored Scheme to assist States, although rural roads are in the State List under the Constitution. The primary objective of the programme is to provide good quality all-weather roads to all eligible unconnected habitations with a population of 500 (Census 2001) and above. In respect of the hill States, desert areas and selected tribal and backward districts under the Integrated Action Plan, the objective is still wider to connect habitations with a population of 250 and above with further relaxation of population category to 100 and above in certain blocks which are highly affected by LWE. PMGSY-II, focusing on consolidating existing rural road network by upgradation, renewal and maintenance of the vast network already created was launched during 2012-13. This Programme is also discussed in the Theme Chapter on Physical Infrastructure.

8.37 Saansad Adarsh Gram Yojana (SAGY)

8.37.1 SAGY, a new initiative in rural development, was launched by the Government of India on 11th October, 2014 with the objective that these Adarsh Grams (Model Villages) serve as the "nucleus of health, cleanliness, greenery and cordiality" within the village community. The scheme Guidelines call upon Members of Parliament (MPs) to make one village of their choice in their constituency, a Model Village by 2016, and another two villages by 2019. In phase I, as many as 500 of the total 543 Lok Sabha Members and 203 of the total 246 Rajya Sabha Members have identified the villages for the programme. Unlike other Schemes, SAGY does not look at the beneficiaries as receivers and the Government as the doer. Taking development to the doorstep of villages, the scheme aims to empower the villagers to make choices and provide them with opportunities to exercise these choices. The scheme will give direction, while the villagers are expected to use their ingenuity to pave their own path through hard work and entrepreneurial skills. Utilising the advantages of Jan-Bhagidari, the scheme will take initiatives in children's education, particularly smart schools, e-libraries, green schools, etc. The Model Villages will serve as demonstration villages for the surrounding areas. The Adarsh Gram selection is for a village having population of 3,000 to 5,000 in plain areas and 1,000 to 3,000 in hilly, tribal and difficult areas. The scheme would utilize, in a convergent manner, resources available from a range of existing schemes including Member of Parliament Local Area Development Scheme (MPLADS) and schemes of MLAs and CSR funds, and as such no additional funding is deemed necessary. The scheme will leverage the strengths of the private, voluntary and cooperative sectors. There will be post-project evaluations by competent independent agencies. Out of 703 Gram Panchayats identified for Village Development Plan (VDP) under SAGY, 671 VDPs have been uploaded in the website.

8.38 Plan Allocation and Expenditure of Ministry of Rural Development

8.38.1 The Plan allocations of the Ministry of Rural Development and Expenditure thereunder is given in the **Table-8.2**:-

Table-8.2: Plan Allocation & Expenditure of Major Programmes under Ministry of Rural Development

Budget Allocations for Major RD programmes **(Rs. in crore)**

Schemes	2012-13		2013-14		2014-15		2015-16		2016-17
	BE	Actual Expenditure	BE	Actual Expenditure	BE	RE	BE	RE	BE
Department of Rural Development									
MGNREGA	33000	30275	33000	32994	34000	33000	34699	36967	38500
IAY	11075	7869	15184	12984	16000	11000	10025	10025	15000
SGSY/NRLM	3915	2195	4000	2022	4000	2186	2505	2672	3000
PMGSY	24000	8884	21700	9805	14391	14200	14291	18291	19000
NSAP	8447	6546	9615	9046	10635	7241	9082	9082	9500
Department of Land Resources									
IWMP	3050	2891	5387	2275	3500	2319	1530	1530	1550
NLRMP	150	95	378	213	250	181	98	40	150
Total	**83637**	**58756**	**89264**	**69337**	**82776**	**70127**	**72230**	**78607**	**86,700**

Source: Ministry of Rural Development.Upto 2013-14, the funds were released as Additional Central Assistance under NSAP. From 2014-15 onwards, NSAP has been included as a Centrally Sponsored Scheme.

8.39 Rural Transformation - The Way Forward

8.39.1 Even though the share of agriculture as a percentage of GDP has declined over the years, it is imperative that without the growth of this sector, it would be extremely difficult to achieve the overall growth targets for the economy. Nearly two-thirds of the Indian population lives in rural areas and strategies for faster, more inclusive and sustainable growth must necessarily address the issues faced by the people living in the rural areas. Agriculture sector often faced serious stress in the recent past on account of inadequate or untimely monsoons or other calamities like floods, hailstorms, etc. It is noteworthy that even though the overall damage to the crop may not be significant at the national level, but for a large number of farmers the distress becomes quite devastating. These natural calamities are beyond the control of human beings but can be managed to reduce the adverse impact to the minimum extent possible. Besides risk reduction, it needs to be ensured that the farmers get a larger share of the price ultimately paid by the consumers. Therefore, the Union and State Governments need to work cohesively for improving the livelihoods of people living in rural areas. Firstly, agriculture as a profession needs to be made more remunerative. Periodic hike in MSPs would be required to cover increase in input costs but that alone may not suffice unless it reaches out to every farm household in the country. It needs to be ensured that the farmers of all regions, and not just of few States of the country, reap the benefits of MSP. This necessitates expanding the network of procurement as recommended by the Shanta Kumar Committee. Secondly, for crops which are not covered by Central procurement, alternative price support and market intervention schemes especially for commodities such as pulses and onions may need to be strengthened, both in the interests of the farmers and consumers. Thirdly, the Pradhan Mantri Fasal Bima Yojana launched in January, 2016 needs to be implemented on a scale to provide a risk cover to the farmers across the regions and commodities. The states need to create enabling environment for speedy implementation of the PMFBY. In the event of natural calamity, a minimum specified sum may be transferred into the farmers' Aadhaar seeded bank accounts for quick relief. Fourthly, the group formation of small and marginal farmers needs to be empowered with policy impetus towards agricultural marketing, financing, land sharing and land leasing. Collectively, these efforts would help in doubling the farmers' income by 2022 as envisaged in Union Budget 2016-17.

8.39.2 The rising absentee landlordism in many States has put large tracts of land out of productive use, as the landowners do not lease it due to fear of losing ownership to tenants. Further, small and marginal farm holders are looking for opportunities to raise their operational holdings by leasing in land. The net result is that some land is not used optimally and many smaller holdings are suffering from scale disadvantages. This requires substantive reforms in the land policy particularly at the States' level, to achieve the economies of scale in agriculture. In this context, promotion of contract farming, legislation on land leasing and encouraging concept of land sharing with some adaptation may lead to the desired vertical integration as a win-win situation for both farmers and landowners. The model land leasing Act prepared by NITI Aayog needs vigorous advocacy and persuasion so that the States may enact their leasing laws.

8.39.3 Another important issue is enhancement of investments in agriculture. The yields in India are much below global standards, and need to be raised significantly as the scope for increase in cropped area is fairly limited. The most important reasons for low average productivity is large scale dependence on monsoons and low level of investments both on-farm and off-farm. The enhanced investment, both public and private is required to develop these regions. Besides, Centre and States should together evolve a comprehensive set of policies to channelize greater private investments to address the issues of farm inputs, irrigation, marketing, post-harvest management, risk management, land development and capacity of institutions. Large price differential amongst different fertilisers, including on account of subsidy policies, have distorted the balanced application of fertilisers, which is rather skewed towards nitrogen. This can become a major impediment in further improving productivity and needs to be addressed through reforms in the fertiliser subsidy regime. Since much of the future growth is expected in non-cereals sector, it is important that horticulture, dairy, livestock, fisheries, etc. are provided necessary impetus so as to meet the future requirements of the country. A National Agricultural Market needs to be developed on priority. At the same time, it is important to create opportunities for livelihood of rural people outside the agriculture sector and linking them to the value chain.

8.39.4 The climate change remains a major challenge in view of its varied direct impact on yields of various crops, and also on livestock, dairy and fisheries; while further impacting price behaviour locally and sometimes globally. The significance of climate change in the agriculture sector was recognised and National Initiatives for Climate Resilient Agriculture (NICRA) for research and National Mission for Sustainable Agriculture (NMSA) for development were launched. These are key initiatives for implementing the adaptation and mitigation measures in agriculture and aim at transforming agriculture into a climate resilient production system. However, greater convergence of these initiatives is required across different schemes -both at Central and State levels. Pradhan Mantri Krishi Sinchai Yojana (PMKSY), as an overarching instrument for drought proofing, also needs to be meticulously implemented to achieve the target of *per drop more crop*.

8.39.5 Public R&D system in agriculture is inevitable in view of the diversity of the sector and its clientele. The experience shows that private sector evolved technologies, many a times, are beyond the normal capacity of small & marginal farmers. They are limited to select commodities and locations. As large part of the peasantry mostly resort to public evolved technologies and support, the public R&D system needs reforms for governance, accountability and efficacy for the public investment made.

8.39.6 The rural development programmes have made major strides in helping people come out of the poverty net. However, there are many issues that need to be addressed in the remaining period of the Twelfth Plan. First and foremost, it is important to curb the leakages and ensure that benefits directly reach the intended people. This would require strengthening delivery mechanisms, using ICT especially through the DBT mechanism and "JAM" (Jan Dhan- Aadhaar- Mobile) trinity, social audits and involvement of all stakeholders. The Pradhan Mantri Jan Dhan Yojana and recently launched social security schemes viz. Pradhan Mantri Suraksha Bima Yojana, Pradhan Mantri Jeevan Jyoti Yojana and Atal Pension Yojana, together have major potential to integrate a large segment of the population with the mainstream financial and insurance markets of the country. These must be dovetailed for comprehensive delivery of benefits to people.

8.39.7 Following higher devolution of resources to States as per the recommendations of the Fourteenth Finance Commission, many schemes for agriculture and rural development are expected to witness changes in the Centre-State sharing pattern. It is, therefore, pertinent that States increase their share wherever envisaged so that the schemes do not suffer on the ground. Further, Gram Panchayats (GPs) are also expected to get nearly Rs.2 lakh crore over a five year period (2015-20) coupled with additional resources being made available to them under schemes like MGNREGA. Being the Constitutional third tier of government and governance, GPs can play a major role in local development by converging resources over which they have a command. At the same time, the Ministry of Rural Development and Ministry of Panchayati Raj should provide technical assistance for such a process and build the capacity of States and Panchayats for carrying out this massive exercise in participatory planning. Likewise, the District Rural Development Agencies (DRDAs) can be restructured into professional organisations capable of coordinating and converging the different schemes for poverty alleviation/ elimination in a time bound manner. Other local bodies have also been granted significant resources as part of 14th Finance Commission devolutions, which can be effectively utilised.

8.39.8 Under MGNREGA, the emphasis needs to be towards works that are more productive, asset creating and substantially linked to agriculture and allied activities. Other issues that need to be addressed are capacity building of institutions, implementation of electronic fund management systems/ electronic muster rolls in all the States, putting in place grievance redressal mechanisms, framing rules of compensation in all the States and payment of wages within the prescribed time limit. Besides, to make the scheme more effective, the restriction of 40 percent limit on materials component may be relaxed at the Panchayat level.

8.39.9 The National Rural Livelihood Mission emphasizes both demand and supply side of financial inclusion. On the demand side, it envisages promotion of financial literacy among the poor and to provide catalytic capital to SHGs and federations. On the supply side, it focuses on coordination with the financial sector and encourages use of information, communication and technology based financial technologies, business correspondents and community facilities like 'Bank-Mitras'. The NRLM aims to follow saturation approach by ensuring that at least one female member from each identified rural household is brought under the SHG network in a time-bound manner. As indicated above, the introduction of DBT, PMJDY, payment of wages under MGNREGA through banks/ post office accounts etc. are other instruments to ensure financial inclusion of rural poor that need to be pursued. The issue regarding service charges payable under financial inclusion initiatives of the Government also needs to be addressed.

8.39.10 'Housing for All' by 2022 is a thrust area of the Government and needs to be implemented with missionary zeal. This would require integrated approach by putting in place appropriate set of policies that promote low cost housing and create greater transparency in the real estate markets. IAY scheme may also have to be re-examined from the point of view of the fact that there is a large segment of population that doesn't have access to appropriate housing, being not classified as the "Below Poverty Line" under the existing guidelines. The Socio Economic and Caste Census 2011, the provisional economic data of which has been released on 3rd July, 2015, can be used to extend benefits to all deserving population. Dissemination of appropriate building technologies, capacity building at various levels and grievance redressal are other areas that need to be addressed in the remaining period of the Twelfth Plan.

8.39.11 The Swachh Bharat Mission launched on 2nd October, 2014 needs to become a mass movement to make India Clean by 2nd October, 2019 as a befitting tribute to the Father of the Nation on his 150th birth anniversary. The focus, therefore, need not be only on constructing toilets in the households, or in the schools and anganwadi centres or setting up sanitary complexes, but it is equally important to carry out an extensive 'Information, Education and Communication' campaign so as to impart a behavioural change amongst the people for keeping their surroundings clean. Other stakeholders, including local bodies, and coverage through initiatives under Corporate Social Responsibility, need to be integrated with SBM so that the vision becomes a reality.

8.39.12 The National Social Assistance Programme currently cover old age, widows and disabled people. The eligibility criteria may need to be re-examined, keeping in view the vulnerability of a large section of the people of the country, preferably by using the Socio Economic and Caste Census data. The quantum of assistance also needs to be revised from time to time keeping in view the inflation. This, together with other social security and financial inclusion initiatives announced recently can potentially mitigate risks of vulnerable people and provide them some stable source of livelihood.

8.40 Learnings for the Future

8.40.1 After a remarkable performance of agriculture sector in the Eleventh Plan, the growth during Twelfth Plan has been fairly muted. Partly it has been on account of drought in three out of four years of the Twelfth Plan period. This has brought to the forefront a need for a strategy which on the one hand improves farmers' income and on the other hand reduces distress like situations. Various schemes for food security and poverty alleviation have mitigated part of the problems but yet there is a long way to go. While meticulous implementation of schemes and programmes on ground would be a key factor, the learnings from the Twelfth Planprovides many cues for future policy interventions, some of which are critically important. These include the following:-

(i) First of all, it is most important to de-risk agriculture. Today a large number of farmers find this means of livelihood unattractive due to lesser incomes and higher risk. To address this concern, Pradhan Mantri Fasal Bima Yojana needs to be implemented across all the States at the earliest. In the event of distress, the relief measures for farmers must be quick and transparent. Irrigated areas must be expanded on a fast track mode.

(ii) Government has stressed for moving beyond 'food security' to 'income security' and reorientation of the interventions in the farm and non-farm sectors to double the income of farmers by 2022. While this necessitates higher investment 'in' and 'for' agriculture (agri markets, irrigation, rural roads, etc), it also squarely requires reforms on land lease laws, fast-tracking APMC reforms and modification in restrictive rules under Essential Commodity Act for bringing economy of scale to operational holdings and better marketing avenues.

(iii) The farmers need to be incentivised to diversify their farm activities towards high value commodities and enhance the productivity with irrigation and technology upgradation. The value addition and connectivity from farm to market as well as competitive market are essential for better price realization and higher farm income. The occupational diversification from farm to non-farm activities would further augment the income of farmers.

(iv) Operational holdings need to be consolidated to make farm holding viable. To achieve, this, trust deficit between land owners and tenants needs to be removed through proper legislations. NITI Aayog has prepared a Model Agricultural Land LeasingAct. The States should consider enacting land leasing laws based on this model Act. Simultaneously, the land records need to be fully digitized and integrated with cadastral maps and registration processes.

(v) Reforms in agriculture R&D must be accelerated to provide adequate opportunity for private participation in developing market driven technologies. Agricultural extension system needs to be overhauled with greater emphasis on climate resilience and more efficient two-way feedback mechanism between farmers and technology developers.

(vi) We must move towards debottlenecking movement of agricultural commodities across the country and facilitate creation of national agricultural market. The States need to modify APMC Acts to favour electronic trading.

(vii) Technology must be embraced in all the sections of rural living be it in the context of providing information on agri-commodity prices or forecast about weather or getting social assistance through DBT or undertaking banking transactions in non-brick and mortar mode or getting information about the better ways of cropping. Seeding with Aadhaar needs to be given high importance for all the databases which should be able to interact with each other with due authorisation from beneficiaries.

(viii) Subsidies, be it for the purposes of food, fertilizers or other segments, must be targeted in a scientific manner. Wherever required, the results of Socio Economic Caste Census or other similar transparent mechanism may be used for better identification of beneficiaries. The model of subsidies needs to be carefully designed so that undue benefit is not cornered by people who can otherwise afford without the same. The usage of fertilizers also needs to be linked to Soil Health Cards.

(ix) There are many schemes of rural development which need to be converged for better outcomes. MGNREGA, with its large outlays can play a major role in rural transformation, but its activities must be defined in a manner that not only resolves the problems faced by people in rural areas but also provides a long term opportunity for sustainable livelihoods.

(x) It has been proved that people at large are very receptive to initiatives such as the Swachh Bharat Abhiyan and Pradhan Mantri Jan Dhan Yojana which can potentially make long term impact on people's lives and these must be further strengthened. Especially in case of PMJDY, it must not be restricted to only opening bank accounts. Rather, this is only a beginning and in due course, it should lead to developing habits of savings as also getting access to credit from the formal financial system. The cycle of borrowing to undertaking productive activities to earning higher incomes and repayments must be activated for all segments of rural population. Only then we would be in a position to ensure a more equitable and sustainable growth in the times to come.

9

Urban Transformation

9.1 Introduction

9.1.1 An efficient urbanisation matters to India on many counts. Firstly, despite a significant reduction in share of Agriculture and Allied Activities in India's GDP from around 51 per cent in 1951 to around 16 per cent in 2014-15, per cent of labour force employed in these sectors has almost showed an occupational stasis, decreasing from 70 per cent to only 54.6 per cent since 1951. For a rapid inclusive growth, a core imperative is faster creation of remunerative employment opportunities in non-farm sector. While there is some evidence of creation of non-farm employment in rural sector itself, if experience in other countries undergoing economic transformation is an indicator, much of such opportunities need to be created in urban sector including peri urban areas and therefore cities in India have to emerge as an 'Engine of Economic Growth'.

9.1.2 Secondly, Indian cities are visibly deficient in providing basic amenities to its citizens even at their current level of population. Assuming that rate of rural urban migration which has so far remained muted[1], would accelerate, cities have to create these amenities at a rate faster than what has been accomplished before. Lack of basic amenities affects a city in many ways that have been well documented. Poor infrastructure adversely affects the ability of cities in attracting investment in this globalized world. Coping cost as well as loss of productivity due to poor infrastructure has been documented to be significant[2]. It is also important to realise that the incidence of such coping cost is disproportionately higher on economically weaker section and other vulnerable groups, not only due to deficiency in provision of such facilities itself but also due to varying abilities of these Groups to access even freely provided amenities. A special mention needs to be made here in terms of availability of affordable public transport and its impact on energy footprint of the cities as well as in improving the outcomes of the city labour markets.

9.1.3 Thirdly, as the pressure on natural resources is increasing, sustainability of cities has emerged as a major concern. A marked deficiency in processing and scientific disposal of urban waste has resulted in a situation where Indian cities are polluting water bodies, degrading soil and environment at a much larger scale than they use these resources. Environmental sustainability of Indian cities is therefore a major imperative for guiding efficient urbanisation.

9.2 Major Trends in Urbanization

9.2.1 About 377 million Indians, comprising about 31 per cent of the country's population, live in urban areas according to Census 2011. While the definition of 'urban' differs across countries, the current level of urbanisation in India in per cent terms is smaller compared to other large developing countries, e.g. 45 per cent in China, 54 per cent in Indonesia, 78 per cent in Mexico, and 87 per cent in Brazil. The Twelfth Plan notes in details the trends in urbanisation[1] and projects that the process is set to

[1] Paras 18.6-18.10, pp 319-320, Volume II, Twelfth Five Year Plan.
[2] Paras 18.14-18.17 pp 321-322, Volume II, Twelfth Five year Plan.

accelerate[2]. After finalization of the Plan, census has released some more data and the following is noted:

a) **Emergence of Census towns:** Census 2011 notes that the number of towns in India increased from 5,161 in 2001 to as many as 7,933 (4,041 statutory towns and 3,892 census towns) in 2011. It points out that almost all of this increase was by growth in 'census' towns (which increased by 2,530) rather than 'statutory' towns (which increased by only 242). 'Statutory' towns are towns with municipalities or corporations. "Census town are settlements which have qualified the Census definition of "Urban" viz. (a) all places with a municipality, corporation, cantonment board or notified town area committee, etc. (b) all other places which satisfy the following criteria:

(i) a minimum population of 5,000

(ii) at least 75% of male working population engaged in non-agricultural pursuits; and

(iii) a density of population of at least 400 persons per square kilometer.

Hence these centers, despite having all the characteristics of an urban centre, continue to be statutorily rural and thus governed by rural governance structure.

b) Though urban population as a percentage of total population has been steadily rising there is as yet no evidence of any significant acceleration in its growth rate, though last decade witnessed a marginal rise. While it is true that during 2001-2011, for the first time India added more people in urban areas (90.98 million) than in rural areas (90.46 million), the annual exponential growth rate (AEGR), which had peaked during 1971-81, has in fact decelerated in recent decades though picked up only marginally during 2001-2011. The AEGR of urban population during the 1950s was 3.5 per cent. The 1970s, saw a very high urban growth of 3.8 per cent. The growth rate, however, came down to 3.1 per cent in the 1980s. It went down further to 2.73 per cent in the 1990s. The corresponding growth rate for 2001-2011 is 2.76 per cent. Comparison of growth rates between last two decades is at **Annexure-9.1** for major urban centers in India.

c) India has added urban population in all classes of cities. Population details of cities of different sizes are at **Annexure-9.2.** In urban India, there has been an increase in the concentration of people, economic performance and quality jobs in the metropolitan cities as compared to that of non-metropolitan cities and small order towns. Share of urban population in the metropolitan cities has increased from 37.8 to 42.3 per cent as compared to non-metropolitan Class I cities, where the same has decreased from 30.8 per cent to 27.9 per cent (though their numbers have gone up by 57) in the decade 2001-11. "The number of metropolitan cities have also increased from 35 to 52 during 2001-11. The growth rate of metropolitan cities have declined during 2001-11."

d) In the metropolitan cities, the trend of peripheralization is evident, with the population in the core city areas as a percentage of the total Urban agglomeration showing a decline of 1.5 percentage points in metropolitan cities from 72.7% to 71.2%, as compared to 4.5 percentage points from 90.2% in 2001 to 85.7% in non-metropolitan Class-I cities during 2001-11

9.3 Some of the implications of emerging trend in urbanisation are covered below:

a) While the growth in the Agriculture and Allied activities during Eleventh Plan was 4.1 per cent, which might have led to creation of non-farm employment in rural sector itself, a relatively modest rate of creation of employment opportunities (self-employment & wage employment) in urban sector may be the prime reason for this trend. In addition, the current urban regulatory framework may also have prevented the cities from becoming inclusive to the desired extent. Causative factors for a sluggish rate of urbanisation at this juncture, with particular reference to emerging trend in rural urban migration, need further exploration.

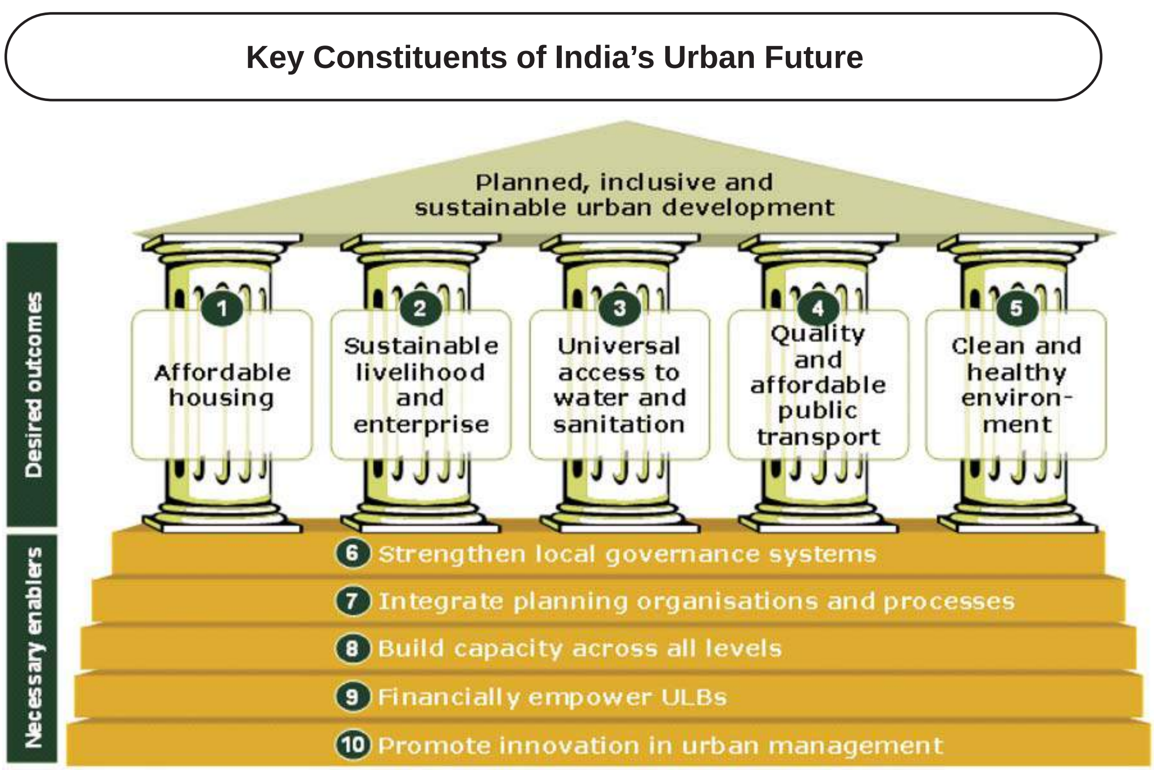
b) Emergence of large number of census town on the periphery of existing large towns indicates that peri-urban areas are zones of intense economic activities. Lack of any urban retrofitting amenities on such urban landscape is prohibitive. It is important that peri-urban areas are brought within the ambit of urban planning.

c) India's main national plan, namely the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was launched (details given in next section) with an avowed objective of making cities more inclusive. The scheme was launched in 65 Mission cities which were relatively large.The reasons for a deceleration in urban growth rate in many of these Mission cities needs to be further explored.

9.4 Approach recommended in the Twelfth Plan and Achievements

9.4.1 Subjects like water supply and sanitation, city transport, land use pattern are enumerated in State List Schedule 7 of the Constitution. In addition, Schedule 12 of the Constitution, inserted by the 74th Constitutional Amendment Act 1992, lists 18 functions as municipal functions. However, as an efficient urbanisation is a key requirement for achieving faster, more inclusive and sustainable development of the country, Government of India has been assisting the States in managing urbanisation.

Figure 9.1



9.4.2 The Twelfth Plan clearly recognized that besides providing financial assistance, a prime function of Government of India is to incentivise such structural reforms which allow the cities to discharge their functions more efficiently. It identified key enablers for efficient urbanisation and its desired outcomes in **Figure 9.1**.

9.4.3 The Plan made a series of recommendations across all these key enablers. In addition, the Plan made specific recommendations for expanding affordable urban transport network, for addressing housing needs and for improving the earning potential of urban poor. Major recommendations made in the Plan and achievements are discussed in ensuing paragraphs.

9.5 National Urban Renewal Mission

9.5.1 Since 2005, the approach of Government of India for assisting States to bring about an efficient urbanisation is largely embodied in its flagship programme viz. the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). The underlying assumptions made regarding urban sector and strategy employed to address through this programme need a review to examine their relevance in the present context as it would help in shaping future strategy. It is therefore instructive to look at the programme in entirety and not confine to the experience gained in first three years of the Twelfth Plan.

9.5.2 It was assumed that a major obstacle to efficient urbanisation is inefficient governance structure at city level despite requisite decentralization mandated under the 74th CAA. The Urban Local Bodies, which are to manage the cities, were financially weak and having poor capacities. In many cases, they were trapped in a low level equilibrium as due to poor capacity, limited functions were assigned to them. Their finances were weak and uncertain and hence they were not in a position to draw a robust urban plan. It was also recognized that urban governance structure is fragmented and thus institutional arrangement to ensure participation of citizenry was very weak.

9.5.3 A central problem recognized was the lack of any robust spatial plans of cities consistent with aspirations of the people. As of now, out of 4,041 statutory towns, Master Plans have been drawn in about 2,200 cities. Ministry of Urban Development has been advising the State Governments to expedite the preparation of Master Plan by using GIS and Remote Sensing Technique. As a symbol of an efficient third tier government, the holistic development of cities should be in accordance with such plans developed through participatory process. Of particular importance is integration of land use pattern with transport planning in a city.

Table 9.1: Urban Reforms and their Broad Objectives

Focus area	Reforms
Empowering Urban Local Bodies and improvement in Municipal administration	Implementation of decentralization measures as envisaged in 74th CAA including transfer of 18 functions to ULBs; e-Governance set up at ULBs; Adoption of accrual based double entry system of accounting in ULBs Administrative and structural reforms.
Improvement in city level planning	Constitution of Metropolitan Planning Committees and District Planning Committees.
Improvement in financial position of ULBs and securing finances for projects	Levy of reasonable user charges; Property tax: 85 per cent coverage and 90 per cent collection efficiency; 100 per cent recovery of O&M cost of water supply and solid waste management; Encouraging Public Private Partnership.
Pro-poor urban reforms	Earmarking of budget for urban poor. Earmarking of 20-25 percent of developed land for LIG/EWS category in housing projects and provision of basic services for poor.
Removing distortions in urban land	All planning related reforms: reform in rent control Act, rationalisation of stamp duty to not more than 5 percent; repeal of Urban Land Ceiling & RegulationAct; computerized registration of land and property and introduction of property title certification system. Simplification of legal and procedural framework forconversion of agricultural land for non-agricultural purpose and Revision in building bye laws - streamlinethe approval process.
Sustainability, community participation and transparency	All planning related reforms; Bye laws for water harvesting, re-use and re-cycled water; Enactment of Community Participation Law and Public Disclosure law.

9.5.4 As the passage of 74^{th} CAA in 1992 did not lead to any significant empowerment of ULBs, the obstacles outlined above were sought to be addressed through incentivizing the States in undertaking urban reforms. Hence 23 urban reforms were incentivised under JNNURM; their focus area may be broadly indicated in **Table 9.1**.

9.5.5 Underlying strategy of urban renewal mission:

a) **Emphasis on 65 Mission cities**: About 70 per cent of JNNURM outlay was meant for 65 relatively large or important cities (like State Capitals or heritage cities with tourist potential), the central idea being that these cities have larger potential to emerge as engines of growth and secondly, as these cities would develop, they would have a 'demonstration effect' on other cities where development could be taken up by States.

b) **Main elements of design:** Reforms fall within the purview of State Governments. Hence JNNURM was designed with the following broad arrangement:

   i. For accessing Central Assistance, cities were to prepare City Development Plans through a participative process.

   ii. Central Government was to take up projects situated in such plans. The percentage of Central Assistance was also calibrated, with larger cities receiving lesser percentage of total project cost as Central Assistance.

   iii. States entered into an MoU with Ministry of Urban Development (MOUD) agreeing to a 7 year timeline for completion of the 23 reforms.

   iv. The first installment of Central Assistance was released on sanction of project. Subsequent installments were to be released on the basis of achievements in completing reforms as per agreed timelines and utilization of earlier installments.

c) **An umbrella scheme for urban sector for requisite convergence of effort:** JNNURM was implemented under 4 components. For providing urban infrastructure relating to water supply, sewerage, solid-waste management, roads etc., Urban Infrastructure and Governance (UIG) component for 65 Mission cities, and Urban Infrastructure and Development Scheme for Small and Medium Town (UIDSSMT) for non-Mission cities were covered. Another component, namely Basic Service to the Urban Poor (BSUP) covers Mission cities, whereas for non-Mission Cities, Integrated Housing and Slum Development Programme (IHSDP) had also been launched. However, over 80 per cent of the non-mission cities could not access the grants due to inability in raising matching resources and in preparing viable detailed project reports. Their limited competence in implementation of the reforms also stood in the way.

9.6 Changes recommended by Twelfth Plan in National Urban Renewal Mission

9.6.1 The Twelfth Plan identified some of the learnings of the implementation of JNNURM and recommended re-launch of these programmes with broadly following changes:

a) **Emphasis on medium and small towns as well**: Taking cognizance of emergence of a large number of census towns and addition of urban population in large as well as smaller towns, the Plan questioned the basic assumption that larger funds flow should take place only to large cities. Instead the Plan recommended development of a suitable portfolio of cities, leaving the choice of selection of such cities with the States.

b) **According more flexibility to States in choosing and sanctioning the project**: The Plan recommended that Central Ministries may approve the plan and assist the States in operationalization of the plans.

c) **Emphasis on drawing spatial development plans through participative process and prioritize projects on the basis of such plans.**

d) **Large basket of urban reforms including introduction of second generation reforms**: The Plan recommended a larger basket of reforms as in many cities, thanks to JNNURM, stage was set for second generation reforms like setting up of regulator for municipal services, establishing municipal cadres, specific reforms related to water, sanitation and transport sector.

e) **Simplification of release of central assistance**: while maintaining that reform linkages in the programme be strengthened, it recommended a simplified process of release of Central Assistance and recommended fungibility of Central Assistance over a range of projects.

f) **Capacity building and a 2 year transition phase.**

9.7 Progress under JNNURM

9.7.1 As a large number of projects were incomplete by March, 2012, the window for releasing installments for these projects was extended till March, 2014. In addition, the Ministry undertook projects in critical areas in the transition phase of the programme, which started in the fiscal year 2013-14. A major stress in the transition phase was on public transport. The JNNURM Mission comprising the IHSDP and BSUP components have been up extended till 31.03.2017 for completion of projects that were sanctioned within 31.03.2012.

9.7.2 JNNURM led to a significant step up in investment in urban sector, though far lower than what had been normatively estimated as required investment by Dr. Isher J. Ahluwalia High Power Expert Committee (March, 2011). As indicated in the **Table 9.2**, while Centre committed Rs. 62,845.03 crore as assistance to States, the total cost of 3324 projects was Rs.1,25,816.14 crore, clearly indicating that objective of leveraging Central funds (by around a factor of 2) was realised and JNNURM indeed was instrumental in a quantum jump in investment in urban sector in India.

Table 9.2: Progress under JNNURM & RAY as in April, 2016

	UIG**	UIDSSMT**	BSUP	IHSDP	RAY	Total
No. of Projects sanctioned	595	1036	478	1,032	183	3324
Total cost of project (in Rs. cr)	64579	20735	23130.82	9649.87	7721.45	125816.14
Total ACA Committed (in Rs. cr)	26780	14994	11262.35	6202.72	3605.96	62845.03
Total ACA released (in Rs. cr)	22010	12929	11464.27*	6434.07*	1978.74	54816.08
Percent of ACA released to ACA sanctioned (in per cent)	82	86	102	104	55	87
No. of DU approved in lakh (BSUP, IHSDP and RAY)	—-	—-	791851	456650	141848	1390349
No. of Dwelling units completed (BSUP, IHSDP and RAY)	—-	—-	658683	352096	20954	1031733

*Excess release is due to cancellation/curtailment of non-starter projects/DUs.

** Progress as on 31st March, 2016.

9.8 Success in incentivizing urban reforms

9.8.1 The programme brought the issue of undertaking urban reforms at the centre stage. States, on their own as well as due to reform linkages in the programme, initiated the processes of reforms mandated under the Scheme though there are significant inter-state variations in achievements of these reforms. Progress in some of the key reforms, like transfer of 18 services to ULBs, reforms for undertaking robust participatory urban planning, rationalization of user charges, modification in Rent Control Act etc. remained modest. More importantly, the broad objectives for which these reforms were mandated to address (**refer Table: 9.3)** still constitute the major challenges in India's urbanisation agenda, giving rise to perception that actual implementation of many completed reforms has left much to desire. This also underlines the need for maintaining continued reform focus in interventions by different level of Governments.

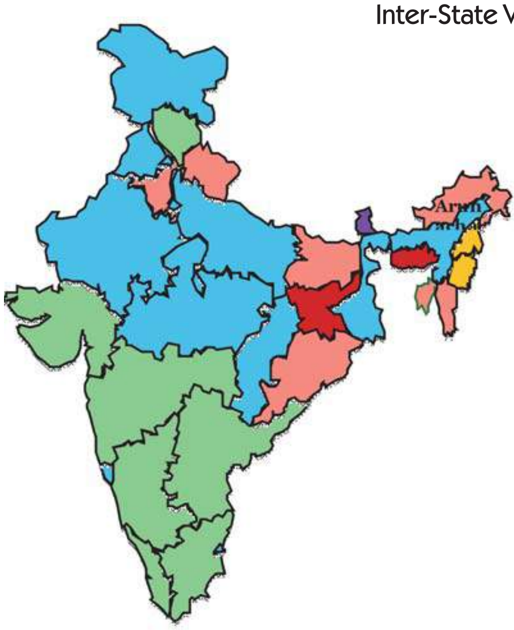
Table 9.3 : State / UT wise Achievement of Urban Reforms

Achievement of urban reforms	No. of States/UTs	States/UTs
90 per cent and above	8	Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Tamil Nadu, Telangana
Between 80 per cent and 89 per cent	12	Assam, Chandigarh, Chhattisgarh, Delhi, Jammu & Kashmir, Madhya Pradesh, Puducherry, Punjab, Rajasthan, Uttar Pradesh, West Bengal, Goa
Between 70 per cent and 79 per cent	7	Arunachal Pradesh, Bihar, Haryana, Mizoram, Odisha, Tripura, Uttarakhand
Between 60 per cent and 69 per cent	2	Jharkhand, Meghalaya
Between 50 per cent and 59 per cent	1	Sikkim
Less than 50 per cent	2	Manipur, Nagaland.

9.8.2 The inter-State variation in progress of reforms is depicted in **Figure 9.2:**

Figure 9.2

Inter-State Variation in Progress of Reforms



Code	Achievement	No of States/UTs
A+	90 per cent and above	8
A	Between 80 per cent and 89 per cent	12
B	Between 70 per cent and 79 per cent	7
C	Between 60 per cent and 69 per cent	2
D	Between 50 per cent and 59 per cent	1
E	Less than 50 per cent	2

9.9 Completion of Projects and Committed Liabilities

9.9.1 The **Table 9.4** indicates that at present a large number of projects are still incomplete. As these projects are in critical sub-sectors, their early completion is desired.

Table 9.4: Progress of Incomplete Projects under UIG, UIDSSMT, BSUP, IHSDP & RAY

Scheme	Projects sanctioned during Mission Phase i.e. prior to March, 2012 and eligible for funding under AMRUT				Projects under transition phase sanctioned between March, 2012-14				Total
	No. of projects	ACA committed (Rs. cr)	ACA released (Rs. cr)	Balance (Rs. cr)	No. projects	ACA committed (Rs. cr)	ACA released (Rs. cr)	Balance (in Rs. cr)	Balance ACA (Rs. cr)
UIG	71	3912	2968	944	61	2154	742	1412	2356
UIDSSMT	31	461	335	126	235	4339	2990	1349	1475
Total	**102**	**4373**	**3303**	**1070**	**296**	**6493**	**3732**	**2761**	**3831**

Progress of Incomplete of Projects under BSUP, IHDSP& RAY

Scheme	Projects sanctioned prior to March, 2012				Projects under transition phase sanctioned between March, 2012-16			
	No. of incomplete projects	ACA committed (Rs. cr)	ACA released (Rs. cr)	Balance (Rs. cr)	No. of incomplete projects	ACA committed (Rs. cr)	ACA released (Rs. cr)	Balance (Rs cr)
BSUP	424*	11262.35	11464.27*** (Including excess release of Rs.688.83 cr. in projects)	486.92#	##	–	–	–
IHSDP	941**	6202.72	6434.07*** (Including excess release of Rs.384.02 cr. in projects)	152.66#	##	–	–	–
RAY	8^	210	100.92	109.08	166^^	3395.96	1877.82*** (including excess release of Rs.383.19cr in projects)	1901.33#
Total	**1373**	**17675.07**	**17999.26**	**748.66**	**166**	**3395.96**	**1877.82**	**1901.33**

* Out of 478 sanctioned projects

** Out of 1032 sanctioned projects; *** Excess release due to cancellation/curtailment of non-starter projects/DUs; # while releasing in projects, adjustment is made wherever feasible, against excess released due to cancellation/curtailment of non-starter projects/DUs; ## No projects of BSUP & IHSDP were sanctioned in this period; ^ out of 16 projects, 8 projects were completed; ^^ out of 167 projects, 1 project has been completed

9.10 Relevance of Urban Renewal Strategy and Recommended Guiding Principles

9.10.1 As mentioned earlier, urban sector is largely a State subject. The recommendations of the 14th Finance Commission (FC) have important bearing on the respective roles of the GOI, States and local governments in the sector. (Box 9.1)

Box 9.1
Recommendations of 14th Finance Commission, accepted by Government

i. To increase the devolution to States in Union's net Tax receipt from 32 per cent to 42 per cent. This recommendation has been accepted by GoI and as against devolution of Rs. 3.48 lakh crore to States in 2014-15, the devolution in 2015-16 would be Rs. 5.26 lakh crore which is an increase of Rs. 1.78 lakh crore approximately.

ii. For Urban Local Bodies, the FC has recommended following grants for the period of 2015-20:

a. Basic Grant: Rs. 69,715.03 crore

b. Performance grant: Rs. 17,428.76 crore

c. Total: Rs. 87,143.79 crore

9.10.2 Following recommendations are being made as part of general approach for efficient urbanisation:

A) Based on recommendations of Isher J. Ahluwalia, High Power Expert Committee (HPEC), the Twelfth Plan had recommended that national urban renewal mission should commit 0.25 per cent of GDP, as this was the projected gap in the municipal finances as a whole. The Plan had also endorsed recommendations of HPEC on strengthening municipal finance which included inserting a Local Bodies Finance List (LBFL) along the lines of the Union and State Lists; Empowerment to ULBs to exclusively levy property tax, profession tax, entertainment tax, and advertisement tax and retain the whole of their proceeds; Constitutionally ensuring sharing of a pre-specified percentage of revenues from all taxes on goods and services etc. In view of recommendations made by the 14th FC, the above position has altered. Hence, while GoI would continue to assist the States in urban sector, its share in projects may suitably get reduced due to larger fiscal space already made available to States. This also gives an opportunity to implement the Scheme on general pattern of fostering competition among States for Central funds. Recommendations of HPEC regarding devolution of funds from State to ULBs continues to remain relevant and stands endorsed.

B) The enablers for efficient urbanisation, identified in the Twelfth Plan (refer para 9.4 above) are still relevant and strengthening of these enablers should continue to be the main strategy for urbanisation. Since Spatial Urban Planning through participatory process is the starting point for any efficient urbanisation, it is specifically recommended that States may complete drawing of such plans in all cities by the end of the Twelfth Plan. In this regard, Ministry of Urban Development may continue to work with States to ensure that some of the key recommendations regarding urban planning viz. integration of land use with transport planning and Transit Oriented Development are mainstreamed. A particular reference is made in this regard to the Plan recommendations of strategic densification in cities and readjustment methods as an instrument for boosting availability of scarce land for efficient urbanisation.

C) The principles identified in the Twelfth Plan for efficient urbanisation continue to remain quite relevant and should guide the urbanisation process. These principles are:

i) More flexibility to State Governments in managing urbanisation

ii) Emphasis on developing a suitable portfolio of cities rather than concentrating only on large cities and inclusion of peri-urban areas for urban planning

iii) **Drawing spatial development plans through participative process**

iv) **Large basket of urban reforms with more flexibility to States to complete them,** while an alternative is to incentivise a smaller set of doable reforms, mandating a large set of reforms including second generation reforms has the advantage of developing a road map for transformation of urban landscape in India.

v) **Encouraging private investment under PPP arrangement.**

vi) **Capacity building in urban sector**

vii) **Convergence across activities of different Ministries:** it is getting increasingly clear that efficient urbanisation involves a series of interconnected activities often falling within domain of different Ministries and different levels of Government. Initiatives like Swachh Bharat Mission, Housing for All, and creation of jobs in urban areas require convergence in strategisation as well as implementation. As recommended in the Twelfth Plan, ULBs should become the focal point for all citizen related services. In this regard, the 14th FC has recommended that municipal budgets should reflect all receipts, including receipts from Government of India, and all expenditure.

D) There are a large number of projects sanctioned under the earlier programme of JNNURM which should be completed on priority.

9.11 Sector-wise Approaches, Schemes and Recommendations

9.11.1 The preceding paragraph outlines the continued relevance of approach recommended in the Twelfth Plan key enablers and guiding principle for efficient urbanisation with some modification. In the succeeding paragraphs, an appraisal of development in the first three years of the Plan and emerging course of action are outlined.

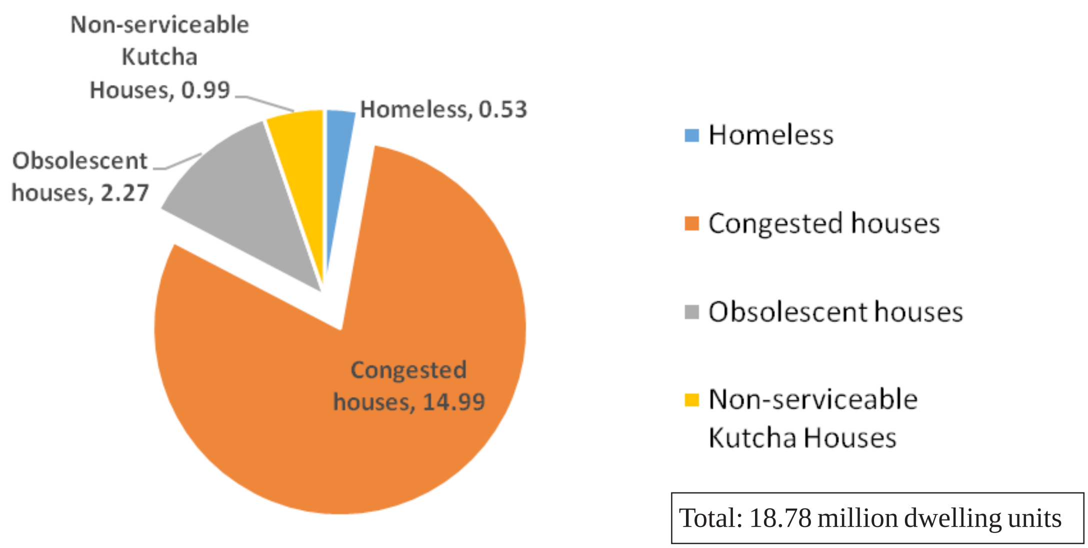
9.12 Housing for All

9.12.1 The Government endeavours to ensure *pucca* housing for every family by the 75th year of Independence (2022). It also aims to provide these houses with basic amenities: water, sanitation, electricity, etc. These, perhaps are quite ambitious pronouncements, given the extent of deficiency of housing in India and limited access to basic services by poor. On implementation, they will also be game changers in many ways. Firstly, as one would expect, since housing deficit is most severe at low income level, decent housing would considerably uplift standard of living of these households. Secondly, in urban India, an overwhelming percentage of workers are engaged in 'informal sector.' Many of these workers live in slums or low quality houses where they face a very high coping cost due to deficiency in basic amenities. Poor living condition also adversely affects their economic productivity. Hence provisions of housing with these services are also productivity enhancing measures. Thirdly, income and output multiplier effect of investment in construction sector has been estimated to be very high. A progress towards ensuring housing to all would also result in increased investment in this sector thereby raising the rate of creation of much needed jobs in Indian cities.

Extent of Problem

9.12.2 The total urban housing shortage in 2012 had been estimated at 18.78 million dwelling units (DU) by, Report of the Technical Group on Urban Housing Shortage (TG-12) (2012-17)headed by Prof. Amitabh Kundu as shown in Figure 9.3.

Figure 9.3 : Shortage of Urban Housing (2012)



9.12.3 About 0.53 million households are in near homeless condition, i.e. they are without a roof and the best cases for a positive and immediate intervention by Government. Majority (80 per cent) of the shortfall is on account of congestion, which is defined as households in which married couples have to share a room with another adult.

9.12.4 In the first three year of Plan, the approach followed by Government may be broadly classified as follows:

a) Measures for promoting affordable housing and their Outcomes

9.12.5 The underlying approach in this regard includes both demand side and supply side interventions. For increasing demand of affordable housing - Interest subvention scheme providing 5 per cent rebate on housing loan for Economically Weaker Section and Low Income Households and for encouraging supply - providing financial assistance for affordable housing projects need to be intensified. Besides, as stated earlier, to ensure availability of urban land at reasonable price, JNNURM mandated many reforms: Repeal of Urban Land Ceiling Restriction Act, 1976 (ULCRA), rationalization and simplification of urban land use policy, reservation of 20-25 per cent developed land for housing for Economically Weaker Section (EWS), modification in Rent Control Act etc. need to be taken forward.

b) Measures for Slum Rehabilitation

9.12.6 Rajiv Awaas Yojana (RAY), envisaging slum-free India was launched in June, 2011 in two phases; the preparatory phase for a period of two years, which ended in June, 2013, and then implementation phase. The Government of India launched implementation phase of RAY as a Centrally Sponsored Scheme on 3rd September, 2013 for the period of 2013-2022. The scheme mandated assignment of mortgage-able and renewable, long-term inheritable lease rights to slum dwellers. Besides States were to bring out three more reforms e.g. Reservation of 15 per cent of residential FAR/FSI or 35 per cent of dwelling units for EWS/LIG, in all future housing projects, earmarking of 25 per cent of the budget of municipality to provide basic services to the urban poor and setting up of a municipal cadre for social/community development and urban poverty alleviation during the Plan period.

9.12.7 It is important to realise that strategy of providing budget funded dwelling units is unsustainable due to budgetary constraints as well as capacity constraints. Hence, the main strategy for ensuring housing for all is required to be multi-pronged: promoting affordable housing by making supply and demand side interventions, promoting rental housing instead of sole reliance on ownership based housing and rehabilitation of slums through innovative financing strategy. Budgetary funding is recommended only in such slum rehabilitation projects where alternative financing is not possible.

9.12.8 The Government of India, as part of Urban Rejuvenation Mission has launched in June, 2015 a Comprehensive Mission viz "Pradhan Mantri Awas Yojana (PMAY)" to assist States/UTs for achieving the goal of providing houses to all by 2022. Important elements of this strategy may be broadly classified as follows:

a) Rehabilitation of existing slum dwellers, using land as resource through participation of private developers *in situ*, wherever possible and in unavoidable cases by relocation.

b) Promotion of affordable housing through credit linked subsidy.

c) Affordable Housing in partnership.

d) Subsidy for beneficiary led individual house construction or enhancement.

9.12.9 Further, in Union Budget 2016-17, Government has announced the following measures to promote affordable housing:

a) 100 per cent deduction for profits to an undertaking from a housing project for flats upto 30 sq. metres in the four metro cities and 60 sq. metres in other cities approved during June, 2016 to March, 2019 and completed within 3 years of approval. Only Minimum Alternate Tax will be applicable to these undertakings.

b) Deduction of additional interest of Rs. 50,000 per annum for the 'first – home buyers', for loans upto Rs. 35 lakh, provided house value does not exceed Rs. 50 lakhs.

c) Exemption of Dividend Distribution Tax on distribution made out of income of SPVs to the REITs and INVITs, to facilitate investments in REITs.

d) Exemption of service tax on construction of affordable houses upto 60 square metres under any scheme of the Central or State Government including PPP schemes.

e) Extension of excise duty exemption, presently available to Concrete Mix manufactured at site for use in construction work at such site to Ready Mix Concrete.

9.12.10 It may be noted that compared to the earlier approach of explicitly seeking land for affordable housing through reforms, the focus suggested here is to internalize the reforms, as projects under this head would promote using land based financial instrument as well locating such projects in areas of intense economic activities.

9.12.11 Affordable housing is not possible unless land is made available for this purpose. Besides identifying and reserving land parcels for affordable housing, a major reform which needs to be the cornerstone of strategy, is to make suitable modifications in the existing urban planning norms, with lead role of States. In addition, integration between land and transport planning is needed so that such affordable housing is linked with public transport. The true potential of construction sector, which has high capacity of generating employment, can be realised only if the building norms, land conversion process and approval processes are streamlined and made transparent. States can also play an important role in encouraging cost saving new technologies of construction so that local material is used. Further, it has been estimated that there are about 10 million vacant houses in urban India. Besides, within cities, there are many parcels of land which are inefficiently utilized or are vacant. Discouraging these tendencies would not only free land for smart cities and affordable housing, but also offer an opportunity to generate much needed resources for financing urban Infrastructure. These should be focus of the Ministry in the remaining Plan period.

9.13 Water Supply & Sanitation and Implementation of Swachh Bharat Mission

9.13.1 An appropriate approach in water supply and sanitation has twin advantages, it helps the cities to improve provision of basic services to its citizenry including the urban poor and secondly, the very sustainability of cities and surrounding environment are crucially dependent on the strategy followed in this sector. The Twelfth Plan recommends (para 18.116 to 18.130 of volume-II of the Twelfth Plan, that this sector should continue to be the focus of the successor scheme of JNNURM, and more importantly identified a list of reforms which need to be incentivized.

9.13.2 The over-all Central assistance in water and sanitation since 2005 till March, 2016 is given in **Table 9.5** which indicates that roughly 57 per cent of central assistance has been in this sector under JNNURM.

Table 9.5 Central Assistance in Water & Sanitation

Particulars	UIG		UIDSSMT		Total	
	No. of projects	ACA Committed (in Rs. cr)	No. of projects	ACA Committed (in Rs. cr)	No. of projects	ACA Committed (in Rs. cr)
Water supply	186	10697	563	9303	749	20000
Sewerage	122	7190	120	3259	242	10449
Drainage	76	3342	70	696	146	4038
Solid waste management	44	1092	63	323	107	1415
Total	**428**	**22321**	**816**	**13581**	**1244**	**35902**

9.13.3 Important reforms identified in the sector under Twelfth Plan and desired outcomes are given in **Box 9.2** for ready reference.

Box 9.2: Reforms in Urban Water and Sanitation and desired outcomes

i. Enact bylaws for re–use of recycled water.
ii. Have road map for bringing down wastage.
iii. Draw up a roadmap i.e. City sanitation plan in accordance with the Urban Sanitation Policy.
iv. Set tariffs on a scientific basis with cross subsidised tariffs for the economically weaker sections.
v. Draw up demand management measures.
vi. Formulate ground water use by laws and enforce effectively energy conservation measures especially in pumping.

State Level Reforms

vii. Set–up a regulator for the sector.
viii. Introduce policies to augment bulk water and resource allocation plans in alignment with the basic requirements of the city.
ix. Transfer the water supply function fully to the cities.
x. Follow the three Rs- Reuse, Reduce, Recycle policy for waste management based on the quantum generated.
xi. Provide incentives for waste water recycling policy.
xii. Prepare a regional solid waste management arrangements (to have larger aggregation and economies of scale).
xiii. Prepare implementable PPP policy for cities.

Desired Outcomes

xiv. Universal Access to Water and Sanitation.
xv. 100 per cent Metering of water supply.
xvi. Opt for 24x7 water supply, wherever possible and feasible.
xvii. Steadily bring down distribution inefficiencies by reducing wastage of water closer to international best practices. Commit to given number of hours of supply and be accountable for it through citizen charters.
xviii. Commit to quality of water to be supplied.
xix. Ensure that cities are free from open defecation and take measures for providing toilets.
xx. Provide sufficient no. of public toilets/urinals in city.
xxi. 100 per cent collection of garbage from houses/establishments and straight transportation for disposal.
xxii. Conversion of waste to energy/other forms.

9.13.4 The current challenges of water and sanitation is aptly summarized[4] as follows:

'The Indian economy and society already face daunting challenges in the water sector, as we move into the second decade of the 21st century. The demands of a rapidly industrializing economy and urbanizing society come at a time when the potential for augmenting supply is limited, water tables are falling and water quality issues have increasingly come to the fore. As we drill deeper for water, our ground water gets contaminated with fluoride and arsenic. Both our rivers and our groundwater are polluted by untreated effluents and sewage, continuing to be dumped into them. Many urban stretches of rivers and lakes are overstrained and overburdened by industrial waste, sewage and agricultural runoff. These waste waters are overloading rivers and lakes with toxic chemicals and wastes, consequently poisoning water resources and supplies. These toxins are finding their way into plants and animals, causing severe ecological toxicity at various trophic levels. In the developing cities, it is estimated that more than 90 per cent of sewage is discharged directly into rivers, lakes, and coastal waters, without treatment of any kind. In India, cities produce nearly 40,000 million litres of sewage every day and barely 20 per cent of it is treated. Central Pollution Control Board's 2011 survey states that only 2 per cent *towns have both sewerage systems and sewage treatment plants.Climate change poses fresh challenges with its impacts on the hydrologic cycle. More extreme rates of precipitation and evapo-transpiration will exacerbate impacts of floods and droughts. More intense, extreme and variable rainfall, combined with lack of proper drainage, will mean that every spell of rain becomes an urban nightmare as roads flood and dirty water enters homes and adds to filth and disease'.*

9.13.5 The challenges in sanitation sector are enumerated in **Box 9.3.** The combined effect of deficiencies in urban water and sanitation sector has resulted in a much larger contamination of natural resources, water including ground water, soil and atmosphere than what cities actually use.

Box: 9.3 - Sanitation: current challenges

a. As per census 2011, 12.6 per cent household in urban and about 67 per cent household in rural areas are forced to open defecation.

b. Piped sewage coverage in rural area is about 12 per cent and in urban area 33 per cent. The actual treatment of the sewage is less than the installed capacities in sewage treatment plants.

c. Coverage by septic tank and other such systems in rural areas is 25 per cent and in urban areas 40 per cent.

d. Combining (b) and (c) above, 63 per cent of rural household and 27 per cent of urban household are without any sewage/septic tank connection. However, what is missing in this statistics is the extent of discharge of black water flowing out of septic tanks. Due to construction of storm drainages, there are many cases where such discharge routinely gets mixed in the drain system of a city and pollutes a much larger volume of water.

e. India has the processing capacity of only about 30 per cent of solid waste that it generates. It is dumping un-processed waste in landfill sites or in areas outside cities.

f. An area requiring special attention is sanitation facilities at Railways stations and handling of open discharge in trains. India has 8,000 plus railways stations. All these have toilet facilities but their maintenance leaves much to desire. To address the problem of open discharge of excreta from moving trains, while Railways have started using bio toilets in newer coaches, conversion of 30,000 existing coaches is a challenge.

[4]*Excerpt from Dr. Mihir Shah: Urban Water System in India: A way forward, (2014) ICRIER, New Delhi.*

9.13.6 The Government of India has launched Swachh Bharat Mission and is also taking a series of initiatives in the water sector. Following brief points are suggested:

i. The approach of addressing challenges of water sector in India must be holistic. This requires Central Ministries, like Ministries of Water Resources, Agriculture, Urban Development, Drinking Water and Sanitation to converge their efforts and work as a team with full involvement of State Governments.

ii. In the water sector, the Twelfth Plan had recommended for suitably taking into account ground water in over-all water supply planning in a city and mapping of aquifers, as this would help in recharge of the ground water as well as prevention of its contamination. Given the fact that a very large number of households, especially in medium and smaller cities are dependent on groundwater, such measures be completed on priorities.

iii. Currently, the widely accepted norm of water supply is the one issued by CPHEEO of Ministry of Urban Development, which stipulates a requirement of 70 litres per capita per day (lpcd) for cities with pipe water system but without sewerage, 135 lpcd for cities with or without planned sewerage system and 150 lpcd for the same in metropolitan systems. As the pressure on available water resources has increased and conflicts between urban, industrial and rural use of water have started surfacing, especially in the water stressed zones, these norms have given rise to major cause of controversy as it has been argued that lesser amount of water would suffice for life with dignity. In any case, considering substitution of clean water by non-potable but reusable water for activities like water for toilets, gardening, street cleaning, industrial cooling etc. the requirement would come down. Hence there is an urgent need to review CPHEEO norms in consultation with sector experts.

iv. With launching of Swachh Bharat Mission, collection of solid and liquid waste in cities is likely to go up. For any cleanliness mission to succeed, its strategy needs to have three important elements: Firstly, there is a need to constantly engage the citizenry. Secondly, it must have a strategy to reduce waste. Thirdly, and quite importantly, success would critically depend on the improvement of processing of the waste. While a major success have been achieved in bringing the notion of cleanliness to the national consciousness, it is important to focus on reduction and processing of waste. The strategy being adopted for Swachh Bharat Mission includes (a) Scientific management, including recycle and reuse, which reduces the waste and (b) Processing of waste for useful by-products such as compost, RDF or Energy which ultimately leaves only a small fraction to reach the landfill.

v. India needs to give a major push to recycling and composting of municipal waste. In this regard, Dr. K. Kasturirangan Committee had made major recommendations, which need to be implemented through the Swachh Bharat Mission. While an attempt may be made in the first instance to develop a robust financial model by treating waste as a resource, given high social return of processing of waste, Ministry of Fertilizer in consultation with MoUD is examining the desirability of subsidising the compositing of municipal waste. Marketing of compost due to its low N-P-K component as compared to heavily subsidised chemical fertilisers has remained a challenge. The recommenda-tions made by the aforesaid Committee are being followed.

vi. Likewise, the approach in sewage treatment has to be reviewed. Firstly, we need to make decentralized sewage treatment a preferred choice unless there are important reasons for preferring the centralized one. This would imply review of the manual issued by CPHEEO. Secondly, such technologies which consume less power should be explored and applied and the popular demand for subsidised power tariff for City Governments in the name of public purpose should be rejected. Thirdly, Government of India may immediately set up an expert Committee to recommend per capita irreducible minimum water consumption.

vii. Discharge of septage to water bodies is a serious issue and deserves more attention than what it has received. State Governments may explore enacting legislation to the effect that septic tanks need to be cleaned in two years' time and failure would invite penal action. Simultaneously, a fee based service may be encouraged by the Municipal bodies to undertake mechanical cleaning of sewage when demanded by the households.

viii. Swachh Bharat Mission has laid special emphasis on stopping open defecation. While provision of community toilets in areas having little space for construction of toilets appears to be a preferred strategy, in reality these have not worked well because lack of their ownership adversely affects maintenance. A preferred strategy therefore, is to incentivise a group of 2-3 households for construction of shared toilet blocks and greater reliance on provision of public toilets with identified agencies and funds for maintenance.

9.14 Urban Mobility

9.14.1 Raising the share of public transport and Non-Motorised Transport (NMT) was one of the key recommendations of the National Urban Transport Policy as well as the Twelfth Plan. Besides improving the quality of life due to reduced commute time and cleaner environment, affordable public transport is important for improving the labour market outcomes in a city. Progress in this regard is broadly as follows:

i. Expansion of Metro Rail Projects

9.14.2 Urban rails are highly capital intensive. Hence the Twelfth Plan recommended specific set of criteria for opting for such projects should a city desire, though it also recommended that feasibility of other less capital options must be considered. Status of metro projects is given in **Table 9.6**.

Table 9.6: Status of City-wise Metro Rail Projects		
Sl. No	**City**	**Metro Rail Project Status**
	3 million + cities	
1	Mumbai UA	One PPP project operational and another project under implementation through government funding
2	Delhi UA	Operational. Phase-III- under implementation + expansion in NCR under implementation
3	Kolkata UA	Under implementation. Project hit major roadblock
4	Chennai UA	Under implementation
5	Bangalore UA	Phase-I partially operational. Phase-II under implemention
6	Hyderabad UA	Under implementation (PPP). Part commissioning expected in July, 2017
7	Ahmadabad UA	Under implementation
8	Pune UA	Under implementation
9	Surat UA	No proposal
10	Jaipur (M Corp.)	Phase-I operational
	City (2 million to 3 million)	
11	Kanpur UA	Proposal under consideration
12	Lucknow UA	Under implementation
13	Nagpur UA	Under Implementation
14	Ghaziabad UA	Covered under DMRC Phase-II
15	Indore UA	Proposal under consideration
16	Coimbatore UA	No proposal
17	Kochi UA	Under implementation and proposal for Phase-IB under consideration
18	Patna UA	Proposal under consideration
19	Kozhikode UA	Proposal under appraisal for LRT (Light Metro Rail)
20.	Bhopal UA	Under consideration
	City(less than 2 million)	
21	Greater Chandigarh Region	DPR returned for revision and updation
22	Vijayawada	Proposal under consideration
23	Visakhapatnam	Proposal under consideration
24	Thiruvananthapuram	Proposal for Light Metro Rail under consideration
25.	Varanasi	Under consideration
26.	Guwahati	Under consideration

9.14.3 Barring Hyderabad and Mumbai Line I which are PPP projects, all others have been developed in public sector where Centre and State make a Special Purpose Vehicle (SPV) on 50:50 basis where their equity covers around 30 per cent of the total project cost. Roughly 45-50 per cent of the cost is met by loan from Japan International Corporation Agency, AfD, KfW and European Investment Bank etc. The balance funding is met by sub-ordinate debt, property development on project land etc. There has been rapid

extension of metro rails under Twelfth Plan which has exceeded the allocation of Rs. 47,000 crore for metro rail provided in the Twelfth Plan,forcing GoI to go slow on expansion of metro unless PPP model is used or budgetary allocation is increased. In this regard, an advisory on PPP in urban transport has been issued to all State Governments/UTs, to explore options for private financing in urban transport with the prime focus on Metro Rail Projects.

9.14.4 Recommendations of the Dr. Rakesh Mohan, National Transport Development Policy Committee (NTDPC) had been received after finalization of the Twelfth Plan. NTDPC has recommended a more cautious approach in expansion of metros. After taking into account the observation and recommendations of the Committee, following is recommended:

a) While world-wide majority of metro rail projects have been developed in public sector, private investment may be attracted. For this, India's PPP policy may be reviewed by MoUD in consultation with DEA, NITI Aayog, Industry experts and selected State Governments.

b) Due to expansion of metro, domestic demand for rolling stocks and equipment would rise. Besides, there may be export potential in this sector to be harnessed. The Twelfth Plan had recommended that indigenous R&D efforts may be intensified. Recently, India has entered into an agreement with Japan for exploring Transfer of Technology (ToT). Developing R&D facilities for indigenization of equipment for metro rail projects may be one of the focus areas for the Ministry in next two years.

ii. Expansion of Public Bus Services

9.14.5 Notable success was achieved under the Eleventh Plan in expanding public transport through city bus services. The Twelfth Plan recommended purchase of public buses and encouragement to Bus Rapid Transit Projects. In the Eleventh Plan under JNNURM, 15,000 buses were purchased,which strengthened existing city bus services in large cities and opened bus service in 34 cites. In Twelfth Plan, this policy has continued and about 10,000 buses have been sanctioned. However, O&M of these buses have been a challenge, especially as in many cities there is reluctance to rationalize bus tariff on the one hand and lack of provision of even O&M expenditure to ULBs on the other. Ministry may explore the possibilities of some reduction in capital expenditure and utilization of savings as O&M expenditure for a limited number of years. In Hilly States and tourist towns, cluster city approach is needed as typically, inter-city bus service is of greater utility. There is a huge opportunity in using PPP and GoI assistance may be securitized to lend comfort to investors.

Issues Requiring Special Attention

a. Integration of Land Use and Urban Transport Planning

9.14.6 Government of India has been incentivizing preparation of Comprehensive Mobility Plan (CMP) in all cities. Stage is set for further professionalization of integration between land use and urban transport planning which is hall mark of a smart city. A special mention is made here of Transit Oriented Development (TOD). Briefly, TOD reduces trip length, trip numbers, commute time, congestions and energy footprint. It makes cities efficient, improves ease of doing business and utilises land more efficiently thereby preventing the cities from eating into arable land. Indeed, by encouraging walking and cycling, it improves the public health profile of a city, with less lifestyle-induced diseases. Hence TOD should be one of the focus areas of the Ministry, especially while planning a smart city. Ministry of Railways have special plan to make Railway Stations as hubs of economic activities. It is planned to redevelop about 400 railway stations. Most railway stations in Indian cities are centrally located. They should ideally be creating the most jobs in the city as economic hubs. They should also be the hub of all mass transit within the city, including buses, taxis, auto-rickshaws, para-transit, as well as airport links and metro systems, wherever present. There is a compelling case for making a smart city around the economic zone of influence of the transport hub built around the Railway station. This smart city would have 'live, work, play' components as well.

b. Non-motorised Transport and Encouraging Pedestrian Movement

9.14.7 NMT such as bicycles, pedal rickshaws and pedestrianism are affordable, environment friendly and promote healthy living. The Twelfth Plan had recommended that MoUD should bring out a comprehensive set of guidelines to incentivise NMT. This is yet to be done. It is recommended that the same may be given due attention. Similarly, innovations in improving designs of NMT like pedal rickshaw should be suitably incentivised as this mode of transport is employment intensive and helps in connecting dots in the last mile connectivity besides being environmentally a preferred solution.

9.14.8 Urban Transport is intertwined with Urban Development which is a State subject. Therefore, urban transport projects, including pedestrianisation, are proposed and implemented by State Governments. Ministry of Urban Development had issued National Urban Transport Policy in year 2006, under which the Central Government gives priority to the construction of pedestrian paths & dedicated cycle tracks in the cities to enhance safety and use of non-motorised modes. The Central Government also supports formulation and implementation of specific "Area Plans" in congested urban areas that propose appropriate mix of various modes of transport including exclusive zones for non-motorized transit. Further, Ministry of Urban Development has issued an Advisory to all State Governments regarding inclusion of feeder buses, public bike sharing and pedestrianisation in the influence zone as an integral portion of the DPRs for Mass Rapid Transit System projects.

iii. Multi Modal integration

9.14.9 At present, even in large cities, India has to go a long way in ensuring seamless travel through multi-modal integration. While this again highlights need for spatial and physical planning and integration of land use and transport planning, as mentioned in para 9.14.6 above, it is recommended that Ministry of Urban Development may create a Task Force to suggest measures to encourage multi-modal integration in Urban transport.

iv. Follow up of Recommendations of NTDPC

9.14.10 Since NTDPC has made a series of recommendations regarding urban transport, it is suggested that to operationalize them, a Task Force may be constituted in the Ministry of Urban Development.

9.15 Urban Poverty

9.15.1 Creation of jobs in urban sector is central to India's development agenda and is covered under the Chapter on Employment. However, some specific observations and recommendations are made which may help in fine tuning the strategy:

a) The Twelfth Plan had fixed an ambitious target for reducing consumption poverty *via* income growth, employment expansion, higher level of investment in health, education water, slum rehabilitation and directly targeted poverty reduction programme. While India's urban sector contribution to GDP has increased from 41 per cent during 1980-81 to 52 per cent during 2004-05 and is currently estimated to be about 60 per cent, the rate of poverty reduction in urban India has been slower than that of rural poverty: Urban poverty ratio has declined from 31.8 per cent in 1993-94 to 25.7 per cent in 2004-5 and further to 13.7 per cent in 2011-12. In this period rural poverty ratio declined from 50.1 per cent to 25.7 per cent.

b) Gini coefficient of urban income has worsened[5] in three comparable economies between 1994 to 2008. In China, the Gini coefficient in urban areas rose from 0.292 in 1994 to 0.348 in 2005 and 0.352 in 2008. In Indonesia, the corresponding figures are 0.353; 0.399 and 0.422. In urban India the Gini Coefficient has risen from 0.343 in 1994 to 0.376 in 2004 to 0.393 in 2009. These figures fuel the apprehension that unless specific policy measures are taken, an increase in income may lead to higher inequality.

c) As indicated in the introductory section, while actual number of people entering into urban sector is high in absolute number due to large population base of India, the rate of urbanisation is yet to pick up. Besides, many urban agglomerations are showing a reduced rate of growth in terms of population. While these issues are matter of further research, *prima facie* they imply that gains of agglomeration are either getting withered away due to congestion or the cities regulatory

[5]Mathur O.P. - Urban Poverty in Asia, published by the Asian Development Bank (2014)

framework are exclusionary in their stance, which needs immediate correction.

d) There is evidence that some jobs are being created in the non-farm sector in rural areas underlining the need for policy attention in rurbanisation in India. The **Table 9.7** below, based on analysis shared by Centre for Policy Research indicates following:

Table 9.7: Non-Farm Job Creation in Villages

State	Total Villages	Villages with +ve Non-Farm and -ve Farm	Villages with +ve Non-Farm and -ve Farm (per cent)
Jammu & Kashmir	6,272	4,550	72.50
Himachal Pradesh	17,621	10,115	57.40
Punjab	12,076	6,962	57.70
Chandigarh	5	4	80.00
Uttarakhand	15,521	7,161	46.10
Haryana	6,594	3,667	55.60
Delhi	99	67	67.70
Rajasthan	42,917	23,290	54.30
Uttar Pradesh	96,647	55,477	57.40
Bihar	38,535	21,985	57.10
Sikkim	423	290	68.60
Arunachal Pradesh	5128	2559	49.90
Nagaland	1381	690	50.00
Manipur	2314	1023	44.20
Mizoram	687	391	56.90
Tripura	848	527	62.10
Meghalaya	6381	3206	50.20
Assam	24,020	11,161	46.50
West Bengal	37,247	17,593	47.20
Jharkhand	29,002	17,232	59.40
Orissa	47,080	24,190	51.40
Chhattisgarh	19,496	9,208	47.20
Madhya Pradesh	51,484	22,726	44.10
Gujarat	17,793	6,554	36.80
Daman & Diu	19	16	84.20
Dadra & Nagar Haveli	65	47	72.30
Maharashtra	40,685	15,119	37.20
Andhra Pradesh	26,125	11,396	43.60
Karnataka	27,110	13,871	51.20
Goa	319	159	49.80
Lakshadweep	5	0	0.00
Kerala	1,017	760	74.70
Tamil Nadu	14,897	10,140	68.10
Puducherry	90	70	77.80
A&N Islands	378	154	40.70
TOTAL	**5,90,281**	**3,02,360**	**51.22**

Source: Pranav Sidhwani, database; 'Farm to Non-Farm: Are India's Villages "Rurbanising"? CPR Urban Working Paper 4, November, 2014'.

e) Evidence of creation of non-farm sector job is also available from Census figure which reports that there is an unprecedented decline in the absolute number of cultivators from 127.3 million in 2001 to 118.7 million in 2011 (as noted in the Economic survey of 2013-14).

f) Even though the **Table 9.7** indicate positive changes in proportion of non-farm workers in more than half of villages in India, the fact remains that such trend may not be strong enough to eliminate poverty in India by creating sufficient jobs.

g) Of particular significance is informal sector in urban India. A study by Participatory Research in Asia (PRIA) and Indicus Analytics in November, 2013 estimated contribution of this segment in city economy to be 7.53 per cent and also noted that GDP multiplier of an informal sector dweller is 1.4. This clearly indicates that far from being a burden on city economy, the informal sector has an important role to play and every attempt may be made to improve their productivity and reduce their cost of living through ensuring access to basic urban amenities.

h) In the Union Budget 2015-16, Government has announced many measures for improving impact of skill initiatives and promote entrepreneurship among the youth, besides strengthening their social security. After ensuring full financial inclusion through Jan Dhan Yojana, new initiatives announced in the budget include setting up of Micro Units Development Refinance Agency (MUDRA) Bank for refinancing micro-finance institution; Self Employment and Talent Utilization mechanism (SETU) for giving e-support to entrepreneurs and self-employed youth who wish to take up manufacturing and selling of product based on new technology; Atal Innovation Mission for providing a platform of researchers, academicians, entrepreneurs, to foster a culture of innovation, research and development.

e) For fully realising potential of these initiatives, it is expected that newly created Ministry of Skill Development and Entrepreneurship would bring synergy to the efforts of various Ministries in skill formation.

j) There is a need for convergence between National Rurban Mission, the Urban and Rural Livelihood Missions and Skill Mission. A major task is dissemination of information regarding these initiatives to target groups. Formation of Self Help Group in urban setting and provision of vouchers for skill development may be explored to take advantage of firstly, a large number of private players and secondly, the aspiration in youth in India. Analyzing the census data on education status of rural urban male migrants, analysis by CPR (**Table 9.8**) indicates that the data is consistent with evidence that while the recent migrants may not be too well skilled but they pick up skills with length of stay. Furthermore, NSS data indicates (**Table 9.9**) that seasonal migrants are especially poorly educated.

Table 9.8 : Education Status for Migrants (Male) from Rural to Urban Areas by Duration of Stay (in per cent)					
Education level	All durations of residence	Duration of residence less than 1 year	Duration of residence 1-4 years	Duration of residence 5-9 years	Duration of residence 10 years and above
Illiterate	19.6	40.4	25.7	17.6	15.9
Literate but below Matric/Secondary	39.7	32.6	37.2	44.0	39.8
Matric/Secondary but below graduate	26.9	18.9	24.8	25.4	29.0
Graduate etc.of which	13.8	8.2	12.4	13.0	15.3
Technical diploma or certificate not equal to degree	1.5	1.1	1.6	1.4	1.6
Graduate and above other than technical degree	10.4	5.8	8.7	9.7	11.8
Technical degree or diploma equal to degree or post-graduate degree	1.9	1.3	2.1	1.9	1.9

Source: CPR analysis, based on Census 2001

Table 9.9: Education Status for Seasonal Migrants from Rural to Urban Areas by Duration of Stay (in per cent)					
Total Migrants (Male & Female)		From Rural to Urban			
Education level	Seasonal	Duration of residence less than 1 year	Duration of residence 1-4 years	Duration of residence 5-9 years	Duration of residence 10 years and above
Illiterate	51.2	25.2	19.5	20.5	35.6
Literate but below Matric/Secondary	41.3	37.3	44.3	48.1	37.5
Matric/Secondary but below graduate	6.5	29.6	25.7	22.2	20.0
Graduate and above	0.9	8.0	10.5	9.3	7.0

Source: CPR analysis, based on NSS 2007-08

9.16 PPP in Urban Sector and Use of Land Based Financing Instruments to generate Resources for Funding Urbanisation

9.16.1 As estimated by the Isher J. Ahluwalia, HPEC, the urban sector in India required about Rs. 39 lakh crore of capex and another about Rs. 20 lakh crore of Opex (both at 2010-11 prices) for next 20 years. It is clear that budgetary resources of Governments at different levels may at best play a catalytic role and a central challenge in urban sector in India is to mobilize resources for urban infrastructure. Encouraging PPP was also a mandated reform under JNNURM. There are only 52 projects which are structured under PPP arrangements, though investment by private concessionaire is not the requisite minimum 60 per cent of the project cost, as mandated by the Ministry of Finance in its Policy of Viability Gap Funding for supporting PPP projects, and hence they are of different genre.

Table 9.10 : PPP Projects

Urban Sub-Sector	No. of Projects	Total Project cost (in Rs. crore)
Sewerage	11	634
Solid Waste Management	23	1032
Water supply	8	856
Urban Transport	10	24180
Total	52	26,702

Source: Ministry of Urban Development.

9.16.2 By all counts the success in attracting funds under PPP arrangement has been modest. In this regard, following seems to be key constraints in our present enabling framework for PPP:

i. The current state of Municipal finance is such that it does not inspire confidence among the potential investor in urban infrastructure sector. Either the ULBs securitize a given certain grant of State or Central Government or improve their accounting by taking a balance sheet approach, the risk elements for private investors remain high.

ii. As per guidelines issued by Ministry of Finance, a PPP project (based on BOT or annuity) is eligible for Viability Gap Funding only if the concessionaire meets 60 per cent of the project cost. As indicated in the **Table 9.10** above, the PPP projects in urban sector reported by the Ministry of Urban Development do not meet the above requirements in general. The causative factors may immediately be explored. In case the projects are not viable from a concessionaire's point of view on such funding arrangement, there is a need for reviewing the policy. There are many options of sweetening such projects: Hybrid financing where Government provides more than current 40% of the TPC and use of land based financial instruments, is a possible solution, which need to be explored.

iii. Of particular interest is use of land based financing instruments in attracting private investment. It may be mentioned that the Vijay Kelkar Committee on Roadmap for Fiscal Consolidation (September 2012) had recommended as follows:

"Over the next 24-36 months, there is yet another policy instrument for raising resources for development and that is monetizing government's unutilized and under-utilized land resources. These resources can finance infrastructure needs particularly in urban areas. Such a policy has been effectively utilized in many countries including USA, France, Canada, Australia and China"

9.16.3 Already there are many successful examples of using land based instruments. For instance, bus station in Vadodara is modernized and Ahmedabad has adopted the same model by raising the FSI and removing the ceiling of capping at only 10 per cent of land for commercial exploitation. Similarly, Government needs to study the New Delhi experience of developing New Motibagh and East Kidwai Nagar (latter still under construction) and disseminate best practices. The recently released Value Capture Financing Policy Framework has to be rapidly implemented by the State/ city Governments.

9.17 Launching of Urban Rejuvenation Mission (URM): of Smart Cities mission and AMRUT

9.17.1 Ensuring 'ease of doing business' has emerged as an important objective. Besides policy and regulatory stance, ease of doing business is also determined by state of infrastructure including uninterrupted power, urban connectivity, broadband connectivity and water supply & sanitation.The Twelfth Plan had endorsed the Gujarat Town Planning Scheme for Land Re-adjustment and has also referred to participative methods being followed in Mumbai (C - ward). Another example may be citizens' initiative at Bhendi Bazar cluster redevelopment in Mumbai.

9.17.2 On June 25, 2015, Government of India has launched the Smart Cities Mission with the scheme of Housing for All and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) complementing it. The underlying approach is to move towards holistic development of cities based on integrated planning. The Government expects to invest Rs. 1 lakh crore over 5 years under Smart City Mission and AMRUT. Besides these, earlier in January 2015, Government launched the National Heritage City Development and Augmentation Yojana (HRIDAY) which aims at pre serving and revitalizing the soul and unique characteristics of heritage cities in India. 12 heritage cities have been identified and full funding of Rs. 500 crore is being provided by the Government for their development. The detailed guidelines of all these schemes have been placed in public domain.

9.17.3 The Smart cities component provides for four different modes of projects: retrofitting of smart applications in existing part of city; redevelopment of a part of city by replacing dysfunctional infrastructure; greenfield projects and pan city improvement by applying smart solution to city wide infrastructure. Key city-wide infrastructure is upgraded by converging with its complementary missions and converging with new schemes of Centre/State. AMRUT has identified water supply, sewerage and septage management, storm water drainage, pedestrian and non-motorized as well as other public transport facilities and creation and up-gradation of green spaces, especially for children. The AMRUT has incorporated some important learnings of implementing JNNURM: a great deal of flexibility has been worked into design of these schemes, for instance. In all the components of AMRUT, a major improvement has been an empowerment of States and ULBs, as the former have been entrusted with to prepare State Annual Plan and approve projects. This is likely to address a major problem under JNNURM and related programmes like Rajiv Awaas Yojana, etc., which had received criticism of being process heavy.

9.17.4 Urban Development is a State subject, whereas provision of Central Assistance is to ensure a high level of investment in city infrastructures. Another objective of the Government of India has been to incentivise urban reforms: a process that was initiated under JNNURM and now the stage is set for incentivizing second generation reforms. Under AMRUT, release of 10 per cent Central Assistance is linked to getting threshold score in achieving reforms. Under Schemes like Housing for All and Smart Cities Mission, reforms are, in a way, internalized in the scheme design as implementation of alternative models of Smart cities or *in-situ* rehabilitation of slum, by using land as a resource, are possible only when some of the important reforms, are carried out. However, to bring a paradigm shift in the way Indian cities are managed, there is a need to review the existing reform basket to include many other reforms and while making all of them mandatory, provide a requisite flexibility to States and cities to implement these reforms.

9.17.5 Under the Smart Cities Mission for developing 100 Smart Cities launched in June, 2015, 60 cities (20 cities in Round 1 in January 2016, 3 cities in fast track round in May 2016 and 27 cities in Round 2 in September, 2016) have been selected. Out of which, 55 cities have created Special Purpose Vehicles (SPVs). Remaining five cities namely New Town Kolkata, Mangalore, Kohima, Huballi- Dharwad and Vadodara are in the process of incorporation. During 2015-16, Rs. 1469.38 crore was released against allocation of Rs. 1496.20 crore during the year. During FY 2016-17, Rs. 3205 crore was allocated as BE which has been enhanced to Rs. 4655.99 crore at RE stage. Out of which, Rs. 4493.36 Cr. (96.51%) has been released to States/UTs.

9.17.6 Under the AMRUT, in FY 2015-16, State Annual Action Plans (SAAPs) of all 29 States and 7 Union Territories amounting to Rs. 20,774 crore (including central share amounting of Rs. 9894 crore) have been approved by the Apex Committee. Further, the first instalment of the Central share amounting to Rs. 1948 crore has been released to the States in FY 2015-16. Also, in the financial year 2016-17, second SAAPs of all States and UTs (pertaining to 2016-17) amounting to Rs. 25183 crores (including central share of Rs. 13334 crores) have been approved and first instalment of Rs. 2370 crore released. The States are also submitting their third and final SAAPs to cover the balance Mission period allocation under the Mission and the Plans are being considered and approved.

9.17.7 Under the HRIDAY, in FY 2015-16 HRIDAY City Plans (HCP) of all the 12 cities Viz.,Varanasi, Amritsar, Warangal, Ajmer, Gaya, Mathura, Kanchipuram, Vellankini, Amaravati, Badami, Dwaraka and Puri have been approved by the HRIDAY National Empowered Committee (HNEC). Further, 17 Detailed Project Reports (DPRs) formulated by the cities have also been approved by the HNEC. Funds of Rs. 27.92 crore have been released in FY 2015-16 to the HRIDAY cities. In FY 2016-17, it is targeted to approve 76 DPRs from the HRIDAY cities and complete execution of all projects. Budget allocation in BE 2016-17 for HRIDAY is Rs.200 crore.

9.18 Learnings from Appraisal

9.18.1 As the URM has been launched recently, no appraisal of underlying strategy is attempted here. However, for implementation of these schemes, following is recommended:

A). As smart cities promote integrated projects, the challenge of creating DPRs/RFPs for such integrated projects will require capacity augmentation in the form of PMCs and professionalto man SPVs.

B) In order to make the complete city smart, the area based development will have to be replicated to the entire only.

C) Smart cities have to leverage up to 2.5 times the grant given by the Centre and State. They will require augmentation of own generated resources and use of new financial tools such as bonds, Value Capture Financing etc.

Annexure 9.1

	Growth Rates of Urban Agglomerations/Cities with a Population of 1 Million and above by Common Base						
Sl. No.	Name of Urban Agglomeration/City	Population				AEGR	
		CS_2011	1991	2001	2011	1991-01	2001-11
1	Greater Mumbai UA	UA	12536243	16434386	18394912	2.71	1.13
2	Kolkata UA	UA	11021918	13205697	14057991	1.81	0.63
3	Delhi UA	UA	8419084	12877470	16349831	4.25	2.39
4	Chennai UA	UA	5421985	6560242	8653521	1.91	2.77
5	Hyderabad UA	UA	4344437	5742036	7677018	2.79	2.90
6	Bruhat Bangalore UA	UA	4130288	5701446	8520435	3.22	4.02
7	Ahmadabad UA	UA	3312216	4525013	6357693	3.12	3.40
8	Pune UA	UA	2493987	3760636	5057709	4.11	2.96
9	Surat UA	UA	1518950	2811614	4591246	6.16	4.90
10	Kanpur UA	UA	2029889	2715555	2920496	2.91	0.73
11	Lucknow UA	UA	1669204	2245509	2902920	2.97	2.57
12	Nagpur UA	UA	1664006	2129500	2497870	2.47	1.60
13	Patna UA	UA	1099647	1697976	2049156	4.34	1.88
14	Indore UA	UA	1109056	1516918	2170295	3.13	3.58
15	Vadodara UA	UA	1126824	1491045	1822221	2.80	2.01
16	Coimbatore UA	UA	1100746	1461139	2136916	2.83	3.80
17	Bhopal UA	UA	1062771	1458416	1886100	3.16	2.57
18	Kochi UA	UA	1140605	1355972	2119724	1.73	4.47
19	GVMC	MC	1057118	1345938	1728128	2.42	2.50
20	Agra UA	UA	891790	1331339	1760285	4.01	2.79
21	Varanasi UA	UA	1030863	1203961	1432280	1.55	1.74
22	Madurai UA	UA	1085914	1203095	1465625	1.02	1.97
23	Meerut UA	UA	753778	1161716	1420902	4.33	2.01
24	Nashik UA	UA	656925	1152326	1561809	5.62	3.04
25	Jamshedpur UA	UA	478950	1104713	1339438	8.36	1.93
26	Jabalpur UA	UA	764586	1098000	1268848	3.62	1.45
27	Asansol UA	UA	262188	1067369	1243414	14.04	1.53
28	Dhanbad UA	UA	151789	1065327	1196214	19.49	1.16
29	Allahabad UA	UA	806486	1042229	1212395	2.56	1.51
30	Vijayawada UA	UA	708316	1039518	1476931	3.84	3.51
31	Amritsar UA	UA	708835	1003917	1183549	3.48	1.65
32	Rajkot UA	UA	612458	1003015	1390640	4.93	3.27
33	Jaipur (M Corp.)	M Corp.	1518235	2322575	3046163	4.25	2.71
34	Ludhiana (M Corp.)	M Corp.	1042740	1398467	1618879	2.94	1.46
35	Faridabad (M Corp.)	M Corp.	617717	1055938	1414050	5.36	2.92
	All		**78350544**	**108290013**	**135925604**	**3.24**	**2.27**

Annexure 9.2

Population in cities of India					
Year	5 million and above	1 - 5 million	1 lakh - 1 million	less than 1 lakh	Total
1901	0	0	6.8	19.08	25.9
1911	0	2.34	4.85	18.76	26.0
1921	0	3.2	5.22	19.67	28.1
1931	0	3.48	7.06	22.96	33.5
1941	0	5.39	11.66	27.07	44.1
1951	0	11.8	16.36	34.34	62.5
1961	6.08	12.55	22.33	37.95	78.9
1971	14.18	14.51	33.72	46.81	109.2
1981	24.88	19.29	53.42	62.03	159.6
1991	37.86	33.95	68.33	77.68	217.8
2001	60.37	47.78	88.12	89.85	286.1
2011	85.18	75.54	104.17	112.21	377.1

Source: Census figures: various years.

Annexure 9.3

Per cent Urban Population in Cities of different size								
Year	Population							
	5 million and above		1 - 5 million		1 lakh - 1 million		less than 1 lakh	
	Cities	Per cent of urban population	Cities	Per cent of urban population	Cities	Per cent of of urban population	Towns	Per cent of urban population
1901	0	0.00	0	0.00	25	26.30	1771	73.80
1911	0	0.00	2	9.00	22	18.70	1768	72.30
1921	0	0.00	2	11.40	28	18.60	1887	70.00
1931	0	0.00	2	10.40	34	21.10	2004	68.60
1941	0	0.00	2	12.20	49	26.40	2087	61.30
1951	0	0.00	5	18.90	72	26.20	2720	55.00
1961	1	7.70	6	15.90	100	28.30	2223	48.10
1971	2	13.00	7	13.30	143	30.90	2405	42.90
1981	3	15.60	9	12.10	207	33.50	3027	38.90
1991	4	17.40	19	15.60	276	31.40	3401	35.70
2001	6	21.10	29	16.70	359	30.80	3984	31.40
2011	8	22.59	45	20.03	415	27.62	5698	29.76

Source: Census of India: various years.