

# Policy Report

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## At the City's Margins: Coal, Land and Livelihoods in Chennai

Mukul Kumar



**THE HINDU CENTRE**

*for*

Politics and Public Policy

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# At the City's Margins: Coal, Land and Livelihoods in Chennai

**Mukul Kumar**

Public Policy Scholar,  
The Hindu Centre for Politics and Public Policy  
(May–August, 2016)

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PhD Candidate,  
Department of City and Regional Planning  
University of California, Berkeley



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## ABSTRACT

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**E**nnore's coastal fishing villages, which are surrounded by coal-fired power plants, are often described as being at the social and geographical margins of Chennai. This report, however, argues that the city's margins are not 'natural'; they are constantly being made and remade through particular technologies of urban planning. The report emphasises that the process of developing coal-fired power plants entails not simply a material struggle between state authorities and marginalised communities over coal, land, and livelihoods, but also a struggle over the instruments and idioms of urban planning as a form of knowledge. From land acquisition and resettlement to environmental impact assessments and land use maps, these technologies of planning are replete with ambiguities and illegalities. The report analyses how the absence of clearly delineated land records, environmental impact assessments, and land use maps enable state authorities to further marginalise fishing communities. It also examines how fishers have challenged such ambiguities and illegalities in order to make political claims to lands and livelihoods.

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## I. Introduction

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*For the bourgeois environmentalist, the ugliness of production must be removed from the city. Smokestack industries, effluent-producing manufacturing units and other aesthetically unpleasant sites that make the city a place of work for millions, should be discreetly tucked away out of sight, polluting some remote rural wasteland. So must workers who labour in these industries be banished out of sight.*

Amita Baviskar, “The Politics of the City” (2002)

**E**nnore Creek, situated at the interface of Pulicat Lake and the Kosasthalaiyar River, was once a verdant estuary on Chennai’s northern shoreline. Today, it is surrounded by coal-fired thermal power plants and two industrial ports. Fishers have argued that Ennore’s coal-fired thermal power plants are dumping fly ash into nearby water bodies, polluting the atmosphere with smoke, and flushing scalding hot water into the estuary. The ongoing expansion of the power plants and related infrastructure is transforming the land and livelihoods of over 16,000 fishers who live in the area. In response, leaders of fishing villages have argued that the expansion of power plants and ports constitutes a violation of Coastal Regulation Zone laws and their constitutional right to life.

As the current situation in Ennore makes clear, the rapid expansion of coal-based power plants across India will have profound long-term impacts on the land, water and air. These impacts will be concentrated in India's central and coastal regions, where the majority of coal industry expansion is expected to take place (CSE 2014). Coal fuels an estimated 70 per cent of power consumption in India and, by nearly all accounts, will remain the predominant source of fuel for the country's growing economy during the twenty-first century. By 2030, the size of India's coal industry is expected to triple, making it the second largest in the world behind only that of China (*ibid.*). Despite the growing importance of coal to the Indian economy, there is a surprising absence of studies that examine the political ecology of coal-fired power plants, especially in coastal areas.

This report analyses how three sets of interrelated technologies of urban planning—land acquisition and resettlement, environmental impact assessments and public hearings, and Master Plans and land use maps—have enabled the expansion of coal-fired power plants and the marginalisation of fisher's lands and livelihoods in Ennore.<sup>1</sup> Through an examination of urban planning interventions

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<sup>1</sup> Drawing upon political ecology and science and technology studies, this report defines “technology” as a form of knowledge that is produced, translated, and transformed by a range of actors, including planners, scientists, and fishers. For

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in north Chennai's Ennore Creek, this report seeks to understand how the city's margins and marginalised communities are constituted. Marginalised communities, however, are not simply passive objects. This report also examines how fishing communities have mobilised themselves politically to respond to the development of coal-fired thermal power plants and challenge what Baviskar (2002) has called "bourgeois environmentalism".

To pursue these lines of inquiry, this report is divided into three sections, each of which explores how struggles over coal, land, and livelihoods are at the same time struggles over the meaning and politics of planning. First, the report examines how historical processes of land acquisition and resettlement have contributed to the marginalisation of fishing communities. The Tamil Nadu Electricity Board (TNEB) began acquiring lands for North Chennai Thermal Power Station (NCTPS) in the early 1980s. This process of land acquisition culminated in the eviction and resettlement of fishing villages in Ennore in May 1990. I argue that this process of land acquisition and resettlement has not only

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a discussion of the concept of technology within the context of these literatures, see Phadke's (2011) analysis of water resource planning and people's science movements in Maharashtra.

displaced fishers from their lands; it has also threatened their livelihoods.

Second, the report examines how margins are constituted through environmental impact assessments (EIAs) and public hearings. This section provides an analysis of how state authorities attempt to secure the consent of coastal fishing communities. Two particular technologies are analysed. First, I discuss how EIAs erase and elide the forms of belonging that define fishers and their relationships to their lands and livelihoods by representing Ennore Creek as “empty lands”. Second, I discuss the ways in which planners seek to mitigate the anger of fishers through public hearings that emphasise corporate social responsibility.

Though these technologies of planning are intended to promote “participation” and “development”, I argue that they ultimately serve to diffuse dissent and pacify fishing communities. Fishers, however, have publically challenged these planning techniques by questioning their legality. Indeed, a coalition of Ennore’s fishing villages has organised their own alternative public hearing to highlight how the state has illegally encroached upon Ennore Creek’s wetlands and, in doing so, threatens their livelihoods. Rather than take the boundaries of the “legal” and “illegal” as

given, this report seeks to interrogate how discourses of legality are deployed to make political claims to coal, land and livelihoods.<sup>2</sup>

Third, I examine how planners at the Chennai Metropolitan Development Authority (CMDA) draw upon technologies of land use mapping and zoning in order to transform Ennore Creek into an area for “Special and Hazardous Industries”. The CMDA’s Master Plan does not provide a rationale for including coastal wetlands at the city’s peripheries for industrial development. I argue that ambiguities in the Master Plan play an important role in marginalising fishers’ lands and livelihoods in Ennore Creek. Fishers, however, are drawing upon GIS mapping techniques to challenge the legality of the Master Plan’s land use conversions in Ennore Creek. This section, therefore, explores how land use mapping and zoning have become an important terrain of political struggle at the city’s margins.

This report is based on four months of fieldwork in Chennai, where I conducted a combination of semi-structured interviews and focus group discussions with fishers in the villages of

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<sup>2</sup> For related conceptual and methodological arguments, see Das and Poole (2004) and Chatterjee (2004)

Kattukuppam, Ennore Kuppam, and Mugathwarakuppam.<sup>3</sup> I am grateful to the *Ennore Anaithu Meenava Grama Kootamaipu*, a coalition of six fishing villages for facilitating my interviews in Ennore.<sup>4</sup> In addition, I undertook archival research on the CMDA, TNEB, and the Tamil Nadu Pollution Control Board (TNPCB). This archival work included collecting land use and coastal zone management plans, EIAs, public hearing transcripts, environmental advocacy reports, Right to Information (RTI) Act requests, as well as newspaper articles from *The Hindu's* archives.

The empirical material presented in this report is for the most part limited to two specific industrial developments in Ennore: the NCTPS and the Kamarajar Port (formerly Ennore Port). While there are certainly other coal-fired power plants and industries (including cement, fertilizer, and petrochemical factories) surrounding Ennore Creek,<sup>5</sup> the report draws upon empirical material from these two specific locations because they are among the oldest and largest industrial developments in the region. These two developments, moreover, have always been, and remain,

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<sup>3</sup> I am grateful to Akhil Al Hassan, Pooja Kumar, and Archanaa Seker for assistance with conducting and translating these interviews.

<sup>4</sup> Though fishing villages are of course structured by class, caste and gender hierarchies, this report focuses on how coalitions of fishers across villages are engaging with regimes of urban planning and politics. Throughout this report, I follow Subramanian's (2011: xiii) use of the term "fishers" as "the best gender-neutral plural" to describe people working in artisanal fishing villages.

<sup>5</sup> For a summary of coal-fired power plants and other industrial developments in the region, see CRC (2016).

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closely connected: Kamarajar Port was originally constructed with the explicit aim of providing coal for the NCTPS. Lastly, and perhaps most importantly for the purposes of this report, fishers described the construction of the NCTPS and the Kamarajar Port as decisive turning points in their lives.

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## II. Land and Livelihoods

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Coal-fired thermal power plants located on the coast are resource intensive; they require vast tracts of scarce land, the majority of which is used to store mountains of fly ash, often near ecologically sensitive water bodies.<sup>6</sup> This section interrogates the role of one particular technology of planning—land acquisition and resettlement—in marginalising fisher’s lands and livelihoods. The TNEB began acquiring lands for the NCTPS in early 1980s, well before the project’s formal approval by the Planning Commission. This process culminated in the eviction and resettlement of fishing villages in Ennore, including the village of Mugathwarakuppam in May 1990.

### **The Politics of Land Acquisition**

The decision to site the NCTPS on the banks of Ennore Creek transformed landed property relationships in the region. The proposed power plant was sited 20 km north of Chennai; it would require 1,107 acres for the plant itself and another 1,137 acres for ash dumping (*The Hindu* 1995). Drawing upon archival material from the TNEB and interviews with fishers from the village of

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<sup>6</sup> For a discussion of the vast land and water resource requirements of coal-fired power plants, see CSE (2015: 23-46).

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Mugathwarakuppam, this section analyses processes of land acquisition. Two specific aspects of land acquisition—the takeover of “common” (*poromboke*) lands and the failure to provide clearly delineated land titles (*pattas*)—have made everyday life more precarious and uncertain for fishers.

In 1981, the TNEB submitted plans for a 630 MW coal-fired thermal power plant in Ennore Creek to the Central Electricity Agency (CEA). The TNEB listed several rationales for the siting of the power plant: proximity to the sea, railways, and the city's electrical grid, among others. Although the TNEB already owned lands adjacent to Ennore Creek that could be used for dumping fly ash, it would need to acquire lands inhabited by fishing villages in order to construct the NCTPS. This process of land acquisition began in the 1980s before the formal approval of the project by the CEA and the Planning Commission. Ultimately, 900 families were displaced as a consequence of the construction of the NCTPS (*The Hindu* 1995).

Fishers immediately voiced their concerns about the project's siting. In a 1986 letter to the Chief Engineer of the TNEB, fishermen argued that the construction of a thermal power plant

would compromise their livelihoods.<sup>7</sup> The TNEB (1986: 158) responded that it would not be possible to site the power plant elsewhere. The siting of the project was described as inevitable: “In setting up a big thermal station, a certain amount of displacement of persons is unavoidable. But [the] Board will take steps to ensure that they are properly resettled.”

Fishers thus had little choice. When I spoke with representatives of the Mugathwarakuppam *panchayat*, who were involved in negotiating the terms of the village’s resettlement in the late 1980s, they described the choice before them in stark terms: either the villagers had to resettle or lose their lands. They decided to move, but with two fundamental conditions. First, resettled families must be awarded land titles (*pattas*) so that they would have security of tenure at the new village site. Second, at least one family member would receive employment with the government (a subject that I discuss in the following section). “We did not want to give up our land,” one fisher woman said, “but the TNEB said it would build regardless, and promised us *pattas* and jobs.”<sup>8</sup> Under these conditions, the village of Mugathwarakuppam was relocated from the northern shoreline and resettled in the southern shoreline of Ennore Creek in May 1990, about 5 km further south from their original settlement.

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<sup>7</sup> See TNEB (1986: 92-94).

<sup>8</sup> Interview with author, July 13, 2016.

Twenty-six years after the village of Mugathwarakuppam was resettled, fishers have not yet received *pattas*. They have approached not only the TNEB and the NCTPS, but also the Revenue Department, the Tamil Nadu Slum Clearance Board (TNSCB), and the Tamil Nadu Government's Fisheries Department. They are yet to receive a clear response as to why they have not been awarded *pattas*, as per the negotiated terms of resettlement. Instead, State government officials have articulated a range of contradictory explanations. While one said that they would receive land titles if they paid property taxes, another insisted that it is the Fisheries Department, and not the TNEB, that owns the land. The fishers, thus, point out that authorities representing different wings of the State continue to deprive their communities of security of tenure (which was promised as a condition of resettlement) by raising ambiguous and often contradictory questions of land revenue and ownership.

It was not only security of tenure that was lost by the fishers through the process of resettlement. During my interviews, they also spoke in detail about the loss of common (*poromboke*) lands at the village's former site. Village elders, in particular, spoke about the vast *poromboke* lands that surrounded the former village site.

Though there are no written records of the exact expanse of this land, they estimate that the total area of the village was approximately 18 acres, “space enough for 10 villages”, as one fisherman said. Fishermen describe the lands between the village and river as being filled with Casuarina and Banyan trees. These lands, which were critical for their livelihood as well as social and cultural life, served multiple, overlapping uses, including drying fish, mending nets and repairing boats. They also served as playgrounds for children. Perhaps most importantly, the village council allotted these lands to families when they needed to expand. Though the Tamil word *poromboke* has come to mean “worthless”, these lands were, in fact, central to the vitality of everyday life in Mugathwarakuppam.<sup>9</sup>

The contrast between the former and present site of Mugathwarakuppam is striking. The measure of land each resettled family was given is less and fixed. Each resettled family was given a loan of Rs. 7,500 and asked to build their own homes. These homes were intended for 4-5 family members. Today, it is not uncommon for eight family members to be living in each household. The settlement was originally built for 200 people. Now, there are 450 people living in Mugathwarakuppam. The village, in short, has no room to expand. As a consequence, the

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<sup>9</sup> For a discussion of the importance of common lands to fisher’s livelihoods in Chennai, see Kumar, Saravanan and Jayaraman (2014).

village's infrastructure is also inadequate. During my interviews, fishers routinely complained of inadequate sewage disposal and treatment. They also spoke nostalgically of a time when children had open space to play outdoors, and when families had room to expand as needed.

The process of planning and constructing NCTPS was a decisive turning point in the history of Mugathwarakuppam. As one elderly fisherman said, “When we were in our native village, we did not know what poverty is. Now we have learned the meaning of poverty.”<sup>10</sup> The loss of common lands and land titles are of fundamental importance to the story of how Ennore's fishing communities have been marginalised. The following section turns to the question of how the expansion of the NCTPS transformed not only the lands, but also the livelihoods of fishing communities.

## **Displacing Livelihoods**

In the vast and growing scholarship on urban evictions and resettlement in India, it is not uncommon for the question of land, and especially land tenure, to be foregrounded. My fieldwork in Ennore Creek's fishing villages called for a focus on the complex

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<sup>10</sup> Interview with author, July 14, 2016.

relationship between land and livelihoods. The development of coal-fired thermal power plants requires vast stretches of land, the majority of which is used to dump fly ash. Today, Ennore Creek's water bodies are brimming with fly ash, which, in turn, has profound consequences for a fisher's livelihood. This section traces the circulation of fly ash through Ennore Creek's water bodies to understand how the construction of the NCTPS displaced fishers from not just their lands, but also from their livelihoods.

The TNEB's original plans to dispose of the fly ash from the NCTPS was to dump it into the Bay of Bengal by way of a pipeline. The Asian Development Bank (ADB), however, asked the TNEB to revise its plans and dump ash on lands adjacent to Ennore Creek. In the 1980s, environmental scientists, social welfare organisations, and fishers expressed concerns at the siting of the fly ash pond (see, for example, TNEB 1986: 53-94). In response to these complaints, the TNEB (1986: 110) responded that the "site chosen is suitable from an environmental pollution angle". According to the TNEB, the "presumption" that the NCTPS would pollute Ennore Creek's air and water was flatly "not correct" (TNEB 1986: 157).

Today, Ennore Creek is filled with ash from the NCTPS and other power plants. Fishermen have observed fly ash from the NCTPS

entering the creek through a channel (CRC 2016). In some places, fly ash is visible above water level. Before the construction of the NCTPS, they observed that the depth of Ennore Creek was 9-13 feet. Today, the creek is only 1-2 feet deep in some parts (ibid.). Fishers no longer feel sand at the bottom of the creek. Instead, they describe walking through ash slurry up to their knees. The abundance of ash in the creek threatens both the quality and quantity of the fish and prawn catch. A fisherman recalls:

“Twenty years ago the water was clean and clear like the pool at the Marina Beach. One could see the bottom of the river through the water. Now, the water is black, the river is filled with ash, and it’s difficult to catch fish. The Buckingham Canal is also filled with ash. When fish are caught, they both smell and taste of chemicals, making them difficult to sell in local markets.”<sup>11</sup>

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<sup>11</sup> Interview with author, July 13, 2016.

## Figure I. From Wetlands to Ash Ponds

(a) North Chennai Thermal Power Station Ash Pond



Source: Photo by Author. August 18, 2016.

(b) Ash in the Buckingham Canal



Source: Photo by Author. June 10, 2016.

River fish from Ennore Creek were once considered a delicacy in Chennai. Today, fishermen report that many species of fish are disappearing from the creek, and they have to sell their catch in distant markets. Over the last 20 years, Ennore Creek's fishers report that their daily income has declined on an average from Rs. 5000-6000 to Rs. 500-600 per boat. Although the TNEB promised employment to one member of each resettled household, fishers assert that these jobs are often 6- to 7-month contract jobs involving gruelling work such as digging ditches for canals in other parts of Tamil Nadu.<sup>12</sup> These physically demanding jobs pay meagre salaries. It is impossible, fishermen say, to sustain a family on income from either fishing or contract jobs alone. As a consequence, fishers have become increasingly dependent upon both loans and ration cards (for rice, lentils, and oil).

In the 1990s, Ennore Creek's fishing villages began to report a range of health problems that their ancestors did not have, including respiratory problems and skin lesions, especially among the elderly and young (see, for example, *The Hindu* 1996, 2000). This has led to increased health care costs for fishers. According to one representative of the *Ennore Anaithu Meenava Grama*

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<sup>12</sup> Interview with author, July 12, 2016.

*Kootamaipu*, fishers spend an average Rs. 20,000 per annum towards health care.<sup>13</sup> The loss of common lands and security of tenure, declining quality and quantity of fish catch, proliferation of precarious contract jobs, rising levels of indebtedness, and high costs of health care threaten the livelihoods and, indeed, the lives of Ennore Creek's fishers.

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<sup>13</sup> Interview with author, June 10, 2016.

### III. Diffusing Dissent

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**T**his section examines the role of EIAs and public hearings in the processes of marginalisation. I argue that these planning technologies are not deployed to mitigate environmental impacts or “include” the public in decision-making, but rather to “diffuse dissent” and mitigate the anger of fishers. The section first explores how and why EIAs are an inaccurate reflection of what exists at Ennore Creek, in the form of ambiguous and incomplete information about not only local plant and animal life, but also entire fisher villages.

Second, I discuss the ways in which planners use public hearings to attempt to mitigate the anger of fishers, by foregrounding corporate social responsibility (CSR) initiatives amongst fishing communities. The fishers, however, have publicly challenged these processes by questioning their legality, both within the state-sanctioned spaces of public hearings and by organising their own alternative public forums to express their disagreements.

## **Representing Environments**

How, then, do EIAs portray Ennore Creek? One of the most prominent themes in these planning documents is a depiction of Ennore Creek as empty, barren, unpopulated lands. The history of modernist urban planning is filled with examples of representing territories with populations as empty lands (Scott 1999). Yet perhaps the most important way in which EIAs depart from earlier histories of modernist planning is by explicitly constituting the “environment” as a distinctive object of governance. This section seeks to problematise how Ennore Creek’s “environment” is represented in EIAs, and to what political ends.

This report examines the EIAs for NCTPS and Kamarajar Port Limited (KPL) completed in 2015 and 2016, respectively. Each of these EIAs required detailed studies of the socio-economic and ecological impacts of proposed expansions to the NCTPS and the Kamarajar Port. Yet, as both fishers and environmental researchers contend, such studies were either incomplete or entirely missing. The “environment” described in these documents often omitted ecologically sensitive wetlands, marshes, and mangroves (TNEB 2015, KPL 2016; see also Saravanan 2014, 2015).

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Although the EIAs for both entities were supposed to include detailed socio-economic studies of the impacts of the proposed expansions upon fishers' lands and livelihood; fishers and environmental researchers contend that no such studies were provided. While one EIA only provided demographic data from the 2001 census, another omitted the presence of six fishing villages (Saravanan 2014, 2015). Neither study includes a substantive discussion of the socio-economic impacts of the developments on fishers, nor of any measures that ought to be taken to mitigate them.

Why would planners create representations of the “environment” which are devoid of the forms of life that inhabit Ennore Creek? Though it is not possible to definitively answer such a question, it is clear that Kamarajar Port, for example, has been dumping dredged ocean sand in and around Ennore Creek to create additional land and expand its facilities (TNPCB 2015). The representation of Ennore Creek's environment as “empty lands” enables the transformation of ecologically sensitive water bodies into land for industrial developments. Though the TNPCB has informed the port that such activities are illegal, fishers argue that

dumping continues.<sup>14</sup> This process—which has been aptly described in another context as “making land from water” by Coelho and Raman (2013)—threatens the livelihoods of fishing communities by fundamentally transforming the ecology of Ennore Creek, a subject which is discussed in the following section.

## **Illegalities**

Much has been written about the shortcomings of EIAs and public hearings, which explicitly aim to involve local populations in the process of planning (for a recent example, see Menon and Kohli 2015). Building upon such critiques, I argue that public hearings are best understood as technologies of pacification, which diffuse the dissent of fishers, and, by extension, contribute to processes of marginalisation. Fishers, however, are keenly aware of the shortcomings of public hearings. Ennore’s fishers have openly challenged the legality of EIA’s representations of their communities in state-held public hearings, and, at the same time, they have begun to organise their own alternative public hearings.

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<sup>14</sup> The Tamil Nadu Pollution Control Board (2016) and the Tamil Nadu Coastal Zone Management Authority has asked Kamarajar Port Limited to stop dumping dredged material in the intertidal zone areas of Ennore Creek: “Hence as per the direction of TNSCZMA, I request you [KPL] to take immediately action to stop the works in the disputed sites, i.e. in the intertidal zone (CRZ – IB), notified under the provision of CRZ Notification 2011, for bund formation in order to dump the dredged material.”

On August 5, 2016, I attended a public hearing on the proposed expansion of Kamarajar Port. The meeting began with a lengthy power point presentation by the project's engineering consultant and comments from the District Collector, who presided over the meeting. It also featured substantial discussion of the Port's CSR initiatives, including building walls, toilets, burial grounds and drinking facilities for local villages. These presentations were interrupted by hundreds of fishers, who attended the raucous meeting. Though fishers presented a variety of perspectives during the hearing, many were visibly angry, disappointed, and cynical about the port's proposed CSR projects. One fisherman, for example, argued that CSR is "something the state should be doing anyways" and is "nothing more than a bribe."<sup>15</sup>

While the Port's representative and District Collector attempted to narrow the scope of the hearing to questions of CSR and employment, fishers sought to reframe the public hearing around their principle concerns: the river, and, by extension, their livelihood. They argued that fly ash from the power plant and silt from the port had been dumped in the creek illegally. As a

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<sup>15</sup> This quote, and the other others cited in this section, are from fisher's public testimony presented at the KPL Phase III public hearing in Ennore on August 5, 2016.

consequence, one fisherman said, their livelihoods had already been “wiped out”. Though the coal power plants and the port had promised jobs in return for their consent, the same fisherman argued: “We don’t want jobs. We want our livelihood back.”

During the hearing, fishers not only raised pointed objections to specifics included in the EIA’s elements, but also articulated a more general critique of the public hearing itself. One fisherman, for example, described the hearing as a farce: “What is the point of the public hearing? Nothing ever changes. We are going to go straight to the Chief Minister and District Collector.” By questioning the efficacy of the public hearing, fishers have sought to expand their struggles for rights to land and livelihoods beyond the circumscribed, de-politicised space of the public hearings into the domains of the law and popular politics.

Fishers also organised their own public hearings to highlight the illegality of coal-fired power plants and other industrial developments. The *Ennore Anaithu Meenava Grama Kootamaipu*, a coalition of six fishing villages, invited a panel of legal and planning experts to preside over a public hearing that included testimony from fishers and a boat tour of the creek’s polluted wetlands. The public hearing emphasised the illegal nature of ash slurry leakage and dumping of dredged material in Ennore Creek (see Figure II below). It is important to note that fishing

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communities do not dismiss the idea of the public hearing, or indeed land-use planning and zoning, out of hand. Rather, they have appropriated and repurposed these planning techniques to expand the conceptual terrain of their political struggles for lands and livelihoods.

**Figure II. Nature of Violations and its Impact on Ennore Creek**

| Nature of Violation                 | Responsible Party      | Description   | Nature of Impact    |
|-------------------------------------|------------------------|---|---------------------|
| Illegal Dumping of Dredged Material | Kamarajar Port Limited | <ul style="list-style-type: none"> <li>• Dumping carried out on Ennore Creek and Buckingham Canal</li> <li>• Dumping carried out on Salt Pans, marked as CRZ I (Ecologically Sensitive)</li> <li>• Illegal Under CRZ Notification 2001 and Water Act, 1974</li> </ul> | Hydrological impact |

|  |  |  |   |
|--|--|--|---|
| <p>Leakage of Ash Slurry into Ennore Creek</p> | <p>North Chennai Thermal Power Station</p> | <ul style="list-style-type: none"> <li>● Leaking pipelines deposit large quantities of ash slurry on the water body</li> <li>● Hardens and destroys natural flow of the water body</li> <li>● Releases a range of harmful toxins into the aquatic ecosystem</li> <li>● Can affect fish resources and, in turn, livelihood of fishermen</li> <li>● Coal ash contains heavy metals such as arsenic, boron, and cadmium. Heavy metals such as selenium bio accumulate in fish and harm their ability to reproduce.</li> </ul> | <ul style="list-style-type: none"> <li>● Hydrological, ecological, and livelihoods impacts</li> </ul> |
|--|--|--|---|

Source: The Coastal Resource Centre

**Figure III. Land Use Change in Ennore**

(a) North Chennai Thermal Power Station Ash Pond (1,000+ acres)



(b) Ennore Creek 2005 versus 2016



Source: The Coastal Resource Centre

## IV. Mapping at the Margins

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In the early 1980s, state authorities converted Ennore into a region specifically designated for “Special and Hazardous Industries”. Planners drew upon technologies of land use mapping and zoning in order to sanction the development of coal-fired power plants and other industrial developments in the region. This land-use decision, moreover, has been reflected in the subsequent land-use maps produced by the CMDA’s Master Plans. The rationale for these zoning decisions and land-use maps, however, are replete with ambiguities. I argue that it is precisely these ambiguities that enable planners to render Ennore Creek’s lands, water bodies, and populations as marginal. Fishers, however, are drawing upon new mapping technologies to highlight the illegality of such land use conversions under the 2011 Coastal Zone Regulation notification.

### **Technologies of Zoning**

The reclassification of Ennore as an area for “Special and Hazardous Industries” has been, and remains, one of the more controversial decisions in the history of land-use planning in Chennai. In 1986, a professor of civil engineering described the zoning decision as “illegal and unconstitutional” on the grounds

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that it violated government guidelines concerning the siting of hazardous industries, protection of coastal areas, and proximity to densely populated urban areas (TNEB 1986: 99). Interestingly, the same critic cited that NCTPS, which is only 12 kilometres from the city, should be located at least 25-kilometres outside of Chennai (ibid.).

In response to such critiques, the TNEB argued that it had followed all the guidelines that were required under the law. Moreover, the TNEB pointed out that the guidelines were not clear about whether the distance of the power plant should be measured from “the periphery of the city or the centre point of the city” (TNEB 1986: 99). The TNEB, in other words, took advantage of procedural ambiguities in order to promote the development of the NCTPS.

The CMDA’s Second Master Plan, drafted in 2006, also provides land-use maps that list Ennore Creek as an area zoned for “Special and Hazardous Industries”. The Master Plan does not provide specific rationales for this land use decision, but it does describe three “spatial strategies” for promoting and managing growth. First, the land use plan explicitly sought to “encourage growth *outside* the CMA on the main corridors” (CMDA 2006: 112).

Second, the land-use plan draws upon technologies of zoning to “segregate hazardous and environmentally unsuitable” uses from other urban uses of work, housing and recreation to reduce the effect of negative externalities, which the former have on the latter” (ibid.). Third, the plan will achieve its ecological objectives by “demarcating areas of significant ecological and water resource values for preservation and conservation” (ibid.). In sum, the plan seeks to move growth *outside* of the city where “hazardous” industries can be segregated from other parts of the city.

In the most recent CMDA Master Plan, principles of economic growth and environmental sustainability shape how planners frame and interpret particular landscapes and ecologies. Coastal areas, for example, are mentioned as an “important feature” of Chennai’s “economy and environment” (CMDA 2006: 113). Therefore, land use zoning “has been carried out in accordance with CRZ regulations” (ibid.). In addition to economic growth and environmental sustainability, land use planners sought to ensure public participation and democratic accountability by establishing a “Land Use and Environment Committee” consisting of both government and non-governmental members to ensure the implementation of the plan’s land use policies (CMDA 2006: 118). Though the Committee is required to be formed under the Master Plan, it has not been convened.

Aside from adumbrating these broad principles and aims, the 2026 Master Plan provides little information concerning how specific land use and zoning decisions were made (Govindarajan 2016; Jayaraman 2016). It simply provides a land-use map with Ennore Creek zoned for “Special and Hazardous Industries”. The decision to convert Ennore Creek to a zone for “Special and Hazardous Industries” is both consistent and contradictory to the land use plan’s principles and aims. On the one hand, it is a decision that promotes “economic growth” and moves “hazardous industries” to the city’s geographical boundaries. On the other hand, it is a decision that converts ecologically sensitive wetlands and CRZ tidal and intertidal zones into “Special and Hazardous” industries with little substantive engagement with impacted coastal communities, including fishing villages.

### **Alternative Mappings**

Crucially, the land use plan does not justify how and why wetlands—which include marshes, mudflats, salt pans, and mangroves—have been converted to “Special and Hazardous Industries”. Moreover, the land-use plan does not include quantitative data on the scale of land-use conversions proposed in Ennore Creek. These ambiguities have enabled the proliferation of “Special and Hazardous Industries”, including massive coal-fired

power plants, factories, industrial ports, and related infrastructures such as roads, bridges and conveyor belts. Such developments have put even more pressure on the ecology of the creek and, by extension, the livelihoods of fishers.

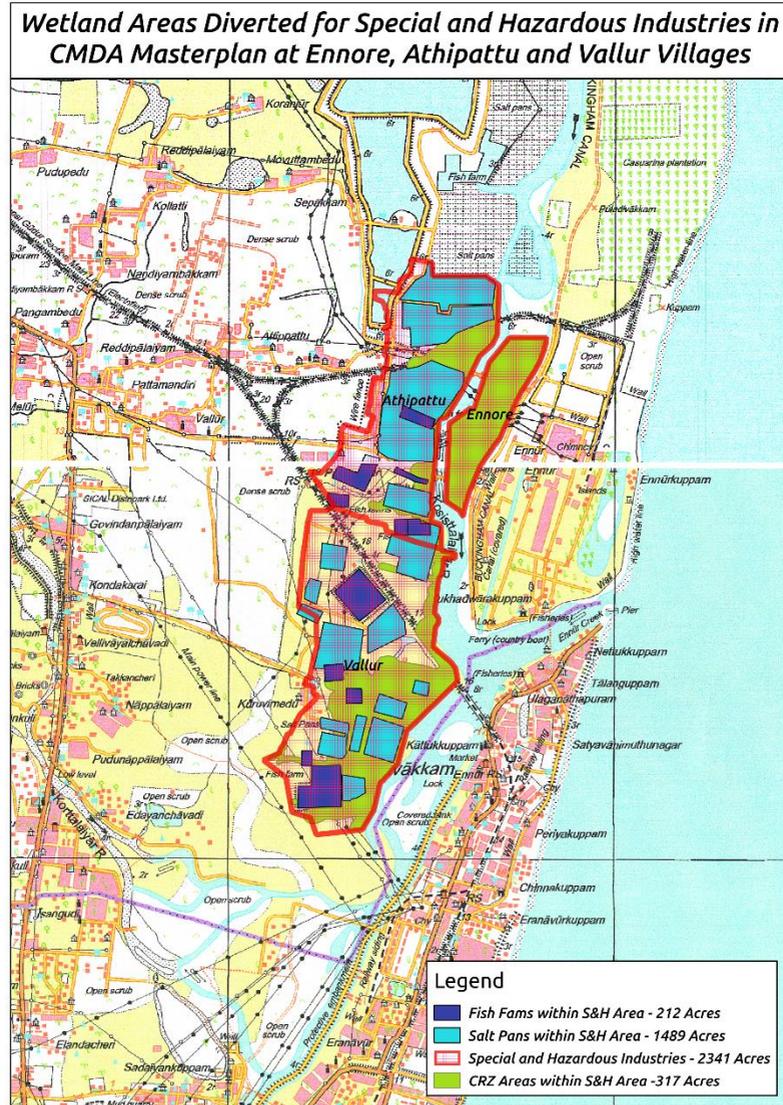
In the aftermath of the devastating 2015 December floods, Chennai-based Right To Information (RTI) activists have demanded that the CMDA provide maps of the city's water bodies, including Ennore Creek. Planners at the CMDA, however, responded that no such map exists, and that "such accuracy is not required in the master plan. There is no plan to incorporate and integrate the information" (CMDA 2016 as cited in Govindarajan 2016). The Chennai Master Plan's ambiguities enable certain forms of industrial development, including coal-fired power plants, to proliferate in ecologically sensitive areas like Ennore Creek.

Residents of Ennore's fishing villages are drawing upon GIS mapping techniques to highlight the illegalities of the Master Plan, and to claim rights to lands and livelihoods. K. Saravanan, a fisherman and activist from Urur Kuppam, has mapped the implications of the Master Plan's land use conversion on the fishing villages of Ennore. By overlaying the Master Plan's land-use maps with Survey of India toposheets and Coastal Zone Regulation Authority maps in GIS software, Saravanan estimates that 1,000 hectares (2,341 acres) of land will be converted to

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“Special and Hazardous Industries” in the fishing villages of Athipattu, Vallur and Ennore. The ecological ramifications of the Master Plan’s land use conversion are significant: nearly 1,500 acres of salt pans, 212 acres of fish farms, and 317 acres of areas identified either as tidal and intertidal bodies under the CRZ are marked as “Special and Hazardous Industries” (Hariparanthaman 2016).

Figure 2. Wetlands Diversion



Source: The Coastal Resource Centre

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Working closely with the fishers, Chennai-based urban planners, legal experts, engineers and environmental activists have lodged a complaint with the CMDA Land Use and Environmental Committee to rezone Ennore so that it is consistent with the 2011 CRZ Notification, which contains provisions to protect coastal wetlands. In a letter to the committee, retired Madras High Court Judge D. Hariparanthaman argues that areas protected under the Coastal Zone Management Plan have been zoned for activities prohibited under the 2011 CRZ Notification. As Judge Hariparanthaman (2016) observes:

“I am alarmed at the scale of encroachments permitted, and those envisaged by the Master Plan. I wish to bring this to the notice of the Monitoring Committee and strongly urge that steps be taken to reverse the damage already done, and prevent any further damage by re-zoning the area in line with the mandates of environmentally sustainable development.”

## V. Conclusion

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**F**ishing villages in Ennore are said to live at the margins of the city. This report has sought to demonstrate that geographical “margins” and conditions of “urban marginality” are produced through historically and geographically specific planning interventions. I have argued that the process of developing coal-fired power plants is not simply a material struggle between state and marginalised communities over coal, land and livelihoods. It is also a struggle over the instruments and idioms of urban planning as a form of knowledge. I have emphasised the question of knowledge because, as Maringanti (2011: 64) has eloquently argued, “envisioning the right to the city as the fundamental human right, a demand for a just and sustainable social order where collective resources are respected and regenerated to support life, entails a democratic approach to the creation of knowledge about our cities”.

This report has analysed three planning technologies in Ennore: land acquisition and resettlement, EIAs and public hearings, and land-use maps and zoning. Though each of these are distinctive ways of interpreting, enumerating, and mapping Ennore Creek’s landscapes, each is characterised by ambiguities and illegalities. The report has also tracked how state authorities and fishers draw upon

planning technologies in order to articulate political claims to rights and resources in Ennore Creek.

The existing capacity of coal-fired power plants in Ennore Creek, including NCTPS, is 3,480 MW. Tamil Nadu State authorities have approved the construction of several new power plants (totalling approximately 4,630 MW) in Ennore alone. This proposed expansion alone would make Ennore Creek's coal-fired power plant capacity larger than that of the Korba power plant cluster in Chhattisgarh. There is, however, no need for such new capacity: not only has the Power Ministry announced plans to curb the development of coal-fired power plants across the country over the next five years, the Tamil Nadu State electricity grid has neither the finances nor infrastructure to evacuate an additional 4,630 MW of electricity (Jayaraman and Kumar 2016).

Moreover, as the December 2015 floods made clear, the transformation of Chennai's water bodies and natural shock absorbers—including marshes, creeks, lagoons and mangroves like that of Ennore Creek—has devastating consequences for not just fishers, but all urban citizens across the city. In this sense, fisher's struggles over coal, land and livelihoods in Ennore should not be

understood as marginal, but as central to processes of urbanisation and environmental change in Chennai.

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Mukul Kumar was a Public Policy Scholar at The Hindu Centre for Politics and Public Policy from May to August 2016. Mukul is currently a PhD Candidate in the Department of City and Regional Planning at the University of California, Berkeley. His research interests include urban political ecology, development studies, and science and technology studies. He can be reached at [mukul.kumar@berkeley.edu](mailto:mukul.kumar@berkeley.edu).



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**Web:** [www.thehinducentre.com](http://www.thehinducentre.com)

**Phone:** +91-44-28524445

+91-44-28538155

**Email:** [thc@thehinducentre.com](mailto:thc@thehinducentre.com)