

## **Coastal Zone Management Plans & the regulation of coastal habitats in Mumbai**

An inquiry into the governance and cartography of a politicised environment

by *Kasturi Gandhi*

*Abstract: Coastal areas in India have been regulated since 1991 using guidelines of the Coastal Regulation Zone (CRZ) Notification. The notification divides India's coastal areas into various categories, and directs their regulation based on their ecological and demographic features. One of its essential outcomes was to be the preparation of land-use maps, called "Coastal Zone Management Plans" (CZMPs), hinging on which projects proposed for coastal locations would be approved/rejected. Today, three decades since the passing of the notification, accurate CZMPs have yet to be drawn-up for several coastal zones. This fact, against the context of a liberalising economy, rising urbanisation, power disparities, and adverse climatic events, has diminished the promise of the notification, and caused problematic land distribution and socio-ecological issues. The present dissertation uses the Political Ecology lens to scrutinise the preparation of the CZMPs, formal apparatus, and state networks of the CRZ Notification, building a case-study of coastal regulation in the Mumbai Metropolitan Region. It regards flawed CZMPs as products of a "politicised environment", and as sites of 'power' and 'control' (Bryant and Bailey, 1997), influenced by the state, multilateral institutions, businesses, NGOs, and grassroots actors. Through qualitative and archival research, it shows how the visual discourse of the CZMPs for this geography has supported political and economic agendas of the state and corporate businesses, whilst marginalising grassroots actors comprising indigenous communities and making more vulnerable the ecology of the coastline.*

## Part 1

### 1. Introduction

#### 1.1. The Context

The Coastal Regulation Zone Notification is arguably India's definitive policy on the governance of coastal landscapes and communities. Its genesis lies in a letter dated November 27<sup>th</sup>, 1981, from the then Prime Minister of India, Indira Gandhi, to the Chief Ministers of India's nine coastal states; the letter directed them to ensure the protection of the country's coastline from further degradation, and emphasised that the 500 metre strip of land on the landward side of coastline should be kept free of all *unnecessary* development<sup>1</sup>. This directive, in turn, was situated in the context of various national and transnational policy events. One of them was the 1972 United Nations Conference on the Human Environment<sup>2</sup>, which had influenced India to make environmental protection a constitutional mandate<sup>3</sup>, and by 1980 form the Department of Environment or, as it was known after 1985 - the Ministry of Environment and Forests (MoEF). At the start of the next decade, on February 20<sup>th</sup>, 1991, Indira Gandhi's directive was formalised as the Coastal Regulation Zone Notification. Just months after, on July 24<sup>th</sup>, 1991, the then Finance Minister of India, Manmohan Singh, presented the Union Budget which propelled India into economic liberalisation<sup>4</sup> - a process whose beginnings went back a few a decades too.

Thus was born the conflict between the conservation-oriented guidelines of the Coastal Regulation Zone Notification (referred to hereafter as CRZ 1991) and MoEF, and the economic growth-oriented Union Budget. Whereas the latter sought to promote deregulation<sup>5</sup>, the former enforced a strict regulation of geographies crucial to India's economic trajectory. One such geography was the Mumbai Metropolitan Region.

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<sup>1</sup>Sahu, B. (2016) *Genesis of Coastal Regulations in India*. Source: Odisha Envis Centre

<sup>2</sup> The United Nations Conference on the Human Environment, June 5-14, 1972 at Stockholm (Sweden)

<sup>3</sup> *Laws for Prevention & Control of Pollution, Protection of Environment*. Source: PMF IAS

<sup>4</sup> Rao, A., Kadam, K. (2016) *25 Years of Liberalisation: A glimpse of India's Growth in 14 charts*. Source: Firstpost

<sup>5</sup> *Rethinking Poverty: Report on the World Situation 2010*. UN Department of Economic & Social Affairs. Source: UN website

## 1.2. Mumbai - A Contested Geography

The Mumbai Metropolitan Region (referred to hereafter as MMR), consists of the island city of Mumbai and its abutting satellite towns - nine municipal corporations and fifteen smaller municipal councils. To better understand the complexity of coastal regulation in the heart of a liberalising economy, it helps to briefly (albeit simplistically) trace the city's ecological, social, and economic history. Mumbai had always been ecologically unique. Two centuries ago, "the city" had been seven separate and thickly wooded hilly islands, which would partly become inundated by the surrounding Arabian Sea during high tide - they were Colaba, Old Woman's Island, Bombay, Mazgaon, Parel, Mahim and Worli. The sea had made several inroads through the erstwhile landmass, creating creeks, swamps and marshes, and this had led to the proliferation of fisherfolk communities, the Kolis and Agris<sup>6</sup>, along the coastlines during the 12th Century. Over time, their homes and neighbouring land used for fishing drying, storage, and boat making, came to be known as "koliwada"<sup>7</sup>, and became permanent features of the area's demographic profile.

During colonial rule in the 19th Century, attempts were made to unify the islands and make a contiguous city around the Fort in Colaba. Causeways were built to stop the ingress of the sea, and hills were quarried and flattened, the rock dumped into the sea to make more land for mills, commercial banks, dumping yards, hospitals, universities, dockyards, railway lines, and residential areas.



*Image 1: The making of Mumbai  
Image source: Quora*

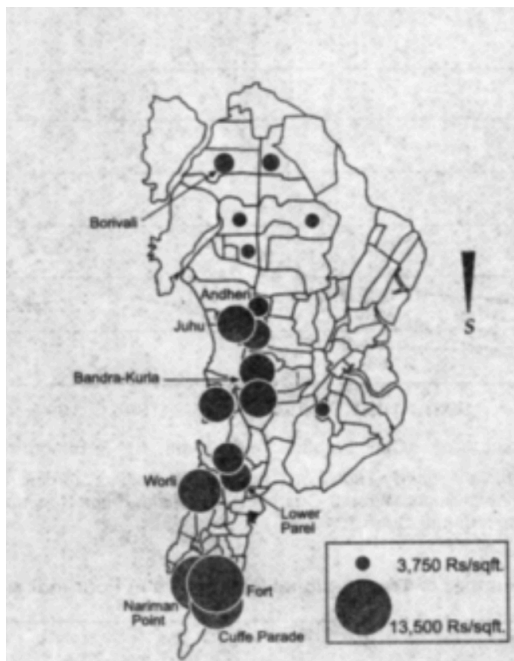
Migrant populations from the mainland sought income-fetching jobs in the island city too, settling northwards into the Salsette Island, where land was cheaper. The city was viewed as the "gateway" to India and as its financial and commercial capital, becoming home to highly

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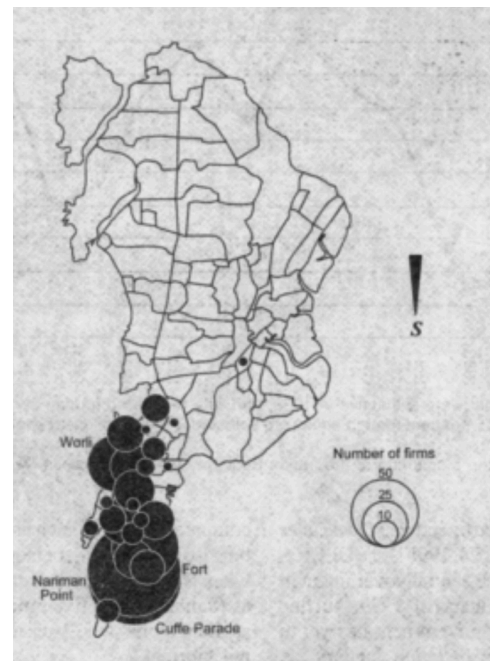
<sup>6</sup> It is believed that as far back as the 12th century, the king Pratapbimb established his kingdom Mahikawati (present day Mumbai suburb of Mahim), and invited 66 tribes to reside there of which the Kolis and Agris were two of them. Source: Gaon Connection

<sup>7</sup> koliwada means a colony of kolis, and in contemporary parlance encompasses residences, fish drying grounds, ancillary fishing activity areas, and boat parking and mending areas

disparate socio-economic classes and an important port area - the city's eastern harbour. Gradually, seven islands were made one with each other, the northern Salsette and Thane islands, and expanded eastward to create 'New Bombay' (in 1971) across from the harbour. Districts like Nariman Point, Cuffe Parade, Ballard Estate and Fort in south Mumbai (reclaimed from the Arabian sea) rapidly became geographies of incoming transnational capital, and for a while, recorded the highest commercial property prices in the world (Nijman, 2000). Consequently, central, northern and eastern suburbs like Bandra-Kurla Complex (reclaimed from the Mithi river and the city's flood plains), Andheri, Jogeshwari, Goregaon, Kandivali and Borivali, being relatively cheaper, became geographies for manufacturing industries and the city's working class populations.



*Image 2: Real Estate Values in Mumbai, 1998.*  
*Image source: The Bombay Times, May 28, 1998,*  
*'City Looks up as Prices Dip'*



*Image 3: Transnational firms in Mumbai.*  
*Image source: Center for the Monitoring of the*  
*Indian Economy, Prowess Database,*  
*Mumbai, 1998*

Mumbai's coastal geography became increasingly heterogeneous, with its urban spatial form changing within minimal spatial distance (Mehrotra et al, 2018) at any given stretch; as the influx of economically disadvantaged migrant populations increased, so too began another significant change in Mumbai's built landscape - the growth of slum clusters housing about 6 million of the city's population. In this way, the landward side of Mumbai's coastline assumed multiple identities - island, metropolitan region, port, trading zone, real estate, fishing grounds, residences, and public commons.

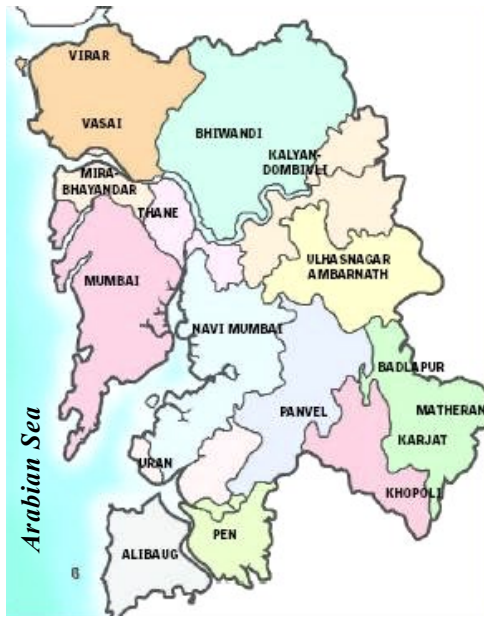


Image 4: The Mumbai Metropolitan Region.  
Image source: Wikipedia

### 1.3. Coastal Regulation and CZMPs

With the promulgation of CRZ 1991, all the varied seaside geographies of Mumbai would be officially acknowledged as “coastal zones” - rural and urban landward stretches situated along seas, bays, estuaries, creeks, rivers, and backwaters influenced by tidal action, up to 500 metres from the High Tide Line. Not only did the notification prohibit the setting up of new industries or expanding old industries in these categories, it also provided guidelines on what would be permitted there.

CRZ 1991 stipulated that each coastal state would have to prepare “Coastal Zone Management Plans” (referred to hereafter as CZMPs) within a year from the date of the Notification. For this, state governments were to identify, classify, and categorise (on detailed maps) coastal zones of Mumbai as CRZ I, II, III, and IV; the CZMPs thus prepared would have to be approved by the central Ministry of Environment and Forests (MoEF). It was within the framework of approved CZMPs that local authorities (state governments) were to regulate the coastal zones.

### 1.4. Mapping a topography at odds

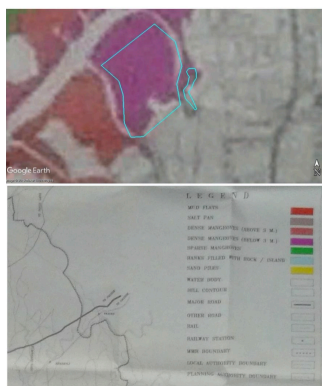
Today, when the various documentations of coastal land use in MMR are compared with one another - the CZMPs, Development Plans<sup>8</sup>, historical satellite imagery of MMR, and the oral testimonies of the indigenous residents of the coastal zones - they seem to tell different stories; stories about how many hectares of mangroves exist/existed, where the flood plains are, to what extent creeks flow into the land, which lands have been used traditionally for ancillary fishing activities, and so on. This is a problem when it comes to official data, raising the question - *whose visual discourse controls the regulation of Mumbai’s contested coastal landscapes?*

<sup>8</sup> Development Plans are public documents that entail rules and regulations for all kinds of ongoing and future real estate developments in Mumbai. These plans are applicable to the area under the Municipal Corporation of Greater Mumbai (MCGM) and are prepared by the MCGM too. They include information on Floor Space Index, Transfer of Development Rights, Slum Rehabilitation, Redevelopment, and other zoning

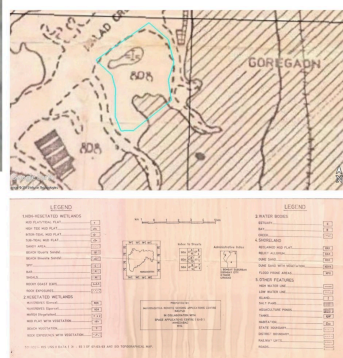
This problem began in the initial years of the notification itself - by the delay (of five years) in the preparation of the CZMPs, the errors in zoning and demarcation, and the exclusion of local communities from their preparation. In the interim, several project layouts (violating CRZ 1991) for the coastal zones in question were promptly approved by the state government via “back-door deals”, often made possible through corruption, bribery, and organised crime (Nijman, 2020), and sometimes by state-backed amendments to the notification itself. These projects included the expansion of the newly built coastal city of Navi Mumbai into ecologically sensitive coastal zones, a World Bank aided housing project (on salt marshes), Special Economic Zones (SEZ), a second airport for Mumbai (on erstwhile wetlands), a new terminal port in the Mumbai Harbour, coastal roads, and residential complexes<sup>9</sup>.

Over the past three decades, their consequences have included the inundation of coastal villages, displacement of fisherfolk communities in MMR’s satellite towns, rebellion and state violence, large scale seasonal flooding, Blue Sky Flooding<sup>10</sup>, beach erosion, salination of village wells, loss of coastal ecosystems, and a disproportionate loss of livelihoods for traditional stakeholders.

*Goregaon Pahadi Coastal Zone  
of North Mumbai*



*Image 5: Mangroves Status Maps of 1997 showing the region as having Dense Mangroves*



*Image 6: Wetlands Map (1994) showing the region as having Dense Mangroves and Intertidal Mudflats*



*Image 7: Google Earth Imagery showing the change in land use in the region from 2009 to 2019*

<sup>9</sup> Elaborated upon as case studies in Part III of this dissertation

<sup>10</sup> Blue Sky Flooding: Unlike flooding associated with downpours, this flooding comes as a result of high tides. These tides happen twice a month during new and full moons. During these periods, high tides are higher and low tides are lower than those occurring at any other part of the month



Image 8: The lack of demarcation of the mangroves and mudflats in Goregaon Pahadi on the CZMPs of 2011 and 2019. Source: MCZMA website

