

# Mumbai's Blinkered Vision of Development Sacrificing Ecology for Infrastructure

AMRITA SEN, HARINI NAGENDRA

Drawing on a discussion of five infrastructure projects in Mumbai, the lack of comprehensive focus in policy on environmental issues is highlighted. A project-wise focus and an unsustainable pattern of urbanisation have distanced the city development plans of Mumbai from achieving essential, interdependent goals of ecological health, environmental justice, and well-being.

There is a pervasive human aspiration for development, forged through “the ideals of modernity disseminated since World War II” (Lele et al 2018: 2). The appeal of development has fascinated planners of Indian cities for decades. Yet, in practice such development has not only bypassed the environment, but also helped in the systemic destruction of ecosystems and the essential services they provide for Indian cities. Rapid urban transformation has taken place with little or no consideration of the complex and interconnected impacts of land-use change, tree felling and ecosystem destruction, impacting the ecological resilience of cities. Local environmental impacts, including an increase in urban heat islands, air pollution and environment-related epidemic outbreaks are on the rise across urban India (Nandi 2018). These impacts will only strengthen over time, as Indian cities continue to grow and expand, driven by a combination of internal growth and rural distress (Revi 2008: 214).

The fifth assessment report of the Intergovernmental Panel on Climate Change (IPCC, Working Group III) finds that urban areas globally account for close to three-fourths of the total greenhouse gas emissions (Seto et al 2014: 928).

Climate change will have severe environmental and socio-economic impacts on cities, exacerbating the effects of local environmental change. Despite the fact that it is crucial for cities to have clear emission reduction targets, very few do so, and most of these are aspirational, neither reflecting actual mitigation potential nor appropriate implementation (Seto et al 2014: 973). In fact, the coming decades are anticipated to witness soaring investments in public expenditure and infrastructure projects.

In these critical times, it is inexplicable that we do not yet have a comprehensive, holistic, cross-sectoral approach to conduct future-proof environmental risk assessments of these megaprojects (Nilekani 2019). City development plans are often designed using a narrowly defined set of objectives, prioritising the growth of built infrastructure (Kennedy 2015). This is driven by a fundamental, blinkered imagination of cities as nodes for the absorption of surplus capital, disregarding the impact of such growth on the urban marginalised (Harvey 2003).

Framed within a capital-intensive imagination of cities, urban development megaprojects have little incentive to focus on social and ecological sustainability. Such projects mostly focus on local environmental ramifications in a piecemeal manner, if at all, without a concern for the disruption of the larger urban ecosystem. Mega development projects have severely impacted the ecology and environment of Indian cities, leading to rising air pollution, decreased groundwater, soaring urban heat island temperatures, frequent outbreaks of diseases like dengue and swine flu, and an increasing

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Amrita Sen ([amrita@apu.edu.in](mailto:amrita@apu.edu.in)) and Harini Nagendra ([harini.nagendra@apu.edu.in](mailto:harini.nagendra@apu.edu.in)) are with the Centre for Urban Sustainability in India, Azim Premji University, Bengaluru.

frequency of disasters like floods. The complexity of the outcomes are rarely understood or accounted for.

Global flows of capital and the struggles by individual cities to get a share of this capital have ultimately resulted in a developmental paradox, which neither serves “public purpose” nor is “future-proof” (Roy 2009: 79). Such lopsided planning is driven by an urban imagination geared towards ambitious residential and infrastructural projects with the stated vision of producing “world class cities” (Baviskar 2011, 2018; Padma 2018). Most urban megaprojects in cities of the global South reveal an absence of an ecological imagination of cities. Instead, functional, thriving ecosystems like rivers and urban forests are recast as empty spaces, prospects for future real estate development (Follman 2015). In addition to flows of capital, urban megaprojects are also driven by discourses on globalisation informed by global policy networks (Kennedy 2015). Such a political economy of urban development will continually resist imperatives of social equity, collective well-being, and environmental protection.

### Infrastructure against Ecology

The popular imagination of Mumbai as a city epitomising cosmopolitanism is often foregrounded in aspirations of growing global recognition and employment opportunities facilitated by a steady flow of corporate capital. The extent to which such aspirations correspond to reality, let alone to resilience and sustainability is often unclear. Mumbai has a long list of pressing environmental problems, listed in a recent report on the World Environment Day 2015, as shrinking mangroves, toxic air, dying lakes, depleting marine biodiversity, irrational city “beautification” plans, fires on dumping grounds, e-waste poisoning, degrading forests, and plastic waste dumping (*Hindustan Times* 2015). Yet, rapid land transformations through processes like gentrification continue, mostly fuelled by a demand for capital accumulation (Chatterjee and Parthasarathy 2018: 2).

The agenda of technical management, a fundamental feature of Mumbai’s city development plans in the post-liberalisation

period, was primarily fuelled by an aspiration for making a “world city with offshore financial facilities” (Banerjee-Guha 2002: 122). Environmental problems have been disregarded in the rush for the city to rapidly urbanise and globalise itself. Accordingly, the City Development Plan of Mumbai 2034 reflects an ambitious developmental and infrastructural agenda for the coming 20 years. The plan is geared towards real estate development, with a relative disregard of effects on water supply, transport, sewage, flood and pollution control, and environmental health (Indorewala 2018). Although the plan engages with affordable housing, much of this housing has so far remained only on paper. Purportedly for the poor, the Brihanmumbai Municipal Corporation (BMC) has earmarked around 2,500 hectares of salt pans in the city, oblivious of the important benefits of salt pans as urban commons that provide important livelihoods for traditional low-income communities, as well as their ecological importance in acting as a buffer against floods in a time of climate-induced sea level rise.

A number of cases from Mumbai, taken together, illustrate the systemic disregard of socio-environmental and ecological impacts in recent years. The Aarey Milk Colony of Mumbai, one of the largest government dairies in India covering 4,000 acres and housing several cattle herding hamlets, is subject to a threat of

diversion of approximately 70 acres, to construct a Metro-3 car shed.<sup>1</sup> This area, at the fringe of the Sanjay Gandhi National Park (SGNP), is home to highly biodiverse scrub forests, seasonal freshwater marshes, rocky hillocks and grasslands, and contains endangered fauna such as leopards, rusty spotted cats and pythons (Adhya 2015; Shinde 2017: 80). This colony provides fodder for around 30,000 cattle, which supply milk to Mumbai, and is therefore an important source of local livelihoods. The Aarey forest area is attractive for real estate lobbies, given the soaring land prices in the area (Parthasarathy 2011). Systemic efforts to divert the land for golf courses, luxury hotels, residential complexes, petrol pumps and other urban projects have already led to the diversion of about 500 acres of the colony.

Land diversion for the Mumbai Metro car shed was sanctioned by the BMC in 2014, despite the risk to 2,700 mature trees, in one of the last large wooded public spaces of Mumbai. Despite widespread protests from the citizens and environmental non-governmental organisations, the proposed diversion remains in the plans, justified on the grounds that it is sanctioned on government-owned forestland. Yet, the project will have repercussions far beyond its physical boundaries. The felling of trees will endanger the water retention capacity of the land along the Mithi river, adjacent

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to the Aarey Milk Colony, leading to the increased risk of floods (Adhya 2015). The felling of a large number of trees is also likely to drive leopards and other wildlife inhabiting the Aarey forests into adjacent densely settled areas, exacerbating human-wildlife conflicts.

Another example of blinkered developmental vision is the proposed new international airport at Panvel, Navi Mumbai. This airport will be built on 141 hectares of reserved forest and 110 acres of mangroves. Proposed in 1997, the airport project got environmental clearance from the Ministry of Environment, Forest and Climate Change in 2010, through exemptions facilitated by amendments in the Coastal Regulation Zone (CRZ) Notification and an erroneous environmental impact assessment report (Chauhan et al 2016: 52). Apart from endangering the wetlands and diverting two river channels of Ulwe and Ghadi, the airport will also disturb the Karnala Bird Sanctuary, home to 147 varieties of resident and 37 species of migratory birds (Menon 2013). The airport will disrupt the mudflats of Navi Mumbai, which act as a sponge, protecting the area from flooding by retaining excess water during the monsoon. The repercussions were already visible in 2018, with flooding in the adjacent low-lying areas. The construction of two parallel airport runways uses stones and soil from the nearby Ulwe hill, exacerbating the instability of the surrounding terrain. Despite assurances of building a 245-hectare compensatory mangrove park, the City and Industrial Development Corporation (CIDCO), which is implementing the project, has still not been able to decide the location of the park. The project will also displace 3,500 families to make way for the airport.

The Mumbai Trans Harbour Link (MTHL), also referred to as the Sewri-Nhava Sheva Trans Harbour Link, is the third example of ecologically blinkered planning. The longest bridge in India, the proposed 22-kilometre (km) sea link which received environmental clearance in March 2005, aims to reduce travel time between Mumbai and Navi Mumbai. The sea link extends through 5 km of coastal mudflats, and will impact

47.4 hectares of wetland, including the Karnala Bird Sanctuary. The MTHL will also impact the ecologically sensitive area around the Sewri creek, where close to 40,000 flamingos nest every year between November and June (Ganesan 2016).

### Degrading Lakes and Rivers

Other ecological hazards are posed by the growing degradation of Mumbai's lakes. The Powai Lake, situated at the peri-urban interface of Mumbai, was built by the British administrators in 1891 by damming the Mithi river. The lake is surrounded by premier educational institutes—the Indian Institute of Technology Bombay and the National Institute of Industrial Engineering—and by the SGNP. The Powai Lake is now highly degraded, with levels of biochemical oxygen demand reaching 150 milligram (mg) per litre, against the accepted standard of 20 mg per litre, posing a threat to its aquatic life (Chatterjee 2017). The lake is a habitat of several varieties of carps, eels and fishes, and is also home to a large number of crocodiles. Instead of ecological restoration efforts, planners have devised irrational beautification plans, including the construction of a musical fountain. Ill-designed initiatives have been undertaken for rejuvenation of the Mithi river, which

originates from the Powai and Vihar Lakes. The river is planned to be made pollution-free by the Mithi River Development and Protection Authority, a process which began in June 2018. Once a source of drinking water for the surrounding areas, the 18-km long Mithi river now contains highly polluted water, and is often referred to as an open drain. The ₹120 crore rejuvenation plan for the river demarcates less than 5% of this polluted water for treatment. Out of the inflow of 124 million litres a day (MLD), only 6–8 MLD will be treated to remove sewage (Chatterjee 2018).

The combination of multiple capital-intensive development plans, coupled with badly designed, cursory attempts to rejuvenate some of the ecosystems, have had stark socio-ecological consequences. The impact of construction on mangroves, mudflats, creeks, rivers, lakes, salt pans and forests are visible in the city's increased risk of floods, heat waves, air pollution, and respiratory and waterborne diseases. In addition to bearing the brunt of the city's development aspirations as a consequence of eviction and exclusion, the urban poor have borne a disproportionate share of these environmental and ecological hazards. Coastal erosion has affected

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marginal fishers, foragers and grazers have been deprived of access to productive pasture commons, salt pan workers have been evicted for real estate development, and marginal slum and pavement dwellers have been dispossessed to make way for ambitious housing projects and city beautification agenda. With an accelerated single-point agenda of economic growth fuelled by construction, Mumbai at present exhibits little prospects of thinking strategically and systemically about the need for sustainable growth, in a manner that addresses environmental and social concerns.

### In Conclusion

For most Indian cities like Mumbai, sustainable development remains a buzzword, far removed from actually ensuring intertwined goals of environmental health, equity, and well-being.

Projections indicate that the population of Mumbai may increase to over 42 million by 2050 (Hoornweg and Pope 2014). A growing population and an increasing demand on consumption will lead to greater demands on ecosystem services. People cannot live without clean air and water, or access to nature in cities (Nagendra 2016). P K Das (2014) points out the importance of building inclusive visions for city development through neighbourhood planning. A developmental plan largely driven by infusions of global capital will not help in planning ecologically sustainable growth, or in addressing concerns for equity, since the vast majority of the city's marginal residents remain out of its scope.

Cities like Mumbai have already begun to witness the effects of unplanned growth in the form of increased health hazards and epidemics, environmental pollution, and the loss of biodiversity. Many of these are one-way processes, difficult if not impossible to reverse. The case of Mumbai is, sadly, not unique. We can see similar patterns repeated in other cities, including Delhi, Chennai and Bengaluru. With India on an accelerated path to urbanisation, we need greater dialogue around how to develop systemic and inclusive planning for an urban future that addresses social,

environmental, ecological and climate crises—both current and future.

#### NOTE

- 1 The 3rd line of Mumbai Metro, proposed to be opened from 2021, would connect Colaba-Bandra-SEEPZ, complementing the 1st and the 2nd line.

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