Policy BRIEFING

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Transforming Urban Governance to Manage Uncertainty and Climate Change in Mumbai, India

Despite unprecedented wealth accumulation, coastal Mumbai suffers from a myriad of socioeconomic and ecological challenges as well as connected uncertainties. These include endemic flooding, shrinking of sensitive ecosystems, inequality, and marginalisation of natural resource-dependent communities, such as fishers. These are in addition to existing risks, including building collapse, fire hazards, infrastructure collapse, industrial accidents, and landslides. The spectre of climate change looms large and further complicates the situation. Urban governance mechanisms and strategies respond insufficiently to the growing threats the city faces. More needs to be done to manage and address these uncertainties through a strategic, adaptation-focused, and communicative urban governance framework that emphasises both reducing risk and strengthening social justice.

Governance and uncertainty

Governance in urban megacities in general, and in Mumbai particularly, is a notoriously complex exercise. The range of actors, scales of governance, multiplicity of institutions, pace of economic development, and emerging threats from environmental change create multiple layers of uncertainty. Uncertainty impedes the ability of local policymakers and governments to accurately predict or plan for future events and disasters (for example, an extreme weather event's intensity, scale or timing, such as the devastating Mithi deluge in 2005) and associated impacts, and attribute a single identifiable root cause (or numeric value) to a situation or outcome. The fractured nature of governance, for instance, creates uncertainty and is a major obstacle towards effective development planning and disaster mitigation.

Social, political, and natural causes of flooding

Annual flooding is undeniably an important matter of concern for residents and public authorities, especially since the devastating Mithi River deluge of 2005 that claimed more than 1,000 lives. Extreme rainfall is often blamed for floods. However, it is only a proximate cause for their occurrence and ongoing attempts to control the runoff have not yielded intended results. Despite a number of infrastructure interventions by authorities, such as retainer walls and pump stations, flooding remains chronic in Mumbai.

Existing approaches preferred by the Municipal Corporation of Greater Mumbai and the Mumbai Metropolitan Region Development Authority tend to sideline underlying causes that are as much political and social in nature as they are physical. For example, unregulated construction activities, untreated discharge of solid waste, ill-planned and uncoordinated urban planning, and disappearing floodplains and mangrove areas have aggravated the vulnerability of many areas by hindering absorption and outflow of water. The consequent flooding affects all sections of society. A greater burden is, however, borne by economically and socially weaker sections, who live in low-lying areas and in closer proximity to drainage channels. They experience ill health through increasing incidence of vector-borne diseases or exposure to contaminated water, injuries, loss in earning days, and destruction of assets and property on a regular basis, with limited capacities to cope, and little state support.

Livelihoods, development, and climate change

City residents perceive climate change mainly in terms of more erratic and intense rainfall events, as well as increasingly frequent heatwaves. In addition, middle-class residents articulate it in terms of rising pollution and a deteriorating quality of the natural environment. Mumbai's oldest community, the *Koli* fishers, observe changes in wave strength, wind, tidal flows,

ocean currents, and sea temperature. The altered patterns adversely affect their fish catch and add uncertainty to their livelihoods. Uncertainties around climate change impacts interweave with larger development trends in the city, including those stemming from global market integration and industrialisation. *Koli* fishers point out that big trawlers, pollution, and disappearing mangroves and coastal ecosystems have had a major impact on their livelihoods. Urbanisation swallows large tracts of fisher spaces, as in the case of the Jawaharlal Nehru Port development. Mangroves also form an important natural defence barrier against floods and coastal erosion, but remain threatened by land grabbing and conversion – despite protective legislation such as Coastal Regulation Zone norms. People living along the flood-prone Mithi River often support efforts for flood mitigation and mention the improved disaster responsiveness of the city. On the other hand, they harbour deep fears of being forced to relocate in the name of flood protection and being impoverished in the process, without adequate compensation. They also point out that while big builders gain access to land along the riverbanks, it is refused to them, highlighting unequal planning outcomes.

The need for a transformative approach

Urban planners have slowly started to mainstream climate risks into development planning. At present, the focus in Mumbai lies on mitigation activities that are focused on technology and infrastructure, exemplified by the central government's flagship scheme for urban modernisation, the Smart Cities Mission. Scientists, residential associations, and NGOs highlight the need for improved vulnerability mapping and pro-poor adaptation action to complement mitigation frameworks. Yet, their voices and knowledge for alternative development plans seldom translate into policy, despite the fact that, as the case of flooding illustrates, singular top-down approaches with short-term fixes do not work, and can be highly inequitable. A transformative approach towards urban planning that emphasises long-term goals, risk reduction, ecological contexts, and social justice outcomes is necessary. In part, this can be driven by changing urban governance paradigms towards a more plural and people-centric approach.

Policy recommendations

1. Clear coordination needs to be established between all agencies – local, regional, and national – involved in climate change, disaster mitigation, urban planning, and municipal governance.
2. Climate risks have to be mainstreamed consistently into urban, disaster management, and flood mitigation planning.
3. Protection of livelihood rights of resource-dependent communities, such as fishers, needs to be strengthened.
4. There should be more focus on pro-poor adaptation that enhances people's and the state's capacity to cope with future climatic changes, and reduces uncertainty. Mitigation alone is inadequate.
5. There needs to be strict implementation by public authorities of Coastal Regulation Zone norms and other protective legislation (e.g. wetland rules) for coastal ecosystems.
6. Short-term infrastructure fixes need to be supplemented by long-term social, economic, and ecological assessments and visions for the city, such as scenario planning exercises, that acknowledge livelihood rights and risk/uncertainty scenarios of all its residents.
7. Genuine streamlining of alternative views and knowledge into political processes should be pursued by strengthening the participation of NGOs, fishers, residential associations, and citizen scientists. Constitutional rights (specifically the 74th Amendment) that provide for the participatory planning and governance of municipal master plans need to be followed in letter and spirit.

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Further reading

Parthasarathy, D. (2016) 'Decentralization, Pluralization, Balkanization? Challenges for Disaster Mitigation and Governance in Mumbai', *Habitat International* 52 (March): 26–34

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Credits

This *IDS Policy Briefing* was written by **Hans Nicolai Adam**, **D. Parthasarathy** and **N.C. Narayanan** with inputs from **Lyla Mehta** and **Shilpi Srivastava** and edited by **Hannah Corbett**. The opinions expressed are those of the authors and do not necessarily reflect the views of IDS. With thanks to the project team: Institute of Technology – Bombay, Centre for the Study of Developing Societies, Norwegian Institute for Water Research, Gujarat Institute of Desert Ecology, All India Disaster Mitigation Institute, IIHMR University, University of Sussex, Institute of Development Studies, and the Norwegian University of Life Sciences. This research is supported by the Research Council of Norway.

Readers can find more information about the Climate Change, Uncertainty and Transformation project on the website: www.nmbu.no/en/faculty/landsam/department/noragric/research/our_projects/projects/node/21234

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