

Climate Disaster Mitigation in Coastal Megacities of India

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Abstract

The United Nations outlines rising temperatures, environmental degradation and climate change along with its effects triggering natural disasters, weather extremes, food and water insecurity, economic disruption and conflict as a crisis in today's time. UNHCR states that climate change and the emergency demand for climate action has caused disaster displacements above millions in number in India.

The goals of the global 'Sustainable Development Goals (SDGs) Agenda 2030' call for actions for changing the world, by way of strengthening finance, enhancement of technology and capacity building, at national and regional level including global level. The National Indicator Framework monitors the SDGs in India and strives to build resilient infrastructure; promote inclusive and sustainable industrialisation and foster innovation; make cities and human settlements inclusive, safe, resilient and sustainable; take urgent action to combat climate change and its impacts, among others.

According to Census of India (2011), urban agglomerations or cities in India with more than 10 million population are considered as megacities (namely Mumbai, Delhi, Kolkata). The Intergovernmental Panel on Climate Change (IPCC) in its Sixth Annual Report (2022) warns of the risks of flooding in coastal Indian cities such as Mumbai, Chennai, Kolkata that necessitate infrastructural interventions with growing number of storm surges, cyclones and the rising sea surface temperatures. The report also resounds with alarm the limitations of resilience and challenges of combating climate crises for these coastal cities of India.

Destructive winds and thundershowers accompanying cyclones raise serious concern of safeguarding the growing, dense population in Kolkata and the coastal region of Bengal. With an intensification of cyclonic occurrences and spiralling damages on landfall along the Bengal coast in the last two decades, the patterns of urban expansion, livelihood and consumption and emission trends together with the ensuing bearings on migration, and at times displacements, require appraisal.

Mumbai is prone to flooding due to the low-lying topography along the Arabian Sea coast, accompanied by high tides and heavy rains. While the expansion of built-up space in Mumbai encroaches upon natural land cover, the challenges arise in formulation of development policies, delineation of hazard prone zones, hazard adaptive measures for mitigation and infrastructure projects that are inclusive of sustainability and conservation in a time when climate resilient cities call for attention.

The study attempts to look into the role of planning and development authorities, civil society organisations, urban local bodies, along with disaster management authorities, law and governance, coastal zone management act and coastal regulation zone rules, resettlement-rehabilitation schemes, infrastructural interventions, social protection schemes, environment management and conservation in combating and mitigating climate disasters in Kolkata and Mumbai.