Climate Change pose dangers to Mumbai

What is the issue?

- The journal Nature published a paper identifying the dangers climate change poses specifically to Mumbai and other coastal cities.
- The research indicates that anthropogenic climate change will inundate significant sections of Mumbai by 2050.

What does this paper reveal?

- Unless the city takes significant action in the next three decades, the sea will reclaim much of the landfill that the city has been built on.
- As per this study, Mumbai in 2050 will look a lot like Mumbai in 1700, unless the city makes serious efforts to adapt to climate change.
- Together with Guangzhou, Jakarta, Miami, and Manila, Mumbai now regularly appears on a list of cities endangered by climate change.
- As the cyclones battering coastlines near Mumbai and unseasonal, heavy rains indicate, climate change is not some event in the distant future.

What do recent studies reveal?

- Recent studies, published by the Intergovernmental Panel on Climate Change (IPCC) and in Nature indicate that its **effects are more intensive than earlier models predicted**.
- There was a Special Report on the Ocean and Cryosphere in a Changing Climate published by IPCC.
- It indicates that **sea levels are significantly higher** than were originally anticipated, and as such will have significant impacts on cities like Mumbai.
- As city residents are very aware every monsoon, much of Mumbai is tenuous land made dry, just a few metres above sea level.

What does the IPCC report recommend?

- The report warns the planners and administrators of Mumbai.
- It states that in the absence of adaptation, more intense, frequent and extreme sea level events with trends in coastal development will increase expected annual flood damages by 2-3 orders of magnitude by 2100.
- The report points out that **well-designed coastal protection** could
    1. Reduce expected damages

2. Be cost efficient for urban and densely populated areas.

- There is an urgent need for adaptation and action in a vulnerable city like Mumbai.
- But, the city is ignoring climate adaptation programs and infrastructures in its development planning processes.

What is the problem with Mumbai's ongoing project?

- Mumbai's ongoing infrastructure project doesn't address climate change, and this may significantly worsen climate risks that its residents face.
- This project makes the city **vulnerable to flooding**.
- The Coastal Road Detailed Project report and the Environmental Impact Assessment report significantly **underestimate sea level rise**.
- These reports were key consideration for designing the road infrastructure that is being built on reclaimed land.
- The project uses data from the period between 1878 and 1993, which indicates an average sea level rise of 1.27 mm/year.
- But the rate of sea level rise has more than doubled in India in just over a decade in line with global rates.
- The National Institute of Oceanography's research has shown that sea level rise has increased to 3.2 mm/year in the period 1993-2012.
- The IPCC projects sea level rise to accelerate still further and faster in the coming years.

What is the concern?

- The infrastructure is being designed for the future (and not for the past).
- But still the **planners don't use current and future projections** that will correctly estimate future climate risk in the design of urban infrastructure.
- We all can note flooding in Mumbai, elsewhere in Maharashtra, Kerala, and beyond.
- When **important climate data are ignored** in the design of new infrastructure projects, it is unclear who would be held responsible for the catastrophes that may unfold in Mumbai.
- Also, when **climate infrastructure and adaptation plans** are never implemented in the city, it is unclear who will be held responsible for urban catastrophes that might result.

Is there any infrastructure that could help?

- Mumbai is in the midst of a climate emergency which requires city administrators to rethink how Mumbai may be remade in and with rising waters.

- These unprecedented times demand new imaginaries, designs, plans, and infrastructures.
- But, experts say that sea walls, river embankments, and reclamation do not always prevent inundation from intensified rains and rising seas.
- They instead magnify the risks of inundation. Water seeks its own level.
- While a wall might prevent inundation in one part of the city, it would exacerbate inundation in other parts.
- Managed wetlands provide water with a place to go, but are difficult to create.

What could be done?

- Climate change is not just an environmental issue.
- It is a human issue and an urban issue that will dramatically affect every resident of Mumbai, particularly its urban poor.
- So there should be a **change in the Mumbai's priorities** that are misplaced currently.
- It is currently spending a large part of the city's 'rainy day' corpus to construct a coastal road that few will use.
- It would be wiser for the city to spend this **money on mitigating the effects** of actual rainier days, floods, and rising seas that already are a new normal in the city's climate changed future.

Source: The Indian Express

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