

## Kolkata Floods 2025

## Why in News?

Kolkata and its suburbs recorded the **third-highest September rainfall since 1978**, receiving **251.4 mm in 24 hours**. The **peak hourly rainfall of 98 mm**, just below the **100 mm cloudburst** threshold, led to **urban flooding**.

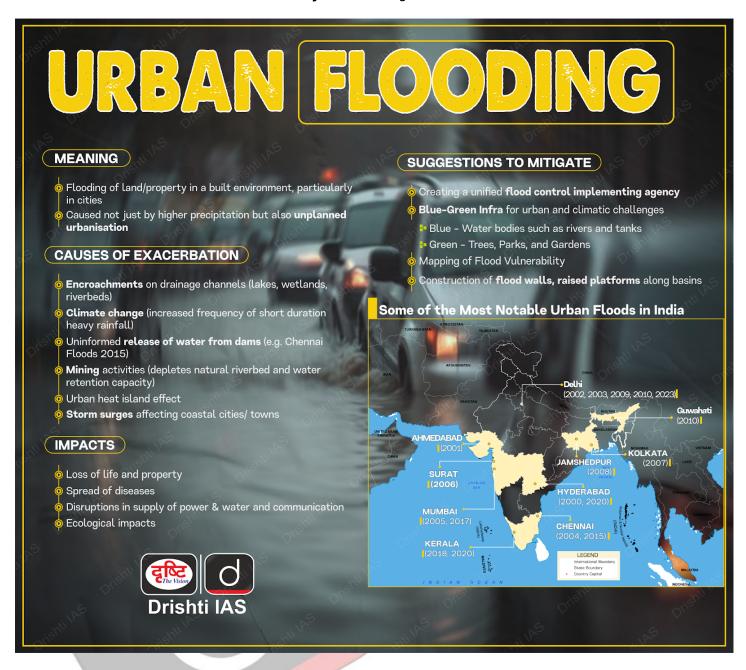
## What is Urban Flooding?

- About: Urban flooding is the waterlogging of densely populated areas caused by heavy rain, overflowing rivers, or poor drainage, disrupting transport, damaging infrastructure, and posing health risks.
- Causes of Urban Flooding:
  - Natural:
    - Heavy Monsoon Rainfall: Intense rains in regions like the Western Ghats and northeast India often overwhelm urban drainage (2015 Chennai floods).
    - Topography: Cities in floodplains or low-lying areas (Mumbai, Kolkata) or with poor natural drainage (Bengaluru) face higher flood risk.
    - Climate Change: Increasing rainfall intensity and frequency causes flash floods (2023 Delhi floods).
  - Anthropogenic:
    - Rapid Urbanization: Encroachment on wetlands and loss of natural drainage (e.g., Bengaluru's 80% lakes lost) increase runoff.
    - Inadequate Drainage: Outdated systems (e.g., Mumbai's British-era drains) fail during heavy rainfall.
    - Solid Waste Mismanagement: Blocked drains worsen flooding (Himachal Pradesh 2023).
- Causes of Kolkata Floods 2025: The heavy rainfall over Kolkata was triggered by
  a low-pressure area moving toward coastal Gangetic West Bengal, causing strong moisture
  convergence and clouds reaching 5-7 km.
  - **Disfigured drainage, choked canals, high tide**, and the **decline of waterbodies** due to unchecked urban expansion worsened flooding.
  - The United Nations Intergovernmental Panel on Climate Change's Sixth Assessment Report (AR6) (2021) had predicted sharply increasing short rainfall episodes in the city.

## **Cloudburst**

- About: A cloudburst is a sudden, intense rainstorm delivering over 100 mm of rain in under an hour across a small area (around 10 km²), often accompanied by hail and thunder.
  - Common in mountainous regions, especially the Himalayas, cloudbursts are difficult to predict but can trigger flash floods and landslides due to their localized, extreme rainfall.
- Causes: A cloudburst occurs when moist air rises over mountains, cools, and condenses into heavy rainfall. Strong upward currents enlarge raindrops, which fall suddenly when the currents weaken.

• In India, it often happens when monsoon clouds move from the Bay of Bengal or Arabian Sea to the Himalayas, releasing intense rain.



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