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Flash Floods

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Why is in news? Death toll from flash floods triggered by unprecedented rains in Telangana's Mulugu district

Excessive or continuous rainfall over a period of days or during particular seasons, can lead to stagnation of water and cause flooding.

Flash floods occur in a **much shorter span of time** (say, when rainfall creates flooding in less than 6 hours) and are **highly localised**.

Flash floods can also be **caused by factors apart from rainfall**, like when a **dam overflows**.

Causes for flash floods in India:

Nearly 75% of the total rainfall is concentrated over just four months (June to September) ? rivers witness a heavy discharge during these months.

Cloudbursts or thunderstorms and **overflowing glacial lakes** (in Himalayan states formed due to the melting of glaciers).

Depression and cyclonic storms in the coastal areas of Orissa, West Bengal, and Andhra Pradesh.

Flash floods may begin to take place after wildfires. Wildfires destroy forests and other vegetation, which in turn weakens the soil and makes it less permeable for water to seep through.

Climate change/global warming has increased the frequency/numbers of the above events.

Flash floods very dangerous - Why?

These are **accompanied by landslides**, which are sudden movements of rock, boulders, earth or debris down a slope.

Landslides are common in mountainous terrains, where there are conditions created for them in terms of the soil, rock, geology and slope.

Vulnerability of India:

According to government data, **India is the worst flood-affected country in the world, after Bangladesh**.

According to **National Flood Commission**, ~40 million hectares of land in the country are liable to floods annually.

India accounts for **one-fifth of the global death count due to floods**.

Flash floods have been commonly witnessed in cities like Chennai and Mumbai.

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Steps taken: India has launched first-of-its-kind **Flash Flood Guidance services** for India and other South Asian countries – Bangladesh, Bhutan, Nepal, and Sri Lanka.

Way ahead: A **comprehensive strategy of monitoring, planning development works** in a way that is sensitive to the region's ecology, and mitigation to reduce the extent of damages.

River Godavari:

The Godavari, also known as the **Dakshin Ganga**, is Peninsular India's biggest river system.

The Godavari basin spans **Maharashtra, Andhra Pradesh, Chhattisgarh, and Odisha**, as well as minor sections of **Madhya Pradesh, Karnataka, and the Union territory of Puducherry (Yanam)**, covering around 3 lakh square kilometers.

The basin is bordered on the north by the Satmala hills, the Ajanta range, and the Mahadeo hills, on the south and east by the Eastern Ghats, and on the west by the Western Ghats.

At a height of 1,067 meters, the Godavari River **emerges from Trimbakeshwar in Maharashtra's Nashik region**, roughly 80 kilometers from the Arabian Sea.

The Godavari is 1,465 kilometers long from its source to its **outflow into the Bay of Bengal**.

Left Bank Tributaries - Dharna, Penganga, Wainganga, Wardha, Pranahita, Pench, Kanhan, Sabari, Indravati

Right Bank tributaries - Pravara, Mula, Manjra, Peddavagu, Maner

In its lowest levels, the Godavari basin is **prone to floods**.

Coastal locations are **prone to cyclones**.

The flat geography of the delta zones **causes drainage congestion**.

Drought affects a big area of Maharashtra (Marathwada) in the basin.

Srirama Sagar, Godavari Barrage, Upper Penganga, Jayakwadi, Upper Wainganga, Upper Indravati, and Upper Wardha are some of the **major projects** completed during the plan period.

Pranahita-Chevella and Polavaram are two of the most important ongoing projects.

