# Himalayas Approaching Ecological Tipping Point

***Prelims:*** *Current events of national and international importance | Geography*

## Why in News?

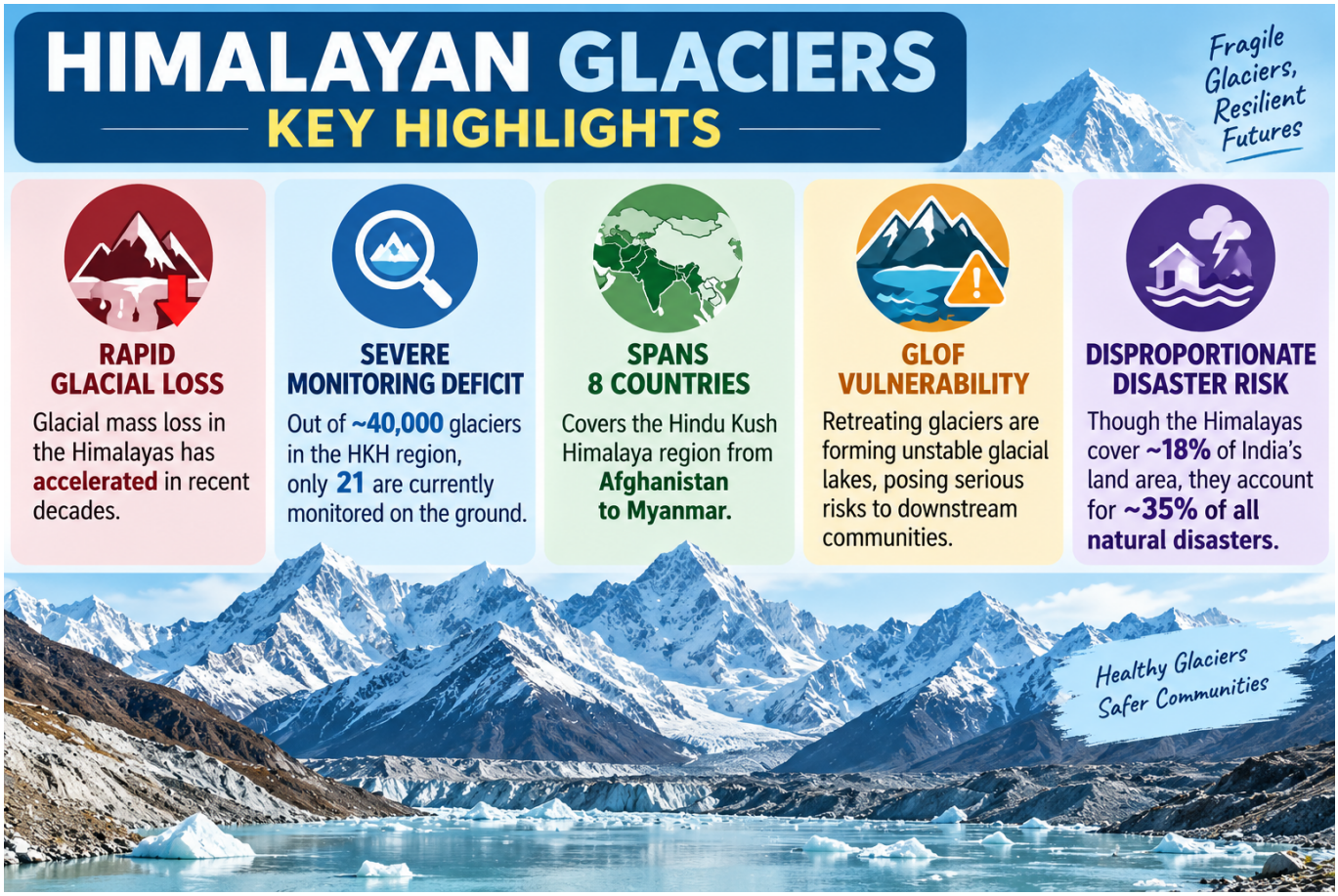
*A recent major study warns that the Hindu Kush-Himalaya (HKH) region is approaching a critical ecological tipping point.*

## Key Highlights

- **Glacial Loss-** Glacial mass loss in the Himalayas has accelerated drastically over recent decades compared to prior baseline studies.
- **Severe Monitoring Deficit -** Out of an estimated 40,000 glaciers across the HKH region only 21 glaciers are currently monitored on the ground.
- It spans across 8 countries from Afghanistan to Myanmar.
- **Glacial Lake Outburst Flood (GLOF) Vulnerability -** Retreating glaciers are leaving behind highly unstable glacial lakes held back by loose moraine debris and ice, posing extreme risks to downstream communities.
- **Proportionate Disaster Vulnerability -** While the Himalayan region accounts for roughly **18%** of India's geographical landmass, it accounts for **~35%** of all natural disasters in the country.

***Peak water*** *represents the point in time when annual river runoff driven by accelerating glacial melt reaches its absolute maximum before experiencing an irreversible, long-term decline.*

- **Mid-Century Threshold -** The study projects that major Himalayan-fed river systems will reach peak water by mid-century (around 2050), after which seasonal river flows will drop sharply during non-monsoon dry seasons.
- **Macroeconomic Threat -** The Himalayan cryosphere directly underpins over 20% of India's Gross Domestic Product (GDP) supporting agriculture, hydropower, heavy industry, and municipal drinking water for over 1.3 billion downstream populations.
- Yet, approaching peak water poses a direct threat to national economic stability.




## Significance

- Highlights the need to reclassify the Himalayan ecosystem as critical national infrastructure requiring dedicated budget allocations, regional risk mitigation, and climate adaptation strategies.
- Demands a rapid expansion of ground-based glaciological research stations beyond the current 21 monitored sites to improve early warning systems for GLOFs, landslides, and flash floods.
- Underscores that because the HKH region spans eight sovereign nations, regional risk reduction requires synchronized, cross-border real-time hydrological data sharing and joint disaster response frameworks.

**Reference**

[The Hindu | Himalaya approaching tipping point]

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