



State of the Climate in Asia 2021

For Prelims: The State of the Climate in Asia 2021, World Meteorological Organization, ESCAP, flash floods, cyclone, lightning, sea level rise, La Nina, mangroves

For Mains: Issues related to increasing disaster and steps need to be taken

Why in News?

Recently, the State of the Climate in Asia 2021 report was published by the [World Meteorological Organization](#) and the [UN Economic and Social Commission for Asia and the Pacific \(ESCAP\)](#).

What are the Findings of the Report?

- **Floods and storms accounted for 80% of the natural disasters** that struck Asia in 2021.
 - **Asian countries incurred financial losses worth USD 35.6 billion in 2021** because of natural disasters. Flooding was the event with **“by far the greatest impact in Asia in terms of fatalities and economic damage.”**
 - This showed that the economic impact of such disasters is on the rise compared to the average of the last twenty years.
- **India suffered a total loss of USD 3.2 billion from flooding** and the country faced heavy rains and **flash floods** during the monsoon season between June and September 2021.
 - These events resulted in about 1,300 casualties and damaged crops and properties.
 - The country was **only second to China in the Asian continent in this regard.**
- Similarly, **storms also caused significant economic damage**, especially in India (USD 4.4 billion), followed by China (USD 3 billion) and Japan (USD 2 billion).
 - During 2021, **India experienced five cyclonic storms (Tauktae, Yaas, Gulab, Shaheen, Jawad)** with maximum sustained wind speeds of ≥ 34 knots.
 - Additionally, in 2021, **thunderstorms and lightning** claimed around 800 lives in different parts of the country.

What are the Reasons for these Disasters?

- **Arabian Sea and Kuroshio Current's Rapid Warming:**
 - Due to the **Arabian Sea** and **Kuroshio Current's** rapid warming, these regions are **warming three times faster than the average global upper-ocean temperature.**
 - Ocean warming could contribute to **sea level rise**, alter storm paths and ocean currents and increase stratification.
 - **Upper-ocean warming is important because it directly affects the atmosphere** in terms of convection, winds, cyclones and so on.
 - The deep ocean does not affect the atmosphere directly.
 - The Arabian Sea is unique because it has pathways to receive excess heat through atmospheric tunnels and bridges and mixed warm water from various oceans is pumped into it.
 - But in the case of the Kuroshio Current system, **the current system takes warm water**

from the tropics and stronger winds force more heat into the current.

▪ **La Nina:**

- The last two years were also [La Nina](#) years and during this time, the pressure patterns set up in India go from North to South, which drives circulations from Eurasia and China.
- This can **cause excessive rainfall patterns over parts of India**, particularly in the Southern Peninsular, which gets the Northeast monsoon. The excess last year was related to the La Nina pressure pattern.

What are the Suggestions?

▪ **Investment in Adaptation:**

- In order to adapt to climate change, India would need to invest USD 46.3 billion annually (which amounts to 1.7% of India's GDP).
 - Generally, **comparison to the GDP reflects the capacity of a country to invest in adaptation.**
- Some adaptation priorities that **require high investment include resilient infrastructure, improving dry land agriculture**, resilient water infrastructure, multi-hazard early warning systems and nature-based solutions.
- For coastal states of India with an increased risk of cyclone surges, **nature-based solutions assume significance and protecting mangroves could help cushion the impact of storms.**

▪ **Adaptation Fund:**

- India does not have a **separate adaptation fund**, but the money is embedded in several schemes by the agriculture, rural and environmental sectors.
- For example, flagship projects such as the [Mahatma Gandhi National Rural Employment Scheme](#), which had an annual budget of USD 13 billion in 2020, should address adaptation in disaster-prone areas.
 - **Around 70% of its budget is marked to go into natural resource management and to build resilient infrastructure.**

UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. The frequency of urban floods due to high intensity rainfall is increasing over the years. Discussing the reasons for urban floods, highlight the mechanisms for preparedness to reduce the risk during such events. **(2016)**

Q. 'Climate change' is a global problem. How India will be affected by climate change? How Himalayan and coastal states of India will be affected by climate change? **(2017)**

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