Cyclones and India - Disaster Preparedness

What is the issue?

With a rise in the frequency of devastating cyclones, India needs to look at some long-term mitigation measures.

What is the impact of the recent cyclones?

- Tauktae (on the western coast, Gujarat) and Yaas (on the eastern coast, Odisha) were the two severe cyclones in India earlier in 2021.
- Impact of both storms put together:
    1. Damage to around 0.45 million houses & 0.24m hectares of crop area
    2. Nearly 200 people died, and 37m people were affected
    3. Large-scale uprooting of trees affected already depleting green cover
    4. Economic loss of Rs. 320 billion

What do long-term trends show?

- Rise in the frequency of devastating cyclones in the coastal States due to
    1. Increasing sea surface temperatures in the northern Indian Ocean.
    2. Changing geo-climatic conditions in India.
- Every year, around 5-6 tropical cyclones are formed in the Bay of Bengal and the Arabian Sea. Of these, 2-3 turn severe.

Between 1891 and 2020

- Out of the 313 cyclones crossing India's eastern and western coasts, 130 were classified as severe cyclonic storms.
- The west coast experienced 31 cyclones and the east coast, 282 cyclones.
- The Odisha coast witnessed 97 cyclones, followed by AP (79), TN (58), WB (48), Gujarat (22), Maharashtra/Goa (7), and Kerala (2).

Why should India be particularly concerned?

- Coastline of around 7,500 km exposes 96 coastal districts
- Around 200 million city residents would be exposed to storms and earthquakes by 2050 in India.
- Cyclones constituted the–

1. 2nd most frequent phenomena over 1999-2020
2. 2nd most expensive in terms of the costs incurred in damage accounting for 29% of the total disaster-related damages after floods (62%)
3. 3rd most lethal disaster in India after earthquakes (42%) and floods (33%)

Why are long-term mitigation measures essential?

Global Climate Risk Index report 2021 - India ranks the 7th worst-hit country globally in 2019 due to the frequent extreme weather-related events & **ranks 1st in human deaths and economic losses** due to extreme weather-related events.

2014 Asian Development Bank's report - India would suffer a loss of around 1.8% of GDP annually by 2050 from climate-related events.

- Cyclones between 1999 and 2020 inflicted substantial damage to public and private properties
- Led to an increase in the fiscal burden of governments
- Fatalities declined from around 10,000 to 110 on account of improved early warning systems and better disaster management activities.
- But these measures are not enough **to achieve a zero-fatality approach and minimise economic losses** from cyclones.

What should be done?

- Improve the cyclone warning system.
- Construction of evacuation shelters in cyclone-prone districts.
- Revamp disaster preparedness measures.
- Widen the cover under shelterbelt plantations and help regenerate mangroves in coastal regions to lessen the impact of cyclones.
- Adopt cost-effective, long-term mitigation measures:
    1. Buildcyclone-resilient infrastructure such as constructing storm surge-resilient embankments, canals
    2. Improve river connectivity to prevent waterlogging in low-lying areas
- Install disaster-resilient power infrastructure in the coastal districts, providing concrete houses to poor and vulnerable households.
- Create massive community awareness campaigns.
- Ensure healthy coordination between the Centre and the States concerned to

collectively design disaster mitigation measures.

Source: The Hindu

