Cyclone Titli

Cyclone Titli has become the third major cyclone to hit the Odisha-Andhra coastal zone in the last five years, all in October. The other two were Phailin and Hudhud.

- Cyclone Titli has been named by Pakistan.
- Both the Bay of Bengal and Arabian Sea experience cyclonic events, however the frequency and intensity of cyclones in the Bay of Bengal is higher. Moreover, nearly 58% of cyclones formed in the Bay of Bengal reach the coast as compared to only 25% of those formed in the Arabian Sea.

Temporal and Spatial Distribution of Cyclone

- The reason that cyclones such as Titli, Phailin (2013) and Hudhud (2014) typically strike in October is that wind shear (the difference within wind speeds and direction at two different levels) is low during this time; low wind shear, when combined with surface sea temperatures greater than 26°C, raises the likelihood of cyclones. In monsoon season, cyclones are rare because of high wind shear.
- Since sea surface temperatures and humidity both directly correlate with chances of cyclone formation, the Bay of Bengal is a more likely target because it gets higher rainfall, and because the slow winds around it keep temperatures relatively high: about 28 degrees around the year. Warm air currents enhance this surface temperature and aid the formation of cyclones.
- In addition, the Bay receives higher rainfall and constant inflow of fresh water from the Ganga and Brahmaputra rivers. This means that the Bay's surface water keeps getting refreshed, making it impossible for the warm water to mix with the cooler water below, making it ideal for a depression.
- On the other hand, the Arabian Sea receives stronger winds that help dissipate the heat, and the lack of constant fresh water supply helps the warm water mix with the cool water, reducing the temperature.
- Due to the lack of any large landmass between the Pacific and the Bay of Bengal, cyclonic winds easily move into the Bay of Bengal. Once here, the winds encounter the Western Ghats and the Himalayas, either becoming weak or getting blocked in the Bay, but never reaching the Arabian Sea.
- Adjacent to the northwest Pacific, which is one of the world's most active basins for typhoons, the Bay of Bengal receives the remnants of major landfalls in the Philippines, China and South Asia. From these places come low-pressure systems that develop into a monsoon depression or a cyclone.

Prediction and Evacuation

- According to scientists, the prediction is difficult because of budgetary and meteorological factors. E.g.:
    - The US has dedicated aircraft that fly directly into the clouds to study moisture levels and gather various data on cyclone profile. While, India largely rely on satellite images (a top view) that reveals little data on moisture content and intensity. Indian scientists get a more detailed picture only when a cyclone is 300-400 km from the coast, which reduces preparation time.

The evacuation exercises are classified into three types:

1. Preventive- In preventive (or horizontal) evacuation, the impact area is meant to be completely evacuated, but this is a measure rarely taken in India because of poor roads and inadequate public transportation. Also, poor people rarely have the resources to find alternative accommodation.
2. Shelter-in-place evacuation involves fortification of existing houses and community buildings, which again required financial resources.
3. Vertical evacuation, people are directed to specially designed buildings within the impact area. This strategy was largely followed during Cyclone Titli.

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