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## Twin Cyclones, Luban and Titli Keep Indian Seas Active

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The cyclonic storms 'TITLI' over the Bay of Bengal and another cyclonic storm 'LUBAN' over the Arabian sea have developed in the Indian Ocean Region.

- The severe cyclone Luban is active in the Arabian Sea and will not affect any coast of India, while severe cyclone 'Titli' is forecast to hit the coasts in Odisha and adjoining North Andhra Pradesh coasts.
- It is very rare that the Arabian Sea and the Bay of Bengal host cyclonic storms of this strength.
- Cyclone Titli has been named by Pakistan, while Luban has been named by Oman.
- The active Inter Tropical Convergence Zone (ITCZ) has started shifting southwards towards the coast. This is the main generator behind the disturbances in the open waters. Both cyclones have been offshoot of this ITCZ only.
- Besides this, MJO (Madden-Julian Oscillation) is also presiding in the close proximity of Indian Ocean and is likely to visit the Indian waters soon. This has also been providing favourable weather conditions.

### **Inter Tropical Convergence Zone**

- The Intertropical Convergence Zone, or ITCZ, is the region that circles the Earth, near the equator, where the trade winds of the Northern and Southern Hemispheres, i.e. the northeast trade winds and southeast trade winds come together.
- The intense sun and warm water of the equator heat the air in the ITCZ, raising its humidity and making it buoyant. Aided by the convergence of the trade winds, the buoyant air rises.
- As the air rises it expands and cools, releasing the accumulated moisture in an almost perpetual series of thunderstorms and heavy rainfall.
- The ITCZ shifts north and south seasonally with the Sun. Over the Indian Ocean, it undergoes especially large seasonal shifts of 40°–45° of latitude.
- Seasonal shifts in the location of the ITCZ drastically affects rainfall in many equatorial nations, resulting in the wet and dry seasons of the tropics rather than the cold and warm seasons of higher latitudes.

## **Madden-Julian Oscillation**

- The Madden-Julian Oscillation is a major fluctuation in tropical circulation and rainfall that moves eastward along the equator, and circles the entire globe in a span of 30–60 days on an average.
- The MJO, therefore is not static and is a moving system of wind, cloud and pressure that brings rain as it circles around the equator.
- The phenomenon takes its name from the two scientists who identified it in 1971 — Roland Madden and Paul Julian.
- In the active phase, MJO results in more than average rainfall for that time of the year, while in the suppressed phase, the area receives less than average rainfall.
- The effect of the MJO is witnessed mainly in the tropical region, in the band between 30 degrees North and 30 degrees South of the equator, even though the mid-latitude regions in both hemispheres also feel its impact.

[Read more about Cyclone...](#)