



Cyclone Dana's Impact on Jharkhand

Why in News?

Recently, [Cyclone Dana](#) is anticipated to cause significant disruptions across **eastern India, particularly in Jharkhand**, with multiple emergency measures being implemented.

Key Points

- **Heavy Rainfall and Flood Risks:** The [India Meteorological Department \(IMD\)](#) forecasts heavy rains in Jharkhand, raising concerns for flooding, especially in vulnerable low-lying areas, from **24th to 25th October, 2024**.
- **Disruption to Transportation:** Rail services across parts of eastern India, including Jharkhand, are heavily impacted, with over **150 trains cancelled** as a precautionary measure to ensure commuter safety during the expected adverse weather conditions.
- **NDRF and SDRF Preparedness:** The [National Disaster Response Force \(NDRF\)](#) and [State Disaster Response Force \(SDRF\)](#) teams are on high alert and prepared for rapid deployment in case of emergencies.
- **Advisory for Fishermen and Coastal Activities:** The **IMD** has issued a strict warning for fishermen and advised against venturing into the Bay of Bengal. High wind speeds, expected to reach **100-110 km/h**, are likely to impact coastal and adjacent regions, affecting local economies reliant on fishing and maritime activities.
- **Evacuations and Public Safety Warnings:** Authorities are making preparations for potential evacuations, particularly in regions where the cyclone's impact may be severe. Public advisories are issued to ensure residents are aware of safety protocols during the cyclone's passage.

Cyclone Dana

- **Emergence:** It is the third cyclone to form in the [North Indian Ocean region](#) and the second to make landfall along the Indian coast in 2024 after [Cyclone Remal](#).
 - It is the first cyclone in the post [monsoon](#) cyclone season.
- **Naming of Dana:** The [World Meteorological Organisation \(WMO\)](#) states that Cyclone Dana was named by Qatar. In Arabic, "Dana" signifies 'generosity' and also refers to 'the most perfectly sized, valuable, and beautiful pearl.'

CYCLONE

Cyclones are rapid **inward** air circulation around a **low-pressure** area.

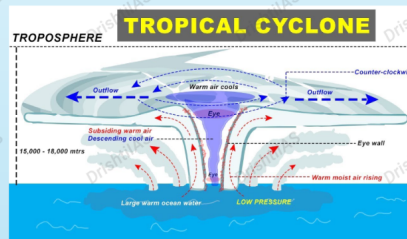


Cyclone v/s Anticyclone

Pressure System	Pressure Condition at the Center	Pattern of Wind Direction	
		Northern Hemisphere	Southern Hemisphere
Cyclone	Low	Anticlockwise	Clockwise
Anticyclone	High	Clockwise	Anticlockwise

Classification

- **Tropical Cyclones;** originate between the **Tropics of Capricorn and Cancer**
- **Extra Tropical/ Temperate Cyclones;** originate in the **Polar Regions**



Conditions for Formation

- Large sea surface with temperature $>27^{\circ}\text{C}$.
- Presence of the **Coriolis force**
- Small **variations in the vertical wind speed**
- A **pre-existing weak low- pressure area**
- **Upper divergence** above the sea level system

Different Names for Tropical Cyclones

- **Typhoons** - Southeast Asia and China
- **Hurricanes** - North Atlantic and eastern Pacific
- **Tornados** - West Africa and southern USA
- **Willy-willies** - Northwest Australia
- **Tropical Cyclones** - Southwest Pacific and Indian Ocean

Nomenclature

- Nodal Authority - **World Meteorological Organization (WMO)**
- Indian Ocean Region - **Bangladesh, India, Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand** contribute to naming cyclones that occur in this region.

Cyclones in India

- **Bi-annual Cyclone Season** - March to May and October to December
- Recent Cyclones - **Tauktae, Vayu, Nisarga and Mekanu** (in Arabian Sea) and **Asani, Amphan, Fani, Nivar, Bulbul, Titli, Yaas and Sitrang** (in Bay of Bengal)