Super Cyclone Kyarr

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***Source**: The Hindu*

Manifest pedagogy: In the backdrop of global warming, tropical cyclones are becoming more intense. They are leaving a trail of destruction across the world. Coastal areas have become highly vulnerable. Analysing the reasons for super cyclones, the factual details in terms of name of cyclone, category, sea etc will help in answering the question in both prelims and mains.

In news: Tropical cyclone 'Kyarr'

Placing it in syllabus: Geophysical phenomenon

Static dimensions:

- General description of tropical cyclones
- Why more tropical cyclones in the Bay of Bengal (BoB) than Arabian sea?

Current dimensions:

- Tropical cyclones of BoB and Arabian sea in 2019
- Kyarr and Maha tropical cyclones – rare two low pressures in Arabian sea

Content:

General description of tropical cyclone:

A Tropical cyclone is a **non-frontal, synoptic-scale, low-pressure system over tropical or subtropical waters with persistent, organized convection and a closed cyclonic circulation.** They have a **spiral, anti-clockwise movement.** Tropical cyclones feed on heat released when moist air rises, resulting in condensation of water vapour contained in the moist air.

Why more tropical cyclones in the Bay of Bengal (BoB) than Arabian sea?

According to the National Cyclone Risk Mitigation Project (NCRMP), the **Indian subcontinent is exposed to "nearly 10 per cent" of the world's tropical cyclones.**

Both the **Bay of Bengal (BoB) and Arabian Sea experience cyclonic events** due to their **proximity to the Indian Ocean**. But the BoB sees approximately five times as many cyclones as Arabian Sea. In addition, **cyclones in the Bay are stronger and deadlier.**

According to the meteorologists, the relatively **colder waters of the Arabian Sea are not conducive to the formation and intensification of cyclones.** BoB gets higher rainfall and the sluggish winds around it keep temperatures relatively high. Warm air currents enhance this surface temperature and aid the formation of cyclones.

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.

Additionally, the **eastern coast of India receives cyclones** that form not just in the BoB but **also those travelling from the Pacific Ocean,** where the frequency of **'typhoons'**, is quite high.

Most of these cyclones weaken considerably after encountering a big landmass. Therefore, **these do not travel to the Arabian Sea side**. The western coast of India thus witnesses only those cyclones that originate locally or the ones, like that travel from the Indian Ocean near Sri Lanka.

Tropical cyclones of BoB and Arabian sea in 2019:

The North Indian Ocean has seen five tropical cyclones in

2019.

Category 4 Fani: Extremely Severe Cyclonic Storm Fani was the **strongest tropical cyclone to strike Odisha** since the 1999 Odisha cyclone. It originated from a tropical depression that formed west of Sumatra in the Indian Ocean on 26 April. Areas affected include Sri Lanka, Odisha, Andhra Pradesh, East India, Bangladesh, Bhutan.

Category 2 Vayu: Very Severe Cyclonic Storm Vayu formed in the Arabian Sea.

Areas affected include Maldives, India, Pakistan, Oman.

Category 1 Hikka: A depression formed in the Arabian Sea and soon intensified into a cyclonic storm. Areas affected include Oman, India.

Category 4 Kyarr: Super Cyclonic Storm Kyarr is the first Super Cyclonic Storm over the North Indian Ocean since Gonu in 2007. It was also the **strongest tropical cyclone in the Arabian Sea ever recorded** and the second-most intense tropical cyclone in North Indian Ocean history only behind the 1999 Odisha cyclone. Kyarr developed from a low-pressure system near the Equator. Areas affected include West India, Oman, UAE.

Category 4 Maha: It is the fourth cyclone in Arabian Sea. It formed off the southwest coast of India.

Kyarr and Maha tropical cyclones – Rare two low pressures in Arabian sea:

- Two tropical cyclones were active in the Arabian Sea – Kyarr and Maha.
- India Meteorological Department (IMD) confirmed that this was the **first recorded case since 1965 of two cyclones occurring simultaneously in the Arabian Sea.**
- Only one or two tropical cyclones form each year in the

Arabian Sea, on average since 1891, according to IMD records.

- This phenomenon occurred due to a strongly **positive Indian Ocean dipole and the Madden-Julian oscillation.**
- Cyclone Maha formed off the coast of western India is expected to gain strength over the central Arabian Sea over the next few days while Cyclone Kyarr is weakening.