

## Cyclone Systems

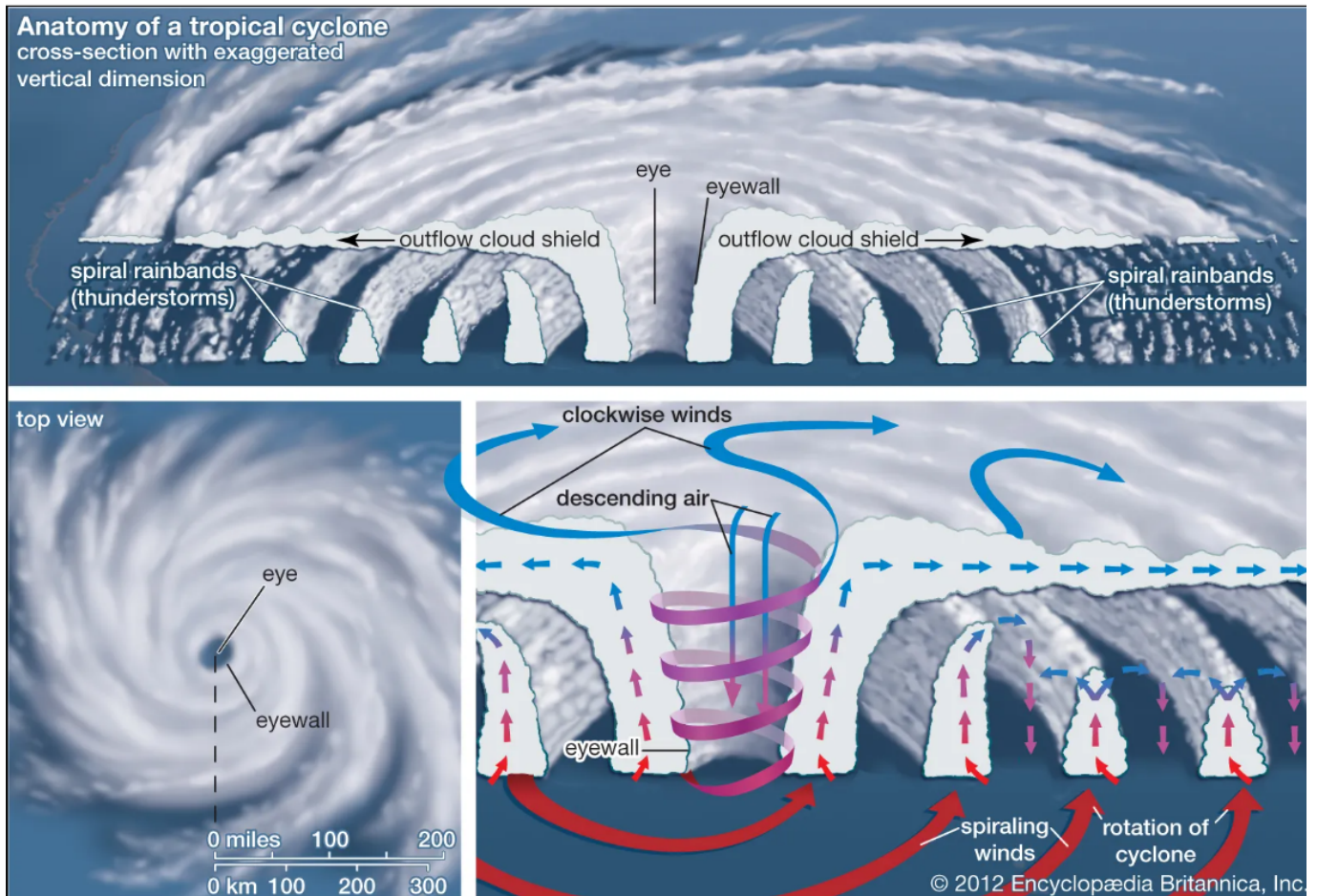
### Why in news?

Due to rapid intensification of cyclones there is a need for change in forecasting the cyclones.

### What is cyclone?

- **Atmospheric disturbances** - Cyclones are caused by atmospheric disturbances around a low-pressure area distinguished by swift and often destructive air circulation.
- **Eye of the cyclone** - The low-pressure center of the cyclone is called the eye.
- Eye **provides energy** to the cyclones.
- The lower the pressure in the eye, the more intense is the cyclone.
- **Eye-wall** - Surrounds the eye with the strongest winds and heaviest rain and is the **most destructive part** of the cyclone.

*The Cyclone Genesis Potential (GPI) to estimate the number of cyclones that may be born in a season is defined based on the variables that occur during the birth of cyclones*



### What is seedling of a cyclone?

- **Rotating low-pressure system** - It is the seed of the cyclone.
- It is the moisture converging near the surface when warm light air rises and takes the evaporated water with it.
- Rising air expands, cools and condenses to release energy in the middle atmosphere.
- **Madden-Julian Oscillations (MJO)** - Throw seeds of rotational low-pressure systems over the Indian and the Pacific Oceans.
- MJOs show a strong association with cyclogenesis, especially for the post-monsoon season.
- **El Niño and La Niña** - Influence the number of cyclone seeds and also the location and the expanse of warm water.
- **Easterly waves** - Produced by West Africa propagate cyclones from west from land onto the tropical Atlantic Ocean and sow the seeds for most hurricanes.

*Tropics have all the critical environmental ingredients for cyclogenesis: Warm Ocean, atmospheric convection, vertical motion and mid-level humidity.*

### What is the environmental factors involved in cyclogenesis?

- Rotation or vorticity of a low-pressure system at the surface
- Sea surface temperatures or the volume of warm water available.
- The vertical motion of air in this low-pressure system.

- The amount of humidity available in the middle atmosphere.
- The vertical shear or the change in winds from the surface to the upper atmosphere.

### Quick facts

#### National Disaster Management Authority (NDMA)

- NDMA is created by NDMA act 2005.
- NDMA is headed by prime minister.
- NDMA is the apex body for Disaster Management in India.
- NDMA is mandated to lay down the policies, plans and guidelines for Disaster Management to ensure timely and effective response to disasters.

### References

1. [Down To Earth | Cyclone Process](#)
2. [NDMA | About NDMA](#)

