

# Cyclone Disaster Management in India

The circulation of the winds through the low-pressure regions or zones is known as a cyclone. The anticyclones remark for the winds circulating through the areas that have higher pressure. There are numerous types of cyclones such as tropical cyclone, extratropical cyclones, polar cyclones, and mesocyclones.

The World Meteorological Department is responsible for the naming and nomenclature of cyclones. Between the months of April and November, cyclones are usually witnessed in India. The states known to be cyclone-prone are Gujarat, Tamil Nadu, Kerala, Odisha, and West Bengal. The devastating cyclones witnessed in India responsible for major upheaval are-

- Cyclone Burevi [2020]
- Cyclone Nivar [2020]
- Cyclone Nisarga [2020]
- Cyclone Amphan [2020]
- Cyclone Fani [2019]
- Odisha cyclone [1999]
- Bholia Cyclone [1970]

## Measures for Cyclone Management

The strategic planning of the lands to avoid settlements in flood-prone areas can assist in minimizing the aftermath of the cyclones. Numerous such measures and initiatives can reduce the devastations caused by natural catastrophes such as floods and cyclones.

- The infrastructures should be engineered and crafted to tolerate cyclones and other catastrophes.
- Through the technique of hazard mapping the cyclone-prone areas can be estimated. It can also predict the areas where the probability of higher impact of cyclones can occur. It gauges the areas affected and other factors such as the wind speed of past years to present an estimation.
- The cyclone shelters can be infrastructure for safeguarding the local population. The area's topography must also be kept in mind while planning the construction and establishment of cyclone shelters.
- Mangrove conservation can also lead to mitigating the occurrence of cyclones. The roots of the mangrove in mitigating the probability of the occurrence of floods and cyclones.
- Saline embankments also assist in safeguarding habitats and crops.
- Levees are the structures that prevent and mitigate the chances of floods. It obstructs the wind and hence the cyclone as well.
- Mass awareness about the ways to adopt to safeguard themselves during a natural catastrophe plays an instrumental role in saving lives.

## Types of Cyclones

Cyclones are a system of winds that rotate inwards to an area of low pressure. The system of winds that emerge from high-pressure areas is known as anti-cyclones. Cyclones can further be segregated into two categories -

- **Tropical Cyclone** - Storms originating from warm tropical seas or oceans are known as tropical cyclones. These types of cyclones are characterized by high winds, low atmospheric pressure, and relentless rainfall. India generally faces tropical cyclones.
- **Temperate Cyclone** - Storms originating outside the tropics are generally referred to as temperate cyclones. These cyclones, also known as extratropical and frontal cyclones, generally occur in temperate and polar regions. These types of cyclones do not usually occur in India.

## Cyclone Disaster Management UPSC

Cyclone disaster management carves out to be an essential sector of the UPSC syllabus. The aspirants who have inclined for preparing for the IAS exam. A strong, methodical strategy for the exam can take the candidates toward performing exceptionally well in the exam.

The previous year papers comprising the questions pertaining to these topics will provide insights into the questions that can be expected in the upcoming exam. The candidates can get a comprehensive ideation of the types of questions and the pattern of questions.

## Initiatives Undertaken by Cyclone Disaster Management in India

The central government has launched numerous cyclone disaster management initiatives to chart the expansiveness and mitigate the future effects of upcoming cyclones. Some of the most important initiatives are -

- **National Cyclone Risk Mitigation Project** - This project was mainly initiated to undertake various non-structural and structural measures to thwart the after-effects of cyclones in India. Mainly designed for the union territories and the coastal states of India, the project is aimed to protect the local communities from the aftermath of various hydro-meteorological calamities, including cyclones. The NCRM Project is being helmed by the National Disaster Management Authority (NDMA) while the World Bank is providing financial assistance.
- **Integrated Coastal Zone Management Project** - In August 2019, the Ministry of Environment, Forest, and Climate Change released a draft of the Environmental and Social Management Framework (ESMF) for more deft coastal management. It aims at coming out with comprehensive plans to manage coastal areas.
- **Coastal Regulation Zones** - The Coastal Regulation Zones notifications of 2018 and 2019 aim to bring forth sustainable development reforms in the coastal areas of India.
- **Color-Coding of Cyclones By IMD** - The famous color-coding of natural calamities aims at making people aware of the intensity of calamities prior to the hazards. The colors used by IMD are green, yellow, orange, and red.