

INDIA METEOROLOGICAL DEPARTMENT (IMD): OVERVIEW

1. ABOUT IMD:

- **Established:** 1875
- **HQ:** New Delhi
- Under Ministry of Earth Sciences
- India's national weather and climate agency



2. KEY FUNCTIONS (WITH EXAMPLES):

A. WEATHER FORECASTING:

- Daily & weekly forecasts
- **Example:** Cyclone Biparjoy tracking in 2023

B. MONSOON MONITORING:

- Tracks onset, progress, and withdrawal
- **Example:** IMD announces monsoon onset over Kerala in June

C. CYCLONE WARNINGS & ALERTS:

- Early warnings for coastal areas
- **Example:** Alerts during Cyclone Yaas (2021)

D. AGRO-MET SERVICES:

- Weather-based advisories to farmers
- **Example:** Rainfall alert for Kharif sowing

E. SEISMOLOGY:

- Monitors earthquakes in India
- **Example:** Earthquake alerts in Himalayan region

F. AVIATION & MARINE SERVICES:

- Forecasts for air and sea navigation
- **Example:** Weather updates for Indian Navy operations

3. TOOLS & TECHNOLOGY:

- Doppler Weather Radars (DWRs)
- **Satellites:** INSAT series
- Automatic Weather Stations (AWS)
- Numerical Models: WRF, GFS, etc.

4. IMPORTANCE FOR INDIA & UPSC:

- Helps in disaster management
- Supports agriculture planning
- Key role in climate change monitoring
- Works with WMO on global weather systems