

GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 1152**  
ANSWERED ON 05/12/2024

**CYCLONE PREDICTION AND MITIGATION IN ODISHA**

1152. SHRI MANAS RANJAN MANGARAJ:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) the advancements made in cyclone prediction systems to minimize the impact of cyclones in Odisha;
- (b) the measures taken to strengthen early warning systems and disaster response in cyclone-prone districts of the State;
- (c) the collaborations with State Governments to ensure preparedness and mitigation efforts for extreme weather events; and
- (d) if so, the details thereof?

**ANSWER**

THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR  
MINISTRY OF SCIENCE AND TECHNOLOGY  
AND EARTH SCIENCES  
(DR. JITENDRA SINGH)

- (a) Ministry is making continuous efforts to make advancements in cyclone prediction systems to minimize the impact of cyclones in the country, including Odisha. The India Meteorological Department (IMD) has demonstrated its capability to provide high-precision early warning for cyclones in recent years.

IMD has adopted new techniques and technology from time to time to detect, monitor, and provide timely early warnings for disruptive weather events, including cyclones. The IMD has expanded its infrastructure for observations, data exchange, monitoring & analysis, forecasting, and warning services using contemporary technology in the country, including Odisha. IMD uses a suite of (surface, upper-air, ocean, space-based) quality observations from satellites, radars, and conventional & Automatic Weather Stations (AWS) to monitor cyclones developing over the Bay of Bengal and the Arabian Sea.

- (b) IMD has a well-defined Standard Operation Procedure (SOP) for monitoring & forecasting cyclones and issuing warnings and advisory alerts to the respective States well in advance. IMD also utilizes storm surge and coastal inundation models and wave models output from the Indian National Centre for Ocean Information Services (INCOIS, Hyderabad) to issue storm surge warnings. IMD uses the latest dissemination tools, including Common Alert Protocol (CAP), mobile apps, websites, APIs, and other social media platforms, to provide efficient, effective, and timely early warning services. IMD is constantly working to improve and adapt to the latest technologies. The current observational network in the State of Odisha is given in Annexure-1.

Government of India has initiated the National Cyclone Risk Mitigation Project (NCRMP) to address cyclone risks in the country. The project's overall objective is to undertake suitable structural and non-structural measures to mitigate the effects of cyclones in the coastal States and UTs of India.

- (c)-(d) Through the Regional Meteorological Centre-Bhubneshwar, Odisha, IMD has been collaborating with the Odisha State Disaster Management Authority (OSDMA) and the State Relief Commissioner to ensure preparedness and mitigation efforts for extreme weather events. Regular pre-season preparedness meetings are held yearly to manage heatwaves, heavy rainfall, and cyclones jointly. Regular joint awareness programs, mock drills, and Table Top Exercise (TtEx) are also conducted from time to time to increase public awareness against natural disasters and understanding of the warnings and needed safety actions.

**Weather Observational System in Odisha**

**Surface monitoring system network:** Odisha has 39 manned observatories, 29 Automated Weather Stations (AWS), and 136 Automated Rain Gauge (ARG) stations.

**DWR network:** Odisha has two radars at Paradip and Gopalpur that are functional round the clock.

**High wind speed recorder network:** Odisha currently has 6 nos. of high wind speed recorders (HWSR) covering the entire coast.

**Aviation Weather Observatory:** It currently has 4 nos. of Aerodrome Meteorological Station (AMS) and 1 Aerodrome Meteorological Office(AMO) with 4 Aviation weather automatic stations and two manned observatories.

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