

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 2099
TO BE ANSWERED ON WEDNESDAY, SEPTEMBER 23, 2020

CYCLONE WARNING CENTRE

2099. SHRI GAJANAN KIRTIKAR:
SHRI SELVAM G.:
SHRI C.N. ANNADURAI:
SHRI GAUTHAM SIGAMANI PON:
SHRI DHANUSH M. KUMAR:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) the details regarding locations of Cyclone Warning Centres (CWCs) functioning in the country, State/UT-wise including Maharashtra;
- (b) the objectives and the salient features of CWCs functioning in various locations in the country;
- (c) whether the Government proposes to establish more CWCs in view of increasing number of cyclones in the country and if so, the details of locations thereof, State/UT-wise;
- (d) whether the Government has been successful in developing technology for safety from cyclonic storms and if so, the details thereof;
- (e) whether the Government has assessed the efficacy of our technology in comparison to other developing countries and if so, the details and findings thereof; and
- (f) the further steps taken by the Government to improve the said technology?

ANSWER
MINISTER FOR SCIENCE AND TECHNOLOGY
AND EARTH SCIENCES
(DR. HARSH VARDHAN)

- (a) In order to cater to the needs of Cyclone Warning Services and Marine weather services, India Meteorological Department (IMD) has established seven Warning Centers covering the east & west coasts of our country. Among these, three are Area Cyclone Warning Centres (ACWCs) located at Chennai, Mumbai and Kolkata and remaining four are Cyclone Warning Centres (CWCs) located at Ahmedabad, Thiruvananthapuram, Visakhapatnam and Bhubaneswar. Area of responsibility of ACWCs and CWCs is shown in the Table below.

Centre	Coastal area*	Maritime State/UT
ACWC Kolkata	State: West Bengal UT: Andaman & Nicobar Islands	State: West Bengal UT: Andaman & Nicobar Islands
ACWC Chennai	State: Tamil Nadu UT: Puducherry	State: Tamil Nadu UT: Puducherry

ACWC Mumbai	State: Maharashtra & Goa	State: Maharashtra & Goa
CWC Thiruvananthapuram	State: Kerala & Karnataka UT: Lakshadweep	State: Kerala & Karnataka UT: Lakshadweep
CWC Ahmedabad	State: Gujarat UT: Dadra-Nagar Haveli-Daman-Diu	State: Gujarat UT: Dadra-Nagar Haveli-Daman-Diu
CWC Visakhapatnam	State: Andhra Pradesh	State: Andhra Pradesh
CWC Bhubaneswar	State: Odisha	State: Odisha

*Coastal strip of responsibility extends upto 75 km from the coast line.

From the table, it is clear that the cyclone warning services of Maharashtra comes under the responsibility of ACWC Mumbai.

- (b) In addition to keeping watch over the Indian Seas for the development of any adverse weather, the Cyclone Warning Centres issue Coastal Weather Bulletins on routine basis as per their area of responsibility given in the table before. Forecast and Warning for the high Sea Area of Bay of Bengal and Arabian Sea are issued by ACWC Kolkata and ACWC Mumbai respectively. In addition to this, these centres issue fleet forecast for the same oceanic regions for the benefit of Indian Navy. The Cyclone Warning Centres also issue fishermen warning for coastal waters & high seas and port warnings as per their area of responsibility.

All these bulletins are issued two times a day on regular basis excluding fishermen warning which are issued four times a day.

During the period of Cyclonic Storms, structured bulletins are issued in every three hours as per Standard Operating Procedure containing information about the current status of system (including location, movement, intensity) and forecast track, intensity, landfall point, associated adverse weather (heavy rainfall, gale wind, storm surge), state of Sea, fishermen warning, damage expected and action suggested.

The entire cyclone warning work is coordinated by Cyclone Warning Division located at IMD HQ, New Delhi.

- (c) No, Sir. There is no plan for establishing more number of CWCs as the requirements of the entire coastal belt of the country is covered by the existing centres as mentioned above.
- (d) & (e) Yes, Sir. IMD has developed state of art tools for cyclone warning services and demonstrated its capability to provide early warning for Cyclones with high precision and has earned worldwide accolades globally and nationally for very effective state of art early warning system for monitoring and prediction of cyclones. The cyclone forecast accuracy has significantly improved in recent years as has been demonstrated during cyclones Phailin (2013), Hudhud (2014), Vardah (2016), Titli (2018), Fani & Bulbul (2019) and Amphan & Nisarga (2020). During recent years, the loss of life has been drastically reduced being limited to double digit figures only.

- (f) Further improvements in the observational network and numerical modeling capability are also expected to increase the accuracy of weather forecasts.

Also, the Government of India has initiated the National Cyclone Risk Mitigation Project (NCRMP) with a view to address cyclone risks in the country. The overall objective of the Project is to undertake suitable structural and non-structural measures to mitigate the effects of cyclones in the coastal states and Union Territories of India. National Disaster Management Authority (NDMA) under the aegis of Ministry of Home Affairs (MHA) is implementing this Project in coordination with participating State Governments and the Ministry of Earth Sciences (MoES). The Project has identified 13 cyclone prone States and Union Territories (UTs), with varying levels of vulnerability for implementation purpose.

The main objective of the NCRMP is to reduce vulnerability of coastal communities to cyclone and other hydro meteorological hazards through

- (i) improved early warning dissemination systems.
- (ii) enhanced capacity of local communities to respond to disasters.
- (iii) improved access to emergency shelter, evacuation, and protection against wind storms, flooding and storm surge in high areas.
- (iv) strengthening DRM capacity at central, state and local levels in order to enable mainstreaming of risk mitigation measures into the overall development agenda.
