

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 5338
TO BE ANSWERED ON WEDNESDAY, 25TH MARCH, 2026**

ADVANCED METEOROLOGICAL INFRASTRUCTURE

5338. DR. KADIYAM KAVYA:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the advanced meteorological infrastructure including Doppler Weather Radar coverage, Automatic Weather Stations and flood forecasting systems are operational in Warangal district of Telangana and if so, the details thereof;
- (b) the details of the number of extreme weather alerts, heavy rainfall warnings and flood advisories issued for Warangal district during the last three years along with the dissemination mechanism adopted for timely communication to local authorities and the public;
- (c) whether any proposal exists to strengthen weather forecasting, lightning detection and climate resilience systems in Warangal particularly in view of increasing instances of extreme weather events and if so, the details thereof; and
- (d) the details of funds allocated and utilised for such initiatives in Telangana including district-level interventions in Warangal?

ANSWER

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

- (a) Yes. Advanced meteorological infrastructure is operational in the Warangal district of Telangana. Five Automatic Weather Stations/Automatic Rain Gauges (Hanamkonda, Mamnoon-KVK, Siddhapur, PTO Warangal, and Mulugu) are operational in the district. There is no Doppler Weather Radar (DWR) installed in the Warangal district. The nearest operational S-Band DWRs are installed at Hyderabad and Visakhapatnam. Their radial coverage extends up to about 400 km, covering Warangal and the surrounding areas and enabling monitoring of regions without local installations.

The Central Water Commission (CWC) is mandated to issue flood forecasts to the concerned State Governments at identified locations. There are no Flood Forecasting (FF) systems of the CWC in the Warangal district. However, FF stations are located in the adjacent districts, namely Mulugu, Jayashankar Bhupalapally, and Mahabubabad. In addition, the CWC's Real Time Data Acquisition System (RTDAS) stations in Mulugu and Jayashankar Bhupalapally—each having one Level Forecast Station and one Inflow Forecast Station—support flood monitoring in Warangal district.

- (b) Yes. The Government adopts various dissemination mechanisms to ensure timely communication, including alerts and warnings, reaches all concerned, enabling local authorities, State Governments, State Disaster Management Authorities (SDMAs), the National Disaster Management Authority (NDMA), the Ministry of Home Affairs (MHA), and the public to take appropriate mitigation measures. The number of alerts, advisories, forecasts, and bulletins issued regarding extreme weather conditions, such as heavy rainfall and floods in Telangana, including Warangal, over the last three years is provided in Annexure-1.

The Ministry of Earth Sciences (MoES) has developed advanced early warning systems for severe weather events, including heavy rainfall. These systems are supported by a state-of-the-art observation network comprising surface and upper-air observations, remote sensing, high-resolution dynamical models, and an end-to-end GIS-based Decision Support System (DSS) developed by MoES institutions, which serves as the front end for early warning systems to enable detection and monitoring of weather hazards across the country. The system is integrated with modern telecommunications technologies to ensure the timely dissemination of information. Effective dissemination methods for weather information and alerts by the MoES are as follows:

- Public alerts and information are disseminated through mobile applications such as MAUSAM, MEGHDOOT, DAMINI, and UMANG.
- Digital dissemination channels include e-mail and SMS-based nowcasting and forecasting alerts to registered users.
- Alerts are issued through the Common Alerting Protocol (CAP) and the SACHET App.
- Information is shared via social media and mass media platforms.
- District Collectors are informed through direct e-mail and WhatsApp group notifications, in coordination with the Telangana Integrated Command and Control Centre (ICCC) of the Police Department.
- Broadcast dissemination is carried out through community radio, public broadcasting systems, and other local communication networks.
- Dissemination is also undertaken through State Government mobile applications.
- Gram Panchayat-level weather forecasting (GPLWF) is facilitated through digital platforms such as e-Gramswaraj, Meri Panchayat App, and e-Manchitra, in collaboration with the Ministry of Panchayati Raj.
- Weather information is disseminated to Pashu Sakhi and Krishi Sakhi at the block and Panchayat levels in collaboration with the Ministry of Rural Development.
- Forecasts are accessible through the Mausamgram portal of the India Meteorological Department (IMD).

The Division Flood Control Rooms (DFCRs) at the Regional Offices of the CWC issue flood forecasts to stations under their jurisdiction during the flood season, based on heavy rainfall warnings and quantitative precipitation forecasts provided by the India Meteorological Department under the Ministry of Earth Sciences. The Central Flood Control Room (CFCR) at CWC Headquarters issues daily flood bulletins, including red and orange bulletins, to all States and to central agencies such as the NDMA and the MHA.

CWC is currently providing a seven-day advisory flood forecast on its web portal <https://aff.india-water.gov.in/> through pan-India rainfall-based mathematical modeling for major river basins of the country. CWC takes immense steps and adopts various dissemination mechanisms to get maximum reach to the flood warnings produced, so that mitigation measures can be adopted by State Governments, SDMA, NDMA, and the public. The flood forecasts formulated by CWC are disseminated to all stakeholders through the Flood Forecasting Website (<https://ffs.india-water.gov.in/>)/FloodWatch India 2.0 App/E-mail/Whatsapp/Facebook-CWCOfficial.FF/X-CWCOfficial_FF, Youtube-CWC Flood updates, and CAP Alert through the NDMA Sachet portal.

- (c) Mission Mausam has been launched by the Ministry with the objective of making Bharat a "weather-ready and climate-smart" nation, including the State of Telangana. The Ministry is in continuous endeavour of augmenting the observational, including the lightning detection network and R&D infrastructure, towards achieving better accuracy in weather forecasting.

IMD has also brought out a web-based "Climate Hazard & Vulnerability Atlas of India" prepared for the thirteen most hazardous meteorological events, which cause extensive damage and economic, human, and animal losses. The same can be accessed at <https://imd pune.gov.in/hazardatlas/about hazard.html>. The atlas provides information that may assist State Government authorities and disaster management agencies in identifying potential hotspots and in planning appropriate measures to address extreme weather events caused by climate change. The product also serves as a reference for efforts related to climate-resilient infrastructure planning.

- (d) The Ministry implements Central Sector Schemes uniformly across the country; therefore, the allocation of funds is not made on a State-wise basis. Funds under these schemes are not released directly by the MoES to the State Governments for implementation.

Annexure-1

Daily routine forecasts issued for Telangana, including Warangal:

Forecast issued (Type)	No. of Bulletins issued (2023–25)
Seven-day forecast	4,380
Zonal forecasts	1,094
Nowcast for districts	11,680
Agro-meteorological advisory services	1,408

Special bulletins during extreme weather conditions in Telangana, including Warangal:

Bulletin Type	No. of Bulletins issued (2023–25)
Advisory bulletin	13
Alert bulletin	27
Impact-based forecast bulletin	305
Agro-meteorological advisory services with severe weather warning	205
Special bulletin of severe weather for the Chief Secretary	45

The number of flood forecasts issued to the Flood Forecasting (FF) stations in Telangana, including Warangal:

Forecast Type	No. of forecasts issued (2023-25)
Flood forecast	1154
