GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 696
TO BE ANSWERED ON WEDNESDAY, 4TH FEBRUARY, 2026

STRENGTHENING WEATHER FORECASTING SYSTEM

696. SHRI TAPIR GAO:
SHRI CAPTAIN BRIJESH CHOWTA:
SHRI JASHUBHAI BHILUBHAI RATHVA:
SHRI VISHWESHWAR HEGDE KAGERI:
SHRI GOVIND MAKTHAPPA KARJOL:
SHRI BIBHU PRASAD TARAI:
SHRI RAMESH AWASTHI:
SHRI KRISHNA PRASAD TENNETI:
SHRI RAJKUMAR CHAHAR:
SHRI ALOK SHARMA:
SHRI SHANKAR LALWANI:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) the details of the key improvements achieved in weather forecasting accuracy, early warning dissemination and climate services during the last five years and the current year particularly in the State of Karnataka;
(b) the extent to which these interventions have translated into measurable socio-economic benefits for farmers, fisherfolk and vulnerable communities including coastal fishing communities in Dakshina Kannada;
(c) the progress made in expanding Doppler Weather Radar coverage, urban climate platforms and Heat Action Plans in collaboration with States including coverage and implementation status in Karnataka and Dakshina Kannada district;
(d) the details of roadmap for further strengthening last-mile delivery of weather and climate advisories; and
(e) the details of the schemes for establishing or relocating a Regional Meteorological Centre in Bhopal city of Madhya Pradesh?

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

(a) The key improvement achieved in the weather forecasting accuracy is the overall increase of average skill of the predictions by 30-40% during the last 10 years for all types of severe weather events over the Indian region at lead time of 1-day to 5-day forecasts. For the State of Karnataka, if we consider, e.g., heavy rainfall events, which are major severe weather events impacting the State, the skill of the latest 5-year warning of heavy rainfall, including 2025, in terms of probability of detection (POD), is given below by Meteorological Sub-division-wise.

For the North Interior Karnataka, it shows it has improved from 52% in 2021 to 88% in 2025 at 1- day lead period, from 48% to 76% for 2-days lead period, 39% to 62% for 3-days lead period, 29% to 57% for 4-days lead period, and 32% to 48% for 5-days lead period.

Similarly, for South Interior Karnataka, it improved from 58% to 70%; from 51% to 65%, from 45% to 67%, from 39% to 63%, and from 39% to 63% respectably during 2021 to 2025 at Day 1 to Day 5 lead period and over Coastal Karnataka, it improved from 80% to 92%, from 75% to 89%, from 77% to 87%, from 68% to 80% and from 72% to 79% during 2021 to 2025 at Day 1 to Day 5 lead period. Overall, a 15-25% improvement is observed during 2020-2025 for day-1 to day-5 forecasts of heavy rainfall for the State of Karnataka.

Regarding climate services, from 2021onwards, the India Meteorological Department (IMD) has been using the Multi-Model Ensemble (MME)-based forecasting strategy to prepare monthly and seasonal forecasting of temperature and rainfall. The accuracy of monsoon prediction over the country has shown marked improvement, with the average absolute error of all India forecast of 2.28% of the Long Period Average (LPA) during the period 2021-2024, compared to that of 7.5% in the preceding four years (2017–2020).

IMD has been using all the latest techniques and technology for early warning dissemination. Currently, the mobile-based alert system is operational to issue the CAP-based alert through SACHET. All these forecasts and warnings are also shared with State Emergency Operation Centres/SDMA to further disseminate to the general public via CAP. Similarly, it was shared via social media, Websites, WhatsApp groups, Mobile Apps, APIs, etc.

Bharat Sarkar has launched the Gram Panchayat Level Weather Forecasting (GPLWF) initiative recently. IMD, in collaboration with the Ministry of Panchayati Raj (MoPR), launched GPLWF for nearly all Gram Panchayats in India on 24th October 2024. These forecasts are accessible on digital platforms such as e-Gramswaraj (https://egramswaraj.gov.in/), the Meri panchayat app, e-Manchitra of MoPR, and Mausamgram of IMD (https://mausamgram.imd.gov.in/).

(b) Because of initiation and specific intervention from the Government, a total of 3,63,806 farmers across Karnataka are also directly connected in WhatsApp groups and are directly receiving forecasts & warnings. For fisherfolk and vulnerable communities, including coastal fishing communities, warnings are also disseminated via WhatsApp through the district collector group and the SDM group for all 3 coastal districts, including Dakshina Kannada.

(c) Currently, 47 DWRs are in operation across the country, including one C-Band Doppler Weather Radar operational from 26-11-2025, at Shaktinagar, Mangalore with 87% of the total area of the country coming under radar coverage. Heat Action Plans have also been taken up in collaboration with the Karnataka State Natural Disaster Monitoring Centre (KSNDMC). Additionally, the Ministry of Earth Sciences (MoES) launched Mission Mausam with the goal of making India a “Weather -ready and Climate -smart” nation, aiming to mitigate the impacts of climate change and extreme weater events.

(d) Meteorological Centre, Bengaluru, is constantly seeking feedback from the user communities as well as KSNDMC for strengthening the last-mile delivery of weather and climate advisories. In this regard, an MoU has been signed with the GPS Institute of Agricultural Management and MC Bengaluru to ensure the timely delivery of weather and climate advisories to farmers across Karnataka, in addition to Agromet Field Units (AMFUs).

(e) At present, there is no such proposal.

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