

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 2866
TO BE ANSWERED ON WEDNESDAY, 5TH AUGUST, 2026**

WEATHER-BASED AGRO-ADVISOR SERVICES

†2866. DR. RAJKUMAR SANGWAN:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has strengthened and expanded the forecasting mechanism of the India Meteorological Department (IMD), Doppler Weather Radar Network, Automatic Weather Stations, satellite-based monitoring systems and Artificial Intelligence-based weather forecasting systems with the objective of making weather forecasting services in the country more accurate, timely and farmer-friendly and if so, the details thereof;
- (b) whether crop-specific, weather-based scientific advisories as well as advance warnings regarding rainfall, hailstorm, heatwave, coldwave and other adverse weather conditions are being regularly provided to farmers in Uttar Pradesh including Baghpat district through Agromet Advisories via SMS, mobile apps, Kisan Portal and other digital platforms, if so, the details thereof and the positive outcomes achieved; and
- (c) whether the Government proposes to further expand and increase awareness regarding weather-based agromet advisory services in Western Uttar Pradesh including Baghpat and 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) The Government has undertaken several measures to strengthen the country's weather forecasting system through the India Meteorological Department (IMD) under the Ministry of Earth Sciences (MoES). It has adopted advanced, state-of-the-art technologies, including high-performance computing (HPC) facilities to support high-resolution Numerical Weather Prediction (NWP) models, modern observational networks, and artificial intelligence (AI)-enabled weather forecasting tools. These advancements have significantly enhanced the accuracy and reliability of weather monitoring, forecasting, and early warning services across the country. Currently, the Ministry has a weather observation network comprising manual observatories, Automatic Weather Stations (AWSs), Automated Rain Gauges (ARGs), Agro-AWS, Doppler Weather Radars (DWRs), upper-air observatories, and weather monitoring satellites.

Under Mission Mausam, various global and regional NWP modeling systems have been implemented and operationalized to generate seamless short-, medium-, and extended-range forecasts for all, including farmers. The Bharat Forecasting System (BharatFS), with a spatial resolution of 6 km, generates forecasts at the cluster of Panchayat level, enabling the capture of localized weather features and improving the accuracy of weather forecasts.

India Meteorological Department, in collaboration with the Ministry of Panchayati Raj (MoPR), has launched Panchayat-level weather forecasts covering nearly all Gram Panchayats in India. These forecasts are accessible through digital platforms such as e-Gramswaraj (<https://egramswaraj.gov.in>), Meri Panchayat app, e-Manchitra of MoPR, and Mausamgram of IMD, MoES (<https://mausamgram.imd.gov.in>). Currently, three AI-based global models (e.g., Pangu Weather, FourCastNet, GraphCast) are operational to provide guidance to the forecaster to predict severe weather. Artificial Intelligence (AI) and Machine Learning (ML) applications and tools have been developed indigenously by weather scientists of the MoES institutions for various aspects of monitoring and observational processing, such as the Nowcasting tool and downscaled urban forecasting.

- (b)-(c) IMD implements the Gramin Krishi Mausam Sewa (GKMS) in collaboration with 55 Host Institutes, including the Indian Council of Agricultural Research (ICAR) institutes, State Agricultural Universities (SAUs), Indian Institutes of Technology (IITs), and other institutions. Under this, 130 Agrometeorological Field Units (AMFUs) covering 127 agro-climatic zones issue district-specific agrometeorological advisories twice (Tuesday and Friday) a week ahead, based on IMD's medium-range weather forecasts, and communicate to the farmers. Under the GKMS scheme, all agriculturally important districts are covered across the country, including Uttar Pradesh, for providing real-time weather forecasts, agro-meteorological advisories, and early warnings directly to the farmers. In addition, IMD issues district-level impact-based weather forecast & risk-based warning valid up to 7 days through Regional Meteorological Centres & Meteorological Centres for their concerned States, including Uttar Pradesh twice daily. These warnings are issued more frequently in case of severe weather. Dissemination of weather forecasts and warnings through multiple communication platforms, including mobile applications, APIs, web portals, SMS, television, radio, and social media, in coordination with Central and State Government agencies.

IMD developed a public-friendly website (<https://mausam.imd.gov.in/>) and mobile apps for the dissemination of weather-related warnings, such as the MAUSAM App for weather forecasting and warnings, MEGHDOOT App for agro-meteorological services, the DAMINI App for lightning warnings, UMANG App for weather forecasting and warnings across the country, including Baghpat, Western Uttar Pradesh. Further, IMD regularly conducts the survey to assess the usefulness of the products for specific sectors like agro-advisory services to farmers and nowcast services for the general public. Based on the survey findings, a report has been prepared and released. The report is publicly available at the following links: https://mausam.imd.gov.in/imd_latest/contents/agromet/kalp/voices.pdf & https://mausam.imd.gov.in/imd_latest/contents/agromet/states/States.pdf.
