

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 1103
TO BE ANSWERED ON WEDNESDAY, 26TH JULY, 2023**

AGRICULTURE SPECIFIC WEATHER FORECASTING

1103. SHRI BRIJENDRA SINGH:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has any technology for agriculture specific weather forecasting;
- (b) if so, the details thereof and if not, whether the Government plans to develop agriculture specific weather forecasting;
- (c) whether the Government has any plans to collaborate with research institutions to develop advanced weather prediction models using artificial intelligence for agriculture; and
- (d) if so, the details thereof and if not, the reasons therefor?

ANSWER

**THE MINISTER OF EARTH SCIENCES
(SHRI KIREN RIJJU)**

- (a)-(b) India Meteorological Department (IMD) runs an operational Agrometeorological Advisory Services (AAS) *viz.*, Gramin Krishi Mausam Sewa (GKMS) scheme for the benefit of farming community in the country. Under the scheme, medium range (up to 5 days) weather forecast for rainfall, maximum and minimum temperature, relative humidity, cloud cover, wind speed and direction at district and block level for next 5 days and also subsequent week Met Sub-division wise rainfall and temperature forecast are generated by IMD.

Based on these forecasts, 130 Agromet Field Units (AMFUs) [located at State Agricultural Universities (SAUs), Institutes of Indian Council of Agricultural Research (ICAR) and Indian Institute of Technology (IIT) etc]. and 199 District Agromet Units (DAMUs) at Krishi Vigyan Kendras (KVKs) under ICAR network prepare Agromet Advisories twice a week on every Tuesday and Friday. These Advisories are prepared for the districts and blocks and it is communicated to the farmers to take decisions on day-to-day agricultural operations for reduction of crop damage and loss due to unusual weather as well as for taking advantages of benevolent weather conditions.

State-of-art weather forecast (GFS) models with approximate horizontal resolution of about 12 km is used for generating 5-day medium range weather forecast at block and district levels. The Climate Forecast System version 2 (CFSv2) coupled model is used for generating extended range weather forecast (Up to 2 to 3 weeks) for taking strategic decisions in agriculture. These weather forecasts are shared with the AMFUs and DAMUs to generate suitable block and district level agromet advisories under GKMS scheme and communicate to the farming community.

Along with the biweekly bulletins, daily weather forecast and nowcast information are also disseminated to the farmers by Regional Meteorological Centres (RMCs) and Meteorological Centres (MCs) of IMD. Impact based forecast (IBF) for agriculture and related Agromet advisories are also being prepared by AMFUs and DAMUs based on the severe weather warnings issued by National Weather Forecasting Centre (NWFC), New Delhi and RMCs and MCs of IMD on excess rainfall and other extreme weather conditions for different districts of various States and UTs across the country.

(c)-(d) Yes Sir. Ministry of Earth Sciences has advertised a call for proposal for applications of AI/ML techniques in earth sciences and also funded research and academic institutions in the country for pursuing research in the said areas.
