

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UN-STARRED QUESTION No. 501
ANSWERED ON 21/07/2022

FORECAST FACILITY OF IMD

501. DR. ASHOK KUMAR MITTAL:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the India Meteorological Department is considering to expand its high tech forecast facilities down to block level and extend its direct SMS alert system;
- (b) whether at present only one lakh farmers in a district get such alert and whether the IMD plans to expand the facilities across the country and if so, the details thereof;
- (c) whether it is a fact that though India's record in predicting cyclones is among the best in the world, the High Performance Computer System would further refine it for more accuracy; and
- (d) if so the action taken by Government in this regard?

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

(a)–(b) Yes Sir. India Meteorological Department (IMD) runs an operational Agrometeorological Advisory Services (AAS) viz., GraminKrishiMausamSewa (GKMS) scheme for the benefit of farming community in the country. Under the scheme, medium range weather forecast at district level is generated and based on the forecast, Agromet Advisories are being prepared and communicated by the 130 Agromet Field Units (AMFUs) located at State Agricultural Universities, institutes of ICAR and IIT etc. to the farmers on every Tuesday and Friday to take decision on day-to-day agricultural operations. AAS rendered by IMD is a step towards weather-based crop and livestock management strategies and operations dedicated to enhancing crop production and food security besides reducing crop damage and loss due to unusual weather.

After successful implementation of district level AAS, District Agromet Units (DAMUs) are being established at KrishiVigyanKendras (KVKs) in collaboration with ICAR to implement block level Agromet Advisory Services (AAS). Till date, 199 District Agromet Units (DAMUs) have been established at KVKs across the country under ICAR network and these DAMUs prepare block level Agromet Advisories based on block level weather forecasts for their respective districts and communicate to the farmers on every Tuesday and Friday. Block level weather forecast and Agromet Advisories aid the farmers in taking decision on day-to-day agricultural operations at micro-level.

State-of-art weather forecast models are used for generating 5-day medium range weather forecast at block and district levels and extended range weather forecast 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. The weather forecast at Block and district level (with validity period of next five days) is updated in website on daily basis.

Agromet Advisories are disseminated to the farmers through multichannel dissemination system like print and electronic media, Door Darshan, radio, internet etc. including SMS using mobile phones through Kisan Portal and also through private companies under Public Private Partnership (PPP) mode.

Social media is also used for quicker dissemination of forecast and advisories to the farmers. At present farmers of 1,19,499 villages in 3,592 Blocks have been covered through 16,102 WhatsApp groups. State Agriculture Department officials of District and Block level are also included in these WhatsApp groups. Continuous efforts are being made to increase the number of farmers and villages covered to disseminate Agromet advisories using WhatsApp.

In addition to above, advisories are also being circulated through a number of Facebook pages created by AMFUs and DAMUs. Initiative on collaboration with State Government has been taken up for integration of weather forecast and Agromet advisories with state government mobile apps and websites. The integration has been completed for Bihar, Chhattisgarh, Gujarat, Haryana, Madhya Pradesh, Nagaland, Rajasthan, Tamil Nadu and Uttarakhand states and about 6 million farmers of above-mentioned states are getting benefitted from weather forecast and agromet advisories.

IMD is taking continuous efforts to popularize the services among the farming community by organising Farmers' Awareness Programmes (FAPs) in collaboration with AMFUs and DAMUs in various parts of the country. IMD along with the experts from AMFUs and DAMUs also participate in KisanMelas, Farmers' Day etc. to create awareness about the services, so that more farmers get benefitted.

- (c)-(d) IMD has one of the best forecasting systems for predicting tropical cyclones crossing both west and east coast of India and associated adverse weather using high resolution advanced mathematical models (including global, regional and cyclone specific models). Ministry of Earth Sciences (MoES) has also introduced ensemble prediction systems viz. Global Ensemble Forecasting System (GEFS) and NCMRWF Ensemble Prediction System (NEPS) for forecasting of cyclones. IMD thus utilizes an array of various models for forecasting genesis, track, intensity, landfall and associated adverse weather like heavy rainfall, gale wind and storm surge. To improve the numerical modelling capability for forecasting cyclones, in addition to in-house efforts, collaborative efforts with various Academic and R&D Institutes have also been undertaken to improve early warning services.

Comparative study of cyclone forecasting skill of India Meteorological Department (IMD) for the cyclones over the north Indian Ocean with other leading centres of the world like (i) national Hurricane centre (NHC), USA for the cyclones over the North Atlantic Ocean and (ii) Japan Meteorological Agency (JMA) for the cyclones developing over Northwest Pacific Ocean indicates that the track and intensity forecast errors of IMD are significantly less than that of JMA, Japan. It is at par or better than of NHC, USA for different lead periods.

Recognizing the urgent need for improving prediction capabilities in the country in a systematic and timely manner, the MoES had launched an ambitious and well-resourced research programme on Mission mode, called the Monsoon Mission. India has augmented its capability of High-Performance Computing (HPC) system, which is close to 10 petaflops capacity now and it is the backbone of the weather research and operational services in the country. The HPC system enabled India to run various global and regional numerical prediction models & climate models. Thereby it helped in the significant improvement of monsoon, cyclone & severe weather forecasts in all time scales, right from short-range to seasonal. It is being planned to further increase the capacity of computing system of MoES from 10 petaflops to 20 petaflops. It will further help to improve the numerical modeling system and hence the forecasting and warning for severe weather events.
