

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION No. 999
TO BE ANSWERED ON TUESDAY, FEBRUARY 11, 2020**

AI BASED WEATHER FORECAST MODELS

999. DR. AMAR PATNAIK:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether Government has implemented the use of AI based technologies in the weather forecast prediction models of India Meteorological Department (IMD);**
- (b) if so, the details thereof and if not, the reasons therefor; and**
- (c) whether it is a fact that the prediction models utilised are presently able to explain dramatic weather disruption in medium and long term forecasts at the local level?**

ANSWER

**MINISTER FOR SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(DR. HARSH VARDHAN)**

- (a) No Sir.**
- (b) The research on the potential feasibility of Artificial Intelligence (AI) based technologies for weather forecasting is in nascent stage all over the world. The outcomes may help to integrate the AI approach with existing numerical weather prediction models and other simulation models to make the weather forecast operationally. Ministry of Earth Sciences (MoES) has now initiated the efforts towards the application of AI based technologies in weather prediction models. Research proposals for projects in Artificial Intelligence are being solicited by the ministry.**
- (c) Currently, India Meteorological Department (IMD) generates forecasts by using different sets of state-of-the-art Numerical Weather Prediction (NWP) models for different spatial & temporal scales. Details of the same are as follow:**
 - Using both regional and global NWP models, IMD generates forecasts at Block/District levels up to 5 days to predict the extreme weather events.**
 - Using the high resolution Global NWP models IMD also generates district level five-days forecasts for five meteorological parameters (Rainfall, maximum temperature, minimum temperature, humidity and cloud cover) with daily update.**
 - IMD has specific models for prediction of intensity, track and storm surge associated with cyclones.**
 - IMD runs ocean-atmosphere coupled models to generate meteorological Subdivision/State levels extended range forecasts for next four weeks with weekly updates. The forecast of active and break phase of monsoon, high temperature, low temperature etc are well predicted up to two weeks, by this model.**
 - IMD also runs ocean-atmosphere coupled models for generating seasonal forecasts of rainfall and temperature for subsequent seasons for four homogeneous regions of India with monthly updates.**
