GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 2351
TO BE ANSWERED ON WEDNESDAY, AUGUST 1, 2018

FORECAST MODEL

2351. SHRI PARBHUBHAI NAGARBHAI VASAVA:
SHRI GEORGE BAKER:
SHRI ANIL SHIROLE:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) the details of models used/being used by the Government to get accurate prediction of extreme weather conditions like rains, heat wave and cold wave across the country, State/UT-wise including West Bengal and Gujarat;
(b) the details of the outcome as a results thereof;
(c) whether the Government is planning to introduce a new forecast model across the country;
(d) if so, the details thereof and the reasons therefor; and
(e) the funds likely to be sanctioned for the purpose along with the time by which it is likely to be introduced ?

ANSWER
MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTRY OF EARTH SCIENCES
(Dr. HARSH VARDHAN)

(a)-(b) The following models are run operationally by IMD for the forecasting of extreme weather on routine basis.

(i) High resolution Global forecast System (GFS) for medium range weather forecasting : Since December 2016 IMD is using the Global Forecast System (GFS) operationally every day to generate deterministic forecasts at 12 km horizontal resolution in the short to medium range (Up to 10 days). The GFS assimilates global conventional atmospheric data as well data from the data from satellites and weather radars.
(ii) High resolution Global ensemble forecast System (GEFS) model for medium range weather forecasting: A high resolution (12 km grid scale) state of the art Global Ensemble Prediction System (EPS) was commissioned on 01 June 2018 for generating operational probabilistic weather forecasts for 10 days.

The EPS will enhance the weather information being provided by the current models by quantifying the uncertainties in the weather forecasts and generate probabilistic forecasts. The probabilistic forecasts of heavy rainfall amount, high temperature, low temperature will be very useful for various sectors.

The probabilistic forecasts of severe weather events at 12 km grid scale across India is very helpful for the disaster management authorities and other users in making better emergency response decisions by explicitly accounting for the uncertainty in weather forecasts.

(iii) Regional models: The Weather Research Forecast (WRF) regional model with two domains (at 9 km and 3 km) is used twice a day for short range weather forecasting (up to 3 days). In addition the Hurricane WRF (HWRF) model has also been implemented to use operationally for the forecasting of cyclones over the North Indian Ocean.

Noticeable improvements have been achieved in prediction skills of heavy rainfall, tropical cyclones and heat waves during the recent years.

(c) No Madam. The above mentioned forecast systems will be improved further for better accuracy.

(d-e) Does not arise.

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