GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION No. **3852**
TO BE ANSWERED ON THURSDAY, AUGUST 14, 2014

ENHANCEMENT OF EFFICIENCY OF IMD

3852. SHRI MANSUKH L. MANDAVIYA:

Will the Minister of **EARTH SCIENCES** be pleased to state:

(a) the Action taken by Government as on date to enhance the efficiency of Indian Meteorological Department(IMD) as it has been observed that the prediction about monsoon is not proper due to which our farming community is facing greater difficulties;
(b) the action taken by Government for better coordination with the State Government in this regard, as many times most of farmers are not aware about probable weather prediction; and
(c) whether the Ministry has been approached by Ministry of Tourism and to update forecast of probable weather to tourists, as such mechanism are functioning in developed nations?

ANSWER
MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES (Independent Charge)
(DR. JITENDRA SINGH)

(a) Earth System Science Organisation has taken various action to enhance the efficiency of Indian Meteorological Department (IMD). As part of its XI five year plan, Government has initiated a comprehensive modernization programme for ESSO-IMD covering upgradation of (i) observation systems (ii) advanced data assimilation tools (iii) advanced communication and IT infrastructure (iv) high performance computing systems and (v) intensive/sophisticated training of ESSO- IMD personnel to facilitate the implementation of advanced global/regional/ meso-scale prediction models for improving the accuracy of weather forecasts in all temporal and spatial scales and for quick dissemination of weather forecast assessments/warnings to the users. Further, several manual operations have been fully automated.

In order to capture the characteristics of the severe weather in real time, 24X7 monitoring system comprising 675 Nos. of AWSs; 1209 Nos. of ARGs; 18 S and C-Band DWRs have been commissioned at Chennai, Sriharikota, Machilipatnam, Visakhapatnam, Kolkata, Mumbai, Bhuj, Hyderabad, Nagpur, Patiala, Delhi Palam, Lucknow, Patna, Mohanbari, Agartala, Delhi Lodi Road, Bhopal and Jaipur.

High Performance Computing (HPC) systems have been used to enhance the weather forecasting capacities by assimilating all available global satellite data for forecast generation. The global model that was earlier run at 50km grid scale are now run at 22km grid. The regional scale model run earlier at 27km grid is replaced by 9km and 3km grid scale models. The accuracy of short range (up to 3-days in advance) monsoon forecasts has improved from 50-60% to 70-95%. The skill of district level medium range rainfall forecast (up to 5-7days in advance) has improved from 60-70% to 75-85% in monsoon season and from 70-75% to 85% in non-monsoon seasons.
As far as the track and landfall forecasts of the tropical cyclones are concerned, the performance evaluation of the updated forecast systems for the past 5-years, have demonstrated enhanced forecast skill by about 18%. ESSO-IMD currently operates 5- Doppler Weather Radars (DWR) at Chennai, Machilipatnam, Visakhapatnam, Kolkata, Sriharikota on the east coast along with a network of Automatic Weather Stations (AWS) and Automatic Rain Gauges (ARG) for continuous weather surveillance over the Bay of Bengal.

ESSO-IMD has operationalized its location specific nowcasting (near real- time) weather service for severe weather (Thunderstorms; heavy rainfall from lows/depressions over the land) across the country. This service activity currently covers 140 urban centres on experimental basis under which nowcast of 3-6hour range is issued. Origin, development/movement of severe weather phenomena are regularly monitored through DWRs and with all other available observing systems.

Based on scientific assessment of the need for further augmentation of observing system network expansion has been formulated. The up gradation of the observing system, high performance computing, communication, forecast/warning systems, product dissemination systems etc. are part of a continuous process by which state-of-the-art science and technology tools can be made accessible to the scientists engaged in weather research and forecasting towards enhancing the service quality.

(b) ESSO-IMD is issuing quantitative district level weather forecast up to 5 days from 1st June, 2008 for the farming community. The products comprise of quantitative forecasts for 7 weather parameters *viz.*, rainfall, maximum and minimum temperatures, wind speed and direction, relative humidity and cloudiness. Further, crop specific advisories to help the farmers are issued and widely disseminated. The Integrated Agro-meteorological Advisory Service (AAS) of ESSO-IMD has been successful in providing the crop specific advisories to the farmers through different print/visual/Radio/ IT based media including short message service (SMS) and Interactive Voice Response Service (IVRS) facilitating for appropriate field level actions. Presently, 5.59 million farmers are receiving the agromet advisories on their mobile through SMS & IVRS.

(c) ESSO-IMD is issuing special weather forecasts for tourist places and they are available on the National and Regional websites of IMD. Special forecasts are also issued for pilgrim tourists for Char Dham Yatra, Amarnathji Yatra etc.The weather information (Maximum, Minimum temperatures, Rainfall and Sky condition, etc.) and forecast for next 7 days for 310 important cities and towns in all the states and union territories of India including 107 tourist locations, is currently being issued under tourism forecasts by the IMD.

ESSO-IMD is in discussion with Ministry of Tourism, Government of India and other State Governments like Govt. of Maharashtra, Uttarakhand, etc to provide updated forecast of various tourist locations.

*****