GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. **1293**
TO BE ANSWERED ON THURSDAY, DECEMBER 12, 2013

WEATHER FORECAST

1293. SHRI SATPAL MAHARAJ:

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

(a) whether the Government is formulating or proposes to formulate any scheme to provide accurate weather forecasts in respect of monsoon, cyclone, earthquake and flood in the country;
(b) if so, the details thereof; and
(c) if not, the reasons therefor?

ANSWER
MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(SHRI S. JAIPAL REDDY)

(a) Yes Madam.

(b) Government has launched the National Monsoon Mission to build state-of-the-art coupled ocean-atmospheric climate model framework for a) improved prediction of monsoon rainfall on extended range to seasonal time scale (16 days to one season) and b) improved prediction of temperature, rainfall and extreme weather events on short to medium range time scale (up to 15 days). Through these efforts, an appropriate dynamical prediction system will be implemented for more accurate monsoon rainfall prediction on all spatial and time scales over the Indian region. The improved system will help us in issuing more accurate short range forecasts (up to 3 days) and warnings for extreme weather events like heavy rainfall events, active (heavy) and break (weak) spells during the monsoon season in advance and more accurate seasonal forecasts for all-India monsoon rainfall.

Operational implementation of improved forecast suite of models after the commissioning of the High Performance Computing (HPC) systems, under the Modernization of the Earth System Science Organization (ESSO) - India Meteorological Department (IMD) have enhanced the weather forecasting capacities through assimilating all available global satellite radiance data for the production of finer-scale forecast products at 22Km grid globally and 9Kms/3Kms grid over India/regional/mega city domains. The performance evaluation of the updated global/meso-scale forecast systems for the past 5-7 years have demonstrated enhanced forecast skill by about 18% quantitatively as far as the track and landfall forecasts of the tropical cyclones are concerned.

As and when the cyclone systems move in to the 500Km surveillance range of DWRs, identification of strong wind zones and pockets of heavy rainfall within the core cyclone area is carried out and their rapid changes are monitored on continuous basis. 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 and Arabian Sea.

There is no proven scientific technique available, anywhere in the world, to forewarn/ predict the occurrence of earthquakes. Nevertheless, efforts are continuously made world-over including India, to monitor and study various earthquake precursory phenomena in critical seismotectonic regions, which would not only help for advancing understanding of earthquake generation processes but also lead to identifying possible earthquake precursors, which may serve as potential predictors in future. As part of this, a National Program on Earthquake Precursors (NPEP) has been initiated, through a multi-institutional and multi-disciplinary mechanism to adopt an integrated approach of generation, assimilation and analyses of a variety of earthquake precursory phenomena in critical seismotectonic environments in the country in a comprehensive manner. The ESSO of the Ministry of Earth Sciences (MOES) has also launched a major program on drilling a deep bore holes in the seismically active Koyna-Warna region in Maharashtra to study in detail the ongoing earthquake generation processes in the region. The on-going scientific deep drilling investigations in the seismically active Koyna region will provide a unique opportunity and the much desired data sets to better understand the mechanisms of faulting, physics of reservoir triggered earthquakes and also contribute towards earthquake hazard assessment and develop models for earthquake forecast in future.

Central Water Commission (CWC) of the Ministry of Water Resources is the nodal agency for issuing flood forecast in India. However, vital meteorological inputs are provided by ESSO-IMD through its 10 dedicated Flood Met Offices. IMD regularly provide inputs to CWC with real time weather situation, Sub catchment wise spatial and intensity distribution of rainfall, Quantitative Precipitation Forecast (QPF), Heavy Rainfall Warning, Station wise significant rainfall amounts etc.

(c) Does not arise.

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