GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 1262
TO BE ANSWERED ON FRIDAY, JUNE 28, 2019

PREDICTION OF NATURAL DISASTERS

1262. SHRI RAVNEET SINGH BITTU:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) **the details of the current capability of the India Meteorological Department to predict natural disasters;**
(b) **whether the Ministry has procured any additional equipment to better predict disasters, if so, the details thereof and cost incurred on their procurement;**
(c) **the reasons for delay in predicting several natural disasters well-beforehand which led to slower evacuation processes; and**
(d) **the details of any future policy of this Ministry to better predict natural disasters?**

ANSWER
MINISTER OF STATE IN THE MINISTRY OF HEALTH AND FAMILY WELFARE
(SHRI ASHWINI KUMAR CHOUBEY)

(a) **India Meteorological Department (IMD) is fully capable for early prediction and issuance of forecasts and warnings of extreme weather phenomena like heavy Rainfall, tropical Cyclones etc. so as to enable disaster managers to minimise loss of life and damage to property.IMD has well established infrastructure for meteorological observations, data exchange, monitoring & analysis, forecasting and warning services using contemporary digital technology. IMD uses a suite of quality observations from Satellites, Radars and conventional & automatic weather stations for monitoring weather developments. It includes INSAT 3D, 3DR and SCATSAT satellites, Doppler Weather Radars (DWRs), automated weather stations (AWS), automatic rain gauges (ARGs), meteorological buoys and ships.**

The recent upgradation of the High Performance Computing Systems with Mihir and Pratyush commissioned in the recent past has helped in the implementation of the following numerical models which would further refine weather forecasting.

- **Global Ensemble Forecasting System (GEFS) at a very high a resolution of 12 km to provide forecast upto 7 days (from 1st June, 2018).**
- **The Unified Model (UM) and Unified Model Ensemble Prediction System (UMEPS) have been adapted from UK Meteorological Office (UKMO), UK to provide forecast upto 7 days with 12 km resolution (from 1st June, 2018).**

In addition to this, IMD also runs cyclone specific multi-nested Hurricane Weather Research & Forecast (HWRF) Model with a resolution of 18 km, 6 km and 2 km for cyclone track and intensity prediction.

Currently Government is operating tsunami early warning system at Indian National Center for Ocean Information Services (INCOIS), Hyderabad to convey the warnings related with sudden natural calamities like tsunami and other coastal hazards to fishermen / coastal communities / safety of coastal Infrastructure.

(b) The following programs have been approved for 2017-20 under the umbrella scheme of Ministry of Earth Sciences entitled "Atmospheric & Climate Research-Modeling Observing Systems & Services (ACROSS) for betterment of weather services. The details of the same follows:

• Atmospheric Observation Network	Rs. 220 Cr.
• Up-gradation of Forecasting Services	Rs. 158 Cr.
• Weather & Climate Services	Rs. 241 Cr.
• Commissioning of DWR	Rs. 44 Cr.
TOTAL	Rs.663 Cr.

(c) IMD issue warnings for tropical cyclones well in advance. In forecasting and monitoring of tropical cyclones, the forecast accuracy of IMD is at par with other leading centres of the world. India's Early Warning System and evacuation preparedness with respect to the cyclone 'Fani' striking Odisha has been appreciated and recognized by many including the United Nations in the recent past.

(d) IMD operates dedicated weather and climate monitoring, detection and warning services useful for various sectors of economy. The weather forecasting systems in the country are at par to most of the developed countries in the world. Upgradation of the system is a continuous process in IMD with respect to weather monitoring and analysis, forecasting and warning services along with high-end computing and networking infrastructure including effective dissemination system.

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