

**GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA**

UNSTARRED QUESTION NO:2575
ANSWERED ON:06.02.2014
SETTING UP OF RESEARCH CENTRE
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Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has set up research centres to study and predict earthquakes, high floods and Tsunami to caution various States to be alert to combat any such natural calamities;
- (b) if so, the details thereof;
- (c) the amount allocated therefor;
- (d) the steps taken by the Government to provide timely warnings to the coastal areas about the floods and other natural calamities due to earthquakes and seismic activities in the Bay of Bengal and the Indian Ocean;
- (e) whether the Department is getting support from Indian Space Research Organisation and Indian Remote Sensing Agency for this research, warning and combative activities; and
- (f) if so, the details thereof?

Answer

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

(a) Yes Madam.

(b) Earth System Science Organization (ESSO)-India Meteorological Department (IMD) is responsible for monitoring, detection and forecasting of Cyclones. ESSO-Indian National Center for Ocean Information Services (INCOIS), Hyderabad is responsible for monitoring, detection and forecasting of Tsunami due to sea-bed earthquakes and storm surges associated with cyclone landfall. ESSO-IMD is responsible for monitoring, detection of Earthquakes. Other activities include carrying out research in pure and applied seismology and earthquake precursory phenomena, earthquake processes and modeling.

Government is in the process of setting up the 'National Center for Seismology' under the Ministry of Earth Sciences (MoES) by separating and bringing together all Seismology and earthquake hazard related activities of ESSO-IMD under its ambit.

ESSO-IMD is also responsible for monitoring, detection and forecasting of other severe weather phenomena like norwesters (severe thunder storms), dust storms, heavy rains and snow, cold and heat waves, etc., which cause destruction of life and property. ESSO-IMD also operates Flood Meteorological Offices (FMOs) at ten locations, viz. Agra, Ahmedabad, Asansol, Bhubaneshwar, Guwahati, Hyderabad, Jalpaiguri, Lucknow, New Delhi and Patna. During the flood season, FMOs provide valuable meteorological support to the Central Water Commission (CWC) for issuing flood warnings in respect of the 43 rivers of India:

- i)Agra - Lower Yamuna and Betwa ;
- ii)Ahmedabad - Narmada, Tapi, Mahi, Sabarmati, Banas and Deman Ganga; iii)Asansol - Ajay, Mayurakshi and Kangsabati;
- iv)Bhubaneshwar - Mahanadi, Brahmani, Baiterini, Bruhaba-lang, Subernarekha, Rushkulya and Vansdhara;
- v)Guwahati - Brahmaputra and Barak;
- vi)Hyderabad - Godawari and Krishna;
- vii)Jalpaiguri - Teesta;
- viii)Lucknow - Ganga, Ramganga, Gomti, Sai, Rapti Ghagra and Samda;
- ix)New Delhi - Upper Yamuna, Lower Yamuna, Sahibi;
- x)Patna - Kosi, Mahananda, Baghmati, Kamla, Gandak, Buri Gandak, North Koel, Kanhar, PunPun and Upper Sone.

(c) During the XII Plan, all the above activities related to cyclones, flood meteorological office, severe weather etc. are covered under the regular budget allocated for the sustenance of the various operational atmospheric observing systems and services of ESSO - IMD having an overall allocation of Rs. 700 crores and ESSO- Seismological Research having an overall allocation of Rs. 796 crores. The allocation of Rs. 84.11 crores is made to ESSO-INCOIS for operating Warning System for Tsunami and Storm Surges.

(d) 24X7 and 7-days a week system of weather surveillance and forecasting is operational at ESSO-IMD for continued monitoring, detection and warning of Cyclones; river basin scale meteorological support (monitoring and warning) for CWCs river flood warning system; other severe weather systems, and Earthquakes. 24X7 and 7-days a week system of sea bed earthquake monitoring and

tsunami warning for north Indian Ocean, as Regional Tsunami Warning Provider (RTWP), is operational at ESSO-INCOIS for continued monitoring, detection and warning of Tsunamis and Storm Surges.

Fully organized protocol exists between ESSO-IMD and ESSO-INCOIS, with the various designated disaster management authorities at centre and state levels for dissemination of weather forecast warning alerts and such existing dissemination protocol is always duly complied with by ESSO-IMD and ESSO-INCOIS.

(e) Yes Madam.

(f) Satellite ground reception stations are established with the support of ISRO at ESSO-IMD and ESSO-INCOIS to receive data from various satellites and also to receive real time data from land/ocean based observing systems (Automatic Weather Stations, Automatic Rain Gauge, Buoys, Sea Level Sensors etc.).