

**GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA**

UNSTARRED QUESTION NO:3941
ANSWERED ON:06.08.2014
EARTHQUAKE FORECASTING
Birla Shri Om

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) the amount spent on several studies regarding earthquakes during each of the last three years and the current year;
- (b) the details of each of the earthquake detected along with its intensity and the losses incurred during the above period;
- (c) the extent to which the forecast regarding earthquake like natural calamity has been proved accurate and the loss of life and property averted thereby; and
- (d) other preventive measures taken by the Government in this regard?

Answer

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

- (a) The year wise amount spent on various activities of seismic monitoring and other earthquake hazard related schemes are given below:

S. No.	Year	Amount (Rupee in Lakh)
1	2011-12	1065.00
2	2012-13	333.53
3	2013-14	1353.60
4	2014-15 (April to June 2014)	116.29

- (b) Details of earthquakes which have been detected and located in and around the country (covering the area bounded by 6°-38°N Latitude and 68°-98°E Longitude) by the Seismological Network during the years 2011, 2012, 2013 and current year with their magnitudes are presented in the annexure.

On the basis of available information, the following damage as reported by the States due to earthquakes during 2011-12 to 2013-14, are given below:-

S. No.	Status	Lives lost (No)	Cattle lost (No.)	Houses (No.)
Earthquake of 18th September 2011				
1	Sikkim	63	1333	23903
2	West Bengal	11	19	88734
3	Bihar	06	Not Reported	Not Reported
Earthquake of 1st May 2013				
4	J & K	3	74	72574

(c) To date, no proven scientific technique exists, anywhere in the world, to forecast/ predict the occurrence of earthquakes. Nevertheless, efforts are being made world-over including India, to monitor and study various earthquake precursory phenomena in critical seismotectonic regions, which would not only help understand the earthquake generation processes better but also lead to identifying possible earthquake precursors, which may serve as useful predictors in future. As part of this, a National Program on Earthquake Precursors (NPEP) has been initiated as 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 seismo-tectonic environments in the country in a comprehensive manner. A suite of Multi-Parametric Geophysical Observations are being carried out at Ghuttu (in Himachal Pradesh), Shillong (in Meghalaya) to monitor and study various earthquake precursory phenomenon. The Government has also initiated a major project on drilling a deep bore hole in the seismically active Koyna-Warna region in Maharashtra, to study in detail the ongoing earthquake generation processes in the region.

(d) Loss of life and damage to property due to earthquakes could be considerably reduced through proper planning and implementation of pre- and post-disaster preparedness and management strategies by respective State and Central Government agencies in a coordinated manner. Guidelines have also been published by the Bureau of Indian Standards (BIS), Building Materials

& Technology Promotion Council (BMTPC) and Housing and Urban Development Corporation (HUDCO) etc. for the design and construction of earthquake resistant structures to minimize the loss of life and damage to property caused by earthquakes. These guidelines are in wide circulation amongst the public and the administrative authorities responsible for the design and construction of earthquake resistant structures in earthquake prone areas.