

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 758
TO BE ANSWERED ON FRIDAY, FEBRUARY 05, 2021

RESEARCH ON EARTHQUAKES

758. **SHRI MAGUNTA SREENIVASULU REDDY:**
SHRIMATI CHINTA ANURADHA:
SHRI BHOLANATH (B.P. SAROJ):
SHRI POCHA BRAHMANANDA REDDY:
SHRI RAMCHARAN BOHRA:

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

- (a) whether the Government has taken note of the recurring earth quakes in National Capital Region and other parts of the country during the last one year and if so, the details thereof;
- (b) whether the National Centre for Seismology (NCS) is carrying out geophysical survey, analysis and interpretation of satellite imageries and geological field investigations for accurate assessment of seismic hazard and if so, the details thereof;
- (c) whether the Government has classified any areas/regions/zones where earthquakes are most likely to occur in future and if so, the details thereof;
- (d) whether the Government has prepared any policy for setting up laboratories for undertaking study on earthquake throughout the country and if so, the details thereof and the time by which the said laboratories are likely to be functional; and
- (e) other measures being taken by the Government to develop early warning systems to disseminate the information on occurrence of earthquakes in the country?

ANSWER
MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY
AND MINISTRY OF EARTH SCIENCES
(DR. HARSH VARDHAN)

(a) Yes Sir, National Centre for Seismology (NCS), under the Ministry of Earth Sciences (MoES), maintains a nation-wide seismological network comprising of 115 seismic stations to monitor the earthquake activity in and around the country. During the last year (1st January 2020 to 31st December 2020), a total of 965 earthquakes with magnitude 3 and above have been reported by NCS. Out of which, 13 earthquakes were recorded in National Capital Region (NCR) and its vicinity.

(b) NCS has initiated Magnetotelluric geophysical survey, interpretation of satellite imageries and geological field investigations in Delhi and surroundings in collaboration with Wadia Institute of Himalayan Geology, Dehradun and Indian Institute of Technology Kanpur. The purpose of these studies is to locate and characterize the major seismic sources/fault lines in Delhi and surroundings.

(c) Yes, the whole country has been divided into four zones viz. zone V, IV, III and II according to the seismic zoning map of India prepared by Bureau of Indian Standards (BIS) based on the historical seismicity and strong ground motions. Out of these zones, Zone V exhibits the highest seismic risk and zone II has the least. Details of states and areas in the country falling in different seismic zones (based on seismic zoning map of India) are given below:

Zone V : Parts of Jammu and Kashmir (Kashmir valley); Western part of Himachal Pradesh; Eastern part of Uttarakhand, Kutch in Gujarat; part of Northern Bihar; all northeastern states of India and Andaman & Nicobar Islands

Zone IV : Ladakh; Remaining parts of Jammu & Kashmir, Himachal Pradesh and Uttarakhand; Some parts of Haryana, Parts of Punjab; Delhi; Sikkim; northern part of Uttar Pradesh; small portions of Bihar and West Bengal; parts of Gujarat and small portions of Maharashtra near the west coast and small part of western Rajasthan.

Zone III : Kerala; Goa; Lakshadweep islands; parts of Uttar Pradesh and Haryana; remaining parts of Gujarat and Punjab; parts of West Bengal, western Rajasthan, Madhya Pradesh; remaining part of Bihar; northern parts of Jharkhand and Chhattisgarh; parts of Maharashtra, Odisha, Andhra Pradesh, Telangana, Tamilnadu and Karnataka.

Zone II : Remaining parts of Rajasthan, Uttar Pradesh, Gujarat, Haryana, Madhya Pradesh, Maharashtra, Odisha, Andhra Pradesh, Telangana, Karnataka and Tamilnadu.

(d) It is planned to strengthen the existing National Seismological Network with additional 35 field stations during 2021-22, thus making it to 150. This will help in detection of smaller earthquakes in selected locations.

(e) Presently, no proven system is available in the country to provide the early warning of earthquakes. However, possibilities are being explored to take up a pilot study on earthquake early warning system in collaboration with United States Geological Survey.
