

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
LOK SABHA  
UNSTARRED QUESTION No. 5670  
TO BE ANSWERED ON FRIDAY, JULY 26, 2019**

**AREA VULNERABLE TO EARTHQUAKE**

**5670. SHRI GNANATHIRAVIAM S.:**

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

- (a) whether the Government is aware that some areas which are highly vulnerable to earthquakes of moderate intensity, if so, the details thereof;**
- (b) whether the experts of Meteorological Department have been working to study it and its possible repercussions; and**
- (c) if so, the findings of the experts in this regard?**

**ANSWER**

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

- (a) Yes Sir. Based on various scientific inputs from a number of agencies such as past seismicity, maximum intensities experienced in the past, geology and seismo-tectonics of the region, Bureau of Indian Standards [IS-1893 (Part-1): 2002], has grouped the country into four seismic zones viz. Zone-II, -III, -IV and -V. In this classification, Zone V is the most seismically active region while zone II is the least. The Modified Mercalli (MM) intensity, which measures the impact of the earthquakes on the surface of the earth, broadly associated with various zones, is given as follows:**

<u>Seismic Zone</u>	<u>Intensity on MM scale</u>
II (Low intensity zone)	VI (or less)
III (Moderate intensity zone)	VII
IV (Severe intensity zone)	VIII
V (Very severe intensity zone)	IX (and above)

**Seismic zonation details for different states of India are written below:**

**Zone V: Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Rann of Kutch in Gujarat, part of North Bihar and Andaman & Nicobar islands.**

**Zone IV: remaining parts of Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Union Territory of Delhi, Sikkim, northern part of Uttar Pradesh, Bihar and West Bengal, parts of Gujarat and small portions of Maharashtra near the west coast and Rajasthan**

**Zone III: Kerala, Goa, Lakshadweep islands, remaining parts of Uttar Pradesh, Gujarat and West Bengal, parts of Punjab, Rajasthan, Madhya Pradesh, Bihar, Jharkhand, Chhatisgarh, Maharashtra, Orissa, Andhra Pradesh, Telangana, Tamilnadu and Karnataka**

**Zone II: Parts of Rajasthan, Madhya Pradesh and Maharashtra, Parts of Odisha, Andhra Pradesh, Telangana, Karnataka and Kerala**

**(b) and (c) National Centre for Seismology (NCS), under the Ministry of Earth Sciences (MoES), maintains a national seismological network to monitor the earthquake activity in and around the country and the information is disseminated about the earthquake parameters to all the user agencies and the disaster management authorities within 5 minutes of the earthquake occurrence.**

**Recently, NCS has completed Seismic hazard Microzonation of Delhi and Kolkata cities and released the reports for the same. Copies of these reports have also been provided to stake holders of concern State and Central Government authorities to help in urban planning. Seismic Microzonation of few other areas like Sikkim, Guwahati, and Bengaluru etc. has also been completed in project mode. Such studies are useful in land use planning and formulation of site specific design and construction criteria for the buildings and structures towards minimizing the damage to property and loss of life caused by the earthquakes.**

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