

**GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA**

UNSTARRED QUESTION NO:3559
ANSWERED ON:15.12.2011
SEISMIC ZONES IN THE COUNTRY
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Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether an increase in the incidence of earthquakes in the country has been registered;
- (b) if so, the details thereof; and
- (c) the details of the seismic zones in the country alongwith the States falling therein?

Answer

MINISTER OF STATE IN THE MINISTRY OF PLANNING, MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN THE MINISTRY OF EARTH SCIENCES (SHRIASHWANI KUMAR)

a) & b) The Alpine-Himalayan seismic belt extending upto Andaman-Nicobar island region, is known to be one of the seismically active belts of the world. The country had experienced the effects of five damaging earthquakes, which had occurred along this belt during the last about two decades. These include the Uttarkashi (1991), Chamoli (1999), Sumatra (2004), Muzaffarabad (2005) and Sikkim-Nepal (2011) earthquakes. Seismic activity along the Alpine - Himalayan seismic belt is known to exhibit such spatio-temporal distribution of earthquakes during different periods of time. The Indian Peninsular shield region has also witnessed three earthquakes viz., Latur (1993), Jabalpur (1997) and Bhuj (2001), during this period. The Indian peninsular shield region exhibited sporadic events in the past also. Thus, these incidences of earthquakes do not appear to give any indication of increase of earthquakes in the country.

c) Bureau of Indian Standards [IS-1893 (Part-1): 2002], based on the past seismic history, grouped the country into four seismic zones, viz. Zone-II, -III, -IV and -V. Of these, 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 as follows:

Seismic Zone	Intensity on MM scale
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)

Broadly, Zone-V comprises of entire northeastern India, parts of Jammu and Kashmir, Himachal Pradesh, Uttaranchal, Rann of Kutch in Gujarat, parts of North Bihar and Andaman & Nicobar islands. Zone-IV covers remaining parts of Jammu & Kashmir and Himachal Pradesh, Union Territory of Delhi, Sikkim, northern parts of Uttar Pradesh, Bihar and West Bengal, parts of Gujarat and small portions of Maharashtra near the west coast and Rajasthan. Zone-III comprises of 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, Tamilnadu and Karnataka. Zone-II covers remaining parts of the country.