

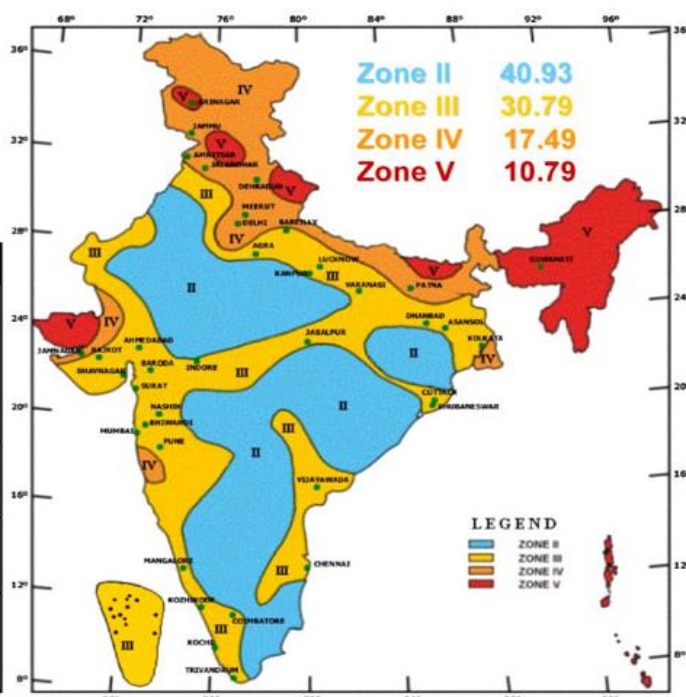
- Inadequate attention to earthquake resistant construction standards in vulnerable areas. For instance, the proposed Pancheshwar dam project on the India-Nepal border is a large-scale project in the geologically sensitive Himalayan area.
- **Indirect vulnerabilities:** The earthquakes also have some serious and far-reaching consequences. For example, earthquakes are also responsible for landslides, soil liquefaction and other calamities in the affected areas.

### Seismic Zone

#### Map of India: -2002

About **59 percent** of the land area of India is liable to seismic hazard damage

Zone	Intensity
Zone V	<b>Very High Risk Zone</b> Area liable to shaking Intensity IX (and above)
Zone IV	<b>High Risk Zone</b> Intensity VIII
Zone III	<b>Moderate Risk Zone</b> Intensity VII
Zone II	<b>Low Risk Zone</b> VI (and lower)



**Fig. 1 Seismic zonation and intensity map of India**

#### Measures for better resilience to earthquakes:

- **Earthquake zone blueprint:** There is a need to prepare a vulnerability map of the country based on different intensities of earthquakes. The vulnerability risk information should be disseminated among the people and they should be educated about the ways and means of minimising the adverse impacts of disasters.
- **Monitoring and identifying the gaps in the existing seismic risk assessment methods:** Establishing earthquake monitoring centres (seismological centres) for regular monitoring in the vulnerable areas. Use of Geographical Positioning System (GPS) can be of great help in monitoring the movement of tectonic plates.
- **Prioritizing Action Plan:** Prioritize the cities and regions based on the severity of risk for implementing mitigation programs using the EDRI model. There is a need for formal training among professionals in earthquake-resistant construction practices.
- **Earthquake-proof planning and design of buildings:** Make it mandatory to adopt earthquake-resistant designs in the vulnerable areas. There should be proper monitoring and enforcement of earthquake-resistant building codes and town planning by-laws.
- **Technological solution:** The new technological solution must be adopted to make houses earthquakes resilient as well as predicting patterns of earthquake occurrences.
- **Periodical drills & awareness:** Disaster like earthquakes cannot be preempted and hence people should be ready to handle any kind of situation. This is possible if periodic drills and mock exercises are conducted. People's participation, cooperation and awareness are the key to success.

Unlike other disasters, it is not possible to prevent the occurrence of earthquakes; hence, the only solution to minimise loss of lives and properties is effective disaster preparedness and mitigation against them. It is thus necessary to empower communities to ensure the seismic safety of the built environment by encouraging the use of simple, easy and affordable technical solutions and institutional arrangements.