



PARLIAMENT QUESTION: HIGH-RISK SEISMIC CATEGORISATION OF THE HIMALAYAN REGION

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As per the updated seismic zonation map of India, the entire Himalayan arc falls within the highest seismic risk category, Seismic Zone VI, reflecting its extremely high tectonic activity and vulnerability to strong earthquakes. Only a small portion of the Ladakh region in the north-eastern corner falls under Seismic Zone V, which is the second-highest seismic hazard category.

In view of the high-risk seismic categorisation of the Himalayan region, the Government has undertaken several focused initiatives to strengthen earthquake monitoring, hazard assessment, and preparedness. These measures include the expansion and upgradation of the seismic monitoring network across Himalayas, the conduct of detailed regional seismic hazard assessments, enhancement of strong-motion instrumentation, and improvement of data acquisition systems to enable precise detection and analysis of seismic events. In addition, various scientific studies relating to site response, fault mapping, and regional source characterisation have been carried out to support disaster risk reduction efforts and facilitate informed planning and development in the Himalayan region. Seismic Microzonation studies conducted by NCS for selected cities, help to identify differential ground-shaking characteristics at the local level, thereby assisting in safe land-use planning, infrastructure design, and mitigation strategies.

The National Centre for Seismology (NCS) is making steady and systematic progress toward establishing an operational Earthquake Early Warning (EEW) system in India. A real-time seismic network dedicated to EEW has been initiated across the Himalayan region, including the installation of 10 P-Alert instruments in the Himachal Himalayas for rapid ground-motion detection. Concurrently, NCS is actively developing and testing prototype EEW algorithms for reliable P-wave detection, rapid magnitude estimation, and early shaking prediction, using regional datasets.

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