

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION NO. 355
ANSWERED ON 06/02/2025

AWARENESS ABOUT EARTHQUAKE SAFETY MEASURES

355. **SHRI BABUBHAI JESANGBHAI DESAI:**

Will the Minister of **Earth Sciences** be pleased to state:

- (a) the manner in which Government plans to enhance public awareness and education on earthquake safety measures;
- (b) the details on its co-ordination with neighbouring countries for cross-border earthquake early warning systems; and
- (c) the steps taken by Government to ensure the earthquake-resistant construction of buildings and infrastructure, especially in urban areas?

ANSWER

THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR
MINISTRY OF SCIENCE AND TECHNOLOGY
AND EARTH SCIENCES
(DR. JITENDRA SINGH)

- (a) To enhance public awareness and education on earthquake safety, following measures are taken by the government:
 - (i) To address the community based preparedness and raise awareness in earthquake prone regions, National Disaster Management Authority (NDMA) runs TV and radio campaigns focused on earthquake preparedness, highlighting critical do's and don'ts during seismic events. Special programs like Aapda ka Samna, aired on Doordarshan, feature expert discussions on prevention and mitigation strategies, equipping the public with actionable knowledge to safeguard lives and property.
 - (ii) NDMA, has also developed guidelines and formulates programs targeting earthquake risk mitigation to mitigate losses in a systematic and coordinated manner.

These initiatives are:

- (I) Home Owner's Guide for Earthquake & Cyclone Safety (2019): The guide will make homeowners aware of various considerations and minimum requirements which need to be taken care of while constructing and buying a house. It would also help them avoid the most common mistakes and ask the relevant questions to the engaged professionals or the seller in urban areas to ensure that the house is disaster-resilient. It outlines best practices for ensuring that masonry or reinforced concrete (RC) structures meet safety standards, empowering homeowners with knowledge to make informed decisions.

- (II) Simplified Guidelines for Earthquake Safety (2021): It provides details based on the National Building Code of India 2016 (released by the Bureau of Indian Standards, Government of India) to those who are constructing a house and who are buying a flat in multi-storey buildings, which are made of either masonry or reinforced concrete (RC). This Guide focuses to address this aspiration of potential home owners, and provides the basic information that they should have when constructing individual houses or buying flats in multi-storey buildings.
- (b) Research efforts are started in India for developing an Earthquake Early Warning (EEW) System for Himalayan region but these are still at a nascent stage, so the question of coordination with neighbouring countries doesn't arise. However, National Centre for Seismology (NCS) under Ministry of Earth Sciences is capable of recording any earthquake of M:2.5 and above in and around Delhi, M:3.0 and above for NE region, M:3.5 and above in Peninsular and extra-peninsular region, M:4.0 and above in Andaman region, and M:4.5 and above in border regions lying between 0 - 40 degree; N: 60 - 100 degree East. The details of the earthquakes reported by NCS are available in public domain through social media and on the website of NCS (seismo.gov.in).
- (c) NDMA has undertaken the Earthquake Disaster Risk Indexing (EDRI) project to systematically address the challenges of rapid urbanization and ensuring earthquake resilience in growing cities; assess earthquake risk across Indian cities. The project aims to provide actionable insights into urban earthquake risk to aid in mitigation, preparedness, and response planning for future seismic events. In Phase I, completed in 2019, the EDRI covered 50 cities, while Phase II targets 16 additional cities. The primary objective of this initiative is to evaluate earthquake risk by combining three critical parameters: hazard, vulnerability, and exposure for each city. The risk index derived from these studies identifies regions within cities as low, medium, or high vulnerability and risk zones. These findings enable decision-makers to prioritize areas requiring immediate attention and implement targeted mitigation measures. NDMA has initiated a project to develop a comprehensive Methodology for Risk Assessment aimed at guiding States in conducting various levels of earthquake risk assessment. The methodology will provide step by-step guidance for conducting risk assessments at different scales, from city-level evaluations to statewide analyses. It will also incorporate best practices and lessons learned from past studies and international frameworks, ensuring a robust and reliable approach. By equipping States with a clear and actionable methodology, NDMA aims to foster uniformity in risk assessments across the country. The results of the EDRI and risk assessment have far-reaching implications, particularly in cities experiencing rapid urbanization. By integrating the risk index into urban planning frameworks, cities can adopt risk-informed decision-making, ensuring safer infrastructure development and community resilience. This initiative underscores NDMA's commitment to developing for proactive disaster risk reduction in urban India.

National Centre for Seismology (NCS), Ministry of Earth Sciences is conducting Seismic Microzonation of cities in India to generate integrated seismological, geological, and geotechnical parameters for earthquake risk resilient structures/infrastructures and buildings.

Additionally, Bureau of Indian Standards (BIS) has published criterion for construction of earthquake resistant structures. The design of structure should be such that the whole structure behaves as one unit at the time of vibration rather than assemblage of parts. However, it is not economical to demolish and reconstruct most of the poorly built structures; for such poorly built structures BIS has prepared guidelines for their retrofitting. Also, HUDCO & BMTPC have published guidelines and brochures for construction and retrofitting of buildings.
