



Research Unit
Press Information Bureau
Government of India

Making India More Disaster-Resilient

Government's Proactive Measures for Earthquake Safety

(Ministry of Earth Sciences)

21st March, 2025

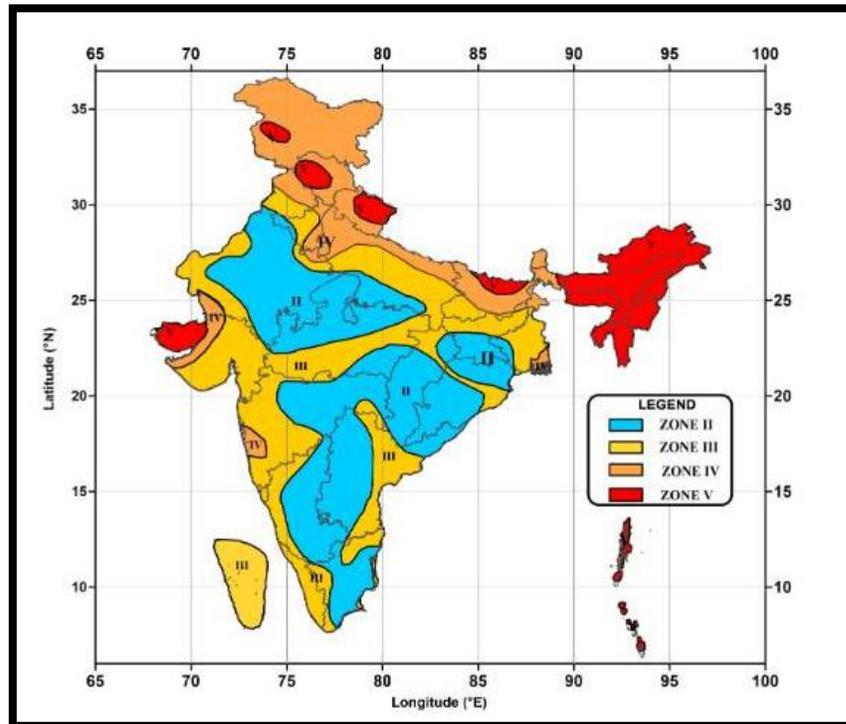
Summary

- **59% of India** is prone to earthquakes.
- **India recorded 159 earthquakes from November 2024 to February 2025**, with the latest being a magnitude 4.0 in Delhi on 17th February, raising concerns.
- The **Disaster Management Act of 2005** led to the formation of NDMA (National Disaster Management Authority), NDRF (National Disaster Response Force) and SDMAs (State Disaster Management Authorities) for efficient disaster response.
- **Seismic observatories increased** from 80 in 2014 to 168 by February 2025.
- The **BhooKamp app** was launched for real-time earthquake updates.
- **NDMA's Earthquake Risk Indexing (EDRI)** project assesses earthquake risks in 50 cities, with plans to cover 16 more cities.

Introduction

India has experienced several earthquake tremors this past year, highlighting the need for better disaster preparedness. Earthquakes occur when stress builds up in the Earth's crust. The crust is made of large plates that slowly move and these movements cause earthquakes. When an earthquake hits a populated area, it can cause significant damage. **Approximately 59% of India is vulnerable to earthquakes**, and the Bureau of Indian Standards (BIS) has classified the country into four seismic zones based on earthquake

risk. Zone V is the most active, including regions like the Himalayas, while Zone II is the least affected. Over the years, India has experienced several devastating earthquakes.

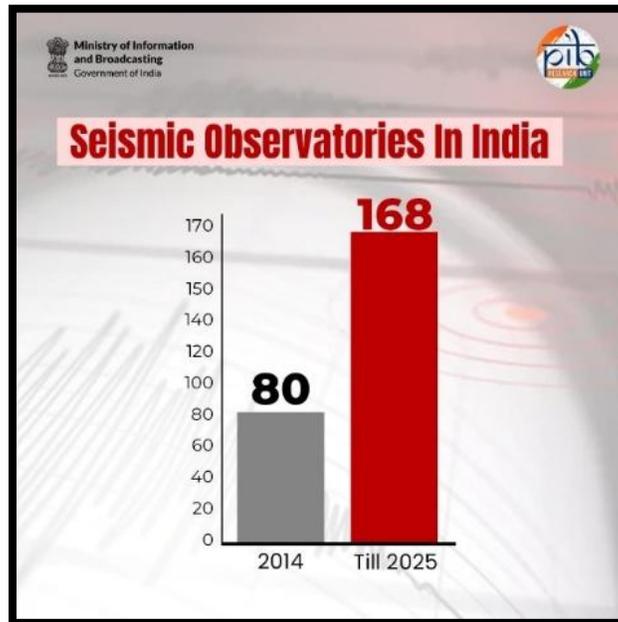


Major Earthquakes in India

The **1905 Kangra** and **2001 Bhuj** earthquakes are among the most catastrophic in India's history. The magnitude 8.0 Kangra earthquake struck Himachal Pradesh, claiming 19,800 lives. In 2001, the magnitude 7.9 Bhuj earthquake followed, claiming 12,932 lives and devastating 890 villages. More recently, on 17th February 2025, a magnitude 4.0 earthquake struck Delhi. **India recorded 159 earthquakes from November 2024 to February 2025**, raising concerns about the country's future preparedness.

Government Initiatives for Earthquake Safety

To enhance earthquake safety, the government has launched several initiatives:



Increase in Seismic Observatories: The number of seismic observatories increased from 80 in 2014 to 168 by February 2025

Special Program: NDMA aired an earthquake discussion program called "Aapda Ka Samna" on Doordarshan TV in March 2025.

10-Point Agenda: Prime Minister Narendra Modi proposed a 10-point agenda in 2016 for disaster risk reduction, which aligns with Vision Document 2047 for a disaster-resilient India.

Retrofitting of Buildings: Approximately 59% of India's land area is earthquake-prone, prompting strict enforcement of building code compliance.

Himalayan Region Earthquake Preparedness: The Himalayan region received special attention with the implementation of early warning systems and a well-defined disaster response framework.

Simplified Earthquake Safety Guidelines: In 2021, earthquake safety guidelines were simplified to ensure better infrastructure safety under the Building Code of India.

Risk Transfer Mechanism and Infrastructure Insurance: A system has been established to assess earthquake-induced damage and ensure insurance coverage for affected infrastructure.

Launch of BhooKamp App: BhooKamp is a mobile app of National Center for Seismology (NCS), Ministry of Earth Sciences (MoES), Government of India; which provides real-time earthquake information to the users.

In addition to these efforts, the Government of India has been actively providing Humanitarian Assistance and Disaster Relief (HADR) support to countries affected by natural calamities. Upholding the spirit of 'Vasudhaiva Kutumbakam,' India swiftly extended aid to Turkiye and Syria after the devastating earthquake in February 2023 by deploying NDRF teams, medical personnel and essential relief supplies.

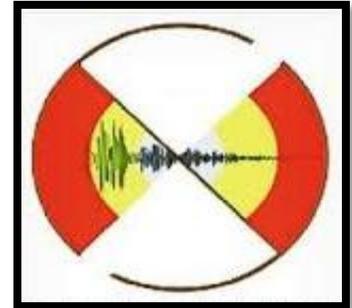
Key Government Agencies for Earthquake Preparedness and Response

Several key agencies play a crucial role in earthquake risk reduction and response in India. These organizations work together to monitor seismic activity, develop disaster management policies and ensure effective response during emergencies.



National Disaster Response Force (NDRF): The National Disaster Response Force (NDRF) was formed under the Disaster Management Act of 2005. Its purpose is to provide specialized response to natural and man-made disasters. The NDRF was first established in 2006 with 8 Battalions. Today, it has expanded to **16 Battalions, each with 1,149 personnel.**

National Centre for Seismology (NCS): India's earthquake monitoring began in 1898 with the establishment of the first seismological observatory in Alipore (Calcutta). Today, the National Seismological Network monitors earthquake activity across the country. The collected data is shared with national and state authorities using advanced technology. The system also conducts research on developing earthquake early warning systems.



National Disaster Management Authority (NDMA): The Disaster Management Act was passed on 23rd December 2005, leading to the creation of the National Disaster Management Authority (NDMA), which is headed by the Prime Minister. Each state also has its own State Disaster Management Authority (SDMA), led by the Chief Minister. While NDMA is responsible for setting disaster management policies, the SDMAs are in charge of creating and implementing disaster plans, including those for earthquakes.

National Institute of Disaster Management (NIDM): It began as the National Centre for Disaster Management (NCDM) in 1995. In 2005, it was renamed the National Institute of Disaster Management (NIDM) to focus on training and building skills. Under the Disaster Management Act of 2005, NIDM is responsible for developing human resources, providing training, conducting research, and promoting policies related to disaster management.



Key Earthquake Safety Measures and Research Initiatives

To enhance earthquake resilience, various safety guidelines, early warning systems and risk assessments are being implemented. These initiatives focus on providing safety information, monitoring risks and preparing for future earthquake hazards.

1. **Guidelines for Earthquake Safety:** The **Home Owner's Guide (2019)** helps homeowners build safe and disaster-resilient homes that meet safety standards. The **Simplified Guidelines (2021)** offer earthquake safety tips for those constructing new homes or buying flats in multi-storey buildings.
2. **Earthquake Early Warning (EEW):** Research on an early warning system is underway in the Himalayan region. NCS records earthquakes of certain magnitudes across India and shares the data publicly on their website.
3. **Earthquake Risk Indexing (EDRI):** NDMA's EDRI project assesses earthquake risks in Indian cities. It evaluates hazard, vulnerability, and exposure to guide mitigation efforts. Phase I covered 50 cities, and Phase II targets 16 more.

Conclusion

India is actively working to strengthen its earthquake preparedness through key policies, safety guidelines, and the development of early warning systems. Government agencies, along with public awareness campaigns, play a vital role in educating citizens and reducing risks. Ongoing efforts to improve infrastructure are crucial to ensuring safety during future earthquakes. However, citizens must also stay

informed and follow safety tips to protect themselves. When people are prepared and aware, it can significantly reduce damage and help save lives.

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