

GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
**RAJYA SABHA**  
**UNSTARRED QUESTION No. 2583**  
**ANSWERED ON 23/03/2023**

**Study on NCT of Delhi being under highly sensitive seismic zone**

**2583. # SHRI DEEPENDRA SINGH HOODA:**

Will the Minister of Earth Sciences be pleased to state:

- (a) the details regarding percentage of geographical area of the National Capital Territory (NCT) of Delhi coming under the highly sensitive seismic zone;
- (b) whether Government has undertaken any study on the possibilities of geological disasters in the densely populated NCT of Delhi; if so, the details thereof, if not, the reasons therefor; and
- (c) whether Government has prepared any special action plan for relief and rehabilitation in densely populated areas of the NCT of Delhi in the event of earthquake like disaster, if so, the details thereof, if not, the reasons therefor?

**ANSWER**

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

- (a) The entire area of National Capital Territory (NCT) of Delhi comes under high seismic hazard and as per seismic zoning map of India (BIS, 2002), this region lies in seismic zone IV. The seismic Zone-IV is broadly associated with seismic intensity of VIII on intensity scale. However, the intensity that a building in an area may experience due to an earthquake could depend on a combination of various factors such as, the magnitude and focal depth of earthquake, epicentral distance of the earthquake, type of soil, typology of the building, design and quality of construction of the building.
- (b) National Centre for Seismology (NCS) under Ministry of Earth Sciences has completed the Seismic Microzonation of NCT, Delhi on 1:10,000 scale. The Seismic Microzonation study is based on geophysical and geotechnical investigations and is used for additional inputs relating to the effects of the underlying soil on the structures in the assessment of damage potential. These seismic microzonation maps are useful in land use planning and formulation of site-specific design and construction criteria for the buildings and structures towards minimizing the damage to property and loss of life caused by earthquakes. To locate and characterize the major seismic sources/ fault lines in Delhi and surroundings, NCS has recently conducted a Magnetotelluric (MT) geophysical survey in Delhi and surroundings in collaboration with Wadia Institute of Himalayan Geology, Dehradun and also carried out analysis of satellite imageries and geological field investigations in collaboration with Indian Institute of Technology, Kanpur. Also, Delhi NCR were equipped with 25 seismic observatories to monitor the earthquake activity on 24/7 basis by NCS.

- (c) National Disaster Management Authority (NDMA) is already engaged in conducting regular awareness campaigns every year through print, electronic as well as social media from time to time to sensitize programs on prevention and preparedness for building safety from earthquakes including exercises in terms of mock drills with NDRF for relief and rehabilitation in densely populated areas of the country as well as the National Capital Territory of Delhi in the event of earthquake like disaster. Besides that, Government of India is poised to follow guidelines by the Bureau of Indian Standards (BIS), Building Materials & Technology Promotion Council (BMTPC) and Housing and Urban Development Corporation (HUDCO) etc. for design and construction of earthquake risk resistant structures to minimize the loss of life and damage to property caused by earthquakes. These guidelines are in wide circulation amongst the public and the administrative authorities responsible for the design and construction of earthquake resistant structures in earthquake prone areas of the country.

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