GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO.2841
TO BE ANSWERED ON FRIDAY,12 MARCH,2021

EARTHQUAKE EARLY WARNING SYSTEM

2841. **SHRI. GOPAL CHINNAYA SHETTY**
SHRI. D.K. SURESH

Will the Minister of EARTH SCIENCES be pleased to state:-

(a) whether 54 percent geographical area of India is highly vulnerable to earthquakes and if so, the details thereof;
(b) whether the Government has maintained any data of Indian cities which are in the highly vulnerable zone and if so, the details thereof, State/UT-wise;
(c) the measures being taken by the Government to create awareness about earthquake-resistant buildings in such cities;
(d) whether the country's earthquake early warning system is able to predict earthquakes of any intensity;
(e) if so, the extent to which an earthquake can be accurately predicted; and
(f) if not the reasons therefor?

ANSWER
MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTRY OF EARTH SCIENCES
(DR. HARSH VARDHAN)

(a) Yes Sir, Considering the recorded history of earthquakes in the country, a total of ~59% of the land mass of India is prone to earthquakes of different intensities. As per the seismic zoning map of the country, the total area is classified into four seismic zones. Zone V is seismically the most active region, while zone II is the least. Approximately, ~ 11% area falls in zone V, ~18% in zone IV, ~ 30% in zone III and remaining in zone II.
(b) The cities of the country falling under very high-risk zone V/highly vulnerable zone, state/UT wise, are given below:

State: Cities
Andaman and Nicobar Island: All cities
Bihar: Araria, Sitamarhi, Darbhanga, Madhubani, Motihari, Saharsa, Kishanganj, Madhepura, Saharsa, Supaul
Gujarat: Bhuj
Himachal Pradesh: Hamirpur, Dharamsala, Chamba, Mandi, Kullu
Jammu Kashmir: Srinagar

NE states: All cities of Tripura, Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram and Nagaland
Uttarakhand: Pithoragarh, Chamoli, Rudraprayag, Bageswar, Almora
West Bengal: Cooch Behar

(c). NDMA has been conducting regular awareness campaigns every year through print, electronic as well as social media from time to time, on earthquakes that include precautions for building safety from earthquakes. Also, Guidelines have been published 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 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.

(d), (e) and (f)

Presently, no proven system exists in the country to provide the early warning of earthquakes. Moreover, there is no scientific technique available anywhere in the world to predict an earthquake precisely in terms of time, location and its magnitude.

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