

GOVERNMENT OF INDIA
- MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 2071
TO BE ANSWERED ON WEDNESDAY, SEPTEMBER 23, 2020

EARTHQUAKES IN DELHI

2071. SHRI P.C. GADDIGOUDAR:
SHRI PARVESH SAHIB SINGH VERMA:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has taken a serious note of the frequent tremors/earthquakes that occurred in the National Capital and NCR region in the last few months and if so, the details thereof;
- (b) the reasons for the increased frequency of earthquakes in the NCR in the past few months and whether it indicates likely occurrence of a major earthquake in the region;
- (c) the number of such tremors/earthquakes reported during the last three years in the country, State/UT-wise particularly in NCR along with the details of loss of human life and property reported as a result thereof;
- (d) whether his Ministry has undertaken an initiative to revise the earthquake vulnerability status of the NCR region and if so, the details thereof and if, not the reasons therefor; and
- (e) the preventive measures taken by the Government to save extensive damage/loss due to these untoward incidents?

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

- (a) Yes Sir, National Centre for Seismology (NCS), under the Ministry of Earth Sciences (MoES), maintains a nation-wide seismological network to monitor the earthquake activity in and around the country. During the last few months (12 April- 3 July), four earthquakes of magnitude in the range M 3.3to 4.7 and 13 smaller earthquakes including, the aftershocks (M 2.5 – 3.0) were recorded in National Capital Region (NCR).
- (b) The analysis carried out by NCS on past 20 years earthquakes occurred in and around Delhi, does not show any definite pattern in frequency of earthquake occurrence which could suggest any increase in earthquake activity. However, during the recent years, seismic monitoring over Delhi has improved considerably and even the lower magnitude events are automatically detected and disseminated quickly through NCS website and Mobile App. It is perhaps giving the impression of enhanced earthquake activity in the region, which was otherwise not noticed earlier. It is difficult to state that any increase in seismicity is an indicator of likely occurrence of major earthquake.
- (c) A total of 745 earthquakes have been recorded by the National Seismological Network including, 26 events in NCR during last three years (September 2017 to August 2020) with magnitude 3 and above. State-wise distribution is given in Annexure -I. No major loss / damage has been reported due to these earthquakes.

- (d) At present there is no proposal to revise the earthquake vulnerability status of the NCR region. The microzonation study conducted by NCS provides detailed information on various parameters like, expected ground motion, liquefaction and composite Hazard, etc. for different parts of Delhi.
- (e) Several initiatives have been taken by concerned Ministries/ departments towards preventive measures. NDMA has prepared and issued the guidelines on "Management of Earthquakes" and "Seismic retrofitting" of deficient buildings. Also, NDMA and State Disaster Management Authorities conducts regular programmes to create awareness about the earthquakes for public at large.

In view of the recent seismic activity in NCR, NDMA has organised meetings with Disaster Response Force and Governments of NCT, Haryana, Rajasthan and Uttar Pradesh to ensure compliance of building bye laws to make upcoming constructions earthquake resistant; to conduct regular mock exercises to deal with earthquakes and to undertake the public awareness programs. Also, online Incident Response System (IRS) training and Table Top Exercise was organised for all the stakeholders.

In addition, Seismic Microzonation studies of Delhi, Kolkata, Sikkim, Guwahati, and Bengaluru etc. has been carried out by MoES. Such studies are useful in land use planning and formulation of site-specific design and construction of buildings/ structures to minimizing the damage to property and loss of life caused by the earthquakes.

Bureau of Indian Standards (BIS) has also published various guidelines for construction of earthquake resistant structures and retrofitting to help in minimising damage.

Annexure -I

| S. No. | Name of the State | No. of Earthquakes |
|--------|----------------------------|--------------------|
| 1. | Andaman and Nicobar Region | 193 |
| 2. | Andhra Pradesh | 3 |
| 3. | Arunachal Pradesh | 31 |
| 4. | Assam | 57 |
| 5. | Bihar | 1 |
| 6. | Chhattisgarh | 3 |
| 7. | Delhi | 2 |
| 8. | Gujarat | 20 |
| 9. | Haryana | 14 |
| 10. | Himachal Pradesh | 64 |
| 11. | J&K | 98 |
| 12. | Jharkhand | 1 |
| 13. | Karnataka | 2 |
| 14. | Madhya Pradesh | 3 |
| 15. | Maharashtra | 55 |
| 16. | Manipur | 56 |
| 17. | Meghalaya | 24 |
| 18. | Mizoram | 19 |
| 19. | Nagaland | 9 |
| 20. | Orissa | 4 |
| 21. | Punjab | 5 |
| 22. | Rajasthan | 14 |
| 23. | Sikkim | 6 |
| 24. | Tamil Nadu | 2 |
| 25. | Telangana | 5 |
| 26. | Uttar Pradesh | 10 |
| 27. | Uttarakhand | 32 |
| 28. | West Bengal | 12 |