

Report on Real Time Earthquake Location

**From: Earthquake Monitoring Center (EMC) of NCS
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Report of Earthquakes occurred in the month of December 2021

1) Introduction:

National Center for Seismology maintains a National Seismological Network of **152 stations** each having state of art equipment and spreading all across the country (**Figure:1**). Using these stations during the period 01st – 31st Dec 2021 a total number of 138 earthquakes have been

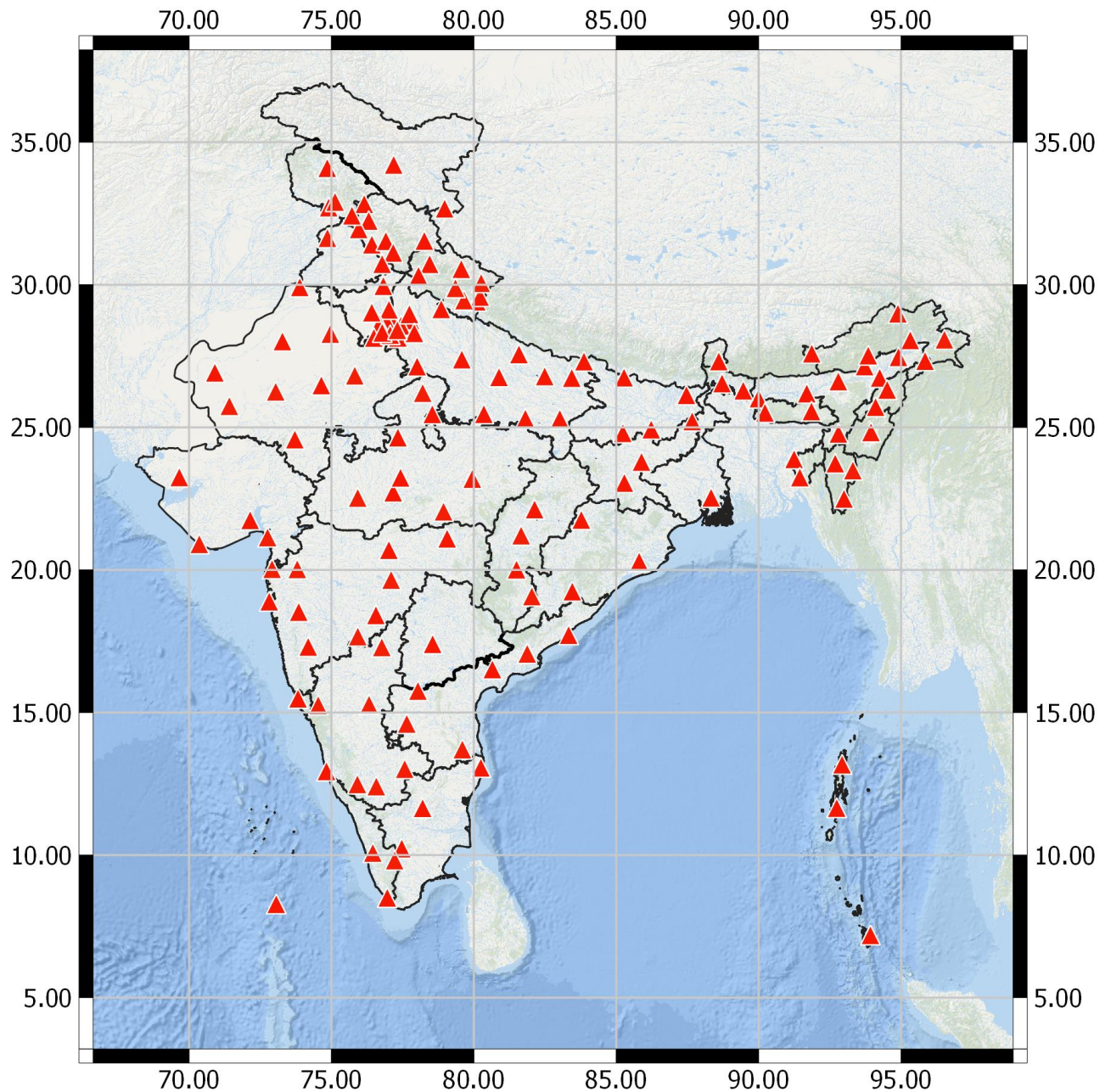


Figure 1: National Seismological Network (NSN) of 152 Stations

located and disseminated from the center (**Figure:2**), out of which 133 earthquakes has occurred

in India and its neighborhood region bounded by the coordinates 0° - 40°N & 60°-100°E (**Figure:3**).

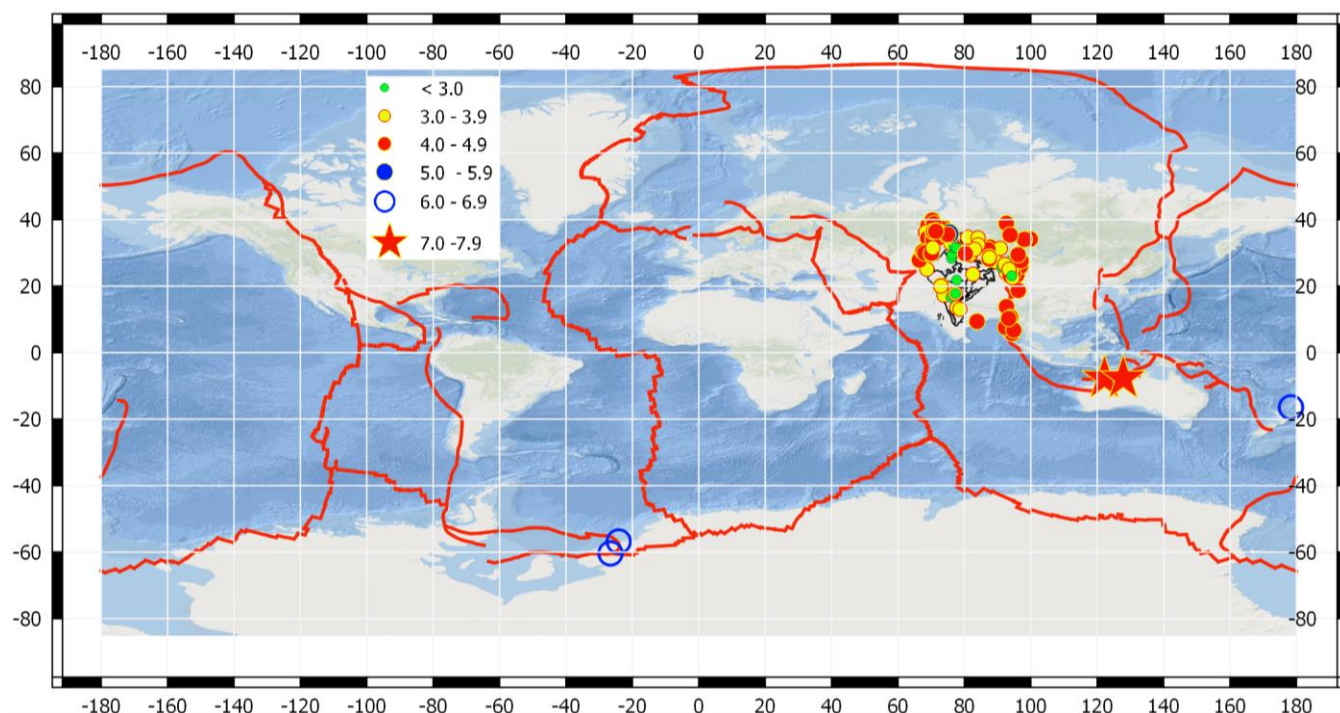


Figure 2: Earthquakes located and disseminated by NCS during 01st – 31st Dec 2021

2) Seismicity:

During the period, the density of earthquakes in India and its neighborhood region bounded by the coordinates 0- 40°N & 60-100°E; can largely be seen in Hindu Kush region, North Eastern part of India and Andaman-Nicobar Island region as shown in **Figure:3**. Few earthquakes of smaller magnitudes were also reported in Himachal Pradesh, Uttarakhand, Haryana, Central (Betul in MP and Koriya in Chhatisgarh), Western (Palghar and Satara in Maharashtra) and Southern (Bidar, Chikkaballapura and Vijayapura in Karnataka and Chittoor in Andhra Pradesh) part of country. Twenty-eight (28) earthquakes of smaller magnitude ($M < 3.0$) comprising 20% of all earthquakes occurred during 01st to 31st December 2021. **Two** earthquakes of magnitude **M:5.0 and above** occurred during the month in the region; as detailed in following table.

| SN | Date | Time (IST) | Lat(^o N) | Long(^o E) | Depth (KM) | M | Region |
|----|------------|------------|----------------------|-----------------------|------------|-----|-------------------------------|
| 1 | 2021-12-03 | 18:40:53 | 36.04 | 71.17 | 110 | 5.0 | Afghanistan-Tajikistan Border |
| 2 | 2021-12-27 | 19:01:09 | 35.68 | 75.30 | 40 | 5.0 | Ladakh |

Out of total 138 earthquakes, **33%** and **42 %** of events occurred in the magnitude range **3.0-3.9** and **4.0 - 4.9** respectively, whereas **two**, **three** and **two** earthquakes occurred in each magnitude

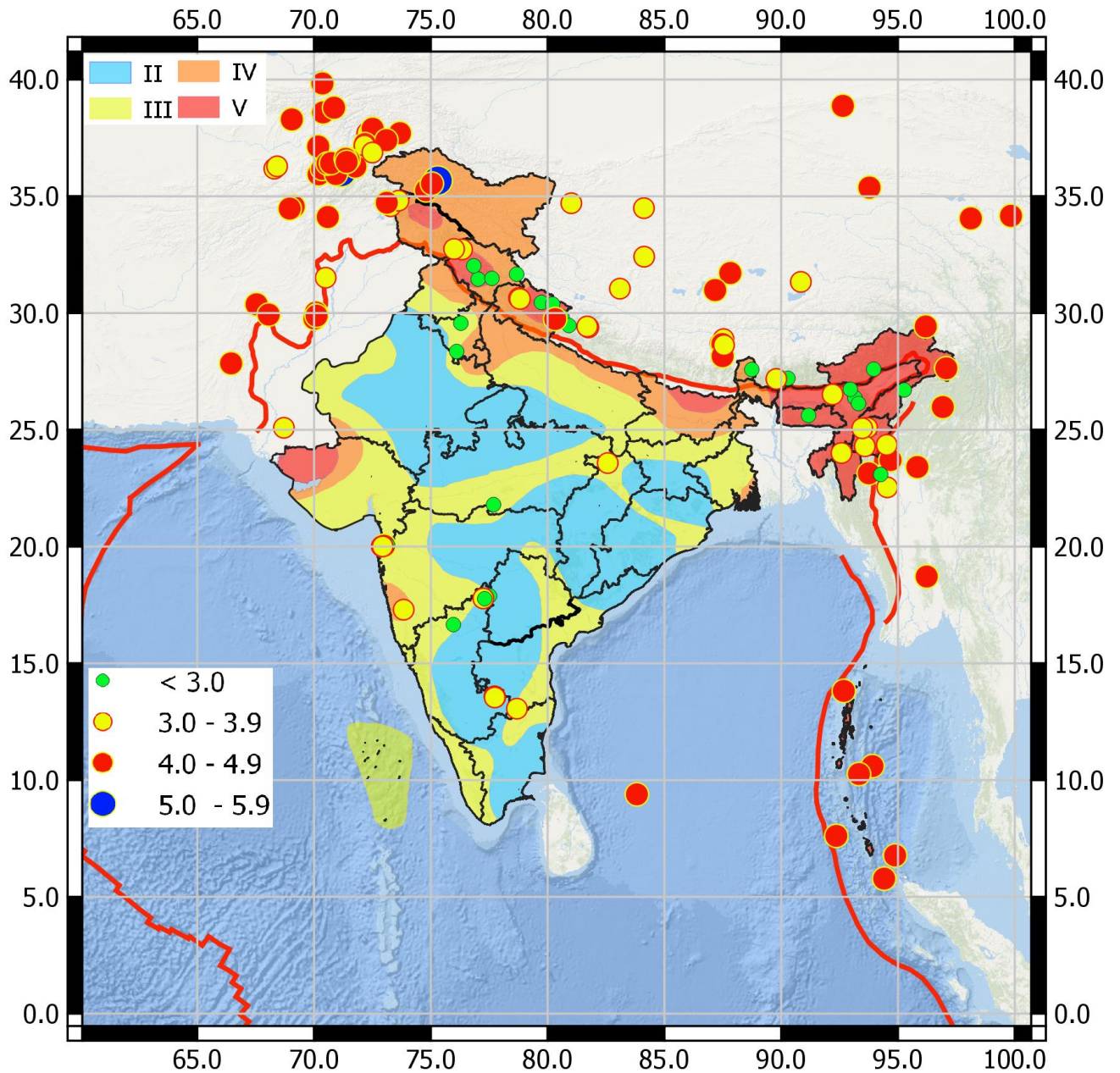


Figure 3: Map showing the seismicity during the period 01st – 31st Dec 2021 occurred in India and its neighbourhood region along with the seismic zone of India.

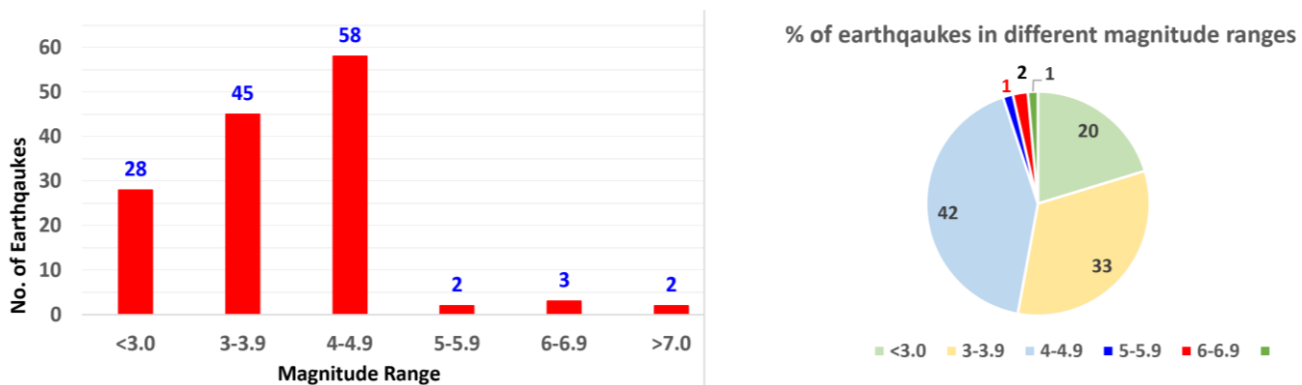


Figure 4: Pie-Chart and Bar-Diagram showing the number of earthquakes occurred in the magnitude range during the period 01st – 31st Dec 2021 that was disseminated.

range of 5.0-5.9 , 6.0-6.9 and > 7.0 respectively as shown in **Figure:4**. Detail list of earthquakes occurred during the month is available at www.seismo.gov.in

3) Significant Activity:

Ladakh Earthquake of M:5.0: An earthquake of magnitude **M:5.0** occurred at **19:01:09 IST** of **27th December 2021** in Ladakh, at 35.68°N and 75.30°E with focal depth of 40km. The epicentre is about 90 km ESE of Gilgit, 145 km NW of Kargil, 180 km NNE of Srinagar, 330 km NNE of Jammu. Location and intensity map of earthquake is shown in **Figure-5**.

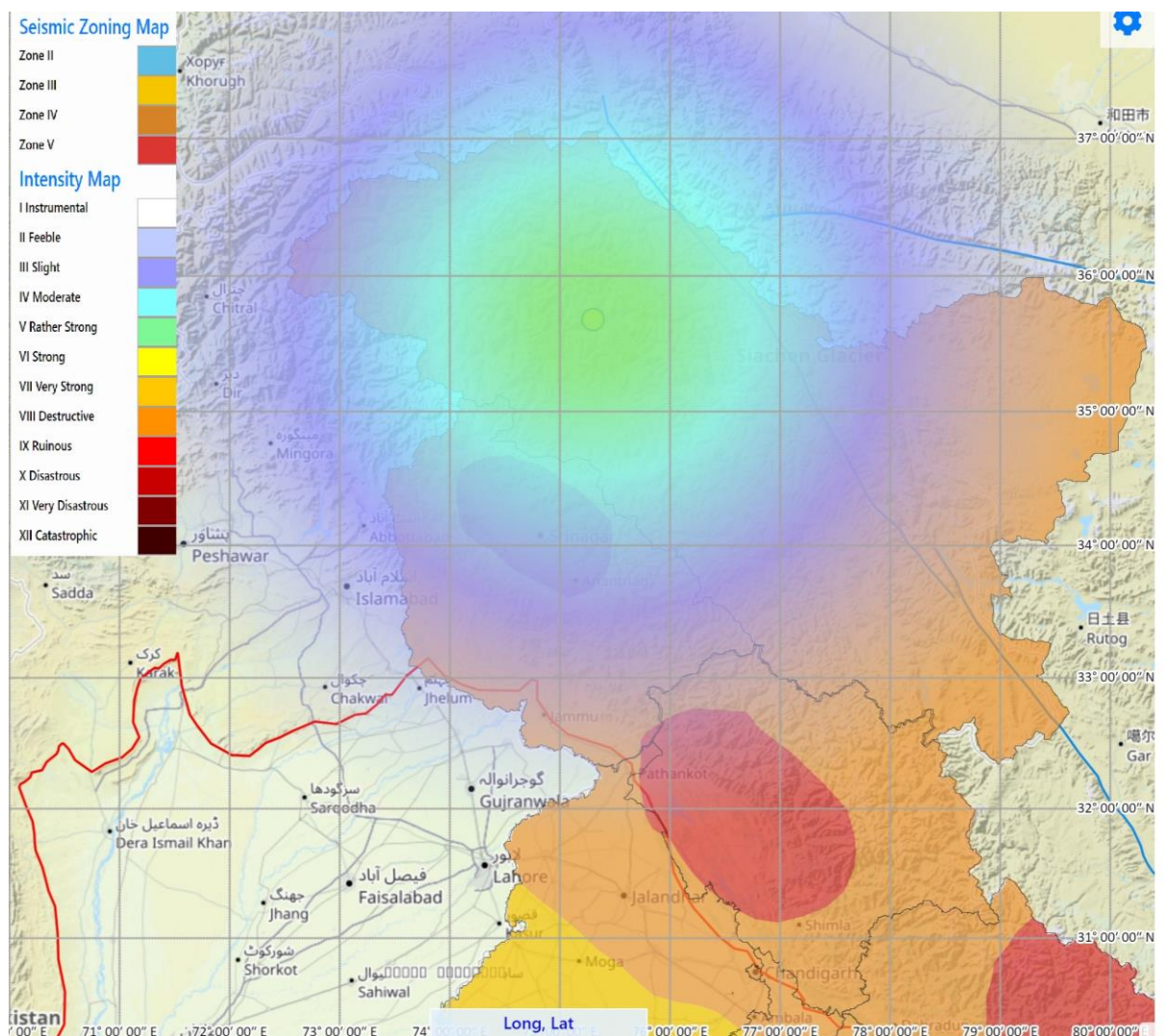


Figure 5: Map showing the epicentre (circle) and intensity of Ladakh earthquake of M:5.0, occurred on 2021-12-27 at 19:01:09(IST).