

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 October 2025

1)Introduction:

National Center for Seismology maintains a National Seismological Network of **169 stations** each having state of art equipment and spreading all across the country (**Figure:1**). Using these stations during the period 01st – 31st October 2025 a total number of 304 earthquakes have been located and

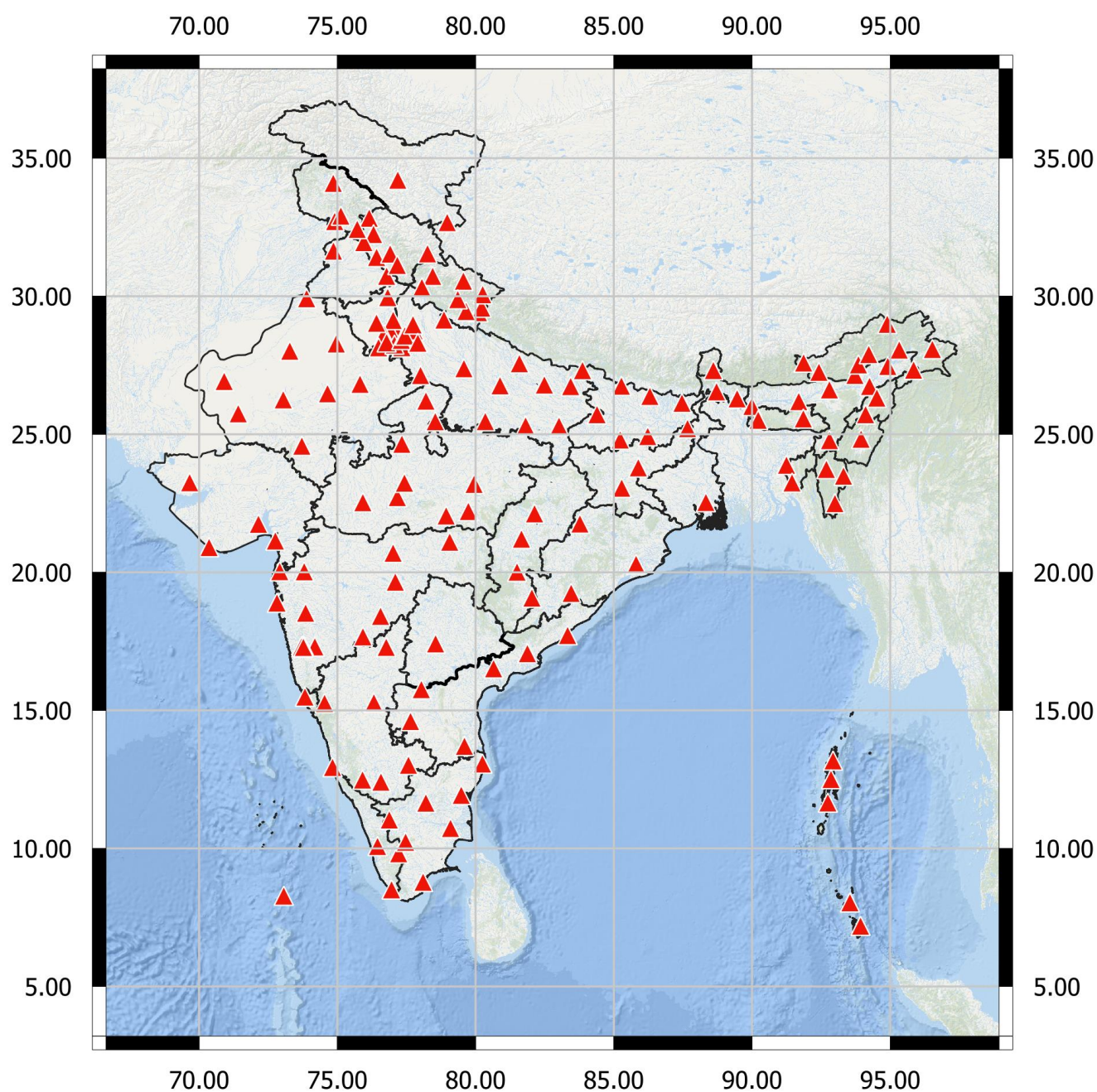


Figure 1: National Seismological Network (NSN) of 169 Stations

disseminated from the center (**Figure:2**), out of which 152 earthquakes have occurred in India and its neighborhood region bounded by the coordinates 0° - 40°N & 60°-100°E (**Figure:3**).

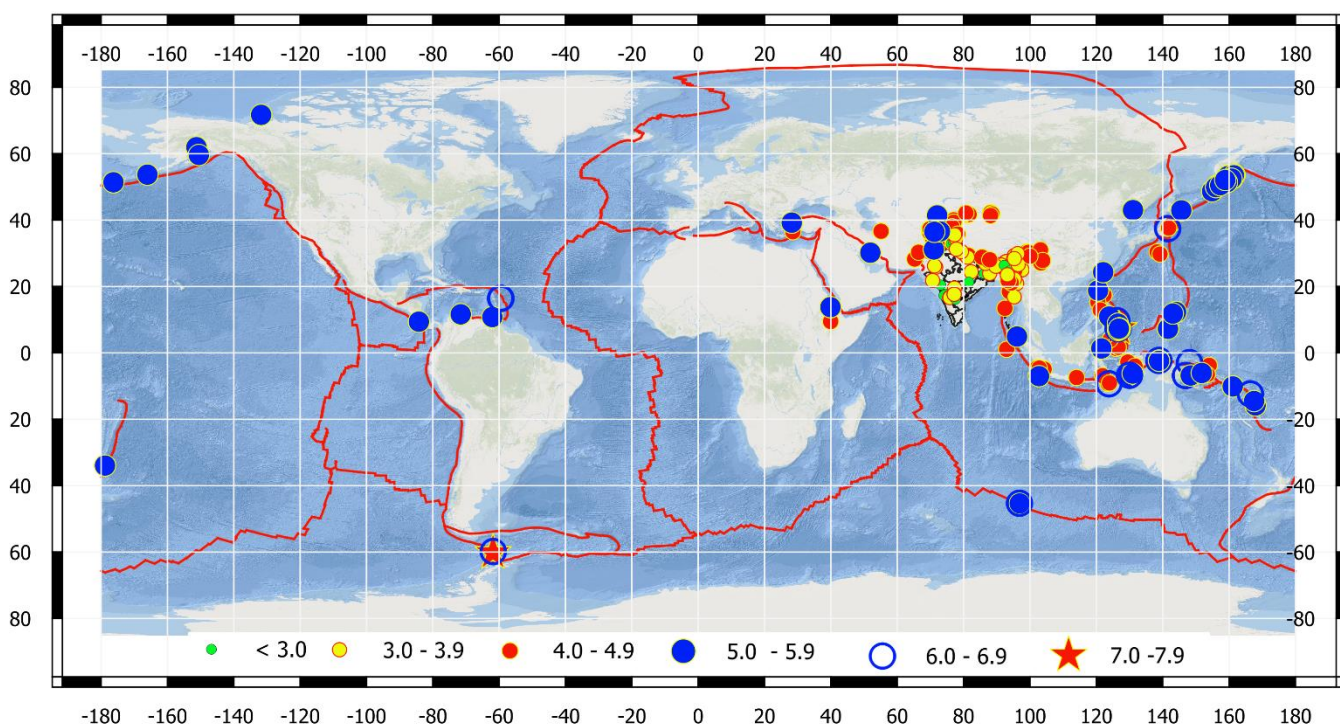


Figure 2: Earthquakes located and disseminated by NCS during 01st – 31st OCT 2025

2) Seismicity:

During the period, the majority of earthquakes within India and its neighbourhood region bounded by the coordinates 0-40°N & 60-100°E; were located in Hindu Kush region, North India (Ladakh, Jammu and Kashmir, Himachal Pradesh and Uttarakhand), North East India (Arunachal Pradesh, Assam, Mizoram, Manipur, Meghalaya, Nagaland and Sikkim) as shown in **Figure 3**.

Few earthquakes of smaller magnitudes were also reported in western (Balotra and Barmer in Rajasthan; Rajkot and Valsad in Gujrat; Hingoli, Satara and Solapur in Maharashtra); southern (Vijayapura and Bidar in Karnataka, Jogulamba Gadwal in Telangana); central (Singrauli in Madhya Pradesh, Raipur in Chhattisgarh) and eastern (Giridih in Jharkhand; Murshidabad in West Bengal) part of country. **Twenty seven** earthquakes of smaller magnitude (**M < 3.0**) comprising **9 %** of all earthquakes occurred during 01st to 31st October 2025. **Four** earthquakes of magnitude **M:5.0 and above** occurred during the month in the region; as detailed in **Table:1**.

Out of total 304 earthquakes **24%** and **39%** earthquakes occurred in the magnitude range **3.0-3.9** and **4.0-4.9** respectively; **Seventy** earthquake in the magnitude range 5.0-5.9 occurred during the

period of which four were inside the grid of 0- 40°N & 60-100°E as shown in **Figure 2** and **Figure 3**.

Table:1 Earthquakes of $M \geq 5.0$ occurred during October 2025 within India and its neighbourhood

SN	Date	Time (IST)	Lat($^{\circ}$ N)	Long($^{\circ}$ E)	D (KM)	M	Region
1	2025-10-11	20:23:57	31.19	71.04	10	5.0	Pakistan
2	2025-10-17	17:45:06	36.61	72.87	10	5.7	Pakistan
3	2025-10-21	23:44:48	36.49	71.18	220	5.0	Afghanistan
4	2025-10-28	05:05:15	04.94	96.10	10	5.1	Northern Sumatra, Indonesia

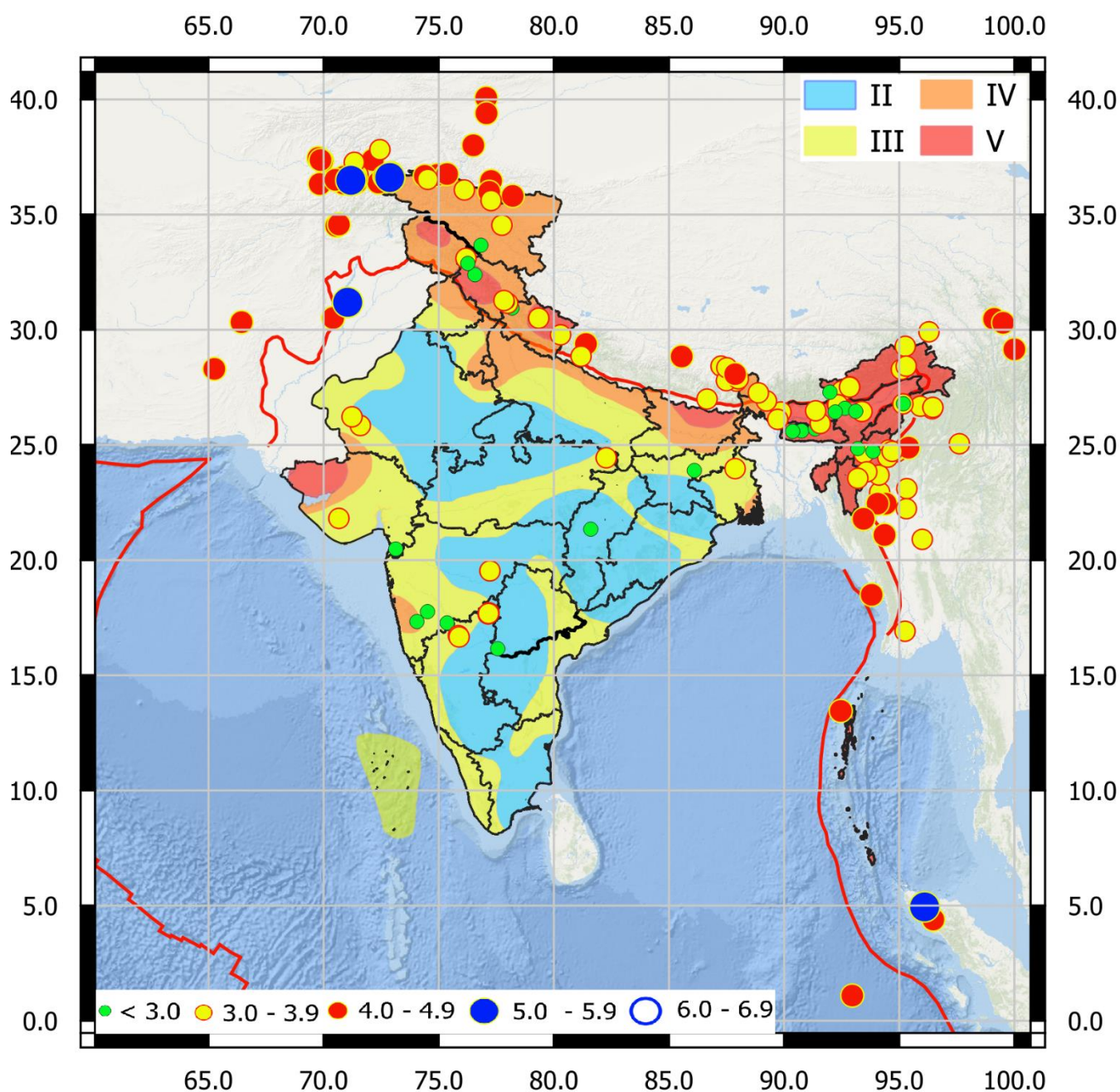


Figure 3: Map showing the seismicity during the period 01st – 31st OCT 2025 occurred in India and its neighbourhood region along with the seismic zone of India.

Thirteen earthquakes in the magnitude range **6.0-6.9** occurred during the period were outside the grid of 0- 40⁰N & 60-100⁰E as shown in **Figure 2** and **Figure 4(a)**. **Two** earthquakes in the magnitude range **7.0-7.9** occurred during the period were also outside the grid of 0- 40⁰N & 60-100⁰E as shown in **Figure 2** and **Figure 4(a)**. Details of earthquakes occurred during the month is available at www.seismo.gov.in .

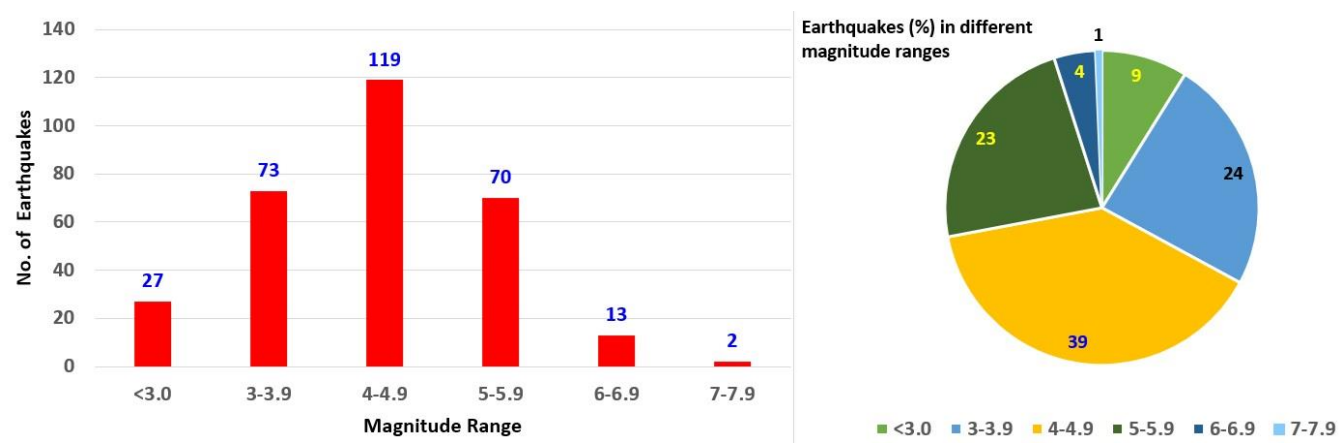


Figure 4 (a) : Distribution of earthquakes in the different magnitude range during 01st – 31st OCT 2025.

There is positive change in number of earthquakes in all the magnitude ranges except < 3.0 and 7.0 - 7.9. The change for different magnitude ranges with respect to previous month (Sep 2025) is shown in Figure 4 (b).

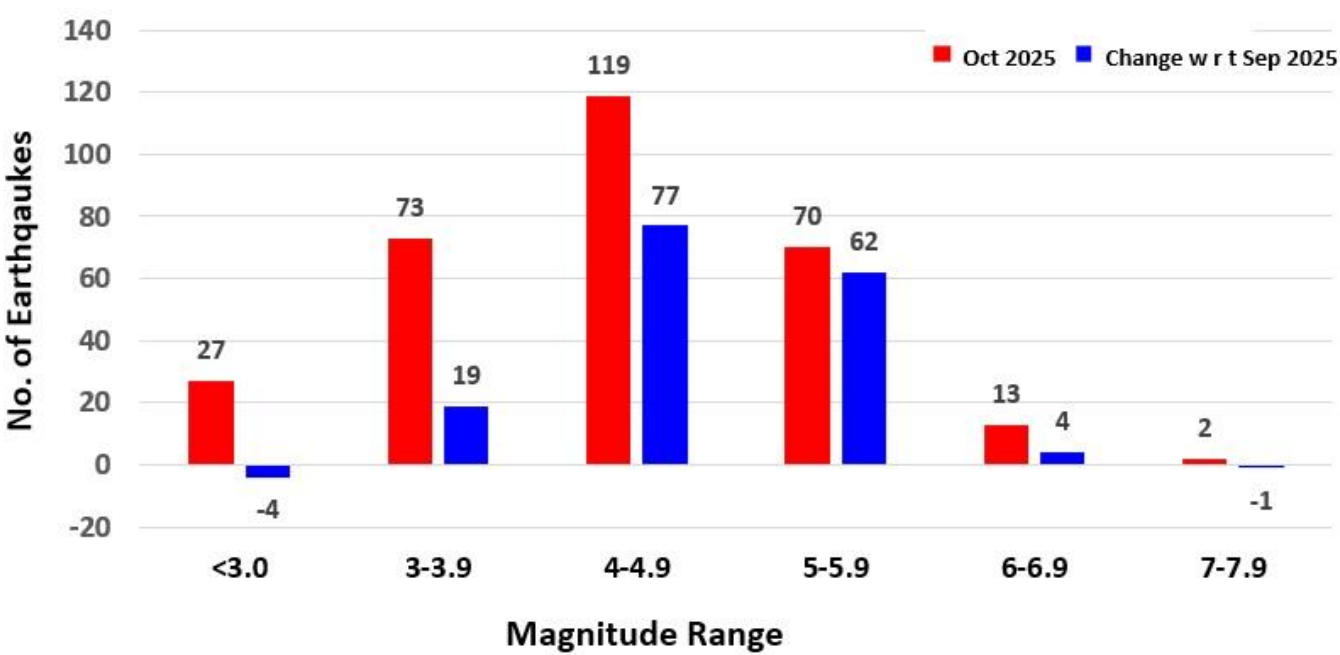


Figure 4 (b) : Change of occurrence of earthquakes in different magnitude ranges w r t previous month

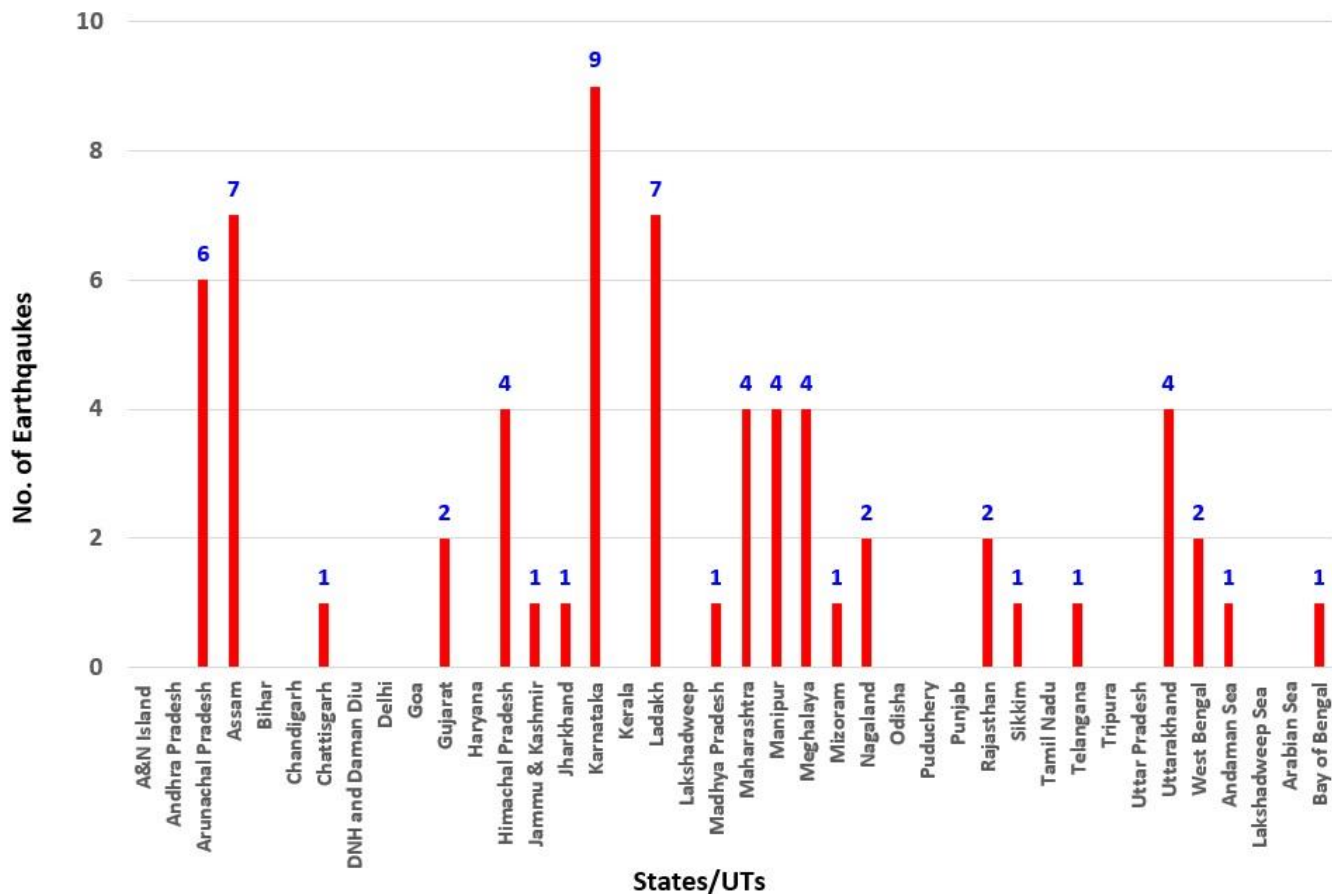


Figure 5: State wise distribution of earthquakes during the period 01st – 31st OCT 2025.

Total **66** earthquakes occurred within Indian territory; of which 9 earthquakes occurred in Karnataka and 7 each in Assam and Ladakh during the period. Out of 66 earthquakes **16** and **25** earthquakes occurred in **North** and **North-East** region respectively. State/UT and region wise distribution of earthquakes occurred during 01st – 31st October 2025 is shown in **Figure 5** and **Figure 7** respectively. There was sparse activity in east and central part of the country the 01st – 31st October 2025 (**Figure 3** and **Figure 6**).

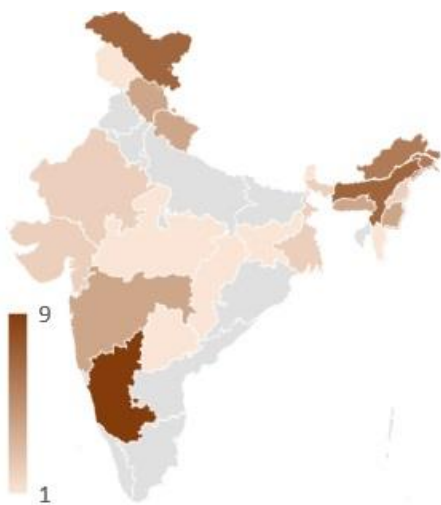


Figure: 6 Earthquake Density map

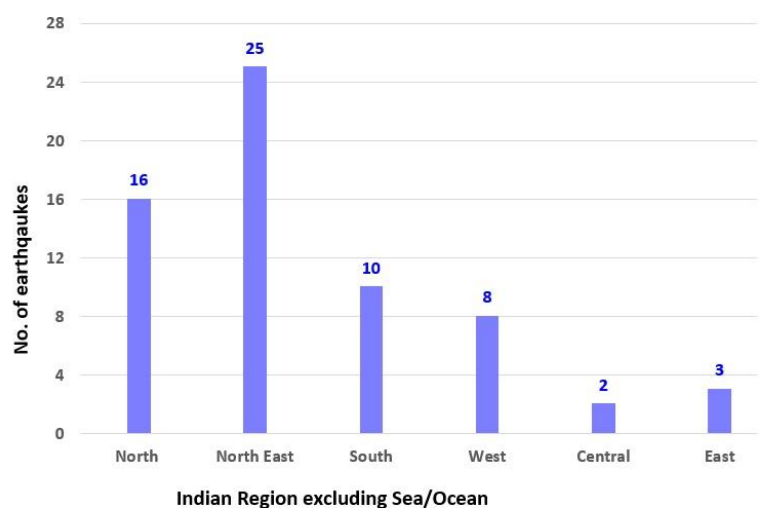


Figure: 7 Region wise distribution

3) Significant Activity:

A. Pakistan earthquake: An earthquake of **M:5.7** occurred at **17:45:06 IST** of **17th OCT 2025** in Northern Pakistan at **36.61° N** and **72.87° E** with focal depth of 10 km. The epicentre was approximately 18 Km west of Indian (Ladakh) boundary; 148 Km NW of Gilgit, India ; 148 km SE of Khorog, 213 km ESE of Fayzabad, Afghanistan; Tajikistan; 325 Km N of Islamabad, Pakistan and 330 Km NW of Srinagar, India. Earthquakes occurring along the Main Mantle Thrust (MMT), which is a major tectonic boundary in the north western Himalayas leading to frequent seismic activity in the region. This fault marks the suture between the Indian Plate and the Kohistan-Ladakh arc, and it's a known zone of seismic activity due to ongoing plate convergence. The other nearby faults are Main Central Thrust (MCT) and Karakoram Fault (to the east) also highly seismogenic zone. The maximum intensity of this earthquake, as measured on the Modified Mercalli Intensity (MMI) scale, was VI near the epicentral region (Figure 2). This level of intensity typically results in strong shaking felt by all. **Figure 7** depicts the expected intensity of this earthquake around the source zone. URL <https://riseq.seismo.gov.in/riseq/earthquake/event/cDkrU0UyClFGexV2aUF2L3JNSkJrdz09/Review> [ed](#) may be visited for more details.

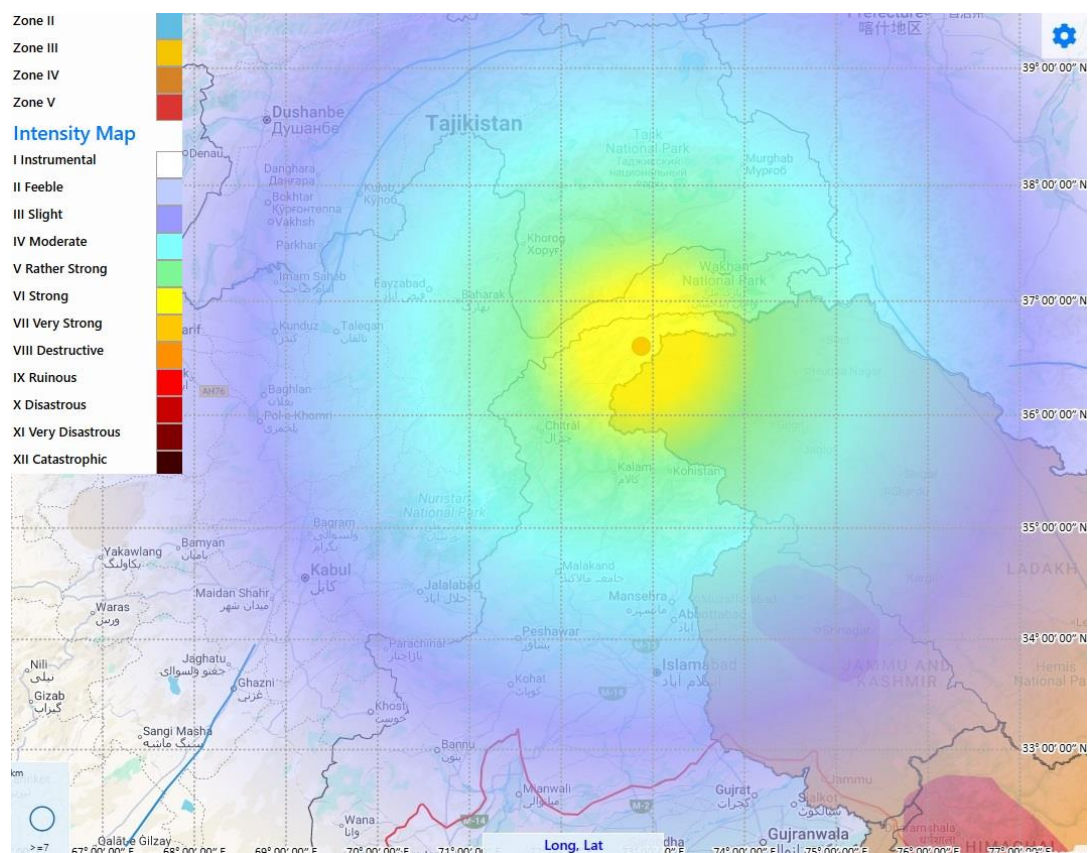
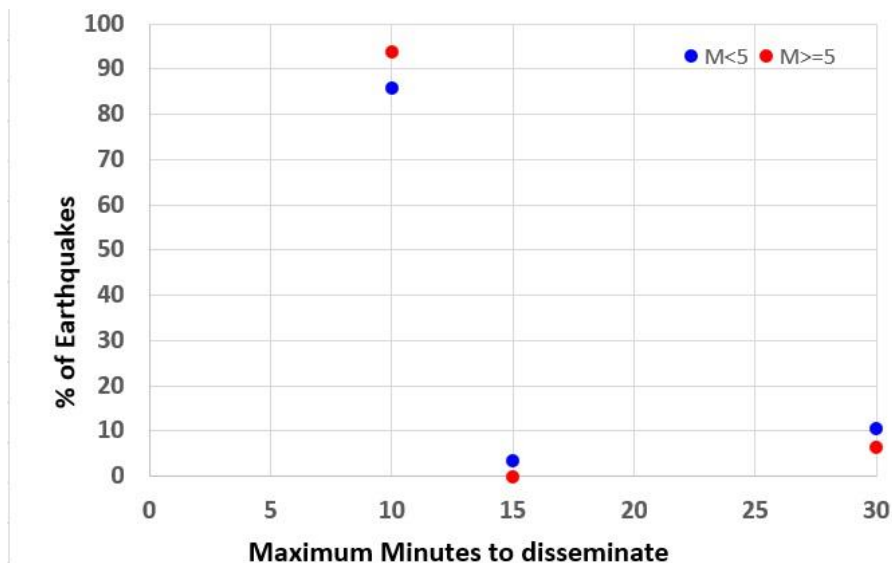


Figure 7: Intensity map of earthquake of M:5.7 occurred on 17th Oct 2025 in Pakistan

4) Dissemination Performance:



More than **80%** earthquakes of **$M < 5.0$** and more than **90%** earthquakes of **$M \geq 5.0$** occurred within India and its neighbourhood region bounded by the coordinates $0-40^{\circ}\text{N}$ & $60-100^{\circ}\text{E}$ were disseminated within 10 minutes as shown in **Figure 8**.

Figure 8: Dissemination of earthquakes within different time ranges during 01st – 31st OCT 2025.