

Report on Real Time Earthquake Location

**From: Earthquake Monitoring Center (EMC) of NCS
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Ministry of Earth Sciences
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Report of Earthquakes occurred in the month of August 2025

1)Introduction:

National Center for Seismology maintains a National Seismological Network of **168 stations** each having state of art equipment and spreading all across the country (**Figure:1**). Using these stations during the period 01st – 31st August 2025 a total number of 112 earthquakes have been located and

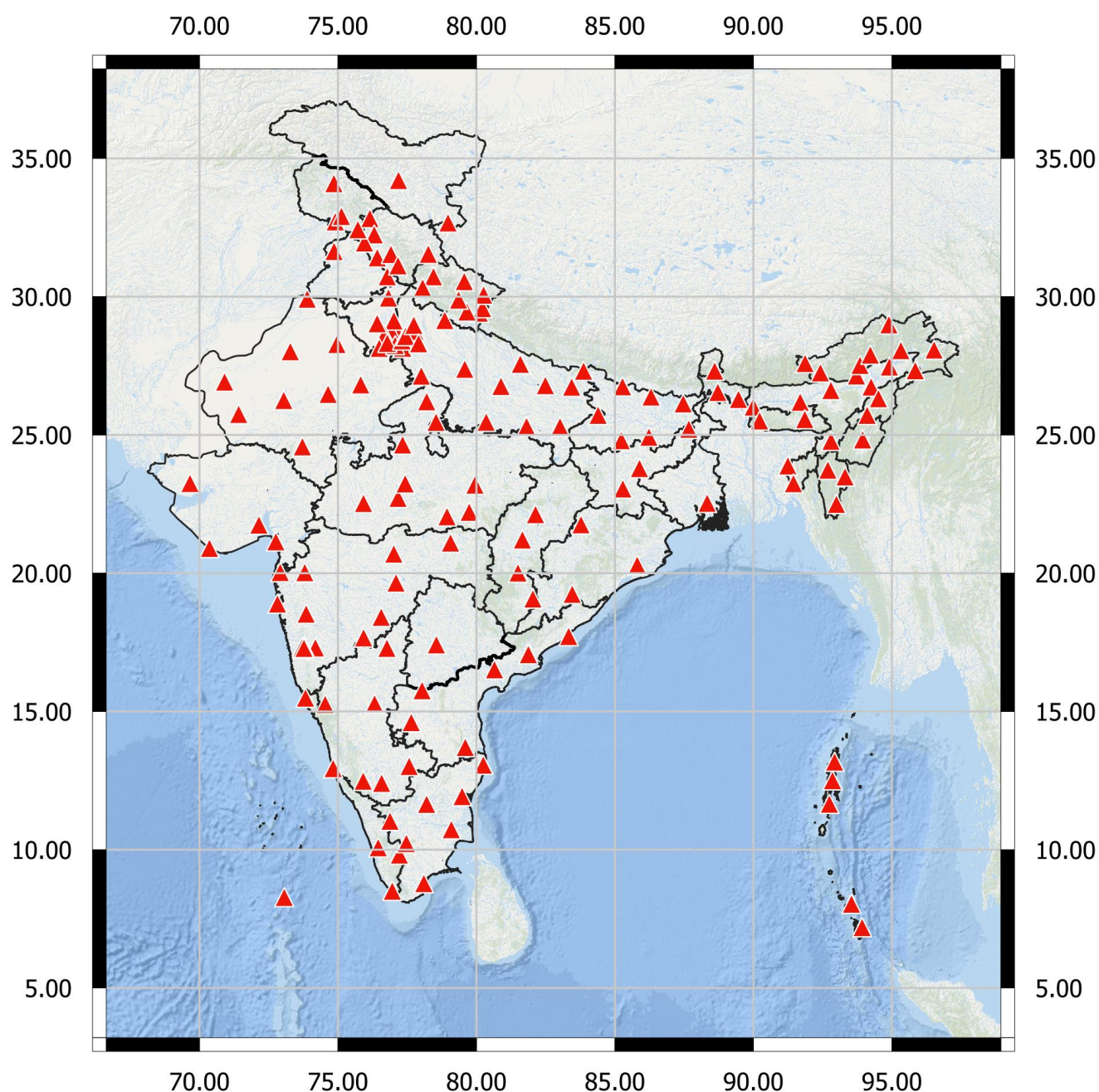


Figure 1: National Seismological Network (NSN) of 168 Stations

disseminated from the center (**Figure:2**), out of which 101 earthquakes have occurred in India and its neighborhood region bounded by the coordinates 0° - 40°N & 60°-100°E (**Figure:3**).

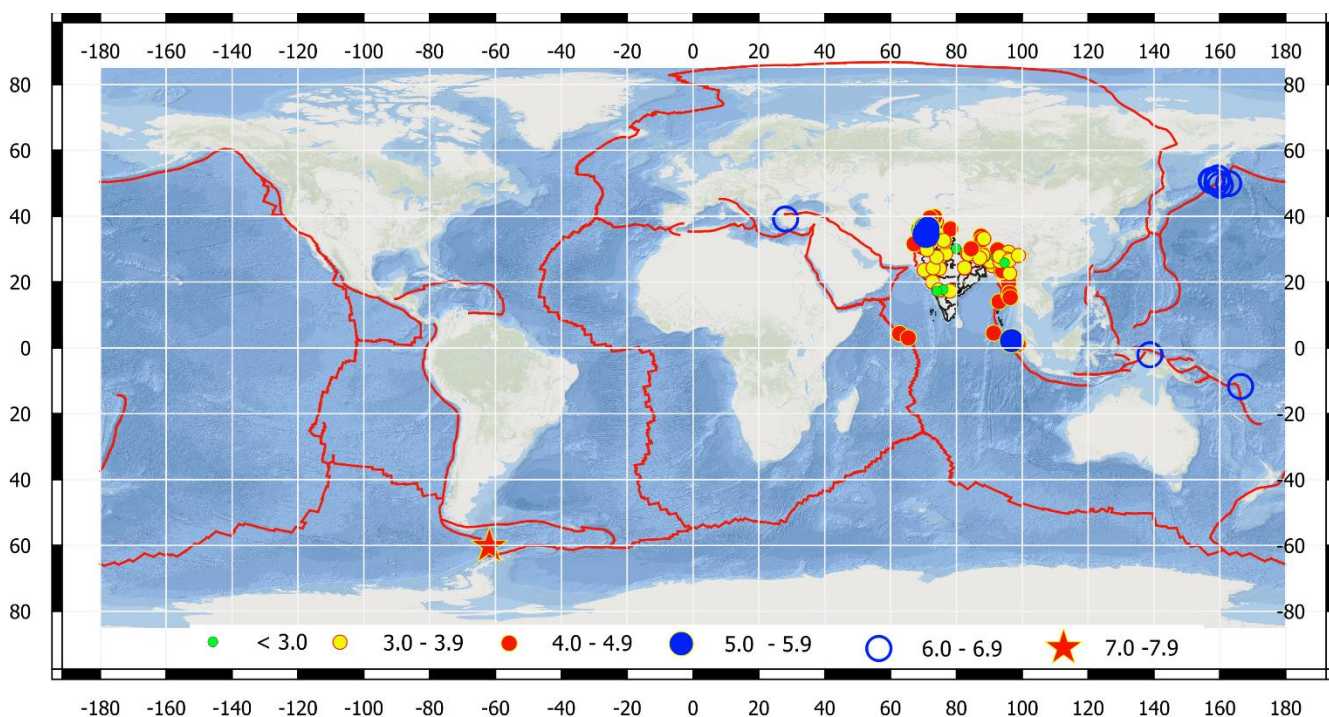


Figure 2: Earthquakes located and disseminated by NCS during 01st – 31st AUG 2025

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 (Jammu and Kashmir, Himachal Pradesh and Uttarakhand), North East India (Arunachal Pradesh, Assam, and Manipur, Nagaland and Sikkim) as shown in **Figure 3**.

Few earthquakes of smaller magnitudes were also reported in northern (Jhajjar in Haryana); western (Churu and Pratapgarh in Rajasthan; Kachchh and Banaskantha in Gujrat; Palghar, Satara and Solapur in Maharashtra; Singrauli in Madhya Pradesh) and southern (Vikarabad in Telangana; Vijayapura in Karnataka) part of country. **Sixteen** earthquakes of smaller magnitude (**M < 3.0**) comprising **14 %** of all earthquakes occurred during 01st to 31st August 2025. **Seven** earthquakes of magnitude **M:5.0 and above** occurred during the month in the region; as detailed in **Table:1**.

Out of total 112 earthquakes **38%** and **31%** earthquakes occurred in the magnitude range **3.0-3.9** and **4.0-4.9** respectively; **Six** earthquake in the magnitude range 5.0-5.9 occurred during the period as shown in **Figure 2** and **Figure 3**. **Eleven** earthquakes in the magnitude range **6.0-6.9** occurred during the period of which one was inside the grid of 0- 40°N & 60-100°E as shown in **Figure 2**,

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

SN	Date	Time (UTC)	Lat($^{\circ}$ N)	Long($^{\circ}$ E)	D (KM)	M	Region
1	2025-08-01	21:03:32	35.86	69.94	87	5.5	Afghanistan
2	2025-08-19	05:19:48	36.45	70.82	190	5.2	Afghanistan
3	2025-08-23	12:24:59	2.17	96.76	58	5.4	Northern Sumatra, Indonesia
4	2025-08-27	13:27:07	36.32	71.33	138	5.4	Afghanistan
5	2025-08-31	19:17:41	34.50	70.81	160	6.3	Afghanistan
6	2025-08-31	21:33:25	34.55	70.81	40	5.0	Afghanistan
7	2025-08-31	23:46:30	34.54	70.57	10	5.0	Afghanistan

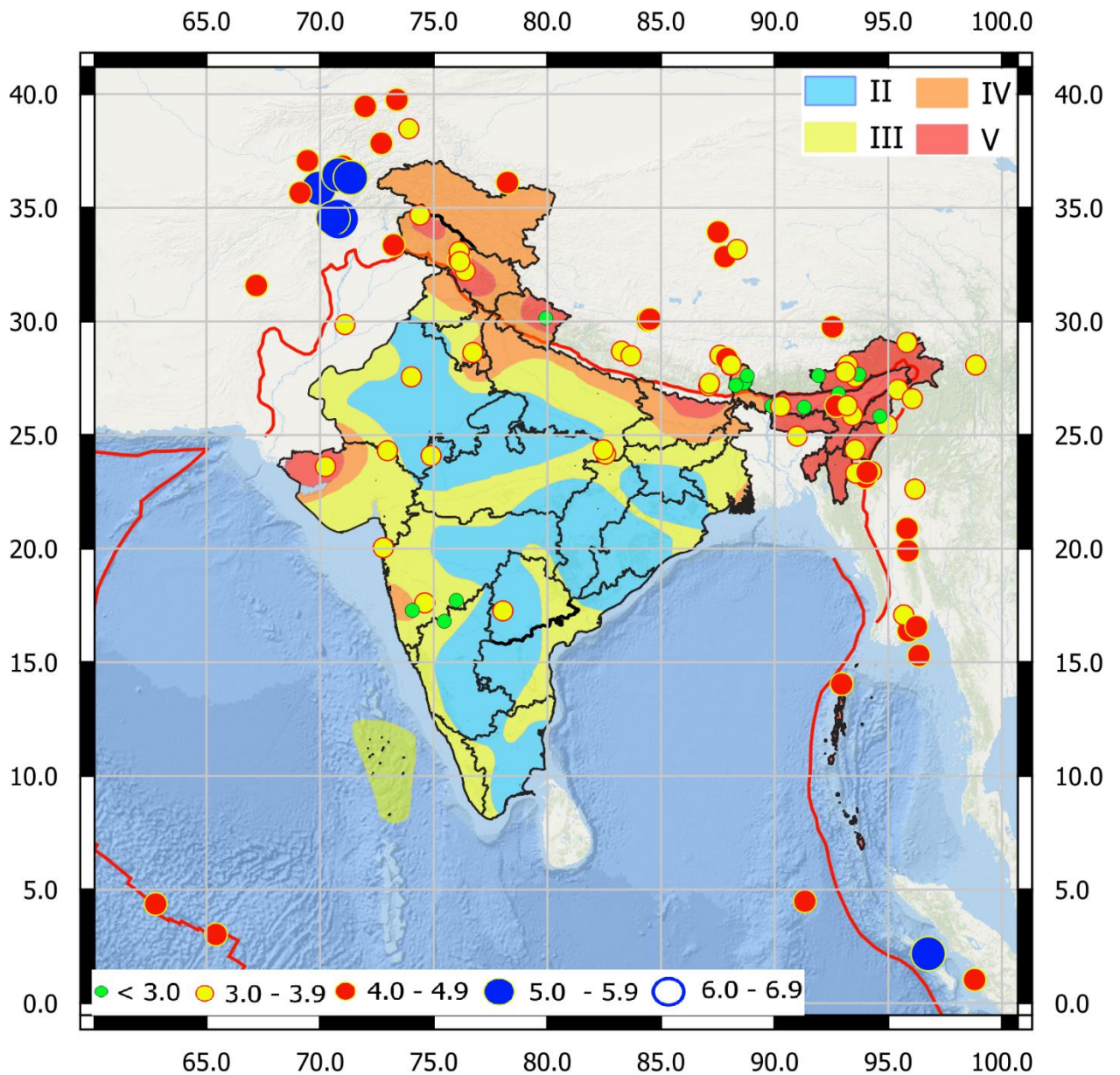


Figure 3: Map showing the seismicity during the period 01st – 31st AUG 2025 occurred in India and its neighbourhood region along with the seismic zone of India.

Figure 3 and Figure 4(a). One earthquake of magnitude range 7.4 occurred during the period was outside the grid of 0- 40°N & 60-100°E as shown in **Figure 2** and **Figure 4(a)**. Detail list of earthquakes occurred during the month is available at www.seismo.gov.in .

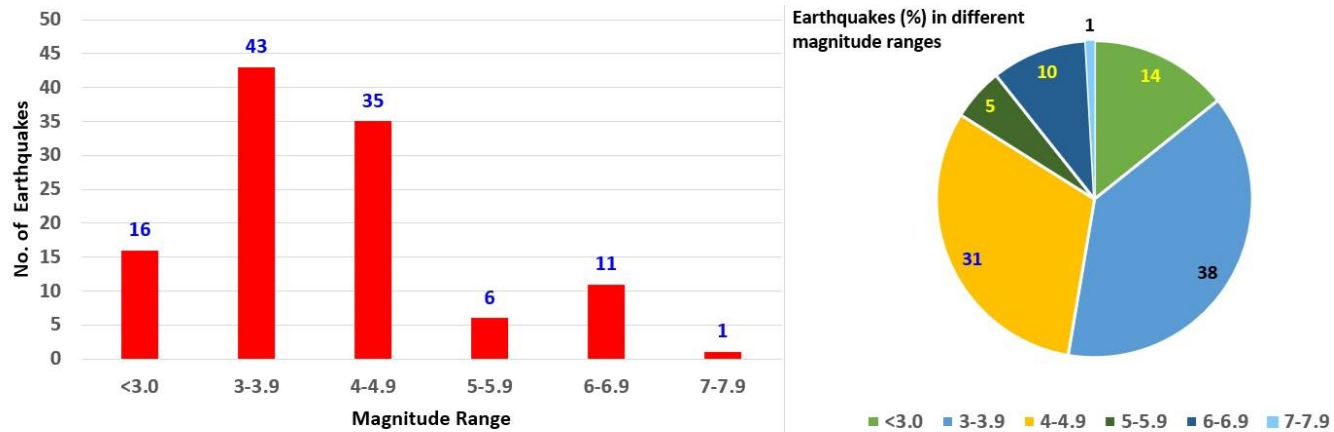


Figure 4 (a) : Distribution of earthquakes in the different magnitude range during 01st – 31st AUG 2025.

There is negative change in number of earthquakes in all the magnitude ranges except 5.0 -5.9 and 3.0 -3.9. The change for different magnitude ranges with respect to previous month (Jul 2025) is shown in Figure 4 (b).

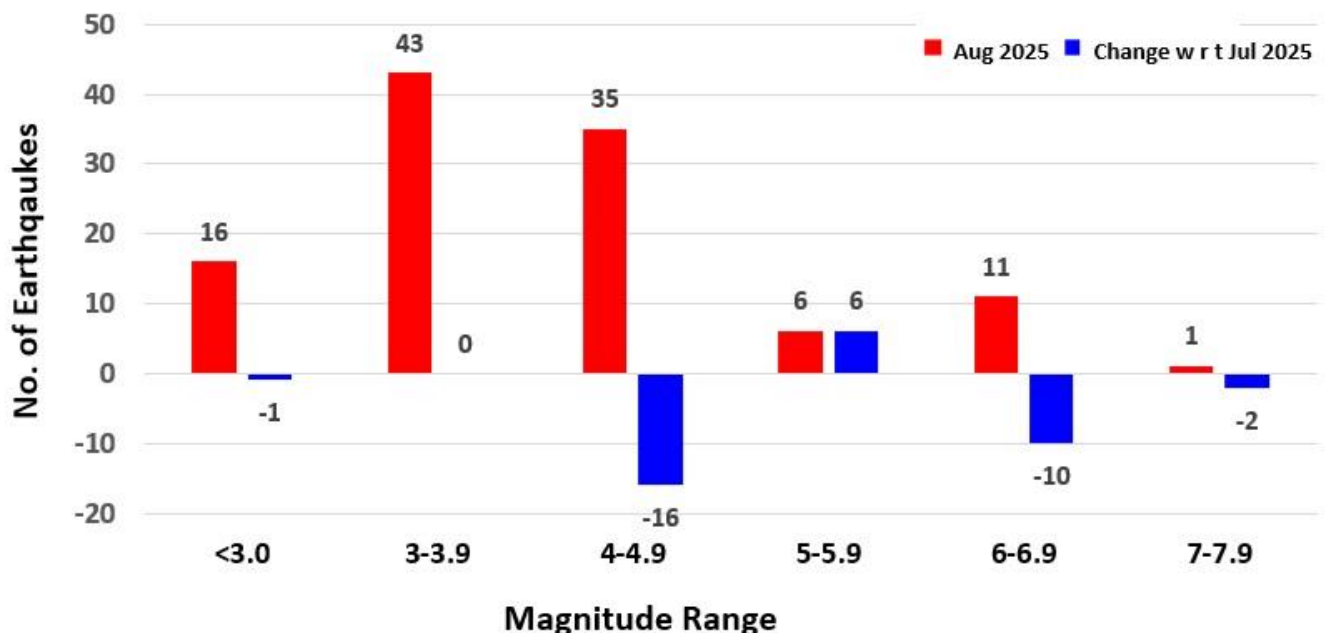


Figure 4 (b) : Change of occurrence of earthquakes in different magnitude ranges w r t previous month

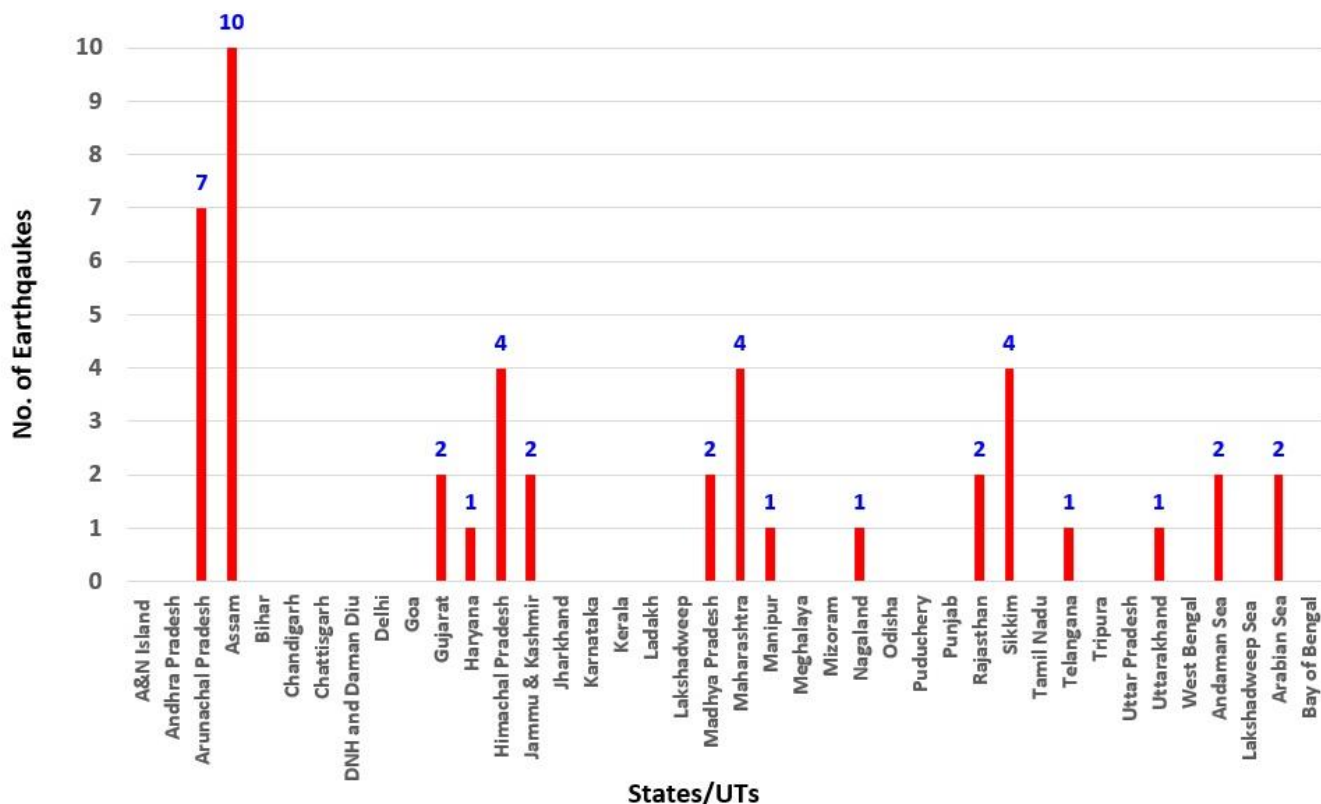


Figure 5: State wise distribution of earthquakes during the period 01st – 31st AUG 2025.

Total **46** earthquakes occurred within Indian territory; of which 10 earthquakes occurred in Assam and 7 in Arunachal Pradesh during the period. Out of 46 earthquakes **8** and **23** earthquakes occurred in **North** and **North-East** region respectively. State/UT and region wise distribution of earthquakes occurred during 01st – 31st August 2025 is shown in **Figure 5** and **Figure 7** respectively. There was sparse activity in south and central part of the country and no activity reported in eastern part of the country during the 01st – 31st August 2025 (**Figure 3** and **Figure 6**).

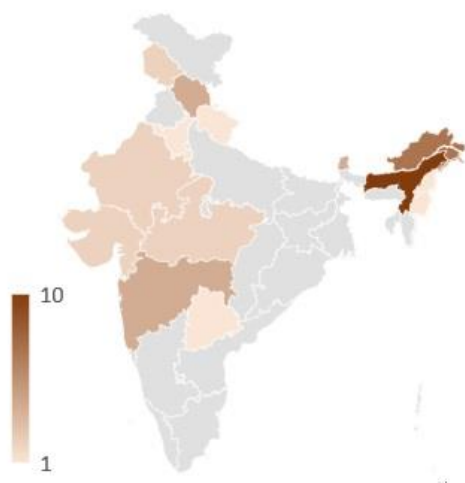


Figure: 6 Earthquake Density map

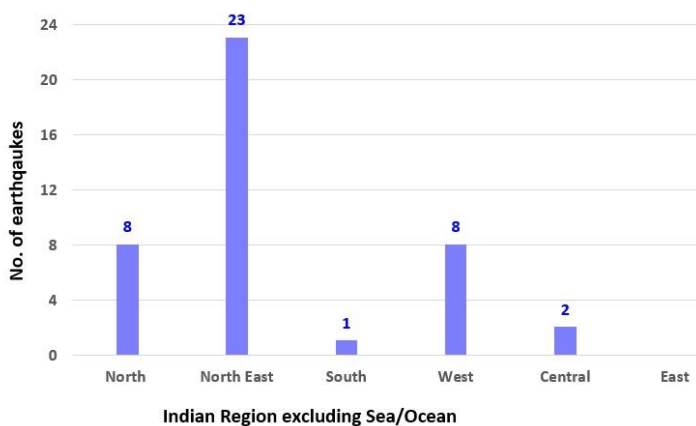


Figure: 7 Region wise distribution

3) Significant Activity:

A. Afghanistan earthquake: An earthquake of **M:6.3** occurred at **19:17:41 UTC of 31st AUG 2025 (00:47:41 IST of 01st Sep 2025)** in Afghanistan at 34.50° N and 70.81° E with focal depth of 160 km. The epicentre was approximately 88 Km NW of Peshawar(Pakistan); 140 Km E of Kabul (Afghanistan) and 370 Km W of Srinagar (India). The area is seismically very active associated with collisional tectonics where Indian plate subducts beneath the Eurasian Plate. The occurrence of earthquakes in the region is attributed mainly to the tectonic settings of the Himalaya comprising Herat Fault, Himalayan Frontal Thrust (HFT), Main Boundary Thrust (MBT) and Main Central Thrust (MCT) besides several local faults and geological demarcated lineaments. The preliminary fault plane solution derived from moment tensor inversion suggests that the earthquake is associated with thrust fault mechanism. The event was widely felt in the region including northwest India. **Figure 7** depicts the expected intensity of this earthquake around the source zone. More details about the event are available at URL <https://riseq.seismo.gov.in/riseq/earthquake/event/bnpCWm1yRzdydmJUenIMWVF3N2dYUT09/Reviewed>.

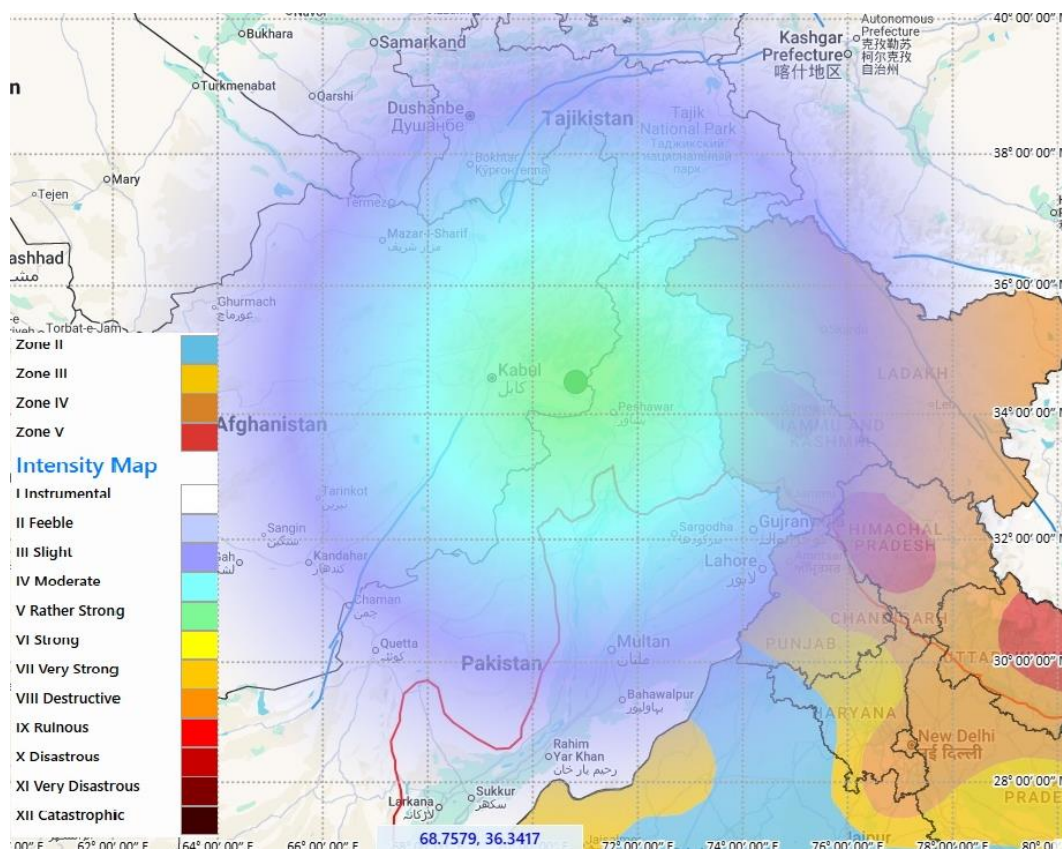
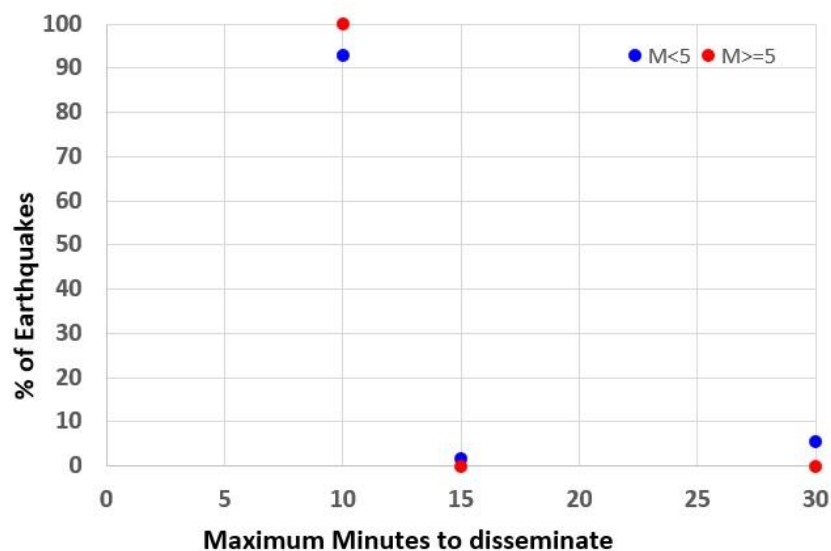


Figure 7: Intensity map of earthquake of M:6.3 occurred on 31st Aug 2025 in Afghanistan

4) Dissemination Performance:



More than **90%** earthquakes of **M<5.0** and **M>5.0** occurred within India and its neighbourhood region bounded by the coordinates 0-40°N & 60-100°E were disseminated within 10 minutes as shown in **Figure 8**.

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