

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 September 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 – 30th September 2025 a total number of 147 earthquakes have been located and

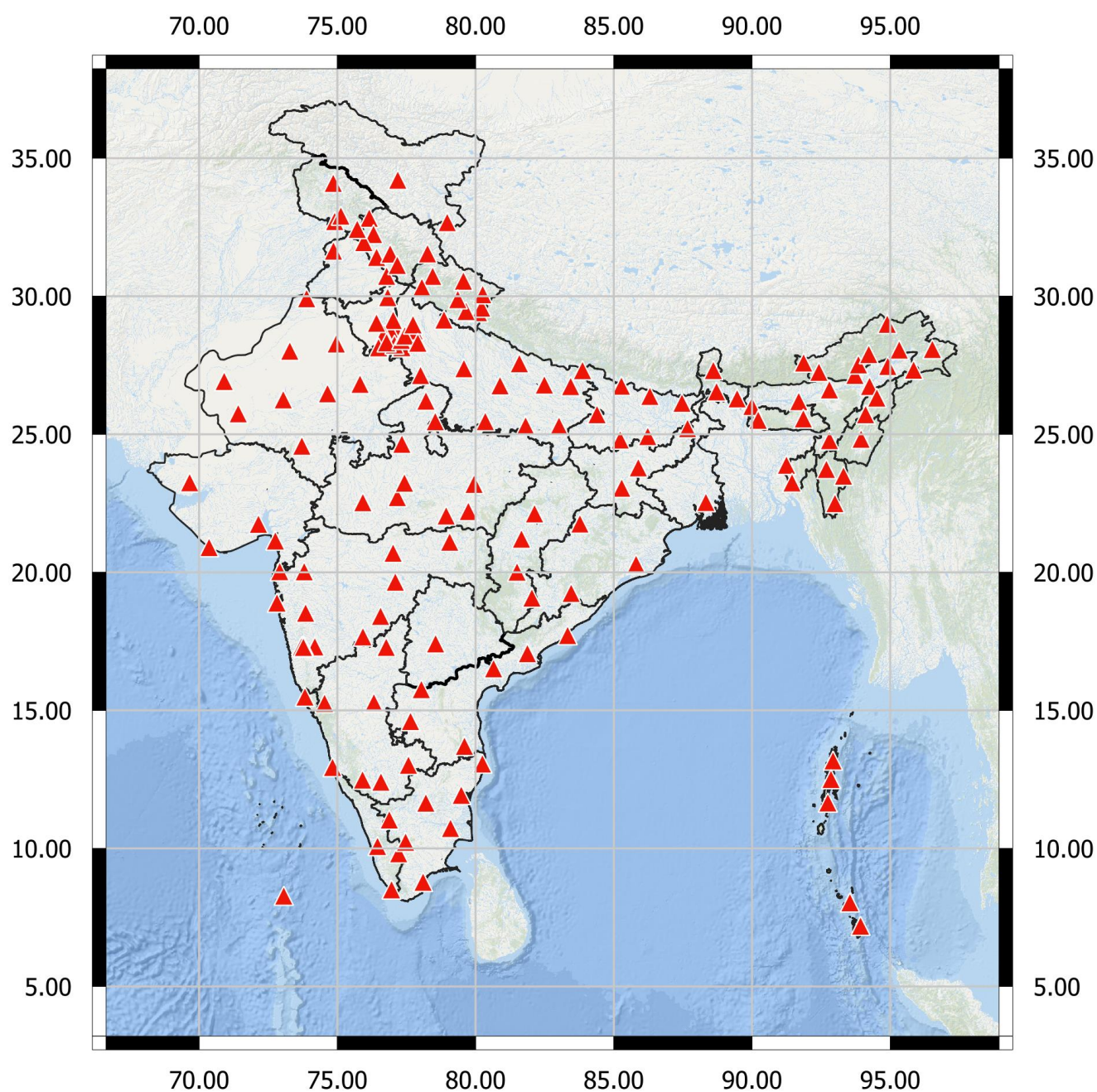


Figure 1: National Seismological Network (NSN) of 168 Stations

disseminated from the center (**Figure:2**), out of which 134 earthquakes have occurred in India and its neighborhood region bounded by the coordinates 0° - 40°N & 60°-100°E (**Figure:3**).

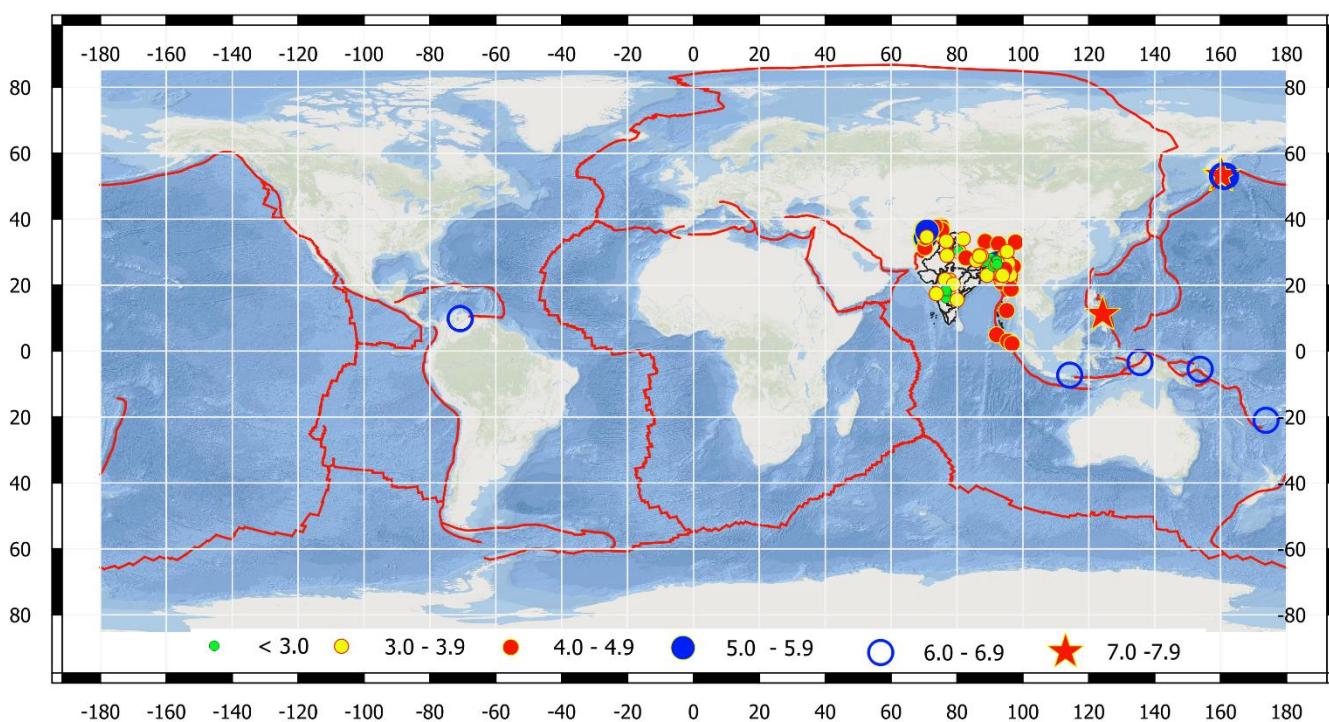


Figure 2: Earthquakes located and disseminated by NCS during 01st – 30th SEP 2025

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 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 northern (Sonipat in Haryana); western (Chandrapur, Satara and Latur in Maharashtra); southern (Prakasam in Andhra Pradesh, Kalburgi and Raichur in Karnataka); central (Betul and Khandwa in Madhya Pradesh) and eastern (Darjeeling in WestBengal) part of country. **Thirty one** earthquakes of smaller magnitude (**M < 3.0**) comprising **21 %** of all earthquakes occurred during 01st to 30th September 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 147 earthquakes **37%** and **29%** earthquakes occurred in the magnitude range **3.0-3.9** and **4.0-4.9** respectively; **Eight** earthquake in the magnitude range 5.0-5.9 occurred during the period of which seven 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 September 2025 within India and its neighbourhood

SN	Date	Time (IST)	Lat($^{\circ}$ N)	Long($^{\circ}$ E)	D (KM)	M	Region
1	2025-09-01	08:13:47	34.21	70.21	85	5.0	Afghanistan
2	2025-09-02	17:59:43	34.55	70.68	130	5.3	Afghanistan
3	2025-09-04	22:26:29	34.58	70.66	160	5.8	Afghanistan
4	2025-09-05	07:00:06	34.51	70.58	140	5.2	Afghanistan
5	2025-09-05	22:55:53	34.45	70.41	10	5.0	Afghanistan
6	2025-09-14	16:41:50	26.78	92.33	5	5.8	Udalguri, Assam
7	2025-09-26	08:47:24	36.40	70.92	165	5.0	Afghanistan

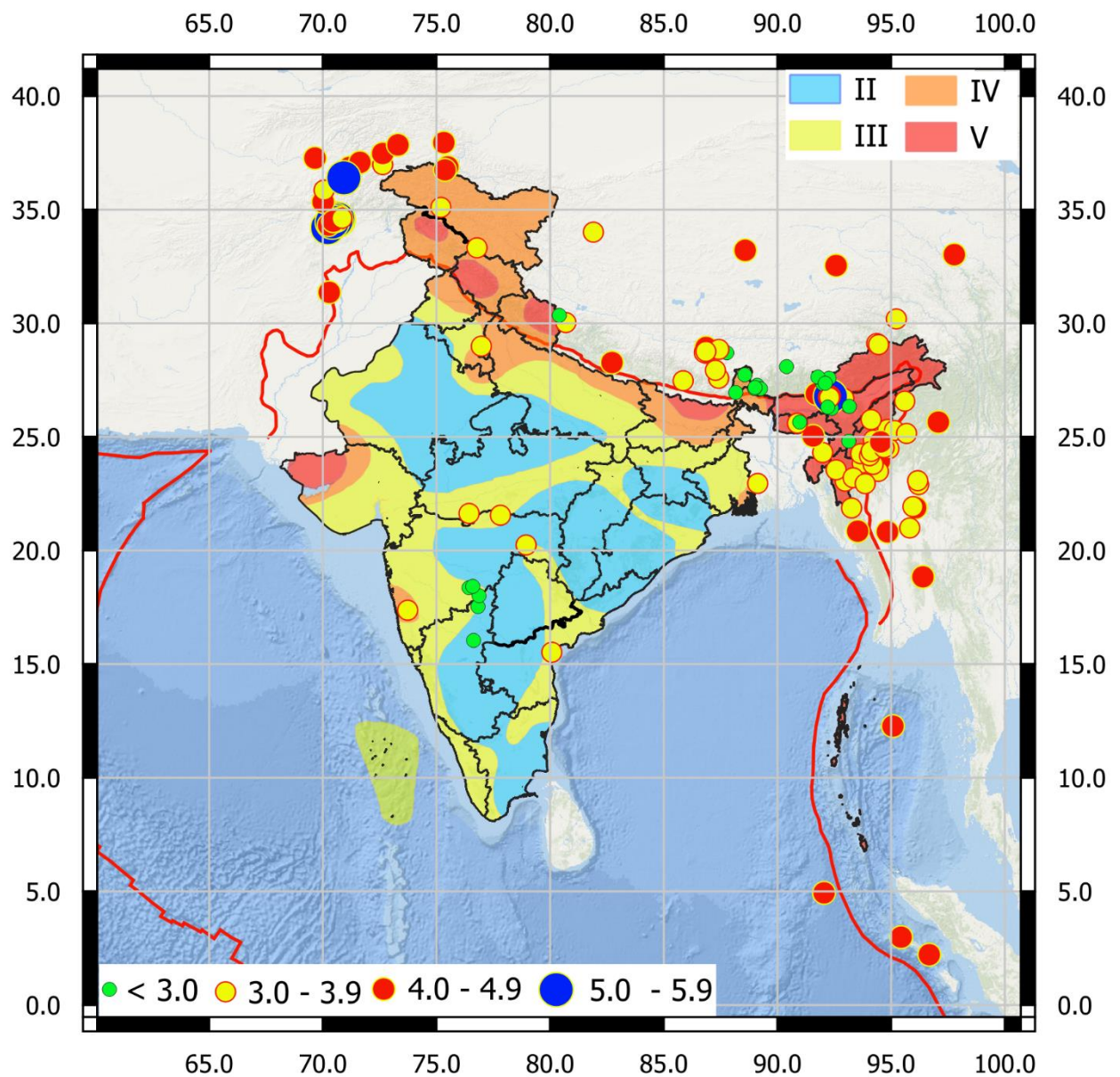


Figure 3: Map showing the seismicity during the period 01st – 30th SEP 2025 occurred in India and its neighbourhood region along with the seismic zone of India.

Nine earthquakes in the magnitude range 6.0-6.9 occurred during the period were outside the grid of 0- 40°N & 60-100°E as shown in **Figure 2** and **Figure 4(a)**. Three earthquakes in the magnitude range 7.0-7.9 occurred during the period were also outside the grid of 0- 40°N & 60-100°E as shown in **Figure 2** and **Figure 4(a)**. Details of earthquakes occurred during the month is available at www.seismo.gov.in

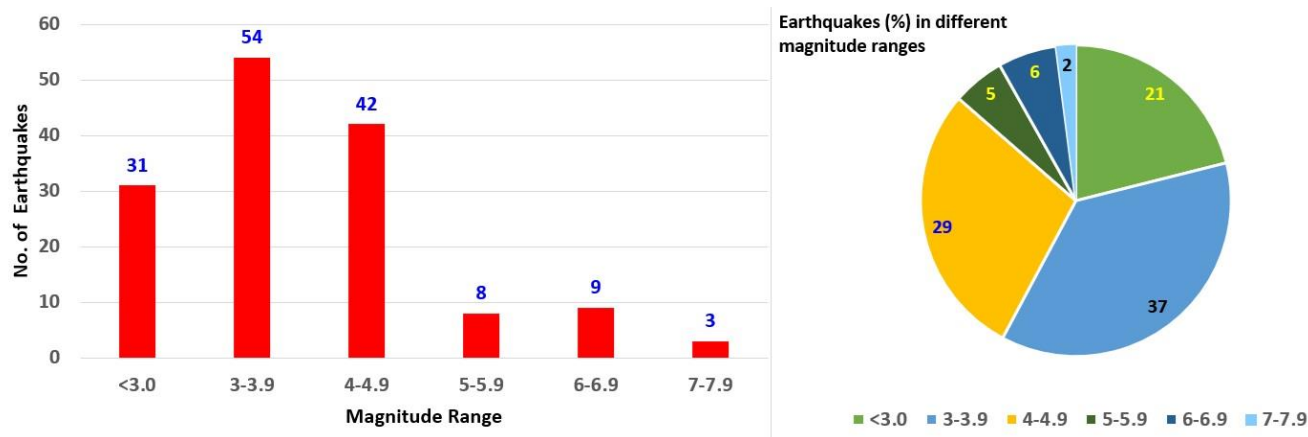


Figure 4 (a) : Distribution of earthquakes in the different magnitude range during 01st – 30th SEP 2025.

There is positive change in number of earthquakes in all the magnitude ranges except 6.0 -6.9. The change for different magnitude ranges with respect to previous month (Aug 2025) is shown in Figure 4 (b).

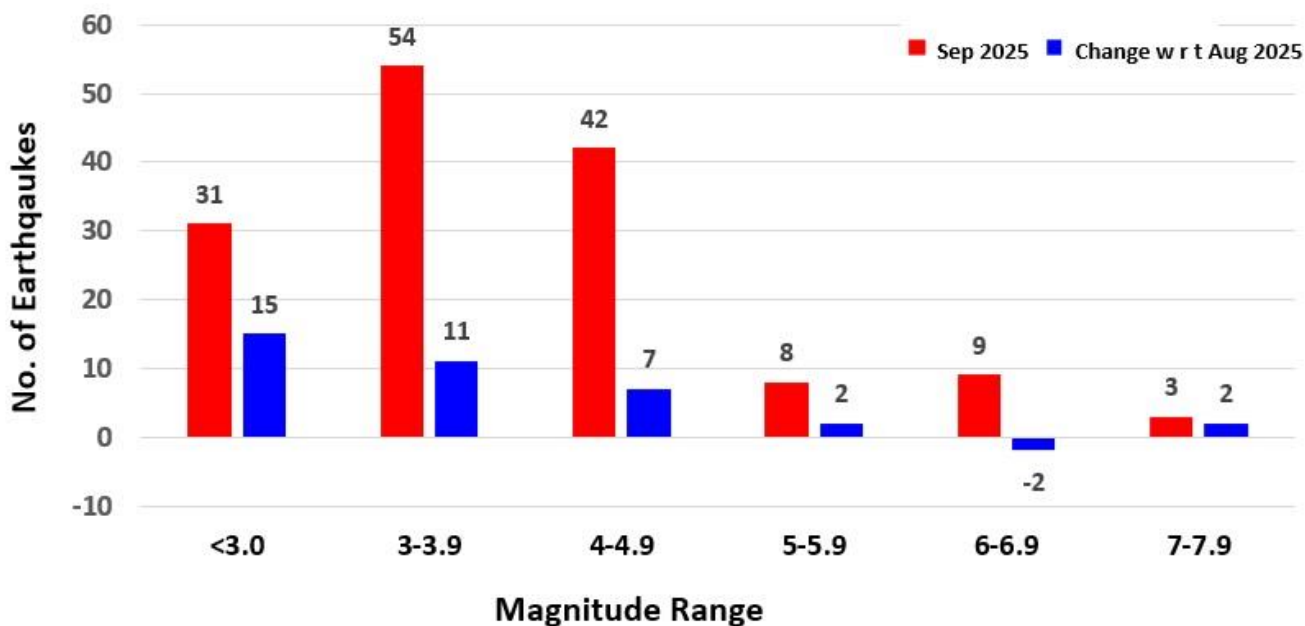


Figure 4 (b) : Change of occurrence of earthquakes in different magnitude ranges w r t previous month

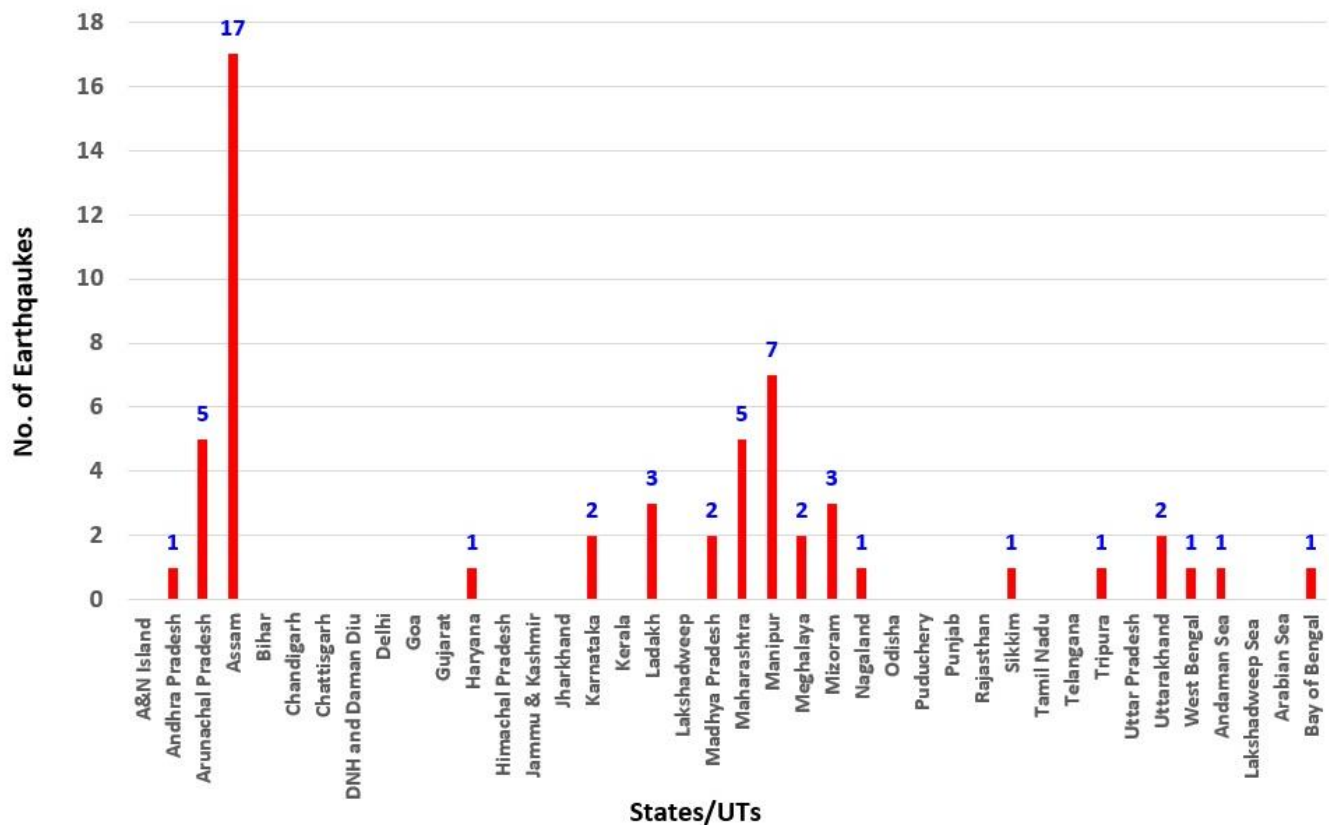


Figure 5: State wise distribution of earthquakes during the period 01st – 30th SEP 2025.

Total **56** earthquakes occurred within Indian territory; of which 17 earthquakes occurred in Assam and 7 in Manipur during the period. Out of 56 earthquakes **6** and **37** earthquakes occurred in **North** and **North-East** region respectively. State/UT and region wise distribution of earthquakes occurred during 01st – 30th September 2025 is shown in **Figure 5** and **Figure 7** respectively. There was sparse activity in east and central part of the country the 01st – 30th September 2025 (**Figure 3** and **Figure 6**).



Figure: 6 Earthquake Density map

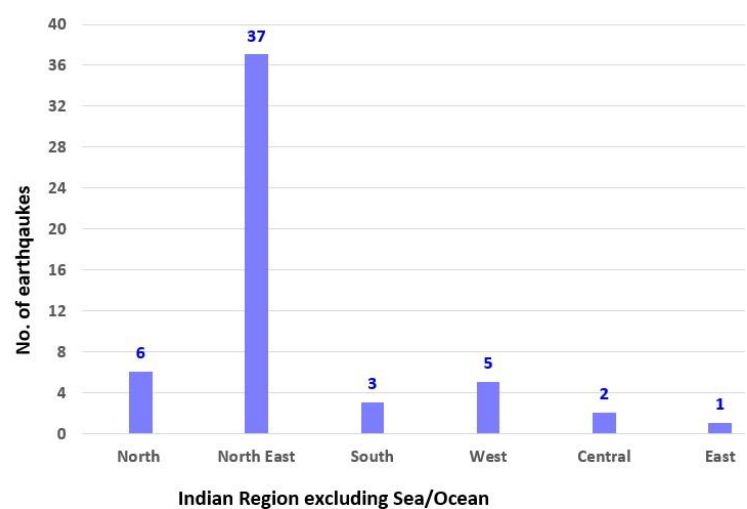


Figure: 7 Region wise distribution

3) Significant Activity:

A. Assam earthquake: An earthquake of **M:5.8** occurred at **16:41:50 IST** of **14th SEP 2025** in Udalguri, Assam at 26.78° N and 92.33° E with focal depth of 5 km. The epicentre was approximately 48 Km WNW of Tezpur; 60 Km NW of Nagaon; 95 Km NE of Guwahati; 99 Km SE of Tawang and 188 Km W of Jorhat. The preliminary fault plane solution derived from moment tensor inversion suggests a strike-slip fault. 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. This event is located near the Kopili Fault and closer to the 28th April 2021 M:6.4 Sonitpur earthquake. Nine aftershocks in the magnitude range M:2.4 to M:3.1 were around the source zone within 24 hours of this earthquake. **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/dFZnUGRzSDISSTZXSXhsemdCSWdydz09/Reviewed>.

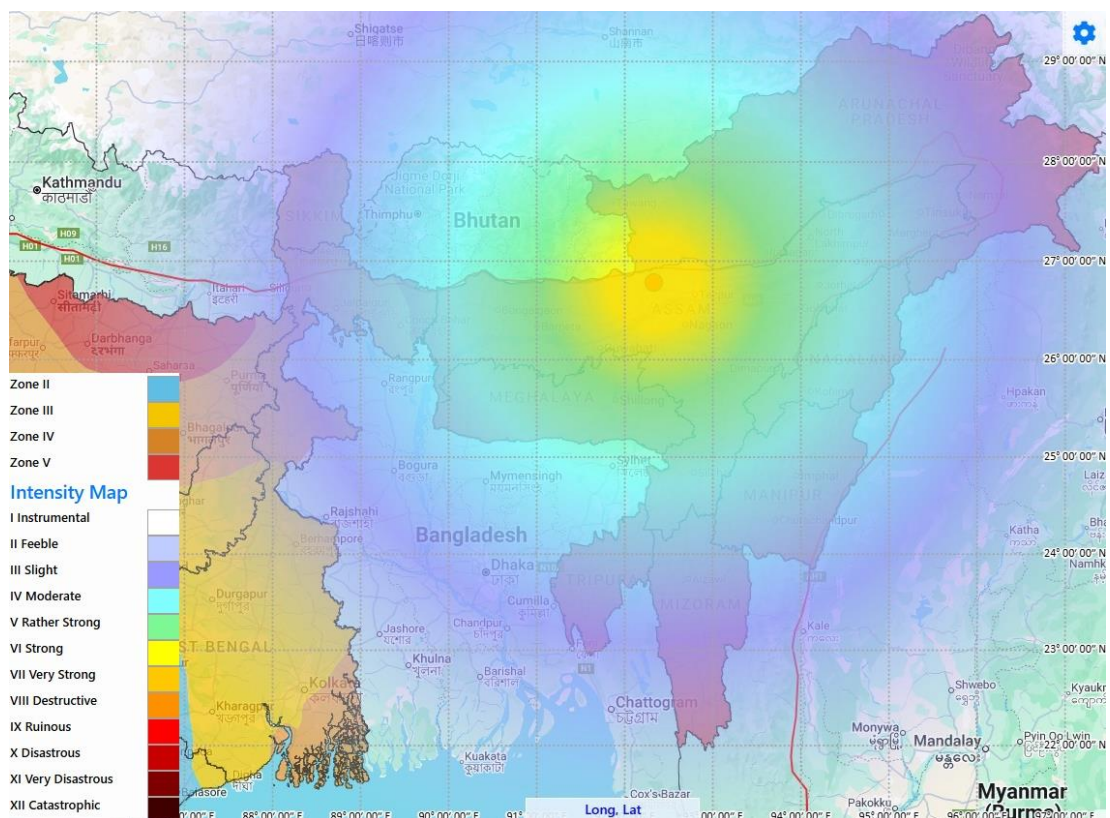
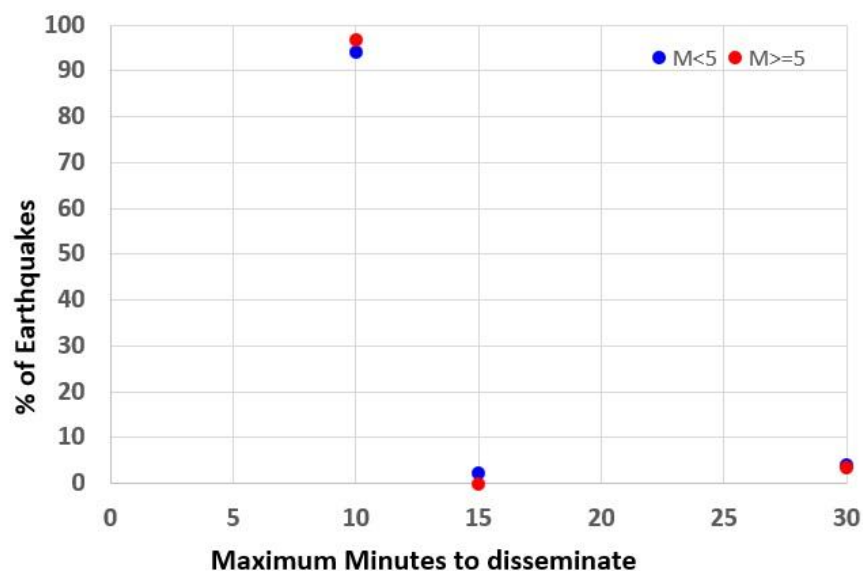


Figure 7: Intensity map of earthquake of M:5.8 occurred on 14th Sep 2025 in Assam

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 – 30th SEP 2025.