

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 September 2024

1) Introduction:

National Center for Seismology maintains a National Seismological Network of **162 stations** each having state of art equipment and spreading all across the country (**Figure:1**). Using these stations during the period 01st – 30th September 2024 a total number of 131 earthquakes have

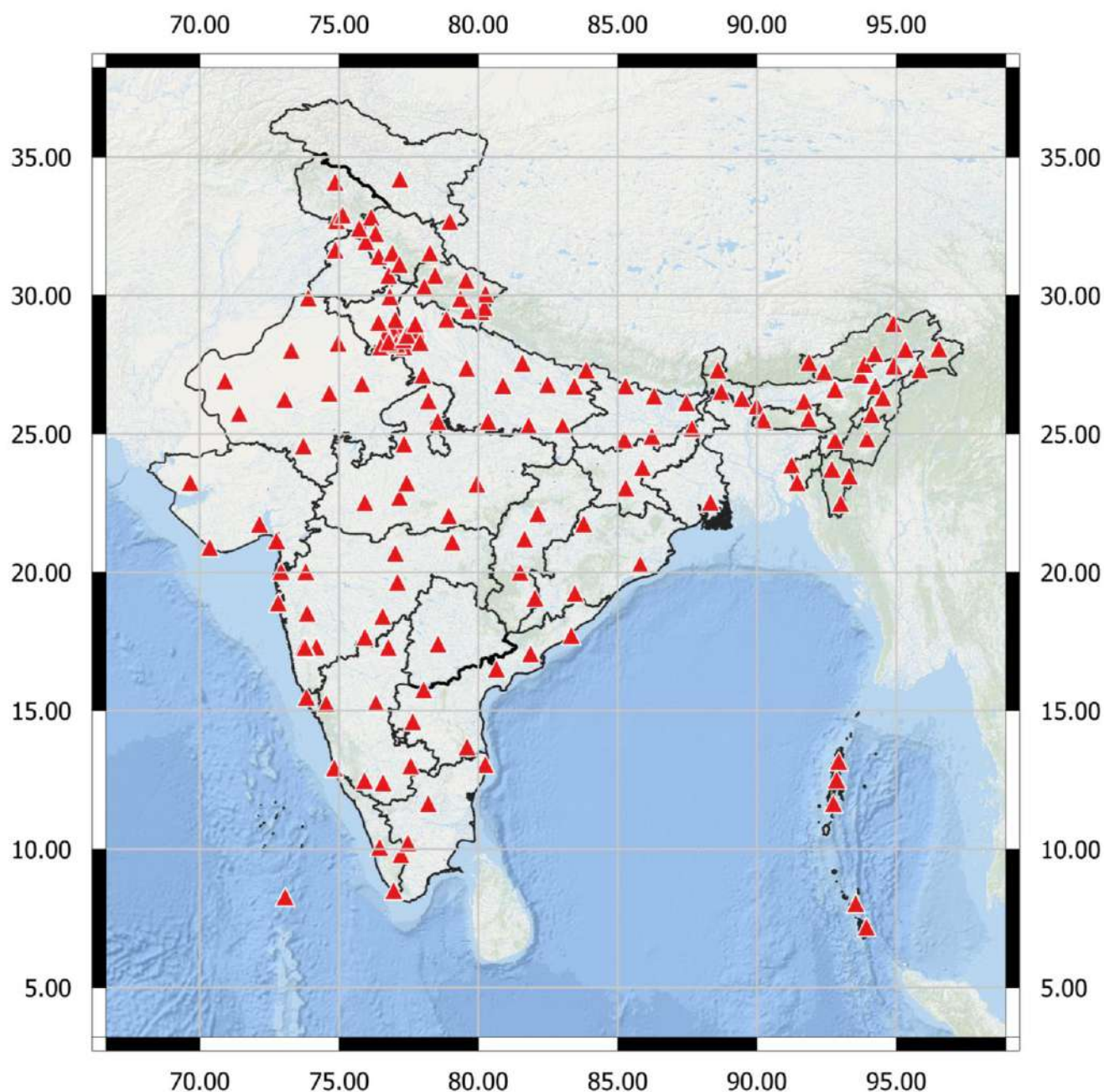


Figure 1: National Seismological Network (NSN) of 162 Stations

been located and disseminated from the center (**Figure:2**), out of which 120 earthquakes has occurred in India and its neighborhood region bounded by the coordinates 0° - 40°N & 60° -100°E (**Figure:3**).

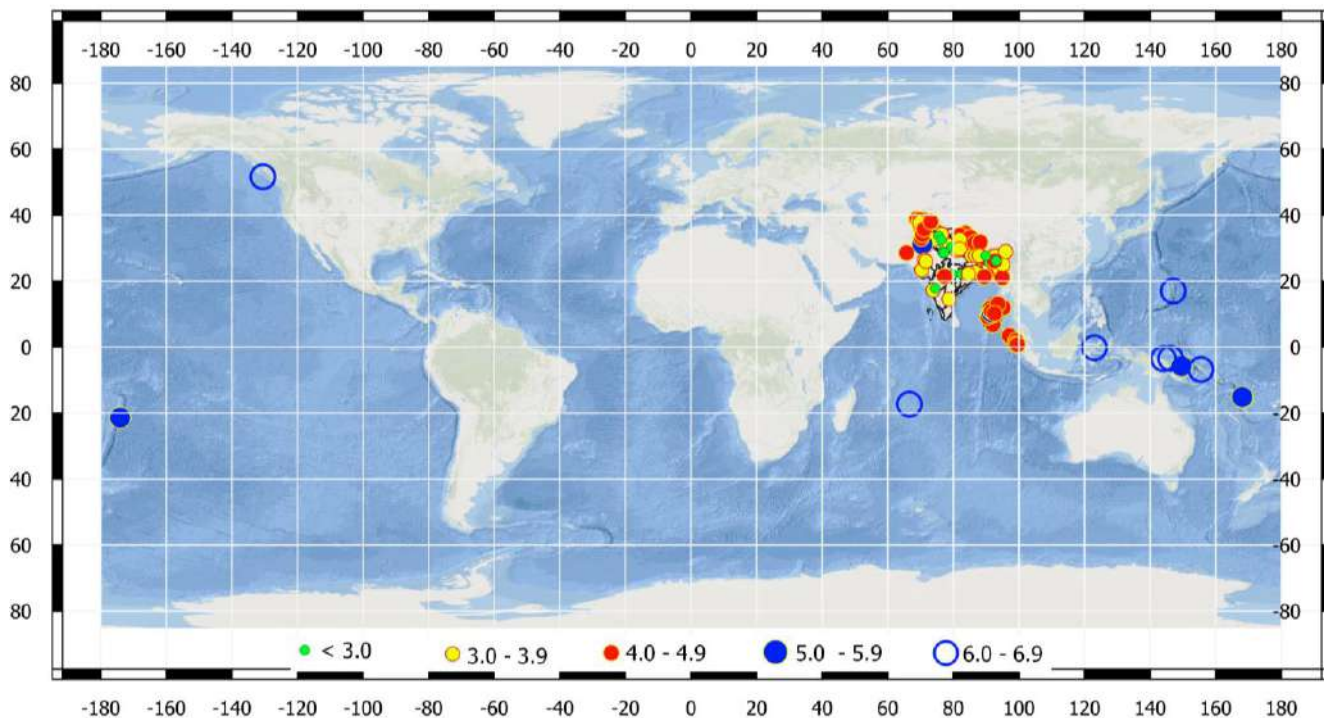


Figure 2: Earthquakes located and disseminated by NCS during 01st – 30th September 2024

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

Few earthquakes of smaller magnitudes were also reported in northern (Rohtak in Haryana; Southwest Delhi and New Delhi in NCT Delhi), western (Balotra and Jaisalmer in Rajasthan; Amravati and Satara in Maharashtra; Kachchh in Gujrat); southern (Vallur in Andhra Pradesh); central (Seoni in Madhya Pradesh and Bilaspur in Chhatisgarh) and eastern (Sundargarh in Orissa and Jhargram in West Bengal) part of country. **Twenty-Five** earthquakes of smaller magnitude (**M < 3.0**) comprising **19%** of all earthquakes occurred during 01st to 30th September 2024. **Three** earthquakes of magnitude **M:5.0 and above** occurred during the month in the region; as detailed in **Table:1**.

Table:1 Earthquakes of $M \geq 5.0$ occurred during September 2024 within India and its neighbourhood

SN	Date	Time (IST)	Lat($^{\circ}$ N)	Long($^{\circ}$ E)	D (KM)	M	Region
1	2024-9-01	09:12:50	08.27	91.67	10	5.1	Bay of Bengal
2	2024-9-11	12:58:03	31.25	70.52	33	5.8	Pakistan
3	2024-9-19	10:50:57	10.54	91.69	10	5.1	Bay of Bengal

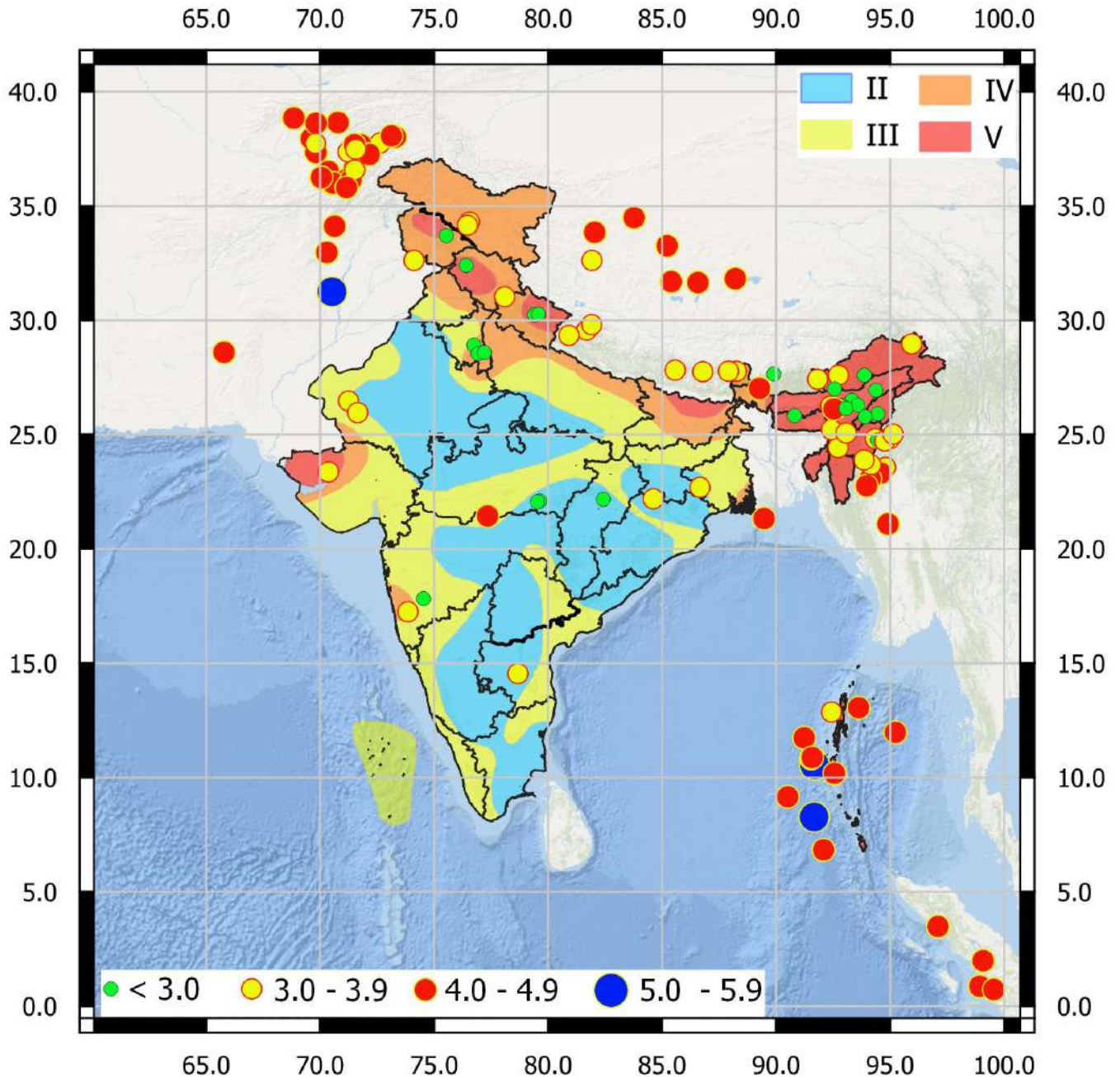


Figure 3: Map showing the seismicity during the period 01st – 30th September 2024 occurred in India and its neighbourhood region along with the seismic zone of India.

Out of total 131 earthquakes **31%** and **39%** earthquakes occurred in the magnitude range **3.0-3.9**

and **4.0-4.9** respectively; whereas **seven** earthquakes in the magnitude range 5.0-5.9 occurred during the period of which three were inside the grid of 0- 40°N & 60-100°E as shown in **Figure 3**. All the **seven** earthquakes in the magnitude range of **6.0-6.9** were occurred outside the grid of 0- 40°N & 60-100°E; as shown in **Figure 2** and **Figure 4**. Detail list of earthquakes occurred during the month is available at www.seismo.gov.in.

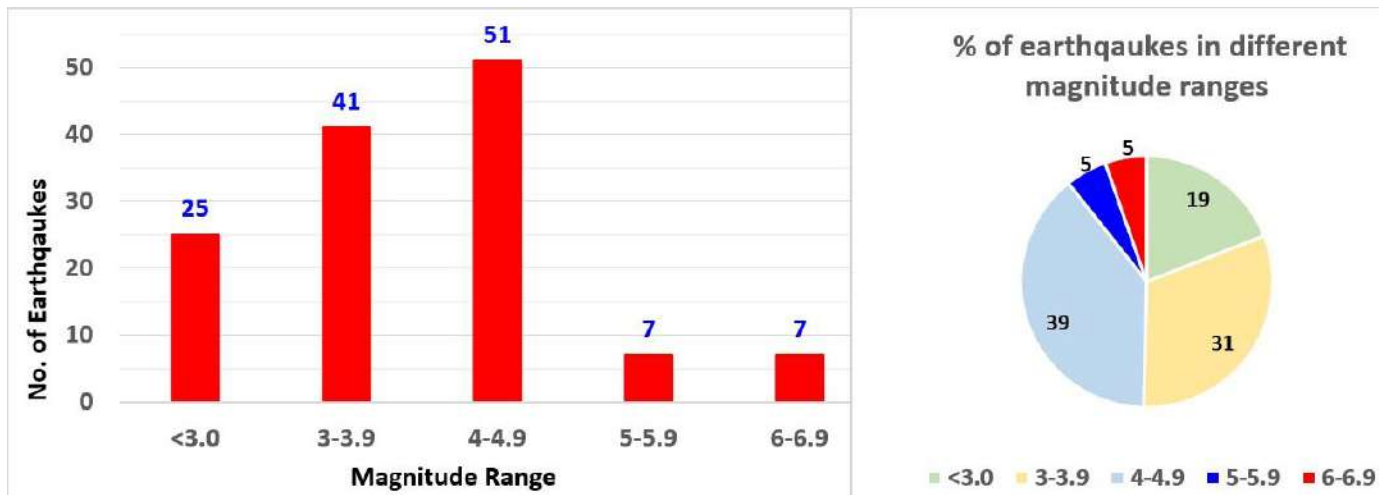


Figure 4: Distribution of earthquakes in the different magnitude range during 01st – 30th September 2024.

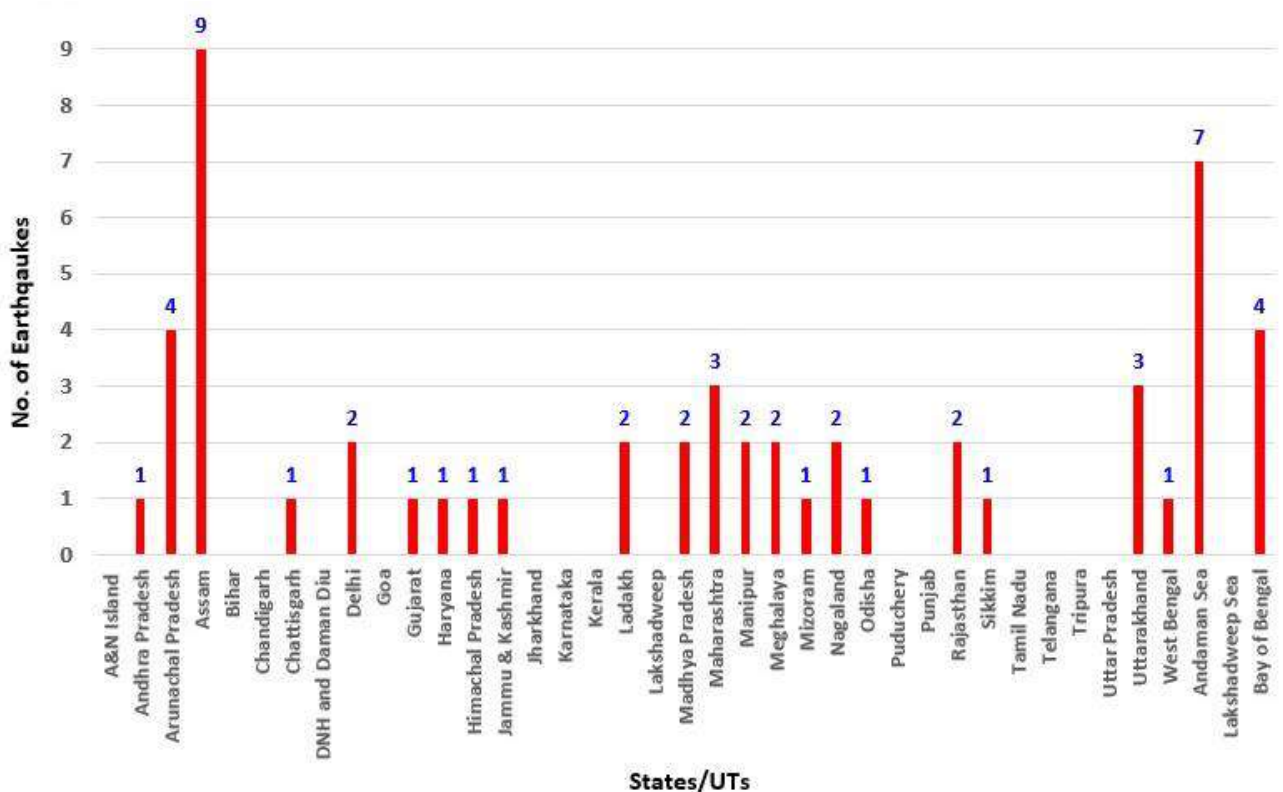


Figure 5: State wise distribution of earthquakes during the period 01st – 30th September 2024.

Total **54** earthquakes occurred within Indian territory; of which 9 earthquakes occurred in Assam and 7 were in Andaman sea during the period. Out of 54 earthquakes **10** and **21** earthquakes occurred in **North** and **North-East** region respectively. State/UT and region wise distribution of earthquakes occurred during 01st – 30th September 2024 is shown in **Figure 5** and **Figure 6** respectively.

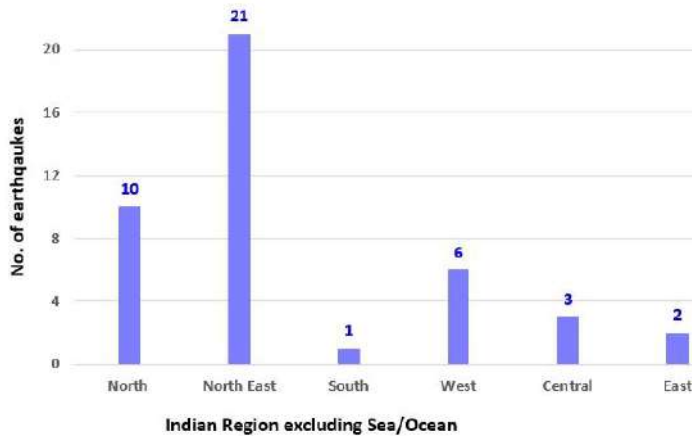


Figure: 6 Region wise distribution

3) Significant Activity:

Pakistan Earthquakes: An earthquake of **M:5.8** occurred at **12:58:03 IST** of **11th September 2024** in Multan, Pakistan at 31.25°N and 70.52°E with focal depth of 33 km. The epicentre is about 358 Km SE of Islamabad; 360 Km NW of Jaisalmer; 364 Km W of Lahore and 500 Km SE of Srinagar. **Figure 7** depicts the expected intensity of this earthquake around the source zone.

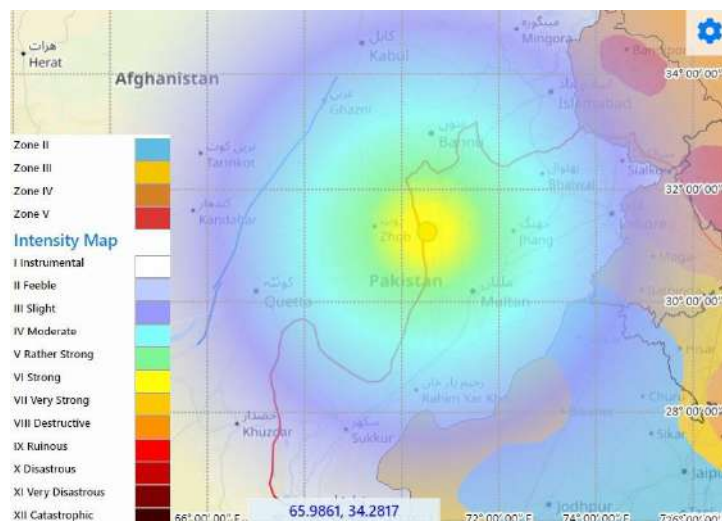


Figure 7: Intensity map of earthquake of M 5.8 occurred on 11th September 2024 at Multan, Pakistan.

This earthquake was widely felt in Punjab, Haryana, Delhi and Rajasthan. The Peak Ground Acceleration(PGA) recorded at Jammu and Bikaner is 0.0004G while it is 0.005G at Udhampur. URL <https://riseq.seismo.gov.in/riseq/earthquake/event/ODIxUIIOcEFCaVNFampWT1pGZWVxUT09/Reviewed> may be visited for more details about this earthquake.

4) Dissemination Performance:

More than **90%** earthquakes of **M<5.0** and more than **80%** earthquakes **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**.

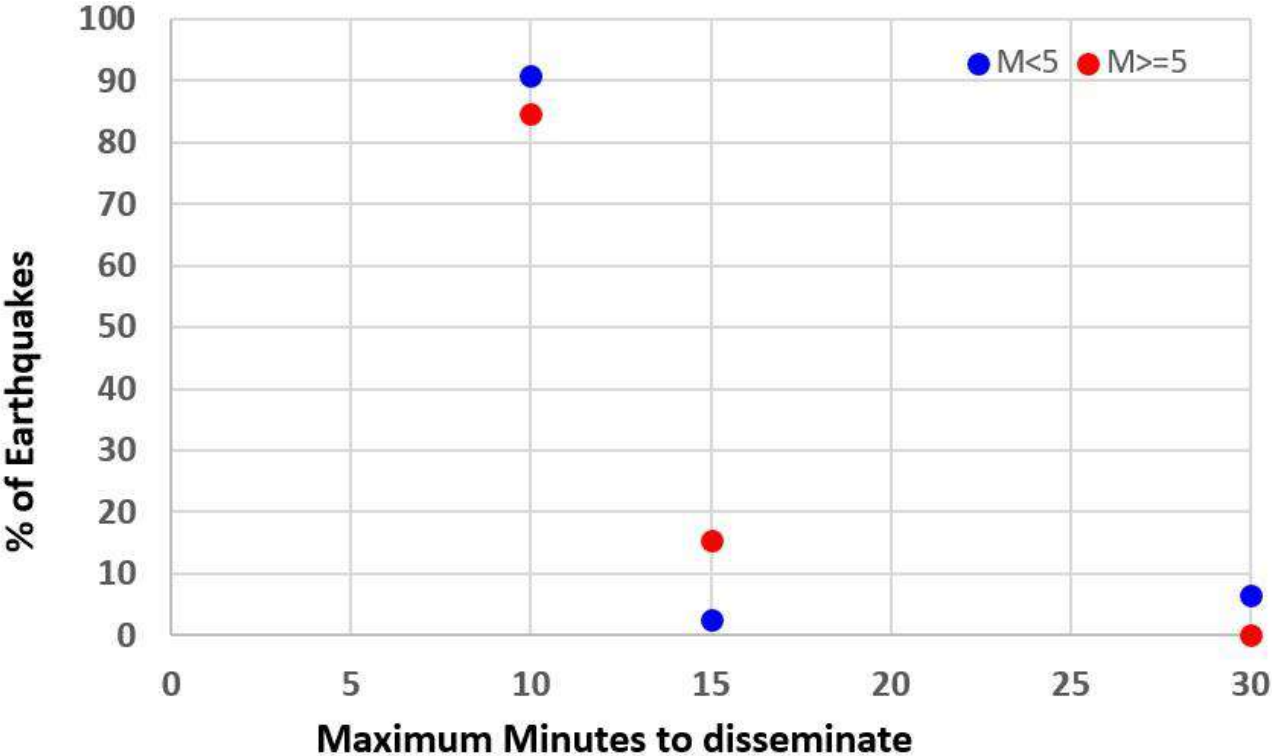


Figure 8: Dissemination of earthquakes within different time ranges during 01st –30th September 2024.