

# Report on Real Time Earthquake Location

**From: Earthquake Monitoring Center (EMC) of NCS  
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Month: March 2024  
Technical Report No: NCS/2024/03

# Report of Earthquakes occurred in the month of March 2024

## 1) Introduction:

National Center for Seismology maintains a National Seismological Network of **160 stations** each having state of art equipment and spreading all across the country (**Figure:1**). Using these stations during the period 01<sup>st</sup> – 31<sup>st</sup> March 2024 a total number of 178 earthquakes have

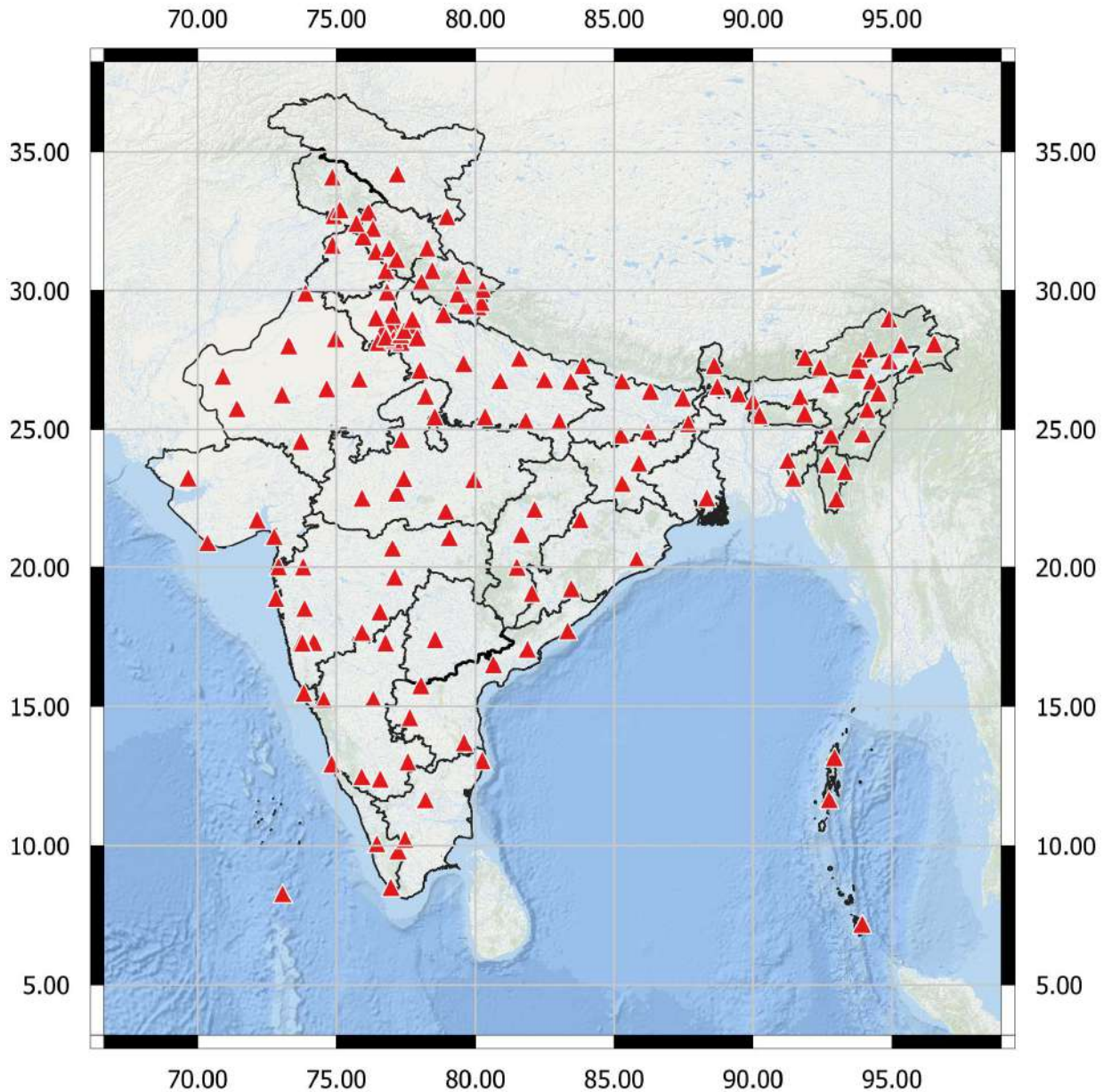


Figure 1: National Seismological Network (NSN) of 160 Stations

been located and disseminated from the center (**Figure:2**), out of which 171 earthquakes has occurred in India and its neighborhood region bounded by the coordinates 0°- 40°N & 60°-100°E (**Figure:3**).

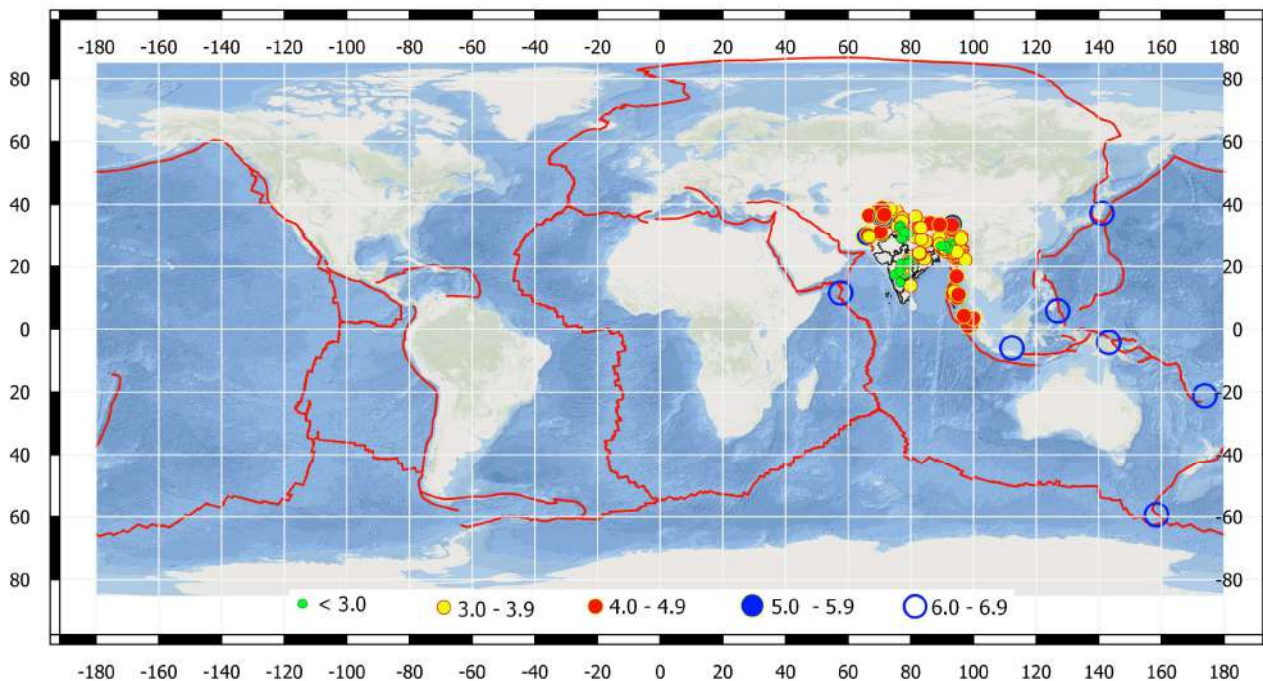


Figure 2: Earthquakes located and disseminated by NCS during 01<sup>st</sup> – 31<sup>st</sup> March 2024

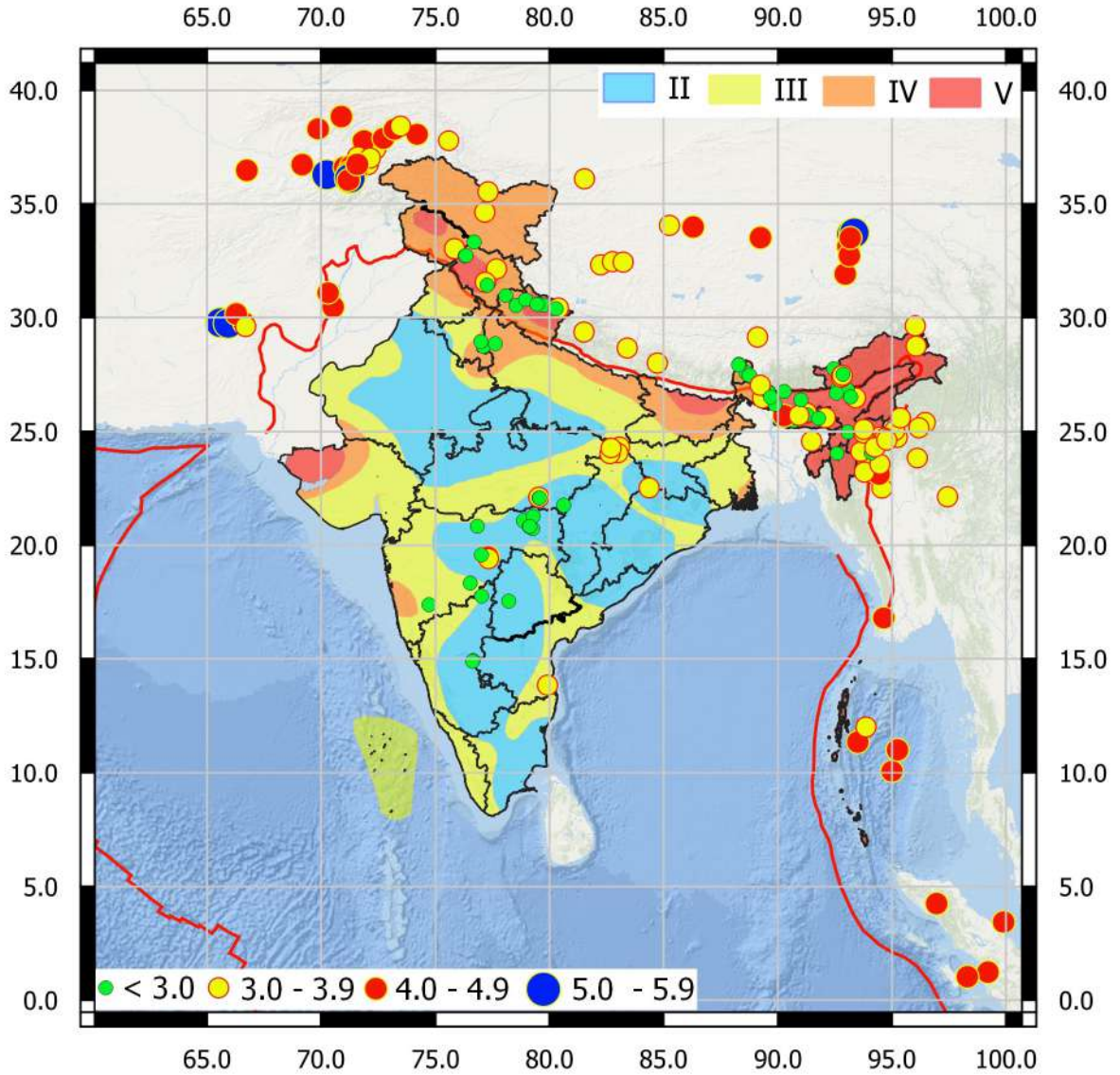
## 2) Seismicity:

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

Few earthquakes of smaller magnitudes were also reported in northern (Sonapat in Haryana; North Delhi; Ghaziabad and Sonbhadra in Uttar Pradesh), central (Singrauli, Seoni and Balaghat in Madhya Pradesh and Nagpur in Maharashtra), western (Akola, Hingoli, and Satara in Maharashtra), eastern (Simdega in Jharkhand; Cooch Behar and Alipurduar in West Bengal) and southern (Sangareddy in Telangana; Tirupati in Andhra Pradesh and Ballari in Karnataka) part of country. **Fifty-Eight** earthquakes of smaller magnitude (**M < 3.0**) comprising **33%** of all earthquakes occurred during 01<sup>st</sup> to 31<sup>st</sup> March 2024. **Six** 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 March 2024 within India and its neighbourhood**

SN	Date	Time (IST)	Lat( $^{\circ}$ N)	Long( $^{\circ}$ E)	D (KM)	M	Region
1	2024-03-05	07:37:31	33.68	93.23	10	5.2	Qinghai, China
2	2024-03-07	15:36:32	33.73	93.34	180	5.0	Qinghai, China
3	2024-03-13	20:54:10	36.28	70.25	146	5.3	Afghanistan
4	2024-03-19	06:05:24	29.77	65.58	130	5.3	Afghanistan
5	2024-03-20	02:57:11	29.74	65.93	105	5.5	Pakistan
6	2024-03-28	16:25:07	36.12	71.25	70	5.2	Afghanistan



*Figure 3: Map showing the seismicity during the period 01<sup>st</sup> – 31<sup>st</sup> March 2024 occurred in India and its neighbourhood region along with the seismic zone of India.*

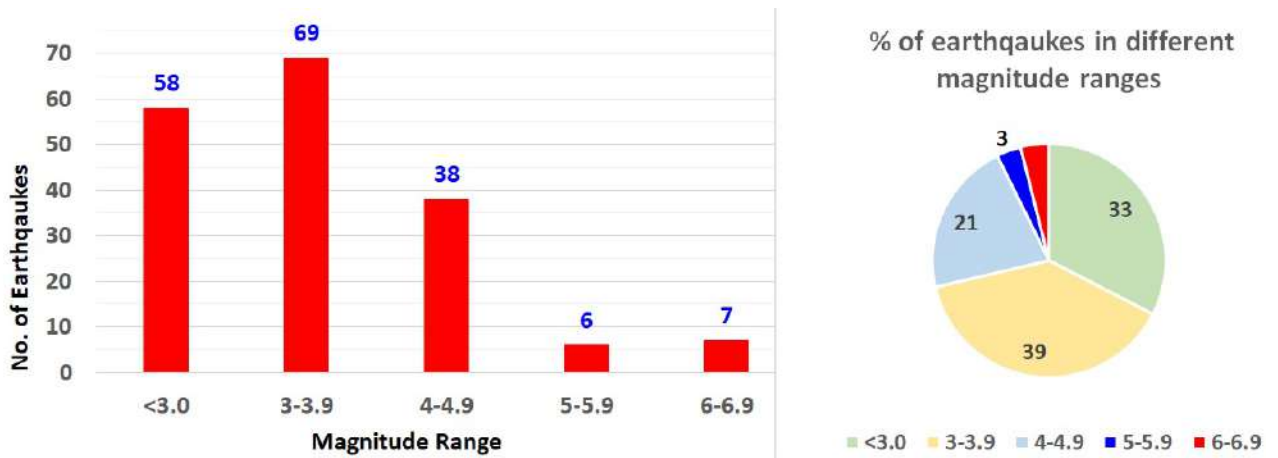


Figure 4: Distribution of earthquakes in the different magnitude range during 01<sup>st</sup> – 31<sup>st</sup> March 2024.

Out of total 178 earthquakes **39%** and **21%** earthquakes occurred in the magnitude range **3.0-3.9** and **4.0 - 4.9** respectively; whereas **Six** earthquakes in the magnitude range **5.0-5.9** occurred during the period were inside the grid of 0- 40<sup>0</sup>N & 60-100<sup>0</sup>E as shown in **Figure:3**. All the **Seven** earthquakes occurred in the magnitude range of **6.0-6.9** were outside the grid of 0- 40<sup>0</sup>N & 60-100<sup>0</sup>E; as shown in **Figure:2** and **Figure:4**. Detail list of earthquakes occurred during the month is available at [www.seismo.gov.in](http://www.seismo.gov.in).

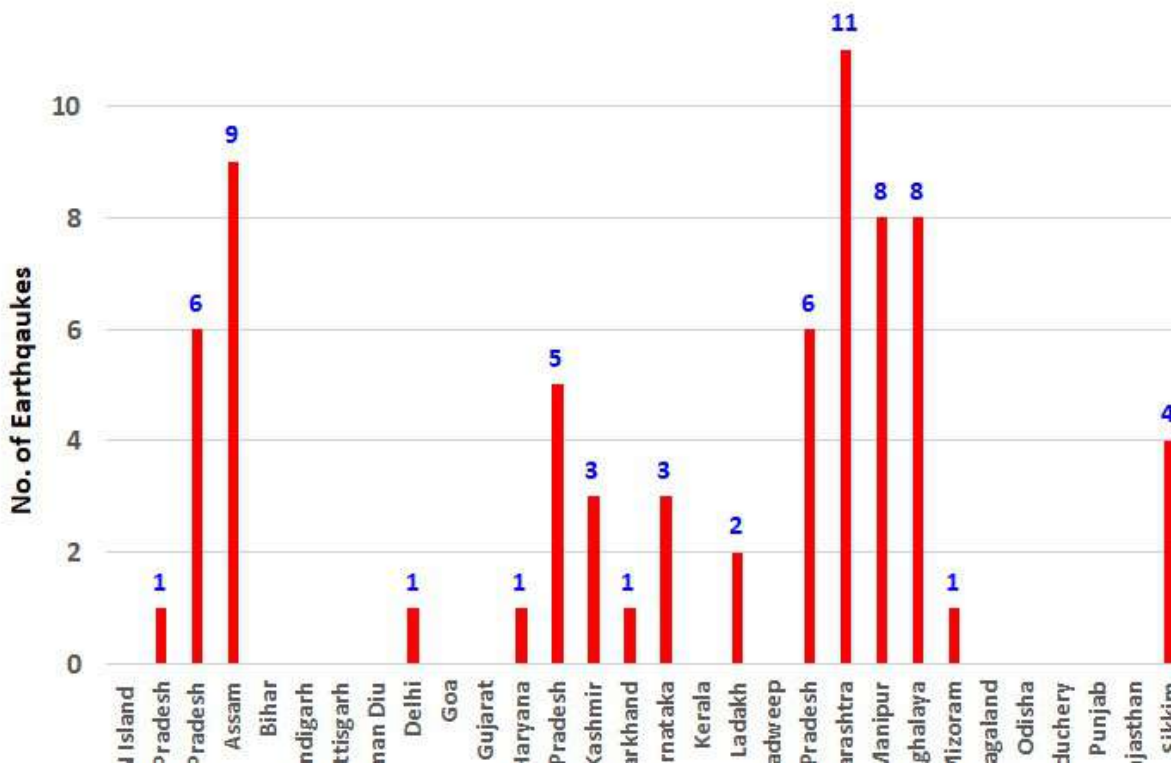


Figure 5: State wise distribution of earthquakes during the period 01<sup>st</sup> – 31<sup>st</sup> March 2024.

Total **91** earthquakes occurred within Indian Territory; of which 11 earthquakes occurred in Maharashtra and 9 each in Assam and Uttarakhand during the period. Out of 91 earthquakes **24** and **36** earthquakes occurred in **North** and **North-East** region respectively. State/UT and region wise distribution of earthquakes occurred during 01<sup>st</sup> – 31<sup>st</sup> March 2024 is shown in **Figure 5** and **Figure 6** respectively.

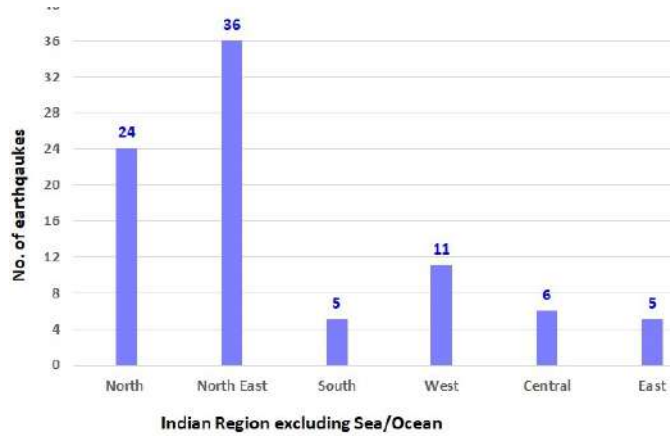


Figure: 6 Region wise distribution

### 3) Significant Activity:

**Hingoli Earthquake:** An earthquake of **M:4.5** occurred at **06:08:30 IST** of **21<sup>st</sup> March 2024** in Hingoli, Maharashtra at 19.48°N and 77.30°E with focal depth of 10 km. The epicentre is about 138 Km S of Akola; 200 Km ENE of Aurangabad; 265 Km SW of Nagpur and NW of

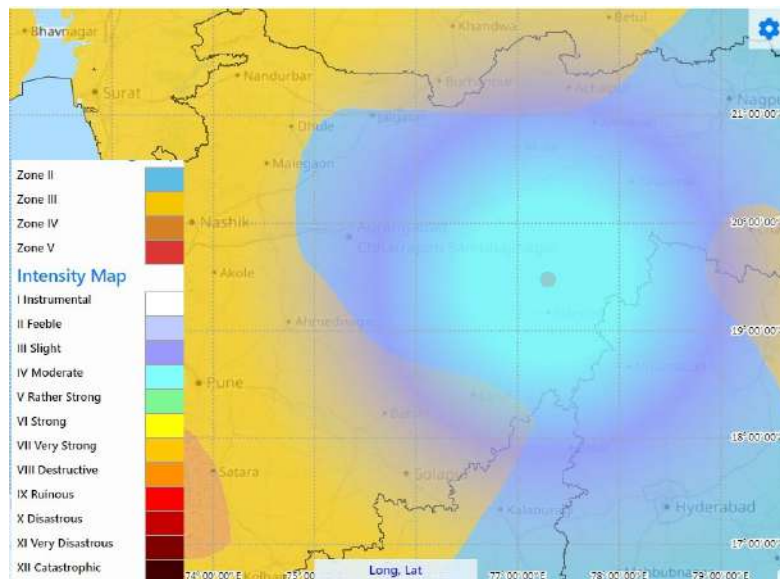


Figure 7: Intensity map of M: 4.5 Hingoli, Maharashtra Earthquake occurred on 21<sup>st</sup> March 2024

Hyderabad and 460 Km E of Mumbai. **Figure 7** depicts the expected intensity of this earthquake around the source zone. This earthquake was widely felt in Maharashtra, Telangana and Karnataka region. More details about this event are available at the URL <https://riseq.seismo.gov.in/riseq/earthquake/event/UDZVNU1ITWF6MkVUc3N2YmEwbVU0Zz09/Reviewed>.

#### 4) Dissemination Performance:

More than **80%** earthquakes of **M<5.0** and more than **70%** earthquakes of **M $\geq$ 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**.

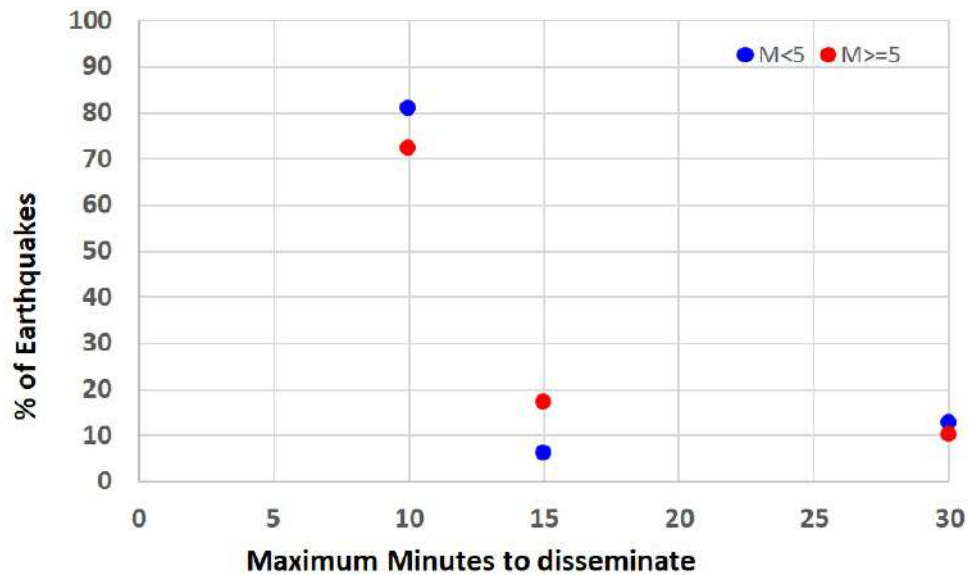


Figure 8: Dissemination of earthquakes within different time ranges (in minutes) during 01<sup>st</sup> –31<sup>st</sup> March 2024.