

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 January 2022

1) Introduction:

National Center for Seismology maintains a National Seismological Network of **152 stations** each having state of art equipment and spreading all across the country (**Figure:1**). Using these stations during the period 01st – 31st January 2022 a total number of 107 earthquakes have been

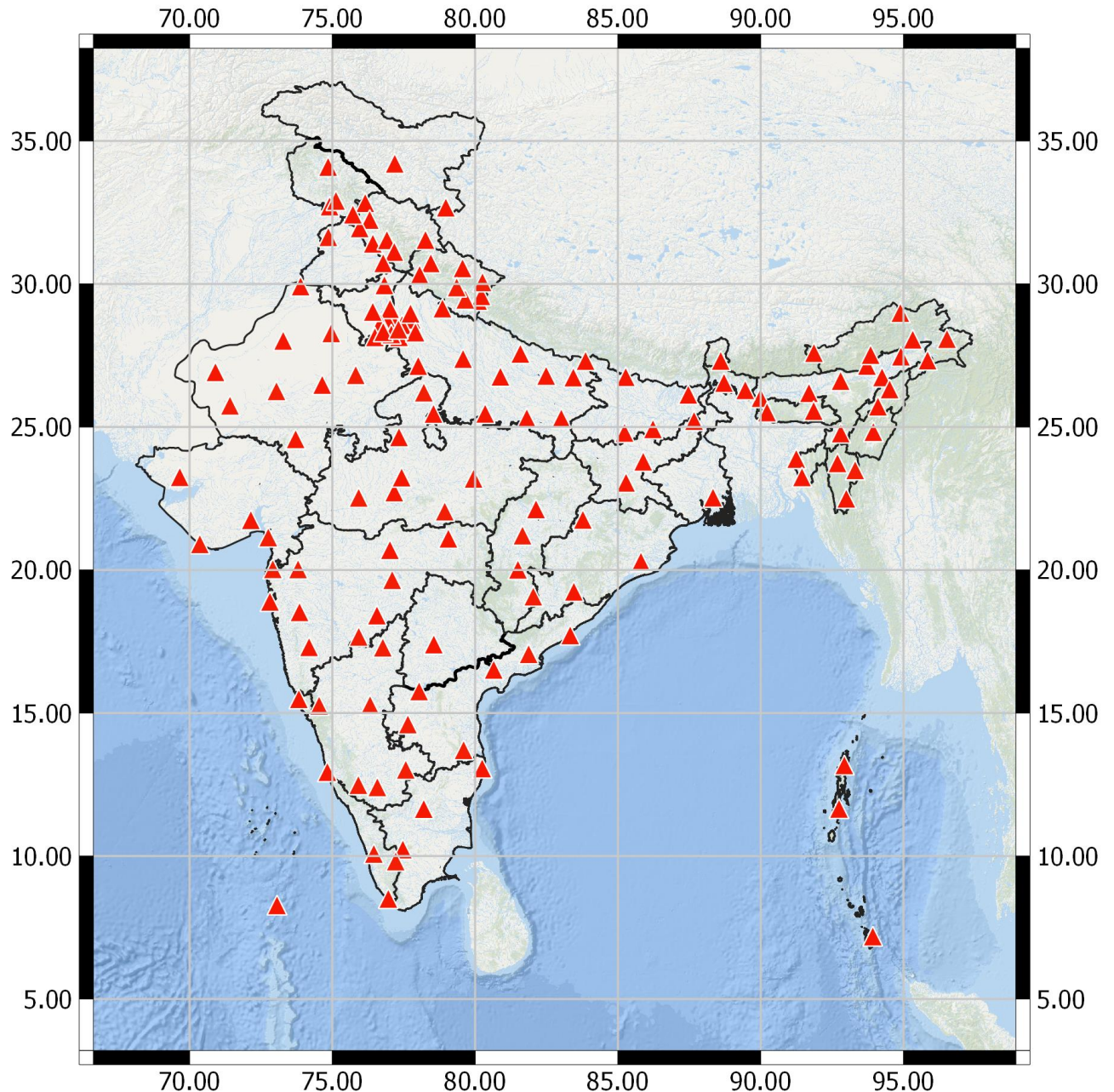


Figure 1: National Seismological Network (NSN) of 152 Stations

located and disseminated from the center (**Figure:2**), out of which 97 earthquakes has occurred

in India and its neighborhood region bounded by the coordinates 0° - 40°N & 60°-100°E (**Figure:3**).

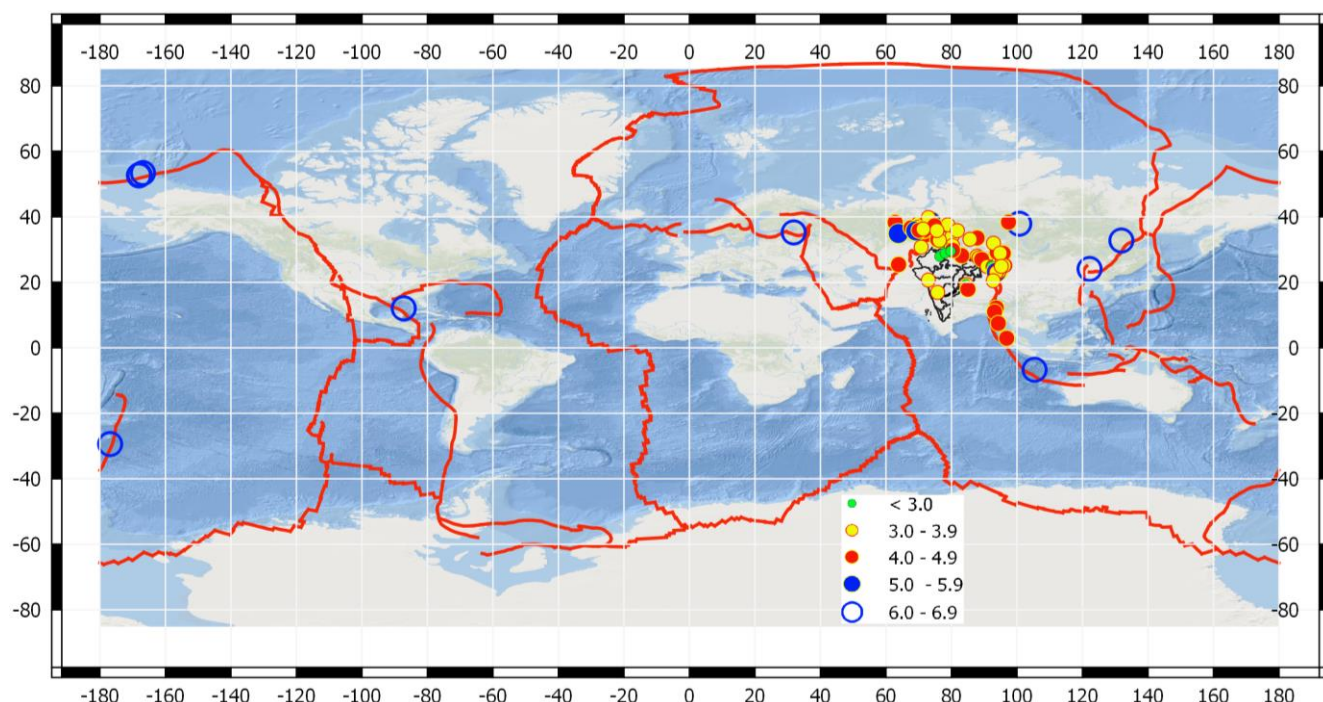


Figure 2: Earthquakes located and disseminated by NCS during 01st – 31st January 2022

2) Seismicity:

During the period, the density of earthquakes in India and its neighborhood region bounded by the coordinates 0- 40°N & 60-100°E; can largely be seen in Hindu Kush region, North Eastern part of India and Andaman-Nicobar Island region as shown in **Figure:3**. Few earthquakes of smaller magnitudes were also reported in Ladakh, Jammu and Kashmir, Himachal Pradesh, Uttarakhand, UP , Rajasthan, Western (Valsad in Gujarat) , Eastern (Ganjam in Odisha and Bay of bengal) and Southern (Vijayapura in Karnataka) part of country. Eighteen (18) earthquakes of smaller magnitude (M < 3.0) comprising 17% of all earthquakes occurred during 01st to 31st January 2022. **Six** earthquakes of magnitude **M:5.0 and above** occurred during the month in the region; as detailed in following table.

SN	Date	Time (IST)	Lat(°N)	Long(°E)	Depth (KM)	M	Region
1	2022-01-01	18:45:24	36.53	71.18	204	5.1	Afghanistan
2	2022-01-09	01:26:16	38.59	73.79	140	5.0	Tajikistan
3	2022-01-14	21:43:02	36.37	71.50	81	5.3	Afghanistan
4	2022-01-17	17:10:08	34.91	63.80	10	5.1	North-western Afghanistan
5	2022-01-21	15:42:32	23.10	93.75	60	5.6	Myanmar
6	2022-01-24	06:50:55	35.72	69.14	10	5.3	Hindu Kush, Afghanistan

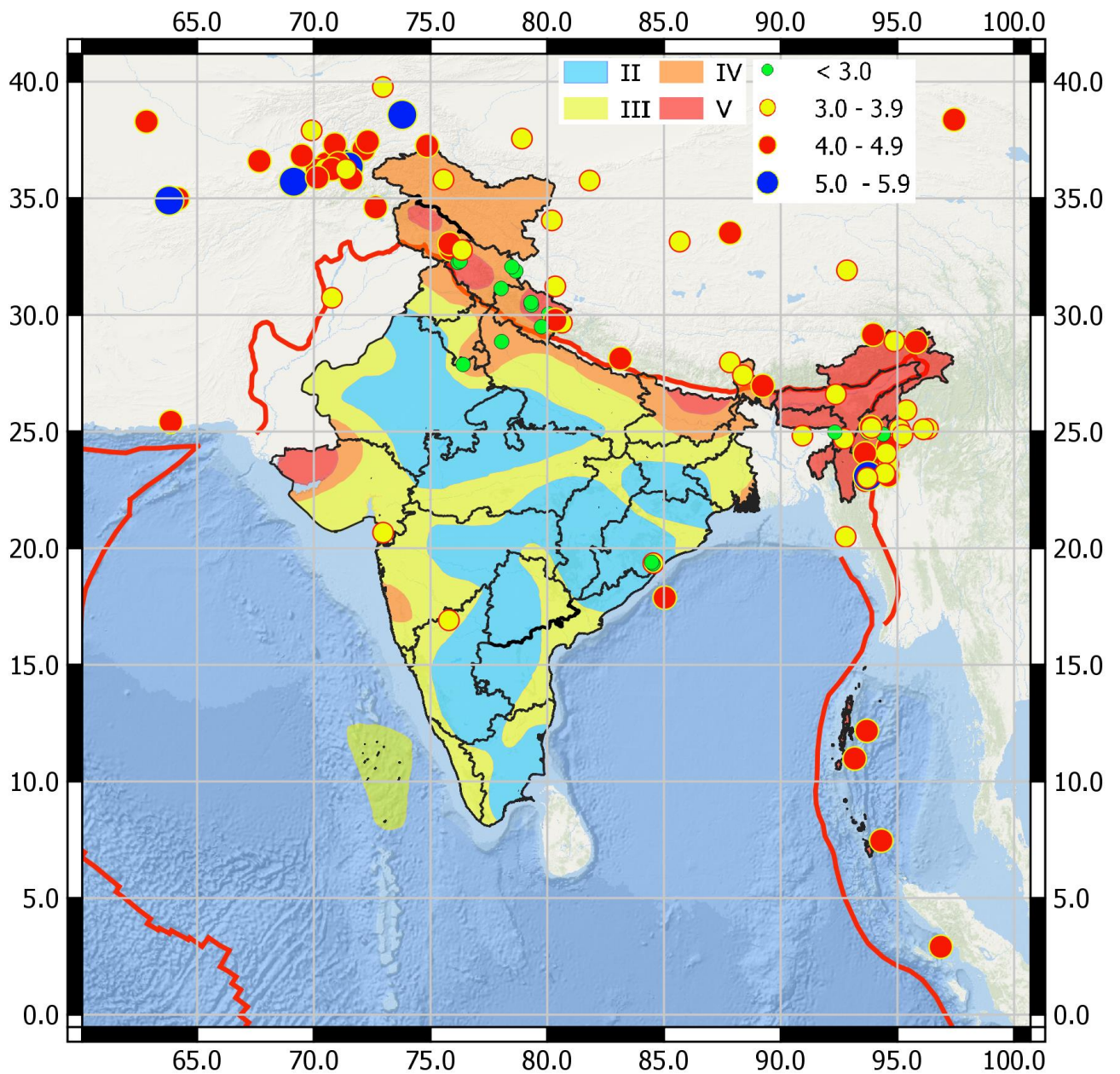


Figure 3: Map showing the seismicity during the period 01st – 31st January 2022 occurred in India and its neighbourhood region along with the seismic zone of India.

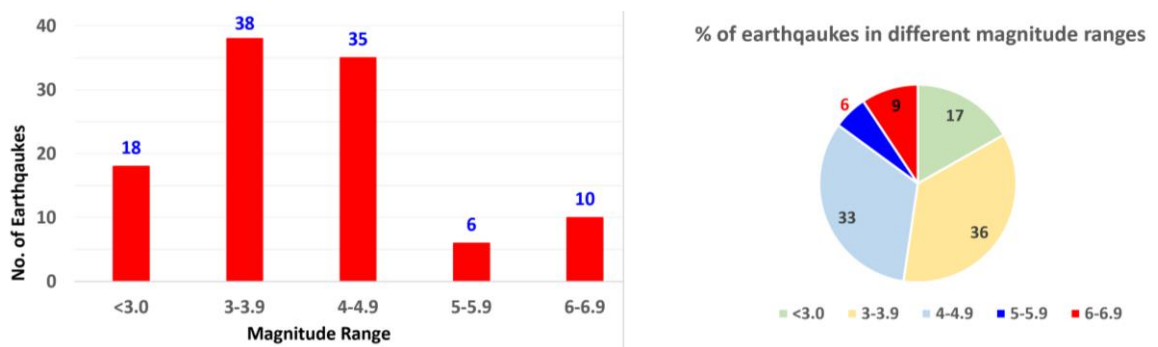


Figure 4: Pie-Chart and Bar-Diagram showing the number of earthquakes occurred in the magnitude range during the period 01st – 31st January 2022 that was disseminated.

Out of total 107 earthquakes, **36%** and **33 %** of events occurred in the magnitude range **3.0-3.9** and **4.0 - 4.9** respectively, whereas **six** earthquakes occurred in the magnitude range of **5.0-5.9** as shown in **Figure:4**. **Ten** earthquakes occurred in the magnitude range of **6.0-6.9** were outside the grid of 0-40°N & 60-100°E; as shown in **Figure:3** and **Figure:4**. Detail list of earthquakes occurred during the month is available at www.seismo.gov.in

3) Significant Activity:

- A. **Afghanistan Earthquake of M:5.3** occurred at **21:43:02 IST** of **14th January 2022** in Northern Afghanistan, at 36.37°N and 71.50°E with focal depth of 81km. The epicentre is about 100 km W of Indian (Ladakh) Border, 250 km West of Gilgit and 275 km NE of Kabul. Location and intensity map of earthquake is shown in **Figure-5**. More than 180 felt responses were received within 80 km to more than 400 Km from epicentre region. These responses were of the MMI III and MMI IV from Afghanistan, Tajikistan and Pakistan region(**Figure-6**).

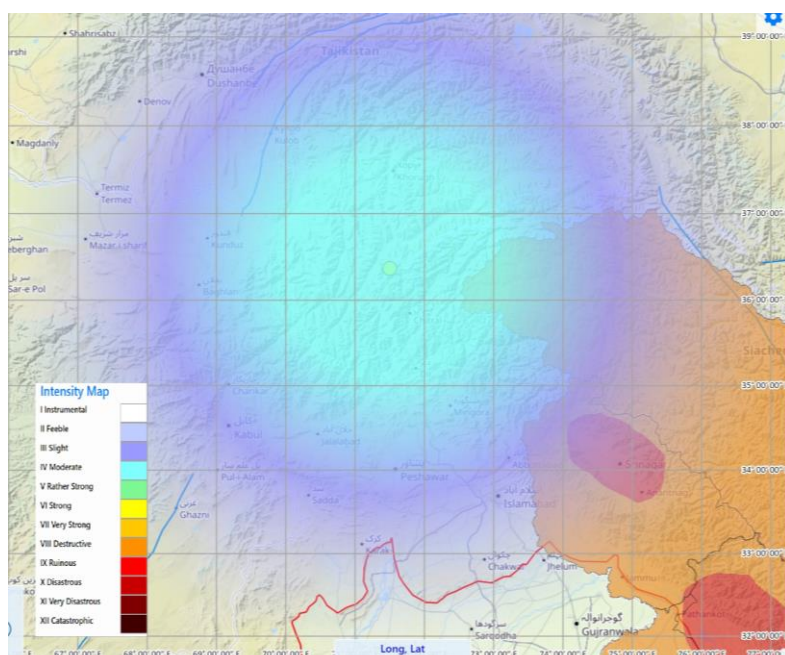


Figure 5: Map showing the epicentre (circle) and intensity of Afghanistan earthquake of M:5.3, occurred on 2022-01-14.

- B. **Myanmar Earthquake of M:5.6** occurred at **15:42:32 IST** of **21st January 2022** in Eastern Myanmar on the plate boundary, 40KM east of Indian (Mizoram) Border, at 23.10°N and 93.75°E with focal depth of 60km. The epicentre is about 120 km SE of Aiawal(Mizoram), 190 km South of Imphal(Manipur), 335 km SE of Shillong (Meghalaya) and 450 km NW of Nay Pyi Taw(Myanmar). Location and intensity map of earthquake is shown in **Figure-7**. Felt responses of MMI II were received from Siliguri, Guwahati and Shillong for this earthquake.

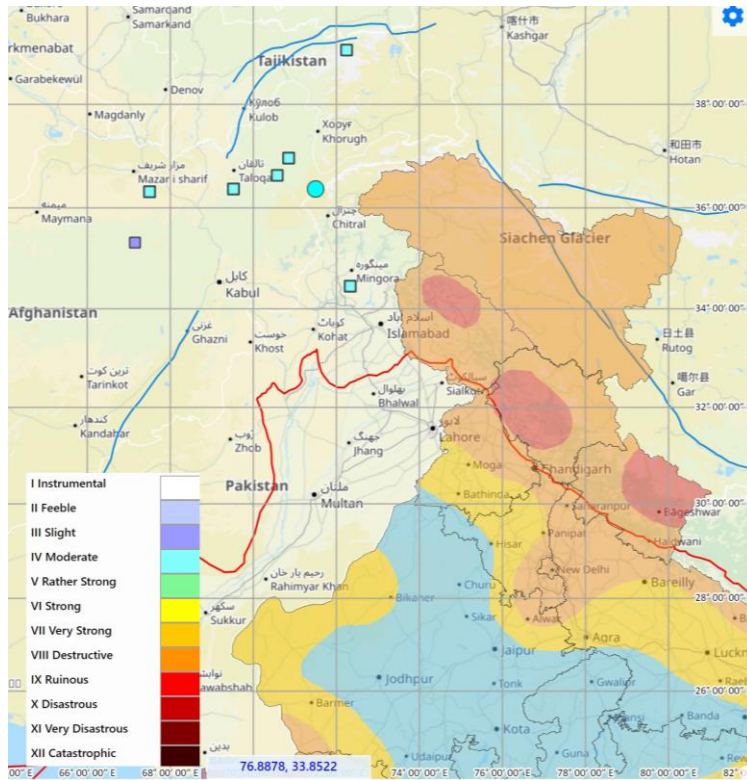


Figure 6: Map showing the epicentre (circle) and felt responses received for Afghanistan earthquake of M:5.3, occurred on 2022-01-14.

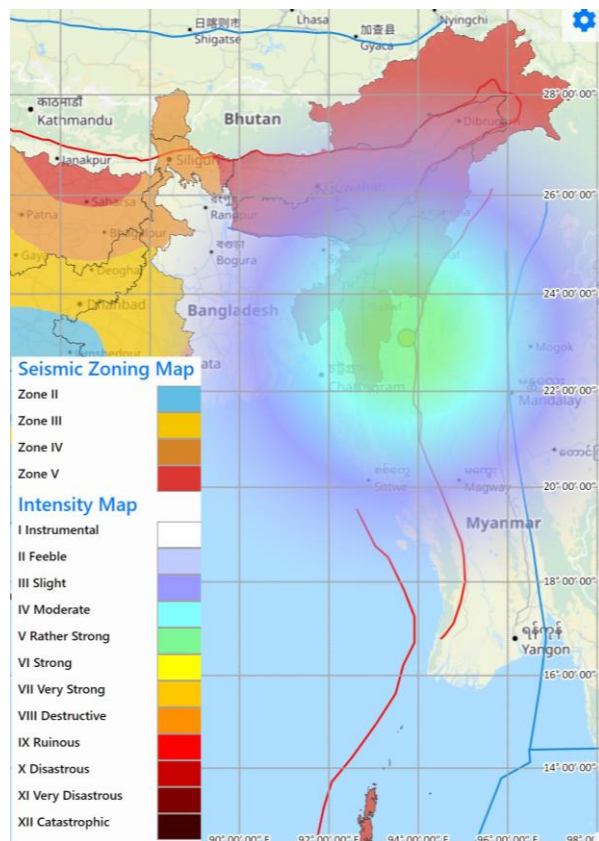


Figure 7: Map showing the epicentre (circle) and Intensity of Myanmar earthquake of M:5.6, occurred on 2022-01-21.

4) Dissemination Performance:

About 70% and more than 20% earthquakes of $M < 5.0$ were disseminated within 10 and 15 minutes respectively. Most of the earthquakes of $M \geq 5.0$ were disseminated within 10 minutes as shown in **Figure:8**.

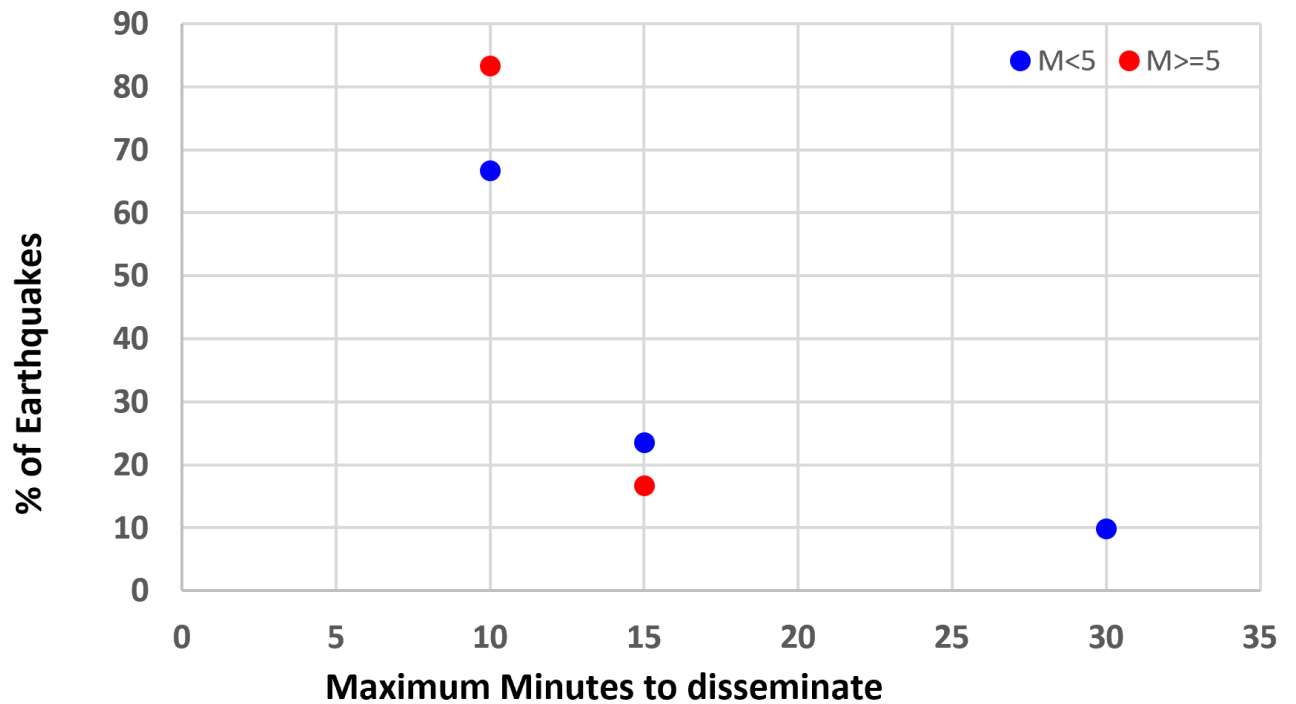


Figure 8: Dissemination of earthquakes within different time ranges (in minutes) during the period 01st – 31st January 2022.