

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 April 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 01st – 30th April 2024 a total number of 150 earthquakes have

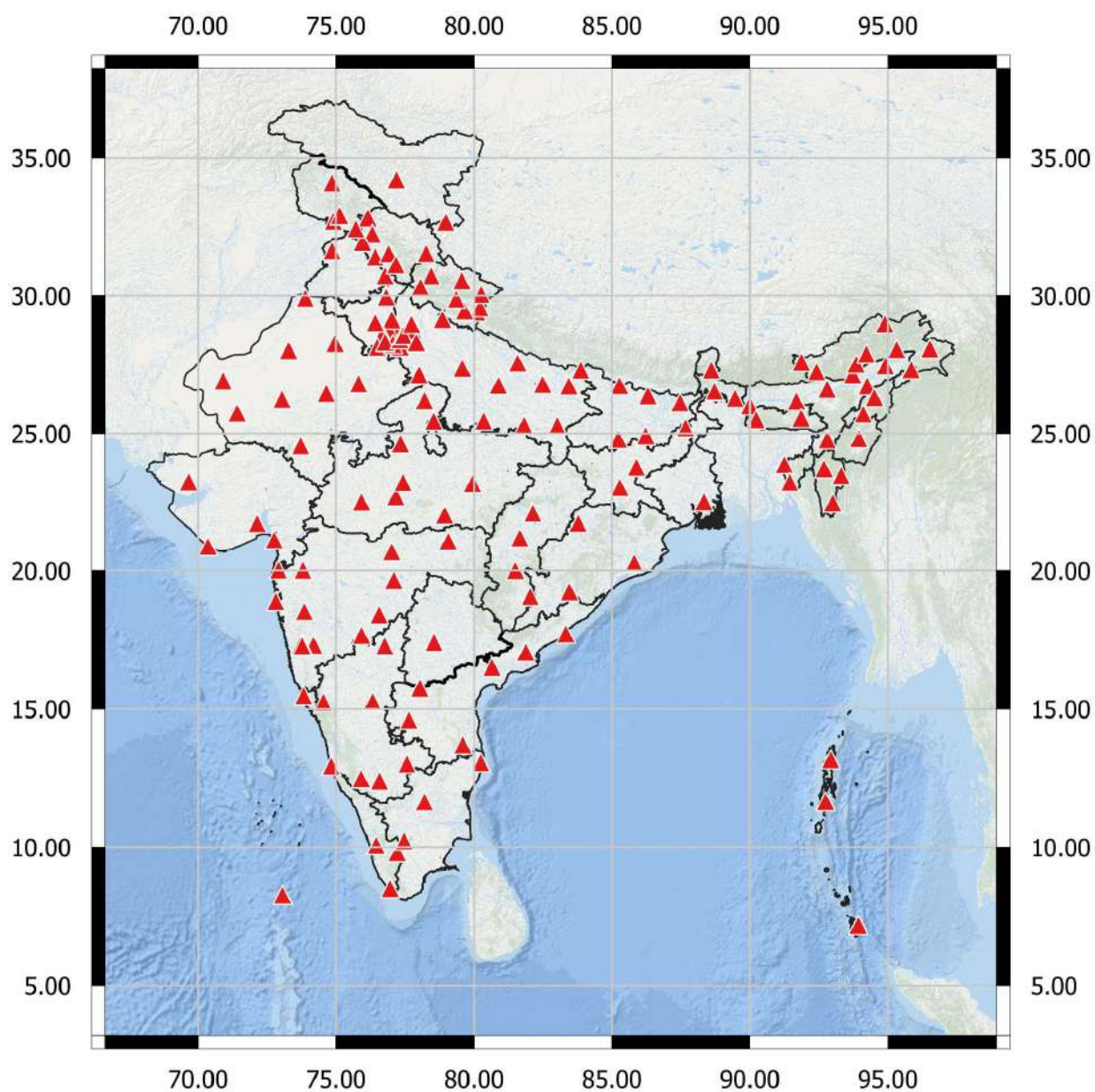


Figure 1: National Seismological Network (NSN) of 160 Stations

been located and disseminated from the center (**Figure:2**), out of which 138 earthquakes has occurred in India and its neighborhood region bounded by the coordinates 0°- 40°N & 60°-100°E (**Figure:3**).

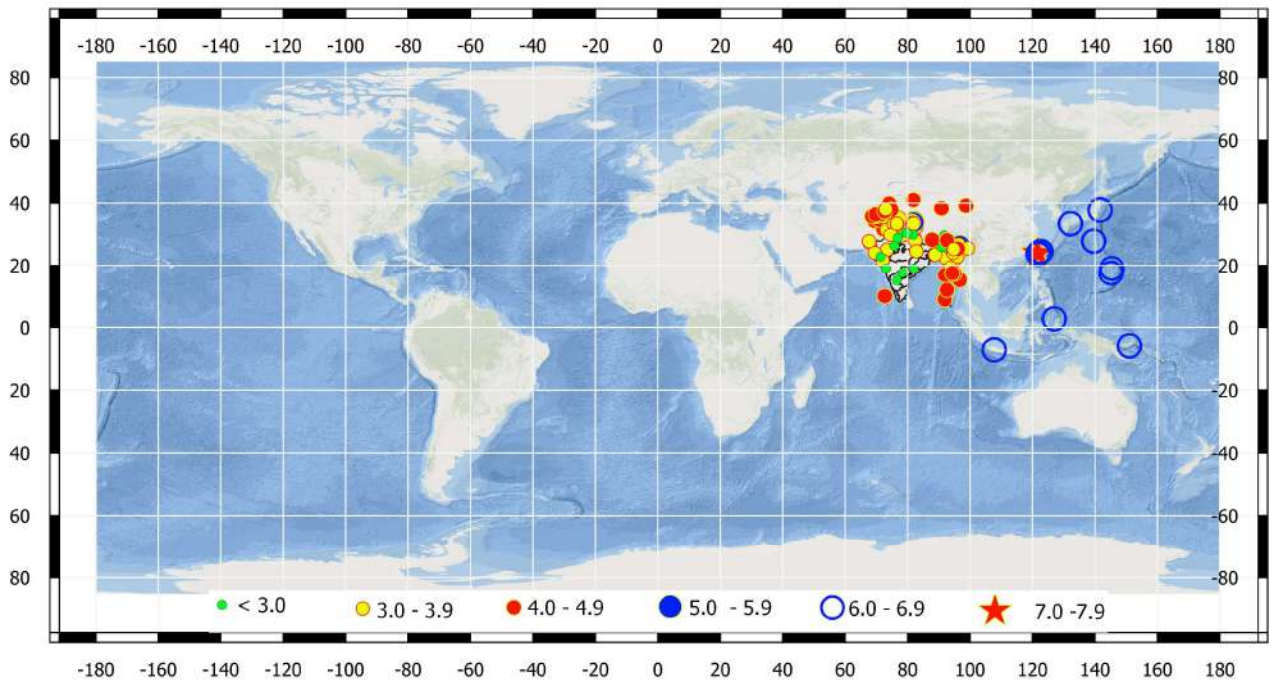


Figure 2: Earthquakes located and disseminated by NCS during 01st – 30th April 2024

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 and , Manipur) as shown in **Figure 3**.

Few earthquakes of smaller magnitudes were also reported in northern (Rohtak, Sirsa and Sonipat in Haryana; New Delhi; Ghaziabad and Sonbhadra in Uttar Pradesh), central (Bastar in Chhatisgarh), western (Bhavnagar, Kachchh and Surendranagar in Gujrat; Pali and Tonk in Rajasthan; Thane in Maharashtra), eastern (Kalimpong in West Bengal) and southern (Sangareddy in Telangana; Ballari in Karnataka) part of country. **Thirty-Eight** earthquakes of smaller magnitude (**M < 3.0**) comprising **25%** of all earthquakes occurred during 01st to 30th April 2024. **Four** 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 April 2024 within India and its neighbourhood

SN	Date	Time (IST)	Lat($^{\circ}$ N)	Long($^{\circ}$ E)	D (KM)	M	Region
1	2024-04-04	21:34:32	33.09	76.59	10	5.3	Chamba, Himachal Pradesh
2	2024-04-05	18:15:37	26.53	96.77	62	5.7	Myanmar
3	2024-04-13	11:14:35	34.31	82.05	10	5.7	Xizang, China
4	2024-04-18	23:10:02	33.85	82.06	10	5.0	Xizang, China

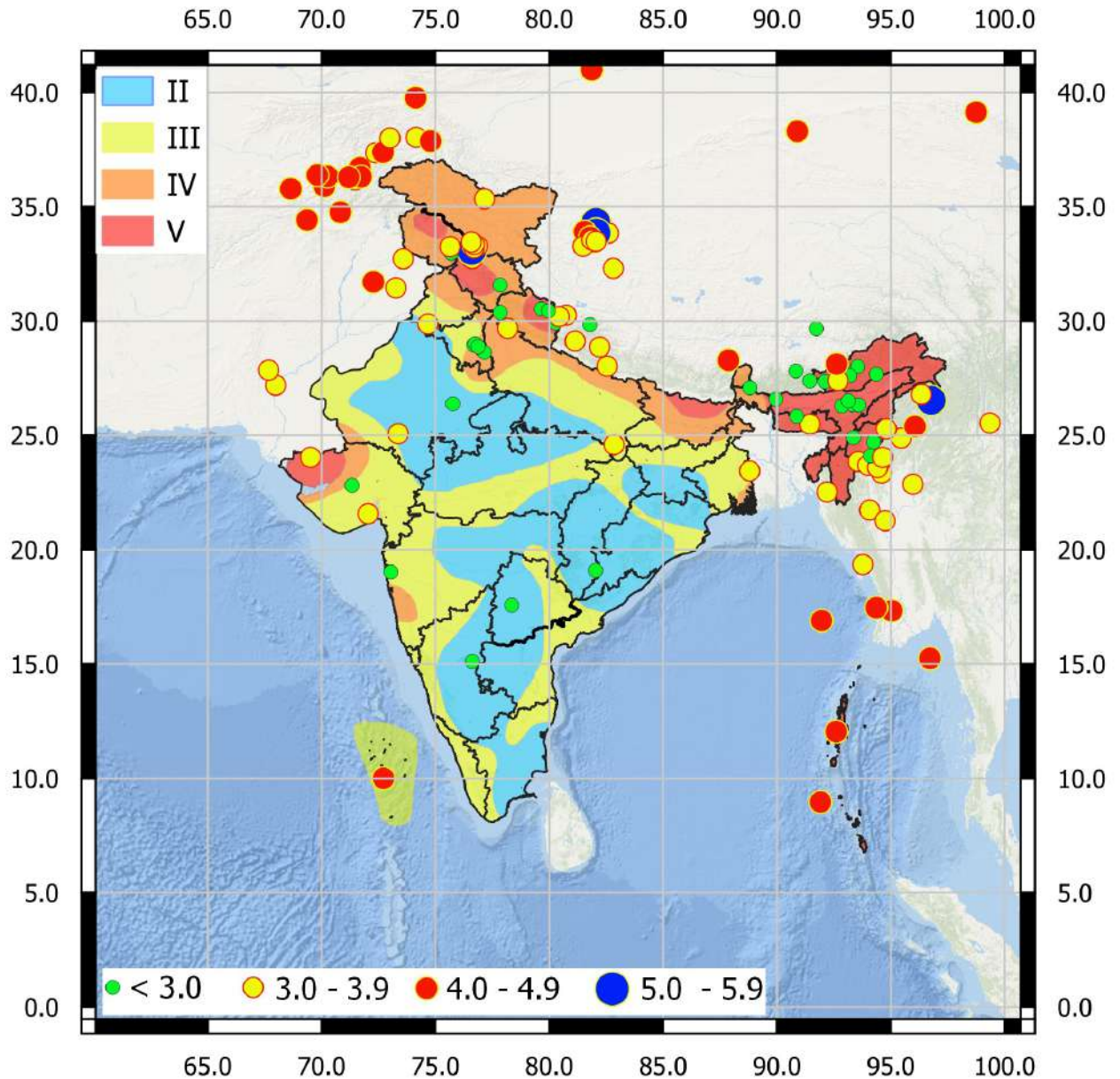


Figure 3: Map showing the seismicity during the period 01st – 30th April 2024 occurred in India and its neighbourhood region along with the seismic zone of India.

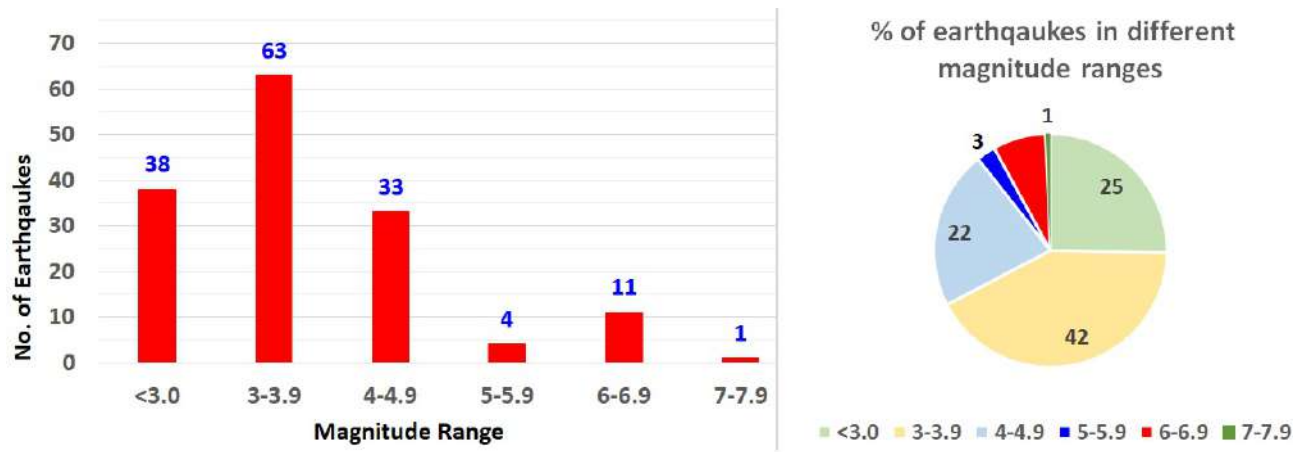


Figure 4: Distribution of earthquakes in the different magnitude range during 01st – 30th April 2024.

Out of total 150 earthquakes **42%** and **22%** earthquakes occurred in the magnitude range **3.0-3.9** and **4.0 - 4.9** respectively; whereas **Four** earthquakes in the magnitude range **5.0-5.9** occurred during the period were inside the grid of 0- 40⁰N & 60-100⁰E as shown in **Figure:3**. All the **Eleven** earthquakes in the magnitude range of **6.0-6.9** and **one** earthquake of **M:7.4** were occurred outside the grid of 0- 40⁰N & 60-100⁰E; as shown in **Figure:2** and **Figure:4**. Detail list of earthquakes occurred during the month is available at www.seismo.gov.in .

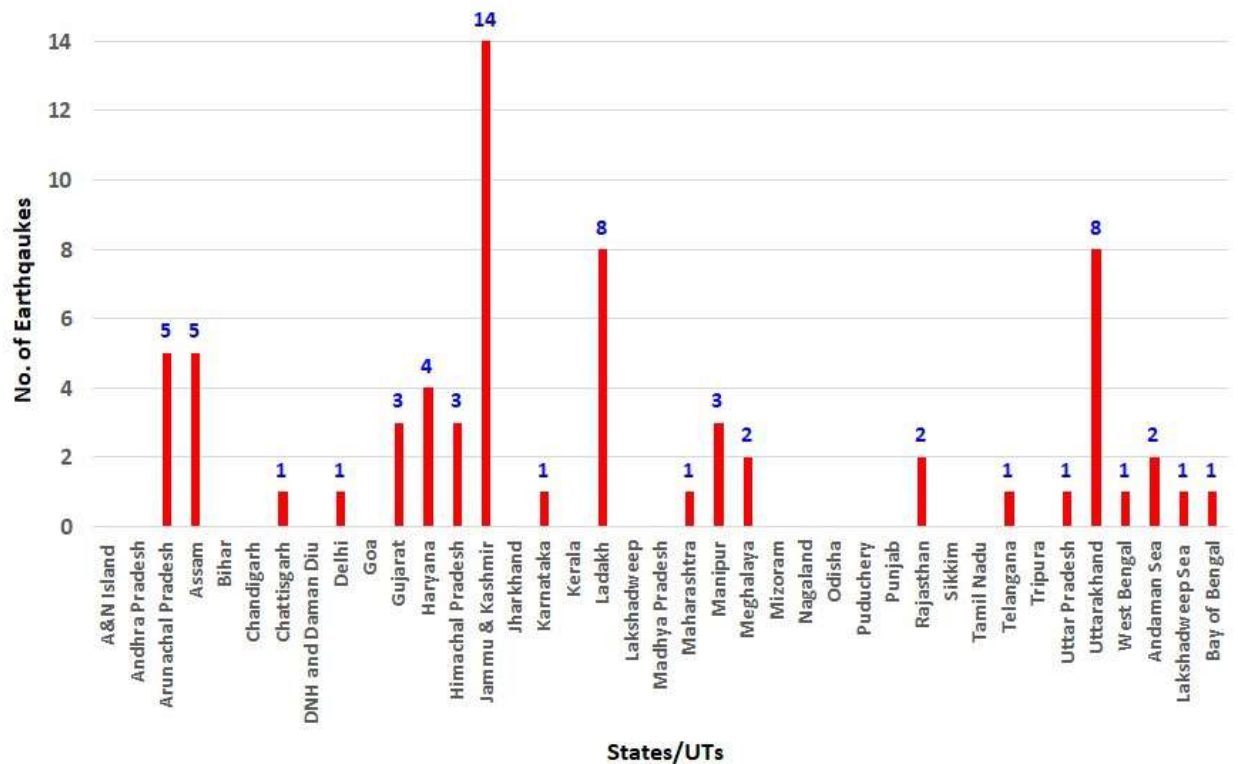


Figure 5: State wise distribution of earthquakes during the period 01st – 30th April 2024.

Total **68** earthquakes occurred within Indian Territory; of which 14 earthquakes occurred in Jammu and Kashmir; 8 each in Ladakah and Uttarakhand during the period. Out of 68 earthquakes **39** and **15** earthquakes occurred in **North** and **North-East** region respectively. State/UT and region wise distribution of earthquakes occurred during 01st – 30th April 2024 is shown in **Figure 5** and **Figure 6** respectively.

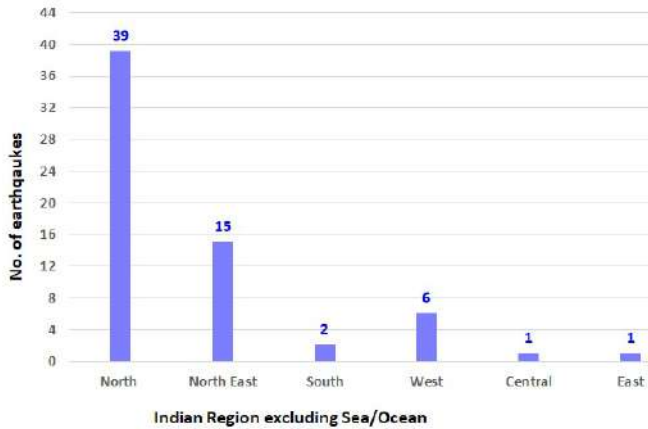


Figure: 6 Region wise distribution

3) Significant Activity:

Chamba Earthquake: An earthquake of **M:5.3** occurred at **21:34:32 IST** of **04th April 2024** in Chamba, Himachal Pradesh at 33.09°N and 76.59°E with focal depth of 10 km. The epicentre is about 95 Km N of Dharamshala; 150 Km ENE of Udhampur; 200 Km SE of Srinagar and 230

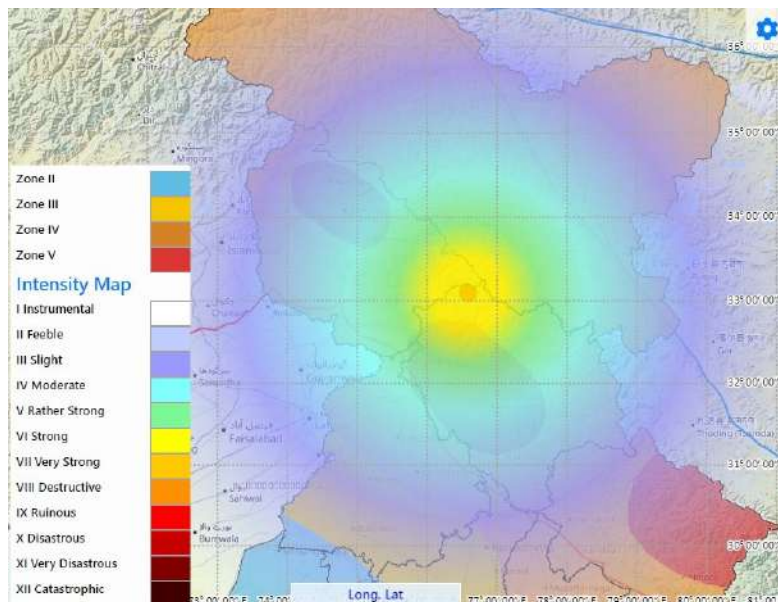


Figure 7: Intensity map of M: 5.3 Chamba, Himachal Pradesh Earthquake occurred on 04th April 2024

Km NNW E of Shimla The epicenter of the earthquake lies within the Kishtwar nappe and north of the Main Central thrust (MCT) fault which is a major thrust fault in the region. 14 and 8 earthquakes occurred in Jammu & Kashmir and Ladakh (Figure 5) are aftershocks and occurred within the 30 km (Figure 8) from this earthquake.

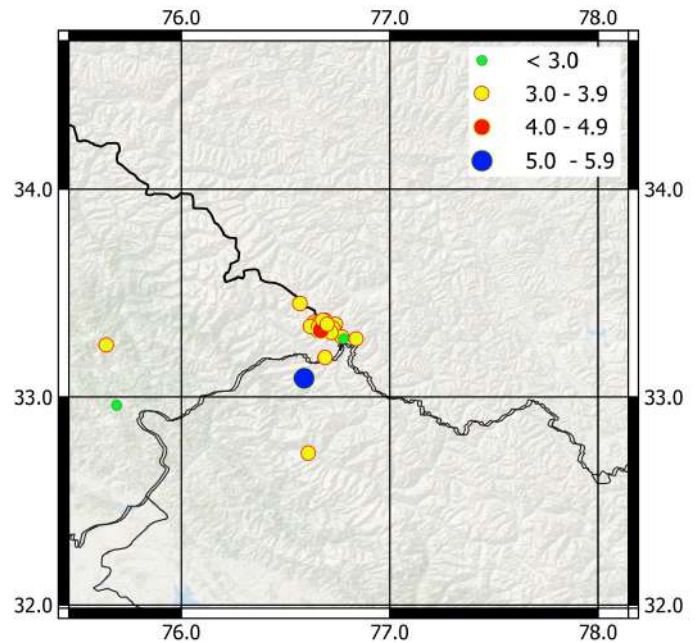


Figure 7 depicts the expected intensity of this earthquake around the source zone. This earthquake was widely felt in Himachal Pradesh, Jammu and Kashmir, Uttarakhand, Punjab and adjoining areas.

Figure 8: Spatial distribution of aftershocks of M:5.3 Chamba, Earthquake of 04th April 2024

Peak Ground Acceleration (PGA) of 0.002G and 0.001G recorded at 186 and 196 km from the epicentre at Bhakra and Srinagar respectively; due to this earthquake. The URL <https://riseq.seismo.gov.in/riseq/earthquake/event/UW9NcFc2K0QreC83aVJUOWtmQzV4QT09/Reviewed> may be visited for more details about this earthquake.

4) Dissemination Performance:

More than 80% earthquakes of $M < 5.0$ and about 90% earthquakes of $M \geq 5.0$ occurred within India and its neighbourhood region bounded by the coordinates $0-40^{\circ}N$ & $60-100^{\circ}E$ were disseminated within 10 Minutes as shown in Figure 9.

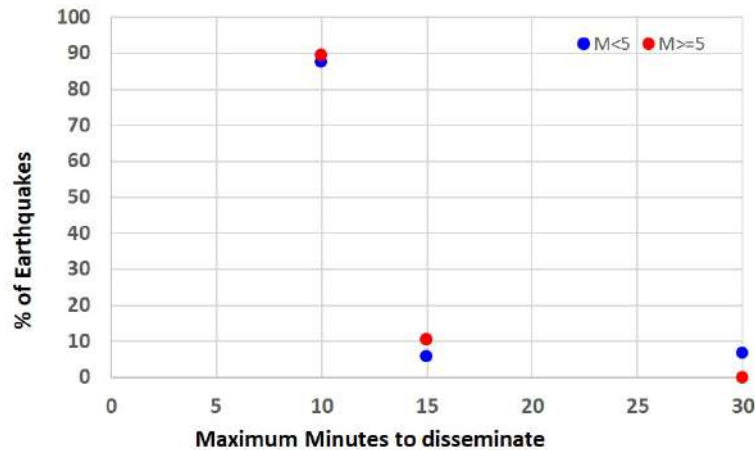


Figure 9: Dissemination of earthquakes within different time ranges during 01st –30th April 2024.