



सत्यमेव जयते

Report on Real Time Earthquake Location

Month: Aug 2020

Technical Report No: NCS/2020/08

**National Center for Seismology
Ministry of Earth Sciences
Government of India**

Report of Earthquakes occurred in the month of August 2020

1) Introduction:

National Center for Seismology maintains National Seismological Network of 115 stations each having state of art equipment and spreading all across the country. Using these stations during the period 01st -31st August 2020 a total number of 136 earthquakes have been located and disseminated from the center, out of which 128 earthquakes has occurred in India and its neighborhood region bounded by the coordinates 0- 40°N & 60-100°E.

2) Seismicity:

During the period, the density of earthquakes occurred in India and its neighborhood region bounded by the coordinates 0- 40°N & 60-100°E; is largely seen in the Hindu Kush region and in the North Eastern part of India as shown in Fig1.

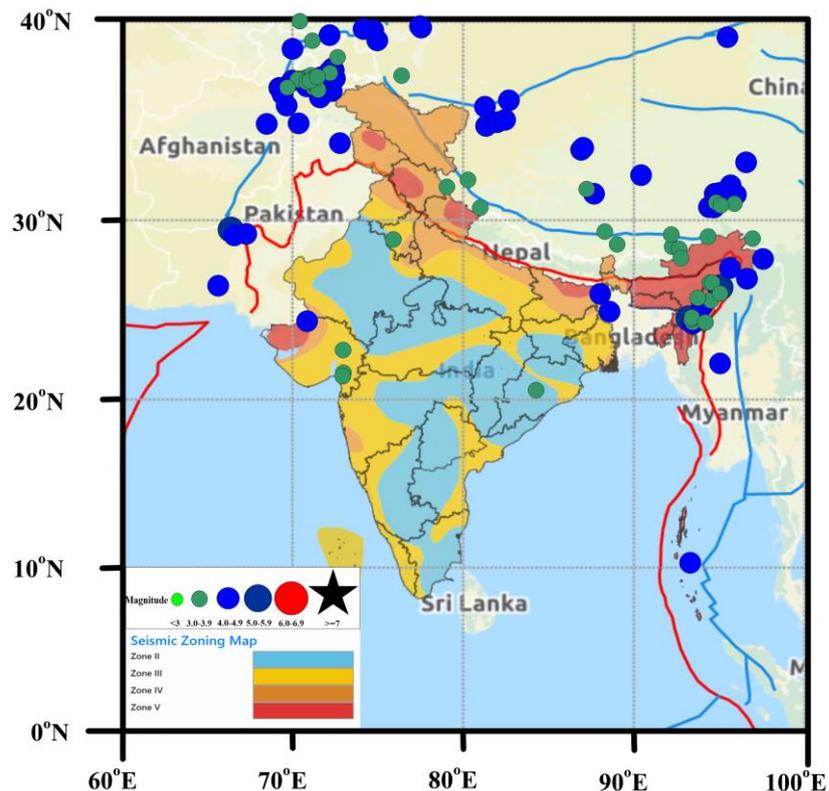


Figure No: 1 Map showing the seismicity during the period 01st – 31st August 2020 occurred in India and its neighbour region along with the seismic zone of India.

Out of total 136 earthquakes majority of events had magnitude in the range 3.0-4.9, while 15 events each occurred in $M >$ than 3.0 and 7 events in the range 5.0-5.9. Five events had magnitude in the range 6.0-6.9., as shown in Fig 2. Detail list of earthquakes occurred during the month is available at <https://seismo.gov.in/>

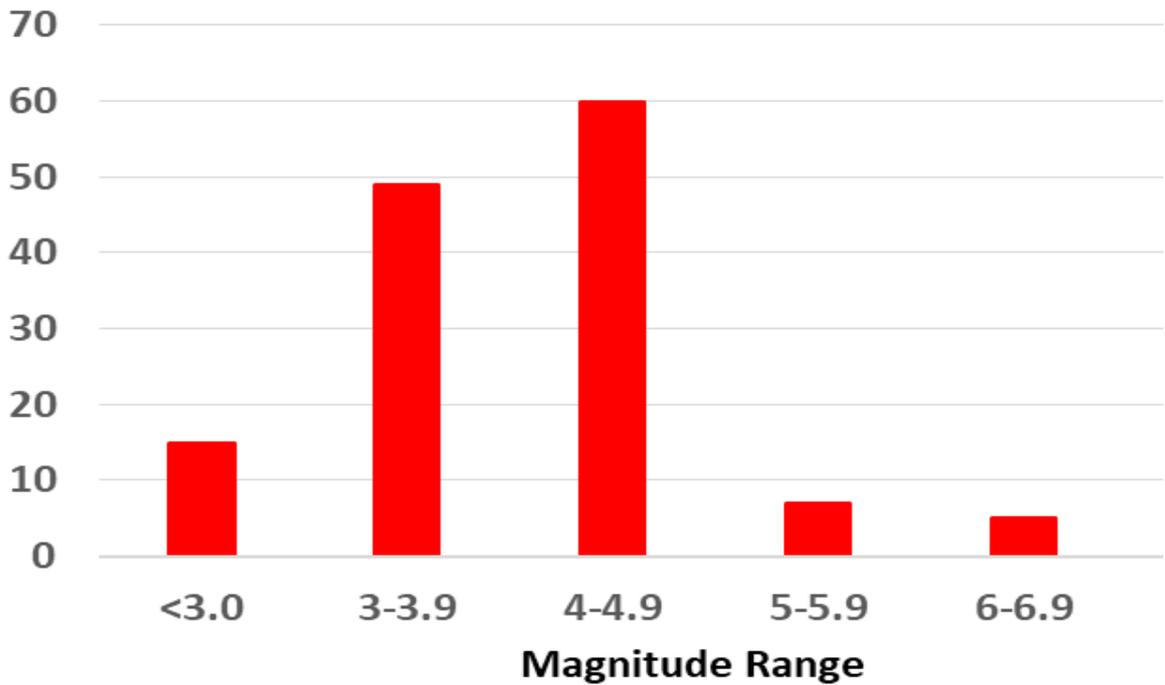


Figure 2: Bar-Graph showing the number of earthquakes occurred in the magnitude range during the period 01st – 31st August 2020 that was disseminated.

3) CMT solution disseminated during the period:

Numbers of earthquakes whose CMT analysis reviewed and disseminated are given below:

I) Indian Region (Latitude 0° - 40° N and Longitude 60° - 100° E):

Date	Time (UTC)	Magnitude	Latitude	Longitude	Depth (km)	Seismic Moment (Mo) Nm	Moment Magnitude (Mw)	Region	Nodal Plane 1			Nodal Plane 2		
									Strike (°)	Dip (°)	Rake (°)	Strike (°)	Dip (°)	Rake (°)
16-08-2020	16:40:34	4.9	30.897	95.479	622	3.06E+16	4.9	Xizang	246	58	133	5	51	41
29-08-2020	02:59:20	4.9	36.902	72.229	622	2.69E+16	4.9	Afghanistan-Tajikistan Border Region	111	45	-66	259	48	-112
27-08-2020	13:17:23	4.4	23.173	93.215	22	1.14E+16	4.6	Mizoram	308	65	-152	206	65	-27
11-08-2020	13:57:50	4.4	24.119	93.807	132	6.33E+15	4.5	MANIPUR - CHANDEL	142	74	63	24	30	148

II) World (M ≥ 6):

Date	Time (UTC)	Magnitude	Latitude	Longitude	Depth (km)	Seismic Moment (Mo) Nm	Moment Magnitude (Mw)	Region	Nodal Plane 1			Nodal Plane 2		
									Strike (°)	Dip (°)	Rake (°)	Strike (°)	Dip (°)	Rake (°)
21-08-2020	04:09:49	6.7	-6.857	123.542	422	1.14E+19	6.6	Banda Sea	66	25	-75	230	65	-96
18-08-2020	22:24:04	6.7	-4.109	101.442	20	8.12E+18	6.5	Southern Sumatra, Indonesia	124	32	65	332	60	104

4) Significant Earthquakes:

During the period 01st-31st August 2020 two significant earthquakes, occurred on 18th August 2020 of **M 6.7** (22:24:04 UTC) and **M 6.9** (22:29:42 UTC) were disseminated by NCS. Both the earthquakes occurred in the **Southern Sumatra, Indonesia** region with coordinated -4.11 and 101.44; -4.12 and 101.62 respectively. The distance of epicenter is around 1029km South–East from 2004 Sumatra Andaman earthquake of magnitude 9.3. The epicenter of both the earthquakes lies on the Sunda Plate and about 130km WSW of Bengkulu Island in Indonesia. The plate boundary wherein, these earthquakes occurred is in the southwest of Sumatra, which is the part of a long tectonic collision zone that extends over 8000 km from Papua in the east to the Himalayan front in the west. The Sumatra-Andaman portion of the collision zone forms a subduction zone megathrust plate boundary, the Sunda-Java trench, which accommodates convergence between the Indo-Australia and Sunda plates. This convergence is responsible for the intense seismicity and volcanism in Sumatra. The Sumatra Fault, a major transform structure that bisects Sumatra, accommodates the northwest-increasing lateral component of relative plate motion.