GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 6187
TO BE ANSWERED ON WEDNESDAY, 1ST APRIL, 2026

SEISMOGRAPH NETWORK

6187. SHRI CAPTAIN BRIJESH CHOWTA:
SHRI ANURAG SINGH THAKUR:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) the details of the number of functional seismographs, strong motion stations in Karnataka and Himachal Pradesh along with the site, latitude-longitude coordinates, district, seismic zone classification, commissioning year and nodal agency responsible for installation, maintenance of these stations;
(b) the details of the recent changes in seismic zone classifications;
(c) the details of these stations which are located on or monitoring large dams including Bhakra dam in Himachal Pradesh hydropower projects in Western Ghats including Linganamakki, Supa, Kalinadi and Varahi;
(d) whether the seismic data are streamed real-time to NCS HQ, SEOC individual project control rooms and the transmission mode adopted;
(e) the details of any earthquake recorded during the last five years, district-wise, magnitude band-wise and focal depth-wise;
(f) whether the spatial coverage gaps exist in high-seismic-hazard districts like Dakshin Kannada of Western Ghats and Himachal Pradesh and if so, the corrective measures taken/being taken in this regard;
(g) the funds sanctioned, released and utilised under Central schemes for network augmentation during the last three years; and
(h) the timebound plan to close identified gaps, integrate dam based stations with National early warning framework, strengthen capacity for rapid ShakeMaps and public alerts?

ANSWER
THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR
MINISTRY OF SCIENCE AND TECHNOLOGY
AND EARTH SCIENCES
(DR. JITENDRA SINGH)

(a) The National Centre for Seismology (NCS), under the Ministry of Earth Sciences (MoES), operates and maintains seismological observatories under the National Seismological Network (NSN), which presently comprises 170 observatories across the country, including 07 stations in Himachal Pradesh and 07 in Karnataka. These stations are equipped with broadband seismographs and strong motion accelerographs. The details of these stations including site/location, latitude and longitude, district, seismic zone classification as per IS 1893 (Part-1):2016, and year of commissioning/upgradation, are provided in the table below. The NCS is the nodal agency responsible for installation, operation and maintenance of these stations. The stations at S. Nos. 10 to 14 are operated at sites co-located with the seismological observatories maintained by the Karnataka State Natural Disaster Monitoring Centre (KSNDMC), Bengaluru.

S. No.	Site / District	State	Seismic Zone	Latitude (°N)	Longitude (°E)	Date of Installation	Date of Latest Upgradation
1	Bhakra	Himachal Pradesh	V	31.3947	76.3810	12.07.1959	29.10.2015
2	Kalpa, Kinnaur District	Himachal Pradesh	IV	31.5460	78.2600	12.05.1985	26.12.2017
3	Sundar Nagar, Mandi	Himachal Pradesh	V	31.5305	76.9056	01.01.1968	19.01.2018
4	Tissa, Chamba	Himachal Pradesh	IV	32.8366	76.1503	27.05.2018	27.05.2018
5	Dharamshala, Kangra	Himachal Pradesh	V	32.2476	76.3067	25.12.2007	25.12.2007
6	Shimla	Himachal Pradesh	IV	31.1280	77.1670	01.01.1975	27.12.2007
7	Pong Dam, Kangra	Himachal Pradesh	V	31.9560	75.9550	01.09.1963	21.12.2017
8	Mangalore	Karnataka	III	12.8923	74.8677	18.01.1984	22.12.2015
9	Bengaluru	Karnataka	II	13.0211	77.5704	11.07.2021	11.07.2021
10	Mandya District	Karnataka	II	12.4100	76.5744	14.07.2021	14.07.2021
11	Kodagu District	Karnataka	II	12.4860	75.9089	17.07.2021	17.07.2021
12	Ballari District	Karnataka	II	15.2796	76.3194	29.07.2021	29.07.2021
13	Uttara Kannada	Karnataka	III	15.2626	74.5349	01.08.2021	01.08.2021
14	Kalaburagi	Karnataka	II	17.2922	76.7663	17.12.2021	17.12.2021

(b) The Seismic Zoning Map of India, published by the Bureau of Indian Standards (BIS) as part of the code: IS 1893(Part-1):2016 -Criteria for Earthquake Resistant Design of Structures, remains the current standard, as the revised zonation has been withdrawn in March 2026.

(c) The National Centre for Seismology (NCS), through its National Seismological Network (NSN), continuously monitors earthquake activity in and around the country and detects and locates events of magnitude 3.0 and above occurring in any part of the country. This provides an assessment of regional seismicity, including in areas around major dams and hydropower projects. NCS does not maintain dedicated instrumentation for monitoring individual dams; such site-specific monitoring is carried out by dam/project authorities, generally in coordination with the Central Water Commission (CWC).

(d) Yes, seismic data from stations operated by the NCS are streamed in real time to the Earthquake Monitoring Centre at its Headquarters in New Delhi, primarily through VSAT and other telemetry systems. The data are processed for rapid estimation of earthquake parameters and timely dissemination. Earthquake information is made available on the NCS website and the *BhooKamp* mobile application, and is also shared with State Emergency Operation Centres (SEOCs) and other stakeholders through SMS, Email, Fax and other communication channels.

(e) Details of earthquakes recorded in Himachal Pradesh and Karnataka during the last five years (2021-2025), magnitude band-wise, are given below:

Magnitude Range	**Himachal Pradesh**					**Karnataka**				
	2021	2022	2023	2024	2025	2021	2022	2023	2024	2025
<3.0	44	38	31	13	8	11	23	21	10	11
3.0-3.9	21	12	14	22	13	12	12	3	2	6
4.0-4.9	2	4	-	-	2	2	1	-	-	-
5.0-5.9	-	-	-	1	-	-	-	-	-	-
Total	67	54	45	36	23	25	36	24	12	17

All the earthquakes recorded in Karnataka and Himachal Pradesh during the last five years were of shallow depth (<30 km), except three events in Himachal Pradesh during 2021 and one event during 2022, which occurred in the depth ≥ 30 km. Details of all earthquakes recorded during the last five years are available on NCS website www.seismo.gov.in and also detailed below:

District-wise recorded earthquakes in Himachal Pradesh (2021-2025)

District / Region	**2021**	**2022**	**2023**	**2024**	**2025**
Bilaspur	3	1	3	-	-
Chamba	22	17	17	11	13
Dharamshala	1	1	-	-	-
Hamirpur	1	1	1	-	-
Kalpa	-	-	1	-	-
Kangra	6	5	3	1	2
Kinnaur	10	6	6	6	-
Kullu	3	2	2	2	1
Lahaul and Spiti	4	4	6	8	1
Mandi	5	11	3	6	4
Shimla	11	4	2	2	2
Sirmaur	1	2	-	-	-
Solan	-	-	1	-	-
Total	67	54	45	36	23

District-wise recorded earthquakes in Karnataka (2021-2025)

District/Region	2021	2022	2023	2024	2025
Ballari	-	1	2	7	-
Bidar	3	3	7	2	3
Bijapur	1	13	-	-	-
Chikkaballapur	3	3	-	-	-
Chitradurga	-	1	-	-	-
Dakshina Kannada	-	2	-	-	-
Gulbarga	6	-	-	-	-
Hassan	1	-	-	-	-
Kalaburagi	-	1	5	-	4
Kodagu	-	3	-	-	1
Kolar	-	1	-	-	-
Koppal	-	-	-	-	1
Mysuru	-	1	-	-	-
Raichur	-	-	3	-	1
Uttara Kannada	-	-	-	1	-
Vijayanagara	-	1	1	-	-
Vijayapura	11	6	6	2	7
Total	25	36	24	12	17

(f)-(h) Spatial coverage of the seismic monitoring network is periodically assessed for the entire country, including high seismic hazard regions such as Himachal Pradesh and parts of the Western Ghats. Presently, the network is capable of detecting earthquakes of magnitude 3.0 and above in any part of the country. The continuous ground motion data from NCS-operated field stations is processed in near real time for rapid estimation of earthquake parameters, generation of ShakeMaps/intensity maps, and timely dissemination of earthquake information to Government authorities, stakeholders and the public. Funds for augmentation and maintenance of the National Seismological Network are under PRITHVI scheme of the Ministry of Earth Sciences (MoES). The funds utilized under Central scheme for network augmentation during the last three years are Rs.2.96 crores.

*****