GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 2922
TO BE ANSWERED ON WEDNESDAY, May 11, 2016

Seismic Tremors

2922. KUMARI SUSHMITA DEV:
SHRI HARISH MEENA:
SHRI MANSHANKAR NINAMA:
SHRI JYOTIRADITYA M. SCINDIA:
SHRI RAVINDRA KUMAR PANDEY:
SHRI SUSHIL KUMAR SINGH:
SHRI C. MAHENDRAN: SHRI PRAHLAD SINGH PATEL:
SHRI RAMESH BIDHURI:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) the details of seismic tremors reported during the last six months in the country along with their intensity, location wise and the loss of life and property reported therein;
(b) the details of claims of insurance/ compensation of earthquake victims lying pending, State-wise and the action taken/ being taken by the Government in this regard;
(c) the details of earthquake study centres and monitoring stations set up in the country, location and State-wise;
(d) the details of funds allocated and released for establishment of new earthquake study centres, monitoring stations and appointment of geologists, State/UT-wise; and
(e) whether the Government proposes to join hands with other countries in studying earthquakes and developing early warning systems and if so, the details thereof and if not, the reasons therefor?

ANSWER
MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTRY OF EARTH SCIENCES
(SHRI Y. S. CHOWDARY)

(a) The details of earthquakes detected and located in and around the country (covering the area bounded by 6°-38°N Latitude and 68°-98°E Longitude) by the National Seismological Network of National Centre for Seismology(NCS) from November 2015 to April 2016 is in Annexure-I.

During this period Tamenglong (Imphal) earthquake (04-01-2016) caused damaged to life and property in India.

Causalities (10) deaths, injured (302) and houses damaged (2240) were reported in Tamenglong / Manipur (Imphal) earthquake (4th Jan 2016) covering 13 Villages in Senapati, Tamenglong and Imphal.

(b) Assistance to the victims of Earthquake or any other natural hazard is dealt by the respective Relief Manuals of various state governments based on the ground reports submitted by the Deputy Commissioners. Government of Manipur already provided immediate assistance to the kin of lost lives, full/partial damaged houses etc.

(c) NCS, maintains a National Seismological Network (NSN) comprising of 84 (eighty four) permanent seismological field stations. Its state wise location is enclosed Annexure-II.

(d) During the FY 2015-16 an amount of Rs 18.21cr was allocated to the National Centre of Seismology (NCS) and expenditure incurred was about Rs.16.05Cr. During the FY 2016-17 an amount of Rs 24.36Cr is allocated to NCS.

In addition to permanent employees of NCS, a total of sixteen scientists on project basis are working in NCS. Details are as under:

- **Project Scientist B -6**
- **Project Scientist C-2**
- **Research Fellow-5**
- **Research Associate-3.**

(e) A pilot project on Earthquake Early Warning (EEW) system is already on implementation in Uttaranchal region of northern India. A successful EEW system can provide a lead time of about 5-60 seconds to Delhi, in case of a big earthquake originating in Himalaya.

Annexure-I

Details of earthquakes detected and located in and around the country (Covering the area bounded by 6°-38°N Latitude and 68°-98°E Longitude)by the National Seismological Network during last six months (November 2015 to April 2016)

Day Year	Mon	day	Origin-TIME (UTC) hr	min	sec	Latitude °N	Longitude °E	Depth (Km)	Magnitude (Richter scale)
2015	11	08	10	42	8.0	7.00	94.60	35	5.2
2015	11	08	10	53	31.0	6.80	94.60	35	5.0
2015	11	08	11	54	52.0	7.30	94.50	60	5.0
2015	11	08	13	24	3.0	7.50	94.50	35	5.2
2015	11	08	14	34	12.0	6.90	94.80	50	5.0
2015	11	08	14	47	8.0	7.00	94.60	50	4.9
2015	11	08	16	47	7.0	6.90	94.60	10	6.0
2015	11	08	16	59	26.0	7.10	94.60	10	5.6
2015	11	08	17	47	17.0	6.70	94.70	10	4.7
2015	11	08	18	48	47.0	6.60	94.60	10	4.9
2015	11	08	19	14	48.0	6.80	94.30	10	4.9
2015	11	09	06	12	24.0	6.50	94.80	10	5.1
2015	11	09	08	12	53.0	6.70	94.80	60	5.4
2015	11	13	07	44	33.0	29.80	80.20	10	3.0
2015	11	14	16	53	40.0	7.10	94.90	10	4.9
2015	11	18	00	59	10.0	36.50	70.50	184	5.0
2015	11	18	08	25	41.0	29.80	80.50	15	3.3
2015	11	18	14	31	21.0	34.00	74.70	10	3.1
2015	11	19	04	15	52.0	27.80	85.60	20	5.0
2015	11	22	18	16	2.0	36.50	71.60	80	6.0
2015	11	25	16	15	7.0	26.40	92.80	10	4.9
2015	11	27	08	34	2.0	22.50	94.70	47	5.2
2015	11	27	11	40	37.0	34.90	73.80	67	4.8
2015	11	29	02	47	38.0	30.60	79.60	10	4.0
2015	12	06	12	35	17.0	28.80	76.80	5	2.9
2015	12	13	18	24	25.0	26.20	92.30	36	3.3
2015	12	15	02	35	14.0	24.20	86.60	10	4.2
2015	12	16	04	48	16.0	13.50	94.00	10	4.8
2015	12	18	22	16	55.0	29.30	81.70	10	5.4
2015	12	23	13	27	12.0	25.80	94.70	48	4.2
2015	12	25	19	14	46.0	36.50	71.20	186	6.5
2015	12	27	04	42	50.0	25.40	91.90	5	2.7
2015	12	29	15	50	22.0	32.20	79.30	10	2.9
2015	12	30	17	24	54.0	25.10	91.10	10	3.7
2015	12	31	03	23	22.0	7.20	94.40	10	4.5
2016	01	01	06	54	35.0	29.70	80.70	10	3.0
2016	01	02	08	37	19.0	36.50	70.90	170	5.8
2016	01	03	23	05	16.0	24.80	93.50	59	6.7
2016	01	04	03	57	46.0	24.90	93.40	20	3.6
2016	01	04	09	00	2.0	24.80	93.50	20	3.4
2016	01	06	10	25	8.0	25.20	93.20	40	4.0
2016	01	07	13	42	58.0	27.70	93.30	32	4.5
2016	01	08	09	07	10.0	36.60	71.00	225	5.5
2016	01	12	20	04	58.0	36.60	71.10	220	5.8
2016	01	15	00	25	20.0	25.20	92.70	10	3.0
2016	01	15	19	24	52.0	11.90	92.50	10	4.0
2016	01	18	00	52	40.0	26.20	92.60	10	3.5

2016	01	21	19	22	43.0	28.10	85.10	10	4.8
2016	01	23	04	54	11.0	36.30	71.50	50	5.1
2016	01	24	17	09	26.0	27.00	92.20	10	3.2
2016	01	26	23	19	9.0	36.80	70.00	250	5.4
2016	01	28	22	47	8.0	27.10	75.50	10	3.8
2016	02	01	19	48	37.0	23.80	93.80	111	3.8
2016	02	01	23	49	30.0	26.40	93.40	33	3.7
2016	02	02	16	14	0.0	25.50	91.90	10	2.5
2016	02	04	07	10	27.0	32.70	75.70	10	4.1
2016	02	04	15	30	51.0	14.40	93.20	10	4.8
2016	02	05	16	20	9.0	27.80	85.40	10	5.2
2016	02	08	11	05	56.0	24.70	94.60	118	3.8
2016	02	09	15	13	47.0	32.80	76.40	10	4.4
2016	02	10	22	45	27.0	25.60	92.10	6	2.7
2016	02	15	16	35	29.0	30.20	79.60	10	3.5
2016	02	16	23	06	55.0	26.30	93.30	10	4.4
2016	02	21	03	39	42.0	7.10	92.10	50	4.5
2016	02	21	07	50	56.0	30.90	78.30	5	3.5
2016	02	21	09	12	8.0	36.50	70.90	177	5.7
2016	02	21	16	32	7.0	36.30	78.40	50	4.4
2016	02	21	18	10	0.0	27.80	84.60	30	5.0
2016	02	22	18	20	58.0	7.50	92.00	20	4.8
2016	02	24	02	06	51.0	24.90	72.30	26	3.0
2016	02	24	09	22	17.0	27.60	85.60	19	4.5
2016	02	27	00	31	3.0	13.60	94.00	60	4.6
2016	03	02	04	03	58.0	26.50	95.20	10	4.0
2016	03	02	06	35	14.0	29.90	70.10	10	5.0
2016	03	06	00	50	19.0	24.50	92.80	30	3.5
2016	03	06	08	51	18.0	24.70	92.90	10	3.3
2016	03	10	09	46	59.0	25.60	91.90	8	3.0
2016	03	10	09	50	32.0	25.60	91.90	9	3.2
2016	03	12	16	15	16.0	26.70	89.40	21	3.8
2016	03	13	05	15	36.0	27.80	84.90	25	3.8
2016	03	13	10	30	4.0	26.50	92.30	10	4.3
2016	03	14	21	27	40.0	27.20	86.20	10	3.9
2016	03	17	16	47	4.0	34.20	77.90	10	4.5
2016	03	18	03	37	33.0	25.40	73.40	33	3.5
2016	03	21	02	19	41.0	25.40	92.50	10	3.0
2016	03	22	11	49	12.0	26.10	95.30	49	3.7
2016	03	28	15	42	42.0	24.10	93.10	5	3.7
2016	03	30	02	04	11.0	32.50	76.00	15	3.8
2016	03	30	12	26	42.0	28.00	85.70	10	4.4
2016	04	03	20	31	39.0	24.40	94.30	120	4.0
2016	04	04	04	31	26.0	27.80	86.20	10	4.3
2016	04	05	07	42	27.0	25.90	90.40	10	5.4
2016	04	07	20	03	19.0	27.00	75.10	15	3.5
2016	04	08	14	30	43.0	36.90	71.20	78	5.0
2016	04	09	13	20	14.0	27.60	85.20	10	4.5
2016	04	10	10	28	57.0	36.40	71.20	190	6.8
2016	04	11	10	36	13.0	29.80	80.10	10	3.7
2016	04	12	11	55	48.0	26.50	90.80	10	3.8
2016	04	12	14	41	53.0	27.50	86.10	10	4.5
2016	04	13	03	56	54.0	24.90	94.00	60	4.6
2016	04	13	13	55	13.0	23.00	94.90	134	6.8
2016	04	14	05	41	55.0	23.80	94.00	80	4.5
2016	04	14	16	23	40.0	23.30	93.20	5	3.5
2016	04	19	01	14	46.0	24.80	92.70	10	3.7
2016	04	19	20	32	58.0	10.30	93.80	10	5.1
2016	04	23	20	31	1.0	28.70	85.10	150	4.6
2016	04	24	21	43	9.0	37.00	71.70	100	5.2

Annexure-II

National Seismological Network (Field stations)

S. No.	Name of Station	State	Latitude (Deg:Min)	Longitude (Deg:Min)
1	Ziro	Arunachal Pradesh	27:31.59N	93:50.99E
2	Itanagar	Arunachal Pradesh	27:08.68N	93:43.32E
3	Tawang	Arunachal Pradesh	27:35.64N	91:52.02E
4	Pasighat	Arunachal Pradesh	28:03.66N	95.19.56E
5	Dhubri	Assam	26:01.21N	89:59.73E
6	Jorhat	Assam	26:44.58N	94:15.08E
7	Silchar	Assam	24:46.88N	92:48.17E
8	Lekhapani	Assam	27:19.98N	95:50.76E
9	Tezpur	Assam	26:37.01N	92:47.93E
10	Guwahati	Assam	26:11.60N	91:41.48E
11	Dibrugarh	Assam	27:28.06N	94:54.67E
12	Vijayawada	Andhra Pradesh	16:31.00N	80:39.00E
13	Visakhapatnam	Andhra Pradesh	17:43.26N	83:19.72E
14	Hyderabad	Andhra Pradesh	17:25.18N	78:33.11E
15	Campbell Bay	A&N Islands	07:01.15N	93:55.59E
16	Portblair	A& N Islands	11:39.34N	92:44.64E
17	Diglipur	A&N Islands	13:10.67N	92:55.83E
18	Valmikinagar	Bihar	27:19.00N	83:52.00E
19	Bilaspur	Chhattisgarh	22:07.75N	82:07.91E
20	Delhi	NCT of Delhi	28:41.00N	77:13.00E
21	Lodi Road	NCT of Delhi	28:35.00N	77:13.00E
22	Ayanagar	NCT of Delhi	28:28.93N	77:07.60E
23	Goa	Goa	15:29.50N	73:49.48E
24	Bhavnagar	Gujarat	21:45.00N	72:08.60E
25	Bhuj	Gujarat	23:15.24N	69:39.24E
26	Bahadurgarh	Haryana	28:41.26N	76:56.33E
27	Sohna	Haryana	28:14.70N	77:03.78E
28	Kurukshetra	Haryana	29:57.69N	76:49.24E
29	Rohtak	Haryana	29:02.00N	76:24.86E
30	Kundal	Haryana	28:08.65N	76:29.35E
31	Kalpa	Himachal Pradesh	31:32.77N	78.15.60E
32	Shimla	Himachal Pradesh	31:07.70N	77:10.00E

33	Dharmshala	Himachal Pradesh	32:14.86N	76:18.40E
34	Jammu	Jammu & Kashmir	32:43.00N	74:54.00E
35	Srinagar	Jammu & Kashmir	34:06.00N	74:51.00E
36	Bokaro	Jharkhand	23:47.69N	85:53.15E
37	Sahibganj	Jharkhand	25:13.00N	87:40.00E
38	Mangalore	Karnataka	12:56.50N	74:49.36E
39	Thiruvananthapuram	Kerala	8:30.48N	76:57.51E
40	Minicoy	Lakshadweep Is.	8:16.89N	73:03.59E
41	Bhopal	Madhya Pradesh	23:14.46N	77:25.47E
42	Karad	Maharashtra	17:18.45N	74:11.00E
43	Akola	Maharashtra	20:42.17N	77:00.92E
44	Latur	Maharashtra	18:24.98N	76:33.57E
45	Mumbai	Maharashtra	18:53.75N	72:48.76E
46	Nagpur	Maharashtra	21:06.11N	79:03.73E
47	Pune	Maharashtra	18:31.77N	73:50.95E
48	Imphal	Manipur	24:49.8 N	93:56.79E
49	Tura	Meghalaya	25:31.01N	90:13.45E
50	Shillong	Meghalaya	25:34.01N	91:51.36E
51	Aizwal	Mizoram	23:44.30N	92:41.38E
52	Saiha	Mizoram	22:30.00N	93:00.00E
53	Mokokchung	Nagaland	26:19.26N	94:30.94E
54	Kohima	Nagaland	25:43.22N	94:06.48E
55	Bhubaneshwar	Orissa	20:17.73N	85:48.35E
56	Rayagarha	Orissa	19:14.83N	83:27.44E
57	Jasuguda	Orissa	21:45.66N	83:46.38E
58	Bhakra	Punjab	31:25.00N	76:25.00E
59	Thein Dam	Punjab	32:26.00N	75:43.00E
60	Khetri	Rajasthan	28:04.44N	75:48.38E
61	Jaisalmer	Rajasthan	26:55.46N	70:54.18E
62	Ajmer	Rajasthan	26:28.75N	74:38.59E
63	Gangtok (Tadong)	Sikkim	27:19.15N	88:36.11E
64	Chennai	Tamilnadu	13:04.08N	80:14.78E
65	Kodaikanal	Tamilnadu	10:14.00N	77:28.00E
66	Salem	Tamilnadu	11:39.00N	78:12.00E
67	Agartala	Tripura	23:53.33N	91:14.77E
68	Belonia	Tripura	23:14.91N	91:26.83E
69	Allahabad	Uttar Pradesh	25:18.54N	81:48.51E

70	Behraich	Uttar Pradesh	27:34.00N	81:35.00E
71	Jhansi	Uttar Pradesh	25:27.95N	78:32.37E
72	Varanasi	Uttar Pradesh	25:18.00N	83:01.00E
73	Bisrakh	Uttar Pradesh	28:34.26N	77:26.34E
74	Agra	Uttar Pradesh	27:13.83N	77:56.63E
75	Ausora	Uttar Pradesh	28:45.35N	77:46.33E
76	Rataul	Uttar Pradesh	28:49.93N	77:20.51E
77	Onchagaon	Uttar Pradesh	28:18.60N	77:54.60E
78	Joshimath	Uttarakhand	30:33.35N	79:33.49E
79	Kalagarh	Uttarakhand	29:30.37N	78:45.22E
80	Dehradun	Uttarakhand	30:19.35N	78: 3.33E
81	Lohaghat	Uttarakhand	29:25.00N	80:06.00E
82	Pithoragarh	Uttarakhand	29:35.00N	80:13.00E
83	Siliguri	West Bengal	26:42.00N	88:25.00E
84	Kolkata	West Bengal	22:32.35N	88:19.84E