

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 1157
TO BE ANSWERED ON WEDNESDAY, 14TH DECEMBER, 2022**

NATURAL CALAMITIES

+1157. SHRI LALLU SINGH:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether it is a fact that the losses due to natural calamities have been increasing in the last few years;
- (b) if so, the details thereof;
- (c) whether it is also true that many people lost their lives due to lightening in many States;
- (d) if so, the details thereof and the reasons therefor; and
- (e) the steps being taken by the Government to prevent these incidents occurring due to climate change?

ANSWER

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

- (a)-(d) The details of the loss of lives due to various natural calamities, including lightning are given as Annexure-I. The data has been provided by National Crime Records Bureau (NCRB).
- (e) IMD issue forecasts and warnings related to extreme weather events and share the same with Disaster Management Authorities as well as general public through various platforms for necessary preparedness and to support mitigation measures.

IMD follows a seamless forecasting strategy. The long-range forecasts (for the whole season) issued are being followed with extended range forecast issued on every Thursday with a validity period of four weeks. To follow up the extended range forecast, IMD issues short to medium range forecast and warnings daily valid up to next five days with an outlook for subsequent two days. The short to medium range forecast and warning at district and station level are issued by state level Meteorological Centres (MCs)/Regional Meteorological Centres (RMCs) with a validity of next five days and are updated twice a day. The short to medium range forecast is followed by very short range forecast of severe weather up to three hours (nowcast) for all the districts and 1171 cities and towns. These nowcasts are updated every three hours.

Forecast is issued for 36 meteorological sub-divisions from National Weather Forecasting Centre, IMD HQ and is updated four times a day. The forecasts and nowcasts are issued at District Level and Station Level by State Level Meteorological Centres and Regional Meteorological Centres.

IMD is implementing Impact Based Forecast (IBF) which gives details of what the weather will do rather than what the weather will be. It contains the details of impacts expected from the severe weather elements and guidelines to general public about do's and don'ts while getting exposed to severe weather. These guidelines are finalised in collaboration with National Disaster Management Authority (NDMA) and is already implemented successfully for cyclone, heat wave, thunderstorm and heavy rainfall.

While issuing the warning suitable colour code is used to bring out the impact of the severe weather expected and to signal the Disaster Management about the course of action to be taken with respect to impending disaster weather event. Green color corresponds to no warning hence no action is needed, yellow color corresponds to be watchful and get updated information, orange color to be alert and be prepared to take action whereas red color signals to take action.

The forecasts and warnings are disseminated to users including disaster managers by e-mail on regular basis. In addition to this, WhatsApp groups are created including disaster managers and IMD officials and forecast & warnings are disseminated through this facility also. The forecast & Warnings are uploaded in social media & website for reference by all concerned. The nowcasts related to Severe Weathers are disseminated through SMS also to the registered users.

In addition to this, as and when the situation arises, Press Releases are issued by IMD and the same are also disseminated by all the platforms mentioned above.

IMD has taken various initiatives in recent years for improvement in dissemination of weather forecast and warning services based on latest tools and technologies. In 2020, IMD has launched seven of its services (Current Weather, Nowcast, City Forecast, Rainfall Information, Tourism Forecast, Warnings and Cyclone) with 'UMANG' mobile App for use by public. Moreover, in 2020, IMD had developed mobile App 'MAUSAM' for weather forecasting, 'Meghdoot' for Agromet advisory dissemination and 'Damini' for lightning alert.

State/UT-wise & Cause-wise Number of Accidental Deaths due to Forces of Nature during 2018-2020

SN	State/UT	Avalanche			Exposure to cold			Cyclone		
		2018	2019	2020	2018	2019	2020	2018	2019	2020
1	Andhra Pradesh	0	0	0	0	0	1	7	0	3
2	Arunachal Pradesh	0	0	0	0	1	0	1	0	0
3	Assam	0	0	0	0	0	0	0	0	2
4	Bihar	0	0	0	192	131	136	3	0	0
5	Chhattisgarh	0	0	0	12	8	5	0	0	0
6	Goa	0	0	0	0	0	0	0	0	0
7	Gujarat	0	0	0	5	13	23	0	3	0
8	Haryana	0	0	0	49	62	48	0	0	0
9	Himachal Pradesh	0	6	2	13	13	16	0	0	0
10	Jharkhand	0	0	0	75	119	92	3	0	0
11	Karnataka	0	0	0	0	0	0	0	1	2
12	Kerala	0	0	0	0	0	0	1	0	0
13	Madhya Pradesh	0	0	0	18	21	19	0	0	0
14	Maharashtra	0	0	0	26	22	8	1	0	2
15	Manipur	0	0	0	0	0	0	0	3	0
16	Meghalaya	0	0	0	0	1	0	0	0	0
17	Mizoram	0	0	0	0	0	0	0	0	0
18	Nagaland	0	0	0	0	0	0	0	0	0
19	Odisha	0	0	0	2	1	7	6	14	0
20	Punjab	0	0	0	83	141	194	0	1	0
21	Rajasthan	0	0	0	27	49	43	0	0	0
22	Sikkim	1	1	3	1	3	1	0	0	0
23	Tamil Nadu	0	0	0	0	0	0	95	0	0
24	Telangana	0	0	0	0	0	0	0	0	0
25	Tripura	0	0	0	0	1	1	2	0	0
26	Uttar Pradesh	0	0	0	196	190	167	5	11	0
27	Uttarakhand	0	0	0	20	18	11	0	0	4
28	West Bengal	0	0	0	0	1	0	0	0	22
	TOTAL STATE(S)	1	7	5	719	795	772	124	33	35
29	A & N Islands	0	0	0	0	0	0	0	0	0
30	Chandigarh	0	0	0	0	0	1	0	0	0
31	D&N Haveli and Daman&Diu @ +	0	0	0	0	0	0	0	0	0
32	Delhi UT	0	0	0	0	0	1	0	0	0
33	Jammu & Kashmir @ *	4	28	8	38	1	1	1	0	2
34	Ladakh @			0			1			0
35	Lakshadweep	0	0	0	0	0	0	0	0	0
36	Puducherry	0	0	0	0	0	0	0	0	0
	TOTAL UT(S)	4	28	8	38	1	4	1	0	2
	TOTAL (ALL INDIA)	5	35	13	757	796	776	125	33	37

As per data provided by states/UTs

* Combined data of erstwhile D & N HAVELI AND DAMAN & DIU UT during 2018-2019

** Data of erstwhile JAMMU & KASHMIR State Including LADAKH during 2018-2019

@ Data of newly created Union territory

State/UT-wise & Cause-wise Number of Accidental Deaths due to Forces of Nature during 2018-2020

SN	State/UT	Tornado			Tsunami			Earthquake		
		2018	2019	2020	2018	2019	2020	2018	2019	2020
1	Andhra Pradesh	2	1	0	0	0	0	0	0	0
2	Arunachal Pradesh	0	0	0	0	0	0	0	0	0
3	Assam	0	0	0	0	0	0	0	0	0
4	Bihar	0	0	0	0	0	0	0	0	0
5	Chhattisgarh	0	1	0	0	0	0	0	0	0
6	Goa	0	0	0	0	0	0	0	0	0
7	Gujarat	1	4	2	0	0	0	0	0	0
8	Haryana	0	0	0	0	0	0	0	0	0
9	Himachal Pradesh	0	0	0	0	0	0	0	0	0
10	Jharkhand	0	0	0	0	0	0	0	0	0
11	Karnataka	0	0	0	0	0	0	0	0	0
12	Kerala	0	0	0	0	0	0	0	0	0
13	Madhya Pradesh	3	1	2	0	0	0	0	0	0
14	Maharashtra	1	0	0	0	0	0	0	1	0
15	Manipur	0	0	0	0	0	0	0	0	0
16	Meghalaya	0	0	0	0	0	0	0	0	0
17	Mizoram	0	0	0	0	0	0	0	0	0
18	Nagaland	0	0	0	0	0	0	0	0	0
19	Odisha	0	0	0	0	0	0	0	0	0
20	Punjab	1	0	0	0	0	0	0	0	0
21	Rajasthan	0	8	10	0	0	0	0	0	0
22	Sikkim	0	0	0	0	0	0	0	0	0
23	Tamil Nadu	0	0	0	0	0	0	0	0	0
24	Telangana	0	0	0	0	0	0	0	0	0
25	Tripura	0	0	2	0	0	0	0	0	0
26	Uttar Pradesh	28	0	0	0	0	0	0	0	0
27	Uttarakhand	0	0	0	0	0	0	0	0	0
28	West Bengal	0	0	0	0	0	0	0	0	0
	TOTAL STATE(S)	36	15	16	0	0	0	0	1	0
29	A & N Islands	0	0	0	0	0	0	0	0	0
30	Chandigarh	0	0	0	0	0	0	0	0	0
31	D&N Haveli and Daman&Diu @ +	0	0	0	0	0	0	0	0	0
32	Delhi UT	0	0	0	0	0	0	0	0	0
33	Jammu & Kashmir @ *	0	0	0	0	0	0	0	0	0
34	Ladakh @			0			0			0
35	Lakshadweep	0	0	0	0	0	0	0	0	0
36	Puducherry	0	0	0	0	0	0	0	0	0
	TOTAL UT(S)	0	0	0	0	0	0	0	0	0
	TOTAL (ALL INDIA)	36	15	16	0	0	0	0	1	0

As per data provided by states/UTs

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State/UT-wise & Cause-wise Number of Accidental Deaths due to Forces of Nature during 2018-2020

SN	State/UT	Epidemic			Flood			HeatSun Stroke		
		2018	2019	2020	2018	2019	2020	2018	2019	2020
1	Andhra Pradesh	0	0	0	0	1	4	97	128	50
2	Arunachal Pradesh	0	0	0	6	0	0	0	0	0
3	Assam	0	0	0	15	100	18	0	3	0
4	Bihar	0	1	0	231	480	786	64	215	53
5	Chhattisgarh	0	0	0	10	10	14	1	16	3
6	Goa	0	0	0	0	0	0	0	0	0
7	Gujarat	0	0	0	4	16	35	31	27	12
8	Haryana	0	0	0	0	0	0	56	46	23
9	Himachal Pradesh	0	0	0	2	6	1	0	0	0
10	Jharkhand	0	0	0	7	4	1	42	88	23
11	Karnataka	0	0	0	13	38	11	0	4	1
12	Kerala	0	0	0	125	32	0	1	3	0
13	Madhya Pradesh	0	0	0	8	27	11	15	33	7
14	Maharashtra	0	0	0	51	190	64	128	159	56
15	Manipur	0	0	0	0	0	0	0	0	0
16	Meghalaya	0	0	0	1	0	1	4	0	0
17	Mizoram	0	0	0	0	0	0	0	0	0
18	Nagaland	0	0	0	0	0	0	0	0	0
19	Odisha	0	0	0	2	0	0	40	84	13
20	Punjab	0	0	0	0	1	0	38	90	110
21	Rajasthan	0	0	0	0	3	0	43	54	23
22	Sikkim	0	0	0	0	0	0	0	1	0
23	Tamil Nadu	0	0	0	0	3	0	0	0	0
24	Telangana	0	0	0	0	0	8	107	156	98
25	Tripura	0	0	0	1	0	0	1	1	2
26	Uttar Pradesh	0	0	0	24	28	0	176	117	50
27	Uttarakhand	0	0	0	0	9	4	0	0	0
28	West Bengal	0	0	0	0	0	0	46	49	6
	TOTAL STATE(S)	0	1	0	500	948	958	890	1274	530
29	A & N Islands	0	0	0	0	0	0	0	0	0
30	Chandigarh	0	0	0	0	0	0	0	0	0
31	D&N Haveli and Daman&Diu @ +	0	0	0	0	0	0	0	0	0
32	Delhi UT	0	0	0	0	0	0	0	0	0
33	Jammu & Kashmir @ *	0	0	0	0	0	1	0	0	0
34	Ladakh @			0			0			0
35	Lakshadweep	0	0	0	0	0	0	0	0	0
36	Puducherry	0	0	0	0	0	0	0	0	0
	TOTAL UT(S)	0	0	0	0	0	1	0	0	0
	TOTAL (ALL INDIA)	0	1	0	500	948	959	890	1274	530

As per data provided by states/UTs

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State/UT-wise & Cause-wise Number of Accidental Deaths due to Forces of Nature during 2018-2020

SN	State/UT	Landslide			Lightning			Torrential Rain		
		2018	2019	2020	2018	2019	2020	2018	2019	2020
1	Andhra Pradesh	1	13	6	74	109	93	0	0	7
2	Arunachal Pradesh	8	5	9	0	0	0	0	0	0
3	Assam	3	5	15	36	28	14	0	0	1
4	Bihar	17	25	0	177	400	436	59	13	1
5	Chhattisgarh	0	1	0	213	212	246	0	0	0
6	Goa	0	0	1	0	2	0	0	0	0
7	Gujarat	7	9	0	13	64	78	0	1	0
8	Haryana	0	0	0	6	11	3	0	0	0
9	Himachal Pradesh	19	12	28	8	1	5	16	1	0
10	Jharkhand	16	6	2	235	334	336	8	3	10
11	Karnataka	22	21	46	126	99	75	3	6	2
12	Kerala	135	72	70	25	15	8	5	2	0
13	Madhya Pradesh	12	13	14	381	400	429	1	1	1
14	Maharashtra	12	1	0	149	189	182	3	5	5
15	Manipur	9	0	0	1	0	0	0	0	0
16	Meghalaya	8	4	7	5	7	8	0	0	6
17	Mizoram	4	3	4	1	1	0	0	0	0
18	Nagaland	2	0	3	0	0	1	0	0	0
19	Odisha	37	18	15	299	271	275	0	0	0
20	Punjab	0	0	3	4	7	8	0	0	0
21	Rajasthan	1	5	0	43	88	48	0	3	3
22	Sikkim	0	1	11	0	0	0	0	0	0
23	Tamil Nadu	2	5	0	82	57	64	0	5	1
24	Telangana	0	0	0	68	96	64	0	0	0
25	Tripura	11	4	0	10	10	5	0	4	0
26	Uttar Pradesh	9	0	4	220	321	304	3	17	0
27	Uttarakhand	42	30	44	2	2	10	3	7	0
28	West Bengal	9	8	7	179	147	170	0	1	0
	TOTAL STATE(S)	386	261	289	2357	2871	2862	101	69	37
29	A & N Islands	0	1	0	0	1	0	0	0	0
30	Chandigarh	0	0	0	0	2	0	0	0	0
31	D&N Haveli and Daman&Diu @ +	0	0	0	0	1	0	0	0	5
32	Delhi UT	0	0	0	0	0	0	0	0	1
33	Jammu & Kashmir @ *	18	2	4	0	1	0	0	0	0
34	Ladakh @			2			0			0
35	Lakshadweep	0	0	0	0	0	0	0	0	0
36	Puducherry	0	0	0	0	0	0	0	0	0
	TOTAL UT(S)	18	3	6	0	5	0	0	0	6
	TOTAL (ALL INDIA)	404	264	295	2357	2876	2862	101	69	43

As per data provided by states/UTs

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'@' Data of newly created Union territory

State/UT-wise & Cause-wise Number of Accidental Deaths due to Forces of Nature during 2018-2020

SN	State/UT	Torrential Rain			Other Natural Causes			Grand Total		
		2018	2019	2020	2018	2019	2020	2018	2019	2020
1	Andhra Pradesh	0	0	0	29	5	0	210	257	164
2	Arunachal Pradesh	2	0	0	18	1	27	35	7	36
3	Assam	0	0	0	171	0	0	225	136	50
4	Bihar	3	0	0	336	256	25	1082	1521	1437
5	Chhattisgarh	1	0	1	1	6	1	238	254	270
6	Goa	0	0	0	0	1	2	0	3	3
7	Gujarat	0	0	0	0	3	5	61	140	155
8	Haryana	0	0	0	71	15	0	182	134	74
9	Himachal Pradesh	0	0	2	3	0	0	61	39	54
10	Jharkhand	0	0	0	9	2	11	395	556	475
11	Karnataka	0	0	0	0	0	0	164	169	137
12	Kerala	0	0	0	3	16	0	295	140	78
13	Madhya Pradesh	0	4	0	34	127	78	472	627	561
14	Maharashtra	2	1	0	10	5	142	383	573	459
15	Manipur	0	2	0	5	0	0	15	5	0
16	Meghalaya	0	0	0	1	0	0	19	12	22
17	Mizoram	1	0	0	0	0	0	6	4	4
18	Nagaland	0	0	0	0	0	8	2	0	12
19	Odisha	0	0	0	810	1078	1118	1196	1466	1428
20	Punjab	0	0	0	0	0	10	126	240	325
21	Rajasthan	0	0	0	0	0	0	114	210	127
22	Sikkim	0	0	0	2	0	4	4	6	19
23	Tamil Nadu	0	0	4	0	0	2	179	70	71
24	Telangana	0	0	0	0	0	0	175	252	170
25	Tripura	0	0	0	0	0	0	25	20	10
26	Uttar Pradesh	1	0	0	90	108	0	752	792	525
27	Uttarakhand	0	2	0	2	0	0	69	68	73
28	West Bengal	0	0	0	41	170	394	275	376	599
	TOTAL STATE(S)	10	9	7	1636	1793	1827	6760	8077	7338
29	A & N Islands	0	0	0	0	0	0	0	2	0
30	Chandigarh	0	0	0	0	0	2	0	2	3
31	D&N Haveli and Daman&Diu @ +	0	0	0	0	0	0	0	1	5
32	Delhi UT	0	0	0	0	0	0	0	0	2
33	Jammu & Kashmir @ *	0	0	0	70	31	32	131	63	48
34	Ladakh @			6	0	0	0			9
35	Lakshadweep	0	0	0	0	0	0	0	0	0
36	Puducherry	0	0	0	0	0	0	0	0	0
	TOTAL UT(S)	0	0	6	70	31	34	131	68	67
	TOTAL (ALL INDIA)	10	9	13	1706	1824	1861	6891	8145	7405

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