

GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI,
DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

LOK SABHA

STARRED QUESTION NO. *62

ANSWERED ON 21.07.2022

LOSS DUE TO FLOODS

*62 SHRI PRADYUT BORDOLOI

Will the Minister of JAL SHAKTI be pleased to state:

- (a) the details of lives lost, total number of people displaced along with its percentage share of total population and financial loss incurred due to floods in the country during the last three years and the current year, State/UT-wise;
- (b) the details of the number of flood relief camps and percentage share of affected population accommodated in the said camps during the last three years and the current year, State-wise;
- (c) the details of the extent of riverine area eroded in Assam due to floods; and
- (d) whether the Government has developed any specific policy for improving disaster and climate resilience of river islands in the North Eastern Region and if so, the details thereof?

ANSWER

THE MINISTER OF JAL SHAKTI

(SHRI GAJENDRA SINGH SHEKHAWAT)

(a) to (d) A statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (d) OF STARRED QUESTION NO. 62 TO BE ANSWERED IN LOK SABHA ON 21.07.2022 REGARDING “LOSS DUE TO FLOODS”.

(a) & (b) The data on damages due to heavy rain and floods is compiled by Central Water Commission (CWC) after receipt of confirmation from respective States. The statement showing damage due to floods/heavy in the country during the last three years (2018-2020), State/UT-wise is at Annexure – I. The primary responsibility of disaster management rests with the State Government. The Central Government supplements the efforts of the State Government and provides requisite logistics and financial support. For providing relief in case of 12 notified natural disasters including floods, State Disaster Response Fund (SDRF) is placed at the disposal of the State Government. Additional financial assistance is extended from National Disaster Response Fund (NDRF) as per established procedure in case of disaster of severe in nature. Under the extant guidelines of SDRF and NDRF, relief is provided to the affected people for the damages caused due to notified natural calamities and not for compensation of loss suffered/claimed. The State-wise data about details of flood relief camps and percentage share of affected population accommodated therein is not maintained centrally.

(c) Erosion, movement and deposition of sediment in a river are natural regulating functions of a river. Rivers tend to maintain a balance between the silt load carried & silt load deposited, maintaining a river regime. Soil erosion caused by heavy floods is a matter of concern as it leads to several associated problems like changes in river course, causing loss of land, etc. The Government of India has been making continuous efforts to assist the State Governments in effective flood management and erosion control. Morphological studies have been carried out for major rivers like Ganga, Sharda, Rapti, Kosi, Bagmati, Subansari, Krishna, Mahanadi Mahanada, etc. These studies aid in finding the vulnerable spots for bank erosion/deposition, aggradations/ degradation etc. As per the morphological study of Brahmaputra river conducted by CWC through consultancy from IIT Guwahati, it has been estimated that in the Brahmaputra river erosion of 252.6 sq km and deposition of 118.6 sq km occurred between 2003-05 and 2008-11.

(d) Flood management including erosion control falls within the purview of the States. Flood management and anti-erosion schemes are formulated and implemented by concerned State Governments as per their priority. The Union Government supplements the efforts of the States by providing technical guidance and also promotional financial assistance for management of floods in critical areas. Flood protection and flood management measures are broadly classified as under-

(i) Structural Measures - The structural measures for flood control which bring relief to the flood prone areas by reducing flood flows and thereby reducing the flood levels.

(ii) Non-Structural Measures- Facilitating timely evacuation of the people and shifting of their movable property to safer grounds by having advance warning of incoming flood through setting up a flood forecasting system. Discouraging creation of valuable assets/settlement of the people in the areas subject to frequent flooding i.e. enforcing flood plain zoning regulation.

Integrated flood approach aims at adopting judicious mix of structural and non-structural measures to provide a reasonable degree of protection against flood damages at economic cost .

To strengthen the structural measures of flood management, Government of India had implemented during XI & XII Plan Flood Management Programme (FMP) for providing Central Assistance to States for works related to river management, flood control, anti-erosion, drainage development, anti-sea erosion, etc. which subsequently continued as a component of "Flood Management and Border Areas Programme" (FMBAP) for the period from 2017-18 to 2020-21 and was further extended up to September 2022. So far, Central Assistance amounting to Rs. 6,686.79 crore has been released to Union Territories/State Government under this programme since inception. In North Eastern States, Central assistance released under FMP component so far is Rs. 1,865.16 crore.

Brahmaputra Board has executed flood management work of Majuli Island and Dholla Hathuguli. Details of works completed under the project named "Protection of Majuli Island from flood and erosion" and "Avulsion of Dholla Hatighuli" by Brahmaputra Board are at Annexure-II

For non structural measures, CWC is the nodal organisation entrusted with the task of flood forecasting and early flood warnings in the country. Presently, CWC issues flood forecasts for 331 forecasting stations (199 river level forecast stations & 132 dam/ barrage inflow forecast stations). These stations cover 20 major river basins in 23 States and 2 Union Territories. In order to provide more lead time to the local authorities to plan evacuation of people and take other remedial measures, CWC has recently developed basin wise flood forecasting model for 5 days' advance flood forecast advisory at identified flood forecasting and inflow forecasting stations.

**ANNEXURE REFERRED TO IN REPLY TO PART (a) & (b) OF STARRED QUESTION NO. 62
TO BE ANSWERED IN LOK SABHA ON 21.07.2022 REGARDING “LOSS DUE TO FLOODS”**

**INDIA
STATEMENT SHOWING STATE-WISE FLOOD DAMAGE DURING 2018**

Sl No.	Name of State	Area affected in	Population affected in	Damage to Crops		Damage to Houses		Cattle lost	Human lives lost	Damage to public utilities	Total damages crops, house, & public utilities
		Mha	Million	Area mha	Value in RsCrore	Nos.	Value in Rs Crore	Nos.	Nos.	Value in RsCrore	in Rs.Crore
1	2	3	4	5	6	7	8	9	10	11	12
1	ANDHRA PRADESH	0.170	1.910	0.170	237.480	51849	243.910	1259	22	3205.781	3687.171
2	ARUNACHAL PRADESH	0.743	NR	0.743	462.915	1647	589.949	47	33	860.963	1913.827
3	ASSAM	0.043	1.322	0.031	23.490	102737	84.010	122	53	2373.480	2480.980
4	BIHAR	0.034	0.150	0.001	5.137	1074	0.413	0.000	1.000	0.010	5.560
5	CHATTISGARH	0.005	0.194	0.004	12.246	10831	4.140	183	135	25.304	41.689
6	GOA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
7	GUJARAT	2.378	18.600	0.054	47.820	2635	2.068	212	57	68.160	118.048
8	HARYANA	0.079	0.000	0.079	88.446	54	0.580	0	3	0.000	89.026
9	HIMACHAL PRADESH	0.006	6.865	0.411	12.570	6023	43.030	1285	343	10.300	65.900
10	JAMMU & KASHMIR	NR	NR	NR	NR	17	NR	38	6	NR	NR
11	JHARKHAND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5	0.200	0.200
12	KARNATAKA	0.328	0.350	0.232	2220.700	14955	367.510	1207	215	2032.570	4620.780
13	KERALA	3.150	5.412	0.087	168.480	324386	998.131	47953	450	2154.149	3320.760
14	MADHYA PRAADESH	Nil	Nil	Nil	Nil	315	1.670	36	31	Nil	1.670
15	MAHARASHTRA	NR	NR	NR	NR	NR	NR	65	68	NR	NR
16	MANIPUR	0.005	0.127	0.005	NR	17846	NR	400	9	NR	NR
17	MEGHALAYA	0.000	0.000	0.000	0.038	0	0.029	0	0	0.000	0.066
18	MIZORAM	NR	NR	0.000	NR	987	NR	3	11	NR	NR
19	NAGALAND	0.002	0.261	0.002	NR	5209	NR	794	13	NR	NR
20	ODISHA	0.033	0.624	0.026	29.020	43360	23.980	164	21	246.840	299.840
21	PUNJAB	0.057	NR	0.057	120.410	1477	4.110	29	26	0.000	124.520
22	RAJASTHAN	0.002	0.017	0.002	2.200	2159	2.160	341	26	27.368	31.728
23	SIKKIM	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
24	TAMILNADU	0.191	0.560	0.191	0.000	220000	0.000	1040	52	0.000	3500.000
25	TRIPURA	0.004	0.250	0.025	24.282	40897	115.945	3905	22	805.950	946.178
26	UTTAR PRADESH	0.445	0.592	0.383	230.364	28063	13.724	149	105	303.336	547.423
27	UTTARAKHAND	0.001	NR	0.001	NR	2062	NR	895	101	NR	NR
28	WEST BENGAL	0.043	0.157	0.011	22.410	34755	13.268	17	31	18.328	54.006
29	A & N ISLAND	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.000
30	CHANDIGARH	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.000
31	D & N HAVELI	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
32	DAMAN & DIU	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
33	DELHI	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
34	LAKSHADWEEP	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	0.000
35	PUDUCHCHERRY	Nil	0.007	0.000	0.180	76	0.030	135	Nil	0.180	0.600
	TOTAL	7.718	37.398	2.515	3708.187	913414	2508.656	60279	1839	12132.919	21849.972

NOTE- NR= NOT REPORTED

STATEMENT SHOWING STATE-WISE FLOOD DAMAGE DURING 2019

Sl. No.	Name of State	Area affected in	Population affected in	Damage to Crops		Damage to Houses		Cattle lost	Human lives lost	Damage to public utilities	Total damages crops,house, & public utilities
		Mha	Million	Area mha	Value in Rs Crore	Nos.	Value in Rs Crore	Nos.	Nos.	Value in Rs Crore	in Rs.Crore
1	2	3	4	5	6	7	8	9	10	11	12
1	ANDHRA PRADESH	0.009	0.198	0.004	19.618	10707	63.820	16.000	14.000	614.613	698.051
2	ARUNACHAL PRADESH	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
3	ASSAM	0.233	7.355	0.233	167.470	117831	151.400	281	103	2803.110	3121.980
4	BIHAR	NR	14.203	NR	NR	NR	NR	NR	274	NR	NR
5	CHATTISGARH	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
6	GOA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
7	GUJARAT	0.000	0.000	0.000	0.000	6111	2.790	1042	217	0.000	2.790
8	HARYANA	0.000	0.000	0.000	0.600	0	0.000	0	0	0.000	0.600
9	HIMACHAL PRADESH	0.010	1.616	0.040	87.120	2940	19.170	555	7	122.820	229.110
10	JAMMU & KASHMIR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
11	JHARKHAND	0.019	0.134	0.005	2.715	126	0.539	0	6	10.000	13.254
12	KARNATAKA	NR	0.115	1.02	NR	168350	NR	4415	301	NR	NR
13	KERALA	NR	0.114	0.013	NR	16543	NR	11338	301	NR	NR
14	MADHYA PRADESH	NR	5.537	6.047	NR	118386	NR	5158	674	NR	NR
15	MAHARASHTRA	NR	0.773	NR	NR	48	NR	824	450	NR	NR
16	MANIPUR	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
17	MEGHALAYA	0.000	0.001	0.000	0.000	0	0.000	0	0	3.661	3.661
18	MIZORAM	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
19	NAGALAND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
20	ODISHA	0.499	1.100	0.038	43.250	25821	42.050	697	13	369.520	454.820
21	PUNJAB	0.152	0.079	0.152	NR	2618	NR	615	20	NR	NR
22	RAJASTHAN	2.390	13.800	2.390	8787.770	28415	33.140	314	126	0.000	8820.910
23	SIKKIM	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
24	TAMILNADU	0.000	0.000	0.000	0.000	2814	1.209	230	10	0.000	1.209
25	TRIPURA	0.001	0.147	0.001	2.610	44963	81.710	15	1	353.330	437.650
26	UTTAR PRADESH	0.890	0.745	0.650	625.120	53665	20.300	325	166	164.210	809.630
27	UTTARAKHAND	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
28	WEST BENGAL	0.290	0.435	0.095	1166.074	57248	46.631	27	71	57.129	1269.834
29	A & N ISLAND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	CHANDIGARH	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
31	D & N HAVELI	NR	NR	NR	NR	4	0.028	NR	NR	NR	0.028
32	DAMAN & DIU	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
33	DELHI	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
34	LAKSHADWEEP	0.000	0.000	0.000	0.000	5	0.000	0.000	0.000	0.000	0.000
35	PUDUCHCHERRY	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	TOTAL	4.494	46.350	10.688	10902.347	656595	462.787	25852	2754	4498.393	15863.526

NR- NOT REPORTED

STATEMENT SHOWING FLOOD DAMAGE FOR THE YEAR 2020

Sl. No.	Name of state	Area affected in	Population affected in	Damage to Crops		Damage to Houses		Cattle lost	Human lives lost	Damage to public utilities	Total damages crops, houses & public utilities
				Area	Value	Nos.	Value in				
				(m.ha.)	(million)	(m.ha.)	Rs.Crore				
1	2	3	4	5	6	7	8	9	10	11	12
1	ANDHRA PRADESH	0.213	1.770	0.213	903.000	7651	14.660	18663	45	0.000	917.660
2	ARUNACHAL PRADESH	0.006	0.670	0.006	10.129	693	4.444	149	21	1375.503	1390.076
3	ASSAM	0.188	5.789	0.188	145.870	8122	93.360	702	150	2201.500	2440.730
4	BIHAR	0.772	10.230	0.517	727.876	18775	11.701	133	62	70.617	810.194
5	CHATTISGARH	0.016	0.040	0.005	3.660	22312	15.300	154	42	12.380	31.340
6	GOA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
7	GUJARAT	2.902	0.340	2.902	2912.820	4548	2.490	726	195	0	2915.310
8	HARYANA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
9	HIMACHAL PRADESH	0.002	0.500	0.001	16.750	1307	8.580	84	11	35.220	60.550
10	JAMMU & KASHMIR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
11	JHARKHAND	0.016	0.028	13.297	0.728	268	0.158	0	5	0	0.886
12	KARNATAKA	1.310	0.170	1.310	NR	40099	NR	2708	142	NR	9833.000
13	KERALA	0.000	0.114	0.006	NR	14016	0.000	2	14	0.000	0.000
14	MADHYA PRAADESH	NR	0.371	0.629	NR	15417	NR	294	189	NR	0.000
15	MAHARASHTRA	NR	NA	NR	NR	NA	NR	NA	NA	NR	NR
16	MANIPUR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
17	MEGHALAYA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
18	MIZORAM	NR	NR	0.12	NR	1	NR	NR	NR	0.007	0.045
19	NAGALAND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
20	ODISHA	0.314	3.890	0.314	542.300	78137	108.910	26	38	858.120	1509.330
21	PUNJAB	NR	0.079	0.152	NR	2570	NR	615	20	NR	0.000
22	RAJASTHAN	0.043	0.480	0.040	45.790	2507	0.890	97	34	144.490	191.170
23	SIKKIM	0.03	0.225	0.010	3.000	1432	6.138	21149	18	339.860	348.998
24	TELANGANA	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
25	TAMILNADU	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
26	TRIPURA	0.010	0.026	0.006	137.720	163	0.197	0	0	0	137.917
27	UTTAR PRADESH	0.170	0.910	0.120	176.380	6821	5.270	659	72	421.310	602.960
28	UTTARAKHAND	NR	NR	NR	NR	736	NR	96	80	NR	0.000
29	WEST BENGAL	NR	1.026	NR	NR	11568	NR	382	227	NR	0.000
30	A & N ISLAND	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
31	CHANDIGARH	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
32	D & N HAVELI DAMAN & DIU	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
33	LADAKH	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
34	DELHI	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
35	LAKSHADWEEP	NR	NR	NR	NR	5	NR	NR	NR	NR	0.000
36	PUDUCHCHERRY	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	TOTAL	5.992	26.658	19.836	5626.023	237148	272.098	46639	1365	5459.007	21190.166

NR- NOT REPORTED

ANNEXURE-II

ANNEXURE REFERRED TO IN REPLY TO PART (d) OF STARRED QUESTION NO. 62 TO BE ANSWERED IN LOK SABHA ON 21.07.2022 REGARDING “LOSS DUE TO FLOODS”

Executed works by Brahmaputra Board related to Majuli Island and Dholla-Hathiguli

i. Majuli Island

S.No.	Name of Work	Estimated Cost (Cr)	Completion year
1	Immediate Measures	6.22	2004-05
2	Emergent measures	4.99	Sep, 2008
3	Phase – I	56.07	Apr, 2011
4	Phase-II &III (combined)	115.99	March, 2018
	Total	183.27	

ii. Dholla Hatighuli works

S.No.	Schemes of Dholla Hatighuli	Estimated Cost(Cr)	Completion Year
1	Avulsion of Brahmaputra at Dholla- Hatighuli phase-I	10.47	Completed in 2004-05
2	Avulsion of Brahmaputra at Dholla- Hatighuli phase-II	5.22	Completed in 2005-06
3	Avulsion of Brahmaputra at Dholla- Hatighuli phase-III	8.41	Completed in 2008-09
4	Avulsion of Brahmaputra at Dholla- Hatighuli phase-IV	54.43	Completed in 2012-13
	Total	78.53	
