

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

**LOK SABHA**

**UNSTARRED QUESTION NO. †3119**

ANSWERED ON 11.07.2019

**SOIL EROSION**

†3119. SHRI SANJAY HARIBHAU JADHAV:

SHRI KRUPAL BALAJI TUMANE:

Will the Minister of JAL SHAKTI be pleased to state:

- (a) whether the Government is aware that several villages of the country have been wiped away due to soil erosion caused by flood and rain during the last three years and the current year;
- (b) if so, the extent to which soil erosion took place and the number of villages wiped away, State-wise and the damage caused to life and property as a result thereof;
- (c) the steps taken/being taken by the Government to tackle the situation;
- (d) whether the Government is aware that there is extreme soil erosion taking place at coastal areas, coasts and off shore of the country including Maharashtra and if so, the details thereof and the reasons therefor;
- (e) whether the Government proposes to allocate fund for affected States on the line of sustainable coastal protection and if so, the details thereof; and
- (f) the steps taken/likely to be taken by the Government for conservation/ prevention of coastal areas to check soil erosion caused by heavy flood and rain?

**ANSWER**

THE MINISTER OF STATE FOR JAL SHAKTI & SOCIAL JUSTICE AND EMPOWERMENT  
(SHRI RATTAN LAL KATARIA)

- (a) & (b) Yes, Government is aware of soil erosion caused by heavy floods and consequent damages. Soil erosion by river is a dynamic and natural process resulting in changes in river course and causing loss of land, the intensity of which varies with time and space. The extent of maximum area affected in a year by floods as per XII Plan Working Group Report on “Flood Management and Region Specific Issues: is 49.815 million hectare. The details of damages caused by floods across the country State-wise as per the data available with Central Water Commission during the year 2015, 2016 and 2017 are at **Axxexure-I**
- (c) & (d) In order to assess the extent of coastal erosion at national level, a Shoreline Change Atlas of the Indian coast, has been prepared by Space Application Centre, Ahmedabad in association with Central Water Commission (CWC), funded by then Ministry of Water Resources, River Development & Ganga Rejuvenation. This Atlas comprises of shoreline change maps prepared using satellite data of different timeframe, on 1:25,000 scale for the entire country. The maps show eroding, stable and accreting coast along with the status of coastal protection measures taken up by maritime States/UTs.

Ministry of Earth Sciences through National Centre for Coastal Research, Chennai is monitoring the shoreline changes along Indian coast on annual basis, which provides information on coastal erosion at district level in 1:25,000 scale. So far, 26 years data from 1990 to 2016 has been analysed and found that ~33% of mainland coastline is subjected to erosion. Over all, during 1990 to 2016, about 231.50 sq. km of land is gained by accretion and 234.25 sq. km land was lost by erosion along the Indian mainland. The State-wise status of sea erosion (1990-2016) along the Indian Coast is as given in **Annexure II**

(e) and (f) The subject of flood management including erosion control being within the purview of the States, the flood management and anti-erosion schemes are planned, investigated and implemented by the State Governments with their own resources as per priority within the State. The Union Government supplements the efforts of the States by way of technical guidance and promotional financial assistance to the States for flood management in critical areas.

A Centrally Sponsored Scheme “Critical anti-sea erosion works in coastal and other than Ganga basin States” was implemented by Government of India during X plan period under which the anti-sea erosion works of the States of karnatka ,kerala, Maharastra, Odisha, Tamil nadu, and UT of Puducherry were included and provided central assistance. This centrally sponsored scheme along with three others were merged together and a restructured scheme namely “Flood Management Programme (FMP)” under State Sector in Central plan was launched in XI plan period for providing central assistance to the State Governments for taking up works related to river management, flood control, anti-erosion,, drainage development, flood proofing works , restoration of damaged flood management works and anti-sea erosion works which was continued during XII plan. A scheme viz.”Flood Management and Border Areas Programme (FMBAP) for flood management works in entire country and River Management activities and works related to Border Areas with an outlay of Rs. 3342 crores is under implementation during 2017-18 to 2019-20.

Ministry of Environment, Forests & Climate Change (MoEF & CC) is implementing Integrated Coastal Zone Management (ICZM) project in the identified coastal stretches of three States namely Gujarat, Odisha and West Bengal. Under this Project, MoEF & CC has mapped shoreline changes through National Centre for Sustainable Coastal Management (NCSCM), Chennai in association with the Institute for Ocean Management (IOM), Anna University, Chennai and designated high erosion, medium erosion, low erosion/stable coast along Coast of India.

Mapping and demarcation of Hazard line along the mainland of the Indian coast is one of the major initiatives to control and protect the coastal lives, infrastructures from natural hazards like storm, tsunami and cyclone which is carried out by survey of india as an activity of national component of ICZM project. The hazard line is the composite lines of the erosion line and flood line. Hazard line will be most important management tool in the area of coastal management. The work of mapping and delineation of hazard line is completed.

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**ANNEXURE-I****ANNEXURE REFERRED TO IN REPLY TO PART (a) to (b) OF UNSTARRED QUESTION NO. 3119 TO BE ANSWERED IN LOK SABHA ON 11.07.2019 REGARDING "SOIL EROSION"****STATEMENT SHOWING STATE-WISE FLOOD DAMAGE DURING 2017**

Sl. No	Name of State	Area Affected (Mha)	Population Affected (Million)	Damages to Crops		Damage to Houses		Cattle Lost Nos.	Human Lives Lost Nos.	Damage to Public Utilities (Rs. Crore)	Total Damages Crops, Houses & Public Utilities (Rs. Crore)
				Area (Mha)	Value (Rs. Crore)	Nos.	Value (Rs. Crore)				
1	2	3	4	5	6	7	8	9	10	11	12
1	ANDHRA PRADESH	0.000	0.000	0.000	0.000	25	0.000	0	1	0.000	0.000
2	ARUNACHAL PRADESH	0.106	0.199	0.041	97.540	1463	5.550	1177	60	1471.590	1574.680
3	ASSAM	0.280	5.602	0.280	178.690	111070	90.940	2763	160	3895.180	4164.810
4	BIHAR	0.810	17.164	0.810	0.000	118410	0.000	373	514	0.000	0.000
5	CHATTISGARH	0.000	0.000	0.000	0.000	929	0.000	0	52	0.000	0.000
6	GOA	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
7	GUJARAT	0.891	0.520	0.891	8.600	38796	15.740	9445	284	3531.530	3555.870
8	HARYANA	0.001	0.000	0.001	17.960	8	0.047	0	0	0.000	18.007
9	HIMACHAL PRADESH	0.006	6.865	0.003	34.607	2195	13.300	199	75	3.460	51.367
10	JAMMU & KASHMIR	0.000	0.000	0.000	0.000	92	0.000	0	7	0.000	0.000
11	JHARKHAND	0.000	0.178	0.000	0.000	183	0.667	5	2	0.000	0.667
12	KARNATAKA	0.000	0.000	0.000	0.000	1910	0.000	0	84	0.000	0.000
13	KERALA	0.000	0.037	0.001	0.000	5288	0.000	76	80	0.000	0.000
14	MADHYA PRADESH	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
15	MAHARASHTRA	0.000	0.000	0.000	0.000	0	0.000	0	148	0.000	0.000
16	MANIPUR	0.089	0.000	0.089	0.000	18989	0.000	0	21	0.000	0.000
17	MEGHALAYA	0.000	0.000	0.000	0.000	148	0.140	0	1	0.000	0.140
18	MIZORAM	0.046	0.130	0.046	11.890	5437	19.950	9	11	72.180	104.020
19	NAGALAND	0.568	0.667	0.568	9.300	4200	18.200	2515	29	524.090	551.590
20	ORISSA	0.658	0.697	0.021	0.000	5610	0.000	1316	3	334.315	334.315
21	PUNJAB	0.006	0.000	0.006	18.230	130	0.410	6	5	0.000	18.640
22	RAJASTHAN	1.087	3.586	0.739	1333.22	57290	30.450	5536	101	513.186	1876.858
23	SIKKIM	0.002	0.033	0.001	5.000	810	9.270	110	10	231.170	245.440
24	TAMILNADU	0.000	0.000	0.000	0.000	9	0.000	0	1	0.000	0.000
25	TRIPURA	0.057	0.020	0.047	14.387	24682	20.549	193	17	97.888	132.824
26	UTTAR PRADESH	0.437	2.923	0.396	308.053	26834	0.000	93	121	0.000	308.053
27	UTTARAKHAND	0.000	0.000	0.000	0.000	1410	0.000	0	59	0.000	0.000
28	WEST BENGAL	1.033	8.723	1.033	6914.50	826982	9158.280	2857	217	1655.160	17727.940
29	ANDAMAN & NICOBAR ISLAND	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
30	CHANDIGARH	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
31	DADAR & NAGAR HAVELI	0.000	0.000	0.000	0.000	0	0.000	0	0	0.100	0.100
32	DAMAN & DIU	0.000	0.000	0.000	0.000	14	0.525	0	0	0.000	0.525
33	DELHI	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
34	LAKSHADWEEP	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
35	PUDUCHERRY	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
	<b>Total</b>	6.076	47.343	4.972	8951.97	1252914	9384.018	26673	2063	12329.849	30665.846

**STATEMENT SHOWING STATE-WISE FLOOD DAMAGE DURING 2016**

Sl. No	Name of State	Area Affected (Mha)	Population Affected (Million)	Damages to Crops		Damage to Houses		Cattle Lost Nos.	Human Lives Lost Nos.	Damage to Public Utilities (Rs. Crore)	Total Damages Crops, Houses & Public Utilities (Rs. Crore)
				Area (Mha)	Value (Rs. Crore)	Nos.	Value (Rs. Crore)				
1	2	3	4	5	6	7	8	9	10	11	12
1	ANDHRA PRADESH	0.003	0.386	0.003				4	3		0.000
2	ARUNACHAL PRADESH					354		15671	42		0.000
3	ASSAM		0.003	0.000					36	17.890	17.890
4	BIHAR	0.410	8.823	0.410	443.530	16717	44.262	246	254	40.970	528.762
5	CHATTISGARH										0.000
6	GOA	0	0	0	0	0	0.000	0	0	0	0.000
7	GUJARAT		0.012			128		322	99		0.000
8	HARYANA	0.004	0.000	0.004	518.235	49	4.212	1	2	0.000	522.447
9	HIMACHAL PRADESH	0.035	6.865	0.035	26.830	2283	15.270	136	40	3.020	45.120
10	JAMMU & KASHMIR								3		0.000
11	JHARKHAND										0.000
12	KARNATAKA	3.780	2.180	3.780	1771.26	21224	5.370	521	63	236.180	2012.810
13	KERALA	0.002	0.006	0.002	42.680	5809		56	66		42.680
14	MADHYA PRADESH	1.304	1.560	1.304		168267		2623	327	207.860	207.860
15	MAHARASHTRA	0.015	0.077	0.015		8164		1036	145		0.000
16	MANIPUR										0.000
17	MEGHALAYA	0.003	0.124	0.003	17.730	1412	15.477	0	4	29.322	62.529
18	MIZORAM									1.790	1.790
19	NAGALAND										
20	ORISSA	0.009	0.015			9	0.050		3	31.245	31.295
21	PUNJAB	0.001	0.000	0.001	1.140	20	0.025	0	13	0.495	1.660
22	RAJASTHAN	0.884	4.381	0.796	1014.22	14494	20.378	635	129	164.514	1199.113
23	SIKKIM					6					0.000
24	TAMILNADU										0.000
25	TRIPURA	0.037	0.091	0.019	89.122	455	0.235		3		89.357
26	UTTAR PRADESH	0.569	2.032	0.277	123.776	35525		293	74		123.776
27	UTTARAKHAND	0.010		0.010	4.200	3324	9.397	823	114	774.640	788.237
28	WEST BENGAL										0.000
29	ANDAMAN & NICOBAR ISLAND	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
30	CHANDIGARH	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
31	DADAR & NAGAR 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	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
34	LAKSHADWEEP	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
35	PUDUCHERRY	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
	<b>Total</b>	7.065	26.555	6.658	4052.72	278240	114.676	22367	1420	1507.926	5675.325

**STATEMENT SHOWING STATE-WISE FLOOD DAMAGE DURING 2015**

Sl. No	Name of State	Area Affected (Mha)	Population Affected (Million)	Damages to Crops		Damage to Houses		Cattle Lost Nos.	Human Lives Lost Nos.	Damage to Public Utilities (Rs. Crore)	Total Damages Crops, Houses & Public Utilities (Rs. Crore)
				Area (Mha)	Value (Rs. Crore)	Nos.	Value (Rs. Crore)				
1	2	3	4	5	6	7	8	9	10	11	12
1	ANDHRA PRADESH			0.000		103		420	28		0.000
2	ARUNACHAL PRADESH	0.014	0.177	0.014	15.294	1702	16.946	848	29	1730.570	1762.810
3	ASSAM	0.002	0.018	0.002		16				3.318	3.318
4	BIHAR		0.279	0.000		518	0.694	1	27	62.000	62.694
5	CHATTISGARH										0.000
6	GOA	0	0	0	0	0	0.000	0	0	0	0.000
7	GUJARAT		4.000						98		0.000
8	HARYANA	0.097	0.160	0.094	437.200	24	0.025	1	0	0.000	437.225
9	HIMACHAL PRADESH	0.006	6.865		121.380	3264	6.690	686	133	2.550	130.620
10	JAMMU & KASHMIR								3		0.000
11	JHARKHAND										0.000
12	KARNATAKA	0.174		0.174	776.480	10427	12.020	430	128	75.490	863.990
13	KERALA	0.006	0.017	0.006		6705		4	74	6.507	6.507
14	MADHYA PRADESH	0.000	1.000			3442		54	19	69.010	69.010
15	MAHARASHTRA	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
16	MANIPUR	0.045	0.427	0.045	35.050	11607	43.000	29	16	396.640	474.690
17	MEGHALAYA		0.000			50			1		0.000
18	MIZORAM	0.189	0.000	0.189	0.386	4	0.200	0	0	0.050	0.636
19	NAGALAND										
20	ORISSA	0.046	0.012	0.046		573			3		0.000
21	PUNJAB	0.037	0.032	0.037	63.860	462	2.680	23	11	98.000	164.540
22	RAJASTHAN	1.559	6.257	0.464	1122.24	70290	48.339	3607	54	234.445	1405.030
23	SIKKIM	0.600		0.600				303			0.000
24	TAMILNADU	0.383	3.042	0.383	2782.78	3015270		16215	421	23129.722	25912.510
25	TRIPURA	0.001	0.014	0.001	247.908	3255	20.735	21	1	42.120	310.763
26	UTTAR PRADESH		0.010			6					0.000
27	UTTARAKHAND					411		181	33		0.000
28	WEST BENGAL	1.300	10.840	1.300	11433.6	830245	7895.630	22774	338	6023.960	25353.270
29	ANDAMAN & NICOBAR ISLAND		0.002		0.477	149	0.010		0	0.000	0.487
30	CHANDIGARH	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
31	DADAR & NAGAR 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	0.000	0.000	0.000	0.000	0	0.000	0	0	0.000	0.000
34	LAKSHADWEEP	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
35	PUDUCHERRY	0.020	0.050	0.020	7.200	668			3	325.800	333.000
	<b>Total</b>	4.478	33.203	3.374	17043.9	3959191	8046.969	45597	1420	32200.182	57291.098

Annexure II

ANNEXURE REFERRED TO IN REPLY TO PART (c) to (d) OF UNSTARRED QUESTION NO. 3119 TO BE ANSWERED IN LOK SABHA ON 11.07.2019 REGARDING "SOIL EROSION"

SI N o	State		Coast Length (in Km)	Length of eroding coast (in Km)	
				km	%
1	West Coast	Gujarat	1701.78	524.84	31
2		Maharashtra	739.57	178.26	24
3		Goa	139.64	16.82	12
4		Karnataka	313.02	70.02	22
5		Kerala	592.96	263.04	45
6	East Coast	Tamil Nadu	991.47	407.05	41
7		Puducherry	41.66	23.80	57
8		Andhra Pradesh	1027.58	272.34	27
9		Odisha	549.50	153.80	28
10		West Bengal	534.35	336.52	63
<b>Total</b>			<b>6631.53 Km</b>	<b>2156.43 Km</b>	
			<b>%</b>	<b>33%</b>	