

GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
RAJYA SABHA
UNSTARRED QUESTION No. - 30
ANSWERED ON 02/02/2023

Survey and mapping of Coastlines

30 Dr. Kanimozhi NVN Somu:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether Government is aware that the coastlines of the country have suffered severely due to natural causes and human activities;
- (b) if so, the details thereof;
- (c) whether Government proposes to undertake any survey and mapping using scientific methodology to identify coastline stretches prone to suffer, due to natural causes and human activities;
- (d) if so, the details thereof;
- (e) whether Government has identified such stretches for restoration; and
- (f) if so, the details along with the action plan for restoration of heavily eroded coastlines?

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

- (a) Yes Madam.
- (b) National Centre for Coastal Research, (NCCR), Chennai, an attached office of Ministry of Earth Sciences (MoES) has studied the shoreline changes along Indian coast using satellite and field surveyed data and mapped about 6907 km long shoreline, covering the entire Indian mainland coast. The study reveals that shoreline changes are combined effect of both natural causes and human activities.
- (c) Yes Madam.
- (d) NCCR is surveying and mapping the shoreline changes for entire Indian coast using scientific methodology. These maps are produced using multi-spectral imageries from Indian Remote Sensing Satellites along with field-surveyed data for the period of 28 years (1990-2018).
- (e) & (f) The analysis indicates 34% of the Indian coastline was vulnerable to erosion, 27% was accretion and 39% was in stable state. The salient findings of shoreline changes for 1990-2018 for Indian coast are given in the below table.

Sl No	State		Coast Length (in km)	Coast length (in Km)					
				Erosion		Stable		Accretion	
				Km	%	Km	%	Km	%
1	West Coast	Gujarat	1945.6	537.5	27.6	1030.9	53	377.2	19.4
2		Daman & Diu	31.83	11.02	34.6	17.09	53.7	3.72	11.7
3		Maharashtra	739.57	188.26	25.5	477.69	64.6	73.62	10
4		Goa	139.64	26.82	19.2	93.72	67.1	19.1	13.7
5		Karnataka	313.02	74.34	23.7	156.78	50.1	81.9	26.2
6		Kerala	592.96	275.33	46.4	182.64	30.8	134.99	22.8
7	East Coast	Tamil Nadu	991.47	422.94	42.7	332.69	33.6	235.85	23.8
8		Puducherry	41.66	23.42	56.2	13.82	33.2	4.42	10.6
9		Andhra Pradesh	1027.58	294.89	28.7	223.36	21.7	509.33	49.6
10		Odisha	549.5	140.72	25.6	128.77	23.4	280.02	51
11		West Bengal	534.35	323.07	60.5	76.4	14.3	134.88	25.2
Total			6907.18	2318.31		2733.86		1855.03	
%				33.6		39.6		26.9	

As part of shoreline mapping, 526 maps were prepared for the entire Indian mainland coast for identifying vulnerable areas to coastal erosion at 1:25000 scale, along with 69 district maps, and 9 State and 2 UT maps. A report on "National Shoreline Assessment System (N-SAS)" was released in July 2018 and the report was shared with various Central and State Government agencies and stakeholders for implementing shoreline protection measures. An updated version of the Atlas, along with a digital version of the report, containing all the maps, was released on 25th March 2022 and these maps are being updated periodically. Ministry of Earth Sciences (MoES) had successfully demonstrated the innovative coastal erosion mitigation measures at two pilot locations at Pondicherry, which helped in restoration of lost beach at Pondicherry. The solution provided by NCCR for mitigation of flooding and sea erosion at Chellanam fishing village was implemented by Govt of Kerala and no flooding or erosion was noticed in recent monsoon. NCCR is providing technical support to coastal states, namely Tamil Nādu, Pondicherry, Kerala, Andhra Pradesh, UT Lakshadweep and Goa for implementation of coastal protection measures at vulnerable stretches and preparation of Shoreline Management Plan.
