

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
STARRED QUESTION NO. *495
TO BE ANSWERED ON WEDNESDAY, 6TH APRIL, 2022**

IMPACT OF RISING SEA LEVELS

***495. SHRIMATI APARAJITA SARANGI:**

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has formulated any plans to rehabilitate people from low-lying coastal areas who may be adversely impacted due to rising sea levels in the coming decade and if so, the details thereof;
- (b) whether any steps have been taken to mitigate rising sea levels and coastal erosion and if so, the details thereof;
- (c) whether India has lost a portion of its original coastline due to rising sea levels and if so, the details thereof reflecting the change in coastline from 1950 to 2021; and
- (d) whether the Government plans to offer assistance and rehabilitation to the victims of climate change such as those displaced or forced to migrate and if so, the details thereof?

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

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

STATEMENT LAID ON THE TABLE OF THE LOK SABHA IN REPLY TO PARTS (a) to (d)
OF STARRED QUESTION NO.* 495 REGARDING 'IMPACT OF RISING SEA LEVELS FOR
ANSWER ON WEDNESDAY, APRIL 06, 2022

- (a) Yes, Sir. Sea level rise is an increase in the level of the world's oceans because of global warming caused due to burning of fossil fuels and emissions of heat-trapping gases in to the atmosphere. This results in oceans getting warmer and sea levels rising worldwide. As per the 6th Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC), relative to 1995-2014, the global mean sea level is expected to rise by 2100 is 0.28-0.55 m under the very low greenhouse emission scenario (SSP1-1.9), 0.44-0.76 m under the intermediate emission scenario (SSP2-4.5) and 0.98-1.88 under the very high emission scenario (SSP5-8.5). The 'XV'th Finance Commission has recommended the creation of National Disaster Risk Management Fund (NDRMF) and State Disaster Risk Management Fund (SDRMF) comprising Mitigation Fund at the National and State level (NDMF/SDMF) and Response Fund at the National and State level (NDRF/ SDRF) for the award period from 2021-22 to 2022-26. The Commission has also made specific recommendations for "Mitigation Measures to Prevent Erosion" under NDMF and "Resettlement of Displaced People Affected by Erosion" under NDRF.
- (b) Indian National Centre for Ocean Information Services (INCOIS) an autonomous organization of MoES has prepared and published an atlas of Coastal Vulnerability Index (CVI) maps for the entire coastline of India at 1:100000 scale using data on sea level rise, coastal slope, shoreline change rate, coastal elevation, coastal geomorphology, tidal range and significant wave height. The observed changes may be induced by natural processes including Sea level rise and anthropogenic activities. There are 526 maps prepared for entire Indian coast for identifying areas vulnerable to coastal erosion in 1:25000 scale along with 66 district maps, 10 state /UT maps. A report on "National Assessment of Shoreline Changes along Indian Coast" was released in July, 2018 and shared with various Central and State government Agencies and Stakeholders for implementing shore line protection measures. The digital and hard copy of all the Maps is released on 25th March, 2022. Ministry through its institutes is also providing technical solutions and advice to the State Governments and UTs to deal with coastal erosion threats.
- (c) National Centre for Coastal Research (NCCR), Chennai an attached office of the Ministry of Earth Sciences (MoES) is monitoring the shoreline erosion since 1990 using remote sensing data and GIS mapping techniques. About 6,907.18 km long Indian coastline of mainland has been analyzed from 1990 to 2018. It is noted that about 34% of the coastline is under varying degree of erosion, 26% is of accreting nature and the remaining 40% is in a stable state. The below table represents the state wise coastal erosion details.

S.No	State		Coast Length (in km)	Erosion	
				Km	%
1	West Coast	Gujarat	1945.60	537.5	27.6
2		Daman & Diu	31.83	11.02	34.6
3		Maharashtra	739.57	188.26	25.5
4		Goa	139.64	26.82	19.2
5		Karnataka	313.02	74.34	23.7
6		Kerala	592.96	275.33	46.4
7	East Coast	Tamil Nadu	991.47	422.94	42.7
8		Puducherry	41.66	23.42	56.2
9		Andhra Pradesh	1027.58	294.89	28.7
10		Odisha	549.50	140.72	25.6
11		West Bengal	534.35	323.07	60.5
Total			6907.18	2318.31	33.6

- (d) Yes, Sir. The XVth Finance Commission has suggested that NDMA and/ or Ministry of Home Affairs may develop suitable norms for mitigation measures to prevent erosion and both the Union and the State Governments develop a policy to deal with the extensive displacement of people caused by coastal and river erosion. At present, NDMA is in the process of preparing the suitable norms for mitigation measures and developing a policy to deal with the extensive displacement of people.
