GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**RAJYA SABHA**
**UNSTARRED QUESTION NO. 368**
TO BE ANSWERED ON 25.07.2024

**Impact of climate change on coastal zones**

368. SHRI A. A. RAHIM:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

(a) whether any scientific study has been done on the effects of climate change on the coastal zone;
(b) whether any data is available regarding erosion of the seashores, if so, the State-wise details thereof; and
(c) whether any unified plan is available with the Central Government to prevent seashore erosion?

**ANSWER**
MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI KIRTI VARDHAN SINGH)

(a) to (c) Scientific studies have been undertaken on the effects of climate change on the coastal zone. The Ministry of Environment, Forest and Climate Change through the Survey of India and National Centre for Sustainable Coastal Management (NCSCM), Chennai has delineated the hazard line for the entire coast of the country. National Centre for Coastal Research (NCCR), Ministry of Earth Sciences has also been engaged in mapping the shoreline changes along the Indian coast to enhance the country's preparedness to face coastal hazards like storm surges, tsunami, etc. and to guide towards sustainable coastal development. NCCR has prepared a status report on shoreline changes for the period 1990 to 2018 (28 years), using 11 shoreline data sets, i.e. the years 1990, 2000, 2006, 2008, 2012, 2013, 2014, 2015, 2016, 2017 and 2018. In this report, about 6907.18 km long shoreline (in 1:25000 scale) was analyzed for the period 1990-2018 to estimate the shoreline change i.e., erosion, accretion and stable. The shoreline analysis suggests that 33.6% of coast is eroding, 26.9% is accreting and 39.6% is in stable state. State-wise details of shoreline changes along the Indian coast are given below:

| Sl No | State | Coast Length (in km) | Coast length (in Km) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Erosion | | Stable | | Accretion | |
| | | | Km | % | Km | % | Km | % |
| 1 | Gujarat | 1945.6 | 537.5 | 28 | 1030.9 | 53 | 377.2 | 19 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2 | | Daman & Diu | 31.83 | 11.02 | 35 | 17.09 | 54 | 3.72 | 12 |
| 3 | | Maharashtra | 739.57 | 188.26 | 25 | 477.69 | 65 | 73.62 | 10 |
| 4 | | Goa | 139.64 | 26.82 | 19 | 93.72 | 67 | 19.1 | 14 |
| 5 | | Karnataka | 313.02 | 74.34 | 24 | 156.78 | 50 | 81.9 | 26 |
| 6 | | Kerala | 592.96 | 275.33 | 46 | 182.64 | 31 | 134.99 | 23 |
| 7 | East Coast | Tamil Nadu | 991.47 | 422.94 | 43 | 332.69 | 34 | 235.85 | 24 |
| 8 | | Puducherry | 41.66 | 23.42 | 56 | 13.82 | 33 | 4.42 | 11 |
| 9 | | Andhra Pradesh | 1027.58 | 294.89 | 29 | 223.36 | 22 | 509.33 | 50 |
| 10 | | Odisha | 549.5 | 140.72 | 26 | 128.77 | 23 | 280.02 | 51 |
| 11 | | West Bengal | 534.35 | 323.07 | 60 | 76.4 | 14 | 134.88 | 25 |
| **Total** | | | **6907.18** | **2318.31** | | **2733.86** | | **1855.03** | |
| **%** | | | | **33.6%** | | **39.6%** | | **26.9%** | |

Government of India has taken a number of steps to identify and prevent sea erosion, which include:

i. Ministry of Environment, Forest & Climate Change has notified Coastal Regional Zone Notification 2019, which includes mapping of erosion prone areas and preparation of Shore Line Management Plan for identified eroding stretches shown in the Coastal Zone Management Plan.

ii. Ministry of Environment, Forest & Climate Change has delineated the hazard line for the entire coast of the country. The hazard line is indicative of the shoreline changes, including sea level rise due to climate change. This line is used by agencies in Coastal States as a tool for Disaster Management including planning of adaptive and mitigation measures. The hazard line features in the new Coastal Zone Management Plans of the coastal States/Union territories approved by the MoEFCC.

iii. Coastal Protection Projects are planned, designed and executed by respective Maritime States/UTs. Coastal Protection Schemes are eligible for Central assistance under Flood Management & Border area Program (FMBAP) of Department of Water Resources, River Development & Ganga Rejuvenation (RD&GR) and Ministry of Jal Shakti.

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