

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 56
TO BE ANSWERED ON 25.11.2024

Impact of Coastal Erosion

56. SHRI CAPTAIN BRIJESH CHOWTA:

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

- (a) whether any studies have been undertaken to assess the sea-level rise and its impact on the country's coastal region and if so, the details thereof specially for the State of Karnataka, including Dakshina Kannada;
- (b) whether the Government has any plans to address the threat of coastal erosion arising from this threat of rising sea-levels;
- (c) if so, whether there is any policy to secure the lives or rehabilitate those who are at the threat of losing their land each year owing to coastal erosion and rising sea levels; and
- (d) whether there are any coastal protection measures and shoreline management efforts that have been put in place for the vulnerable coastal stretches of the State of Karnataka?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

(SHRI KIRTI VARDHAN SINGH)

(a) Indian National Centre for Ocean Information and Services (INCOIS), an autonomous institute under Ministry of Earth Sciences (MoES) has prepared the Multi-Hazard Vulnerability Maps (MHVM) for the mainland of India at 1:25000 scale. These maps were prepared based on the composites of extreme water levels recorded by the tide gauges and other published scientific literature, shoreline change rate estimated from satellite data, rate of sea level change and high-resolution topographic data (Airborne Lidar Terrain Mapping, and Digital Terrain Models derived from Cartosat-1 data). The MHVM indicates the probable areas of the coast that would get flooded due to oceanogenic disasters like tsunamis and storm surges in 100-year return periods.

Coastal erosion is one of the impact of sea level rise along the Indian coastline. National Centre for Coastal Research, (NCCR), an attached office of MoES, has monitored the shoreline changes for the entire Indian coastline using multi-spectral satellite images along with field-surveyed data for the period 1990-2018. As per NCCR study, it has been observed that 33.6% of the Indian coastline is under erosion, 26.9% is under accretion (growing) and 39.6% is in a stable state. In Karnataka, around 50% of the Karnataka coast is in stable conditions, 26% and 24% is under accretion and erosion respectively. The study has also estimated the coastal erosion along various coastal districts of Karnataka and the details are given below:

District	Coastal Length (In km)	Erosion		Stable		Accretion	
		km	%	km	%	km	%
Uttar Kannada	175.65	21.64	12.3	107.8	61.4	46.22	26.3
Udipi	100.71	34.96	34.7	40.97	40.7	24.78	24.6
Dakshin Kannada	36.66	17.74	48.4	8.02	21.9	10.9	29.7
Total	313.02	74.34	23.7	156.78	50.1	81.9	26.2

(b) to (d) The Government of India is committed for taking proactive steps in combating sea erosion and protection of India's coastal areas and the coastal communities. Some of the important measures taken are as follows:

- i. Ministry of Environment, Forest & Climate Change (MoEF&CC) in association with Survey of India (SOI) 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 to be 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 (CZMP) of the coastal States/Union territories approved by the MoEF&CC.
- ii. MoEF&CC has notified Coastal Regulation Zone (CRZ) Notification, 2019 with a view to conserve and protect coastal stretches, marine areas and to ensure livelihood security to the fisher and other local communities. The coastal regulations, however, permit setting up of erosion control measures in the coast. The notification also provides for No Development Zones (NDZ) along various categories of coastal areas to protect India's coastline from encroachment and erosion.
- iii. The Ministry has issued directions to Coastal States/UTs for incorporation of the Shoreline Management Plan in CZMP as per the provisions CRZ Notification, 2019.
- iv. MoEF&CC has framed a national strategy for coastal protection along with guidelines for all Coastal States and Union Territories.
- v. Mangrove and shelterbelt plantations also helps in control of coastal erosion. Union Budget 2023-24 announced 'Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI)' to promote and conserve mangroves, which will also work as a bio shield.
- vi. The Flood Management Scheme of Ministry of Jal Shakti, including anti-sea erosion schemes, are planned and executed by the State Governments with their own resources as per priorities of States. Union Government provided assistance to states which is technical, advisory, catalytic and promotional in nature.
- vii. Considering the importance of collection of data on coastal processes towards coastal protection measures, a new component "Coastal Management Information System (CMIS)" was initiated under the Central Sector Plan Scheme "Development of Water Resources Information System". CMIS is a data collection activity carried out to collect

near shore coastal data which can be used in planning, design, construction and maintenance of site specific coastal protection structures at vulnerable Coastal stretches. Establishment of three sites each in the State of Kerala, Tamil Nadu and UT of Puducherry has been completed.

- viii. The 15th Finance Commission has recommended Rs. 1000 crore for resettlement of displaced people affected by erosion for 2021-26 under National Disaster Response Fund (NDRF). In addition, Rs.1500 crore is earmarked for mitigation measures to prevent river and coastal erosion for the same period under National Disaster Mitigation Fund (NDMF). For both funds (NDRF and NDMF), state governments will have to avail resources on a cost-sharing basis.
- ix. National Cyclone Risk Mitigation Project (NCRMP) Phase-II is implemented in 6 Coastal States (Goa, Gujarat, Karnataka, Kerala, Maharashtra and West Bengal) with an overall budget/outlay of Rs. 1864.38 Cr (GoI share Rs.1465.16 Cr, State Share Rs. 399.22 Cr), since July 2015 to March 2023.
- x. The Government of Karnataka has prepared the Shoreline Management Plan in compliance to the provisions of CRZ Notification, 2019. Further, Government Karnataka is in the process of implementation of Karnataka Strengthening Coastal Resilience and the Economy (K- SHORE) Project under World Bank assistance, with an objective to enhance coastal protection and resilience of coastal infrastructure, strengthening of livelihood of the coastal communities and tackling of marine plastic pollution.
