

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**LOK SABHA**  
**UNSTARRED QUESTION NO. 1406**  
TO BE ANSWERED ON 09.02.2026

**Environmental Stress and Coastal Vulnerability in Kasaragod**

1406. SHRI RAJMOHAN UNNITHAN:

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

- (a) whether the Government is aware that coastal and border districts of Kerala, including Kasaragod are increasingly vulnerable to environmental stress due to climate change, coastal erosion and loss of green cover;
- (b) whether it is a fact that unregulated development and infrastructure expansion have aggravated ecological risks in these regions;
- (c) whether the Government has conducted any district-specific environmental impact or climate vulnerability assessments in Kasaragod;
- (d) whether targeted mitigation and adaptation projects have been sanctioned for ecologically sensitive coastal districts; and
- (e) the steps taken or proposed to be taken by the Government to strengthen environmental protection, climate resilience and sustainable development in vulnerable regions of Kerala?

**ANSWER**

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

(a) to (c) The Indian National Centre for Ocean Information Services (INCOIS), an autonomous institute under the Ministry of Earth Sciences (MoES), has prepared the report “Projected Changes in Extreme Sea Levels and Coastal Vulnerability along the Indian Coasts” under the Deep Ocean Mission. The study provides a comprehensive assessment of projected sea-level rise, its implications for coastal India, and associated coastal vulnerability maps.

To prevent unregulated development in the coastal regions of the country, including Kerala, the Government has been implementing the Coastal Regulation Zone (CRZ) Notification since 1991, with the objective of conserving and protecting coastal stretches and marine areas, and ensuring livelihood security for fishers and other local communities. The Ministry of Environment, Forest and Climate Change (MoEFCC) approved the Coastal Zone Management Plan (CZMP) of Kerala under the CRZ Notification, 2019, vide letter dated 16.10.2024. Accordingly, all development and infrastructure expansion activities are regulated under the CRZ Notification, 2019 to ensure environmental sustainability.

The National Centre for Coastal Research (NCCR) an attached office of Ministry of Earth Sciences, has carried out an updated assessment of shoreline changes along the coastal districts of Kerala including Kasaragod, using remote-sensing datasets for the period 1990–2022.

Based on information received from the Department of Environment, Government of Kerala, and the Kerala Coastal Zone Management Authority, sector-wise vulnerability assessments were conducted under the State Action Plan on Climate Change (SAPCC 2.0), with the district as the unit of analysis, including Kasaragod.

(d) to (e): Several steps have been taken to strengthen environmental protection, climate resilience and sustainable development to address the vulnerability of coastal areas in Kerala which, inter-alia include the following:

- i. As reported the National Disaster Management Authority, in order to mitigate the risk of erosion in the country, the 15<sup>th</sup> Finance Commission had recommended an allocation of Rs.1,500 crore from National Disaster Mitigation Fund (NDMF) for the period 2021-26 and Rs.1000 crore from National Disaster Response Fund (NDRF) for resettlement of displaced people affected by erosion.
- ii. The Ministry of Environment, Forest & Climate Change (MoEF&CC), in association with the Survey of India (SOI) has delineated the hazard line for the entire coast of the country which is indicative of the shoreline changes, including sea level rise due to climate change. The hazard line features in the new Coastal Zone Management Plans (CZMP) of the coastal States/Union territories approved by the MoEF&CC. Further, 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.
- iii. The Indian National Centre for Ocean Information Services (INCOIS) has developed a Coastal Vulnerability Index (CVI) for the entire Indian coastline as part of the Tsunami Early Warning System. INCOIS has also carried out Coastal Multi-Hazard Vulnerability Mapping (MHVM) for the entire Indian coastline
- iv. The NCCR also undertakes R&D on coastal processes and shoreline management, assists States/UTs in identifying vulnerable stretches, recommends site-specific mitigation measures, and supports the preparation of Shoreline Management Plans (SMPs). Based on the findings and recommendations of these reports, the Government of Kerala has undertaken various coastal protection measures, including the restoration of damaged seawalls in vulnerable reaches, maintenance of existing coastal seawalls, implementation of coastal protection works, and protection of houses using geobags.
- v. Further, the State Government is implementing the Kerala State Action Plan on Climate Change (2023–2030) to strengthen environmental protection, climate resilience, and sustainable development.

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