

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 2594
TO BE ANSWERED ON 09.03.2026

Coastal Erosion in Andhra Pradesh

2594. SHRI APPALANAIDU KALISSETTI:

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

- (a) the total length of coastline in the country affected by coastal erosion, State/UT-wise along with identification of district-wise erosion hotspots in Andhra Pradesh and the rate of annual land loss recorded during the last five years;
- (b) the details of assessment studies or surveys conducted by the Government or scientific institutions to monitor coastal erosion and its impact on communities, infrastructure and coastal ecosystems;
- (c) the measures undertaken under the National Coastal Zone Management Plan or any other programme to mitigate coastal erosion, including seawalls, groynes, mangrove afforestation and community-based interventions;
- (d) the details of the funds allocated, released and utilised for coastal protection measures, State and year-wise including Andhra Pradesh;
- (e) whether any early warning systems or monitoring stations have been installed to predict and respond to erosion events; and
- (f) if so, the details thereof along with the future plans to strengthen coastal protection and resilience measures in Andhra Pradesh?

ANSWER

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

(SHRI KIRTI VARDHAN SINGH)

(a) The National Centre for Coastal Research (NCCR), an attached office of the Ministry of Earth Sciences (MoES), has been monitoring shoreline erosion along the Indian coast since 1990 using remote sensing data and GIS mapping techniques. Based on the results of the study, the **Annexure** provides detailed information on the total length of coastline in the country affected by coastal erosion, State/UT-wise along with identification of district-wise erosion hotspots in Andhra Pradesh and the rate of annual land loss recorded during the last five years.

(b)-(f) The Government of India is committed to taking proactive steps in combating sea erosion and protection of India's coastal areas. Some of the important measures undertaken in this regard are as follows:

- MoEFCC has issued Coastal Regulation Zone (CRZ) Notifications with a view to conserve and protect the unique environment of coastal stretches and marine areas,

besides livelihood security to the fisher communities and other local communities in the coastal areas and to promote sustainable development based on scientific principles taking into account the dangers of natural hazards, sea level rise due to global warming.

- As per CRZ Notification, 2019, measures for control of erosion are permissible activity in CRZ areas. The Ministry has issued directions to Coastal States/UTs, for incorporation of Shoreline Management Plan in CZMP. NCSCM, an organization under Ministry of Environment Forest & Climate Change (MoEFCC) and NCCR is providing technical support to coastal States for implementation of coastal protection measures at vulnerable stretches and also involved in the preparation of Shoreline Management Plans.
- MoEFCC has delineated the hazard line for the entire coast of the country. The hazard 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 Coastal Zone Management Plan (CZMP) of the coastal States/Union territories and approved by the MoEFCC.
- Coastal Protection Projects are planned & executed by respective Maritime States/ UTs. Central Government's role is largely advisory, technical support and catalytic in nature. These projects are generally funded by States/ UTs from their own funds or from multilateral funding or through Central Assistance. In some cases, Government of India has facilitated multilateral funding to States/ UTs in tackling the coastal erosion. A Status Report on Coastal Area Management published in 2024 by Central Water Commission noted that the total expenditure incurred by various Maritime States/ UTs for protection of coastal erosion in the last 10 years is ₹ 2641.39 crore and the total cost of planned schemes as well as ongoing works for the next 5 years is ₹ 7218.63 crore.
- 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. Under this program, an amount of ₹ 4.71 Crore has been released to the Andhra Pradesh during the FY 2024-25 as Gap-Funding from National CAMPA through MISHTI Scheme
- The 15th Finance Commission has recommended ₹ 1000 crore for resettlement of displaced people affected by erosion for 2021- 26 under National Disaster Response Fund (NDRF). In addition, ₹ 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. The proposal submitted by the Government of Andhra Pradesh for funding under National Disaster Mitigation Fund (NDMF) is as follows:
 - Detailed Project Report (DPR) with an amount of ₹ 323.00 Crore for developing an integrated coastal protection strategy from Kakinada City to Uppada by summarizing and integrating the site-specific works like construction of groyne, sea wall, deflecting wall, Bio- shield etc.
 - DPR with an amount of ₹ 200.00 Crore for Control of coastal erosion through structural and non-structural mitigation measures, restoration of ecosystems,

and enhancement of community resilience in the Visakhapatnam Metropolitan Development Authority (VMRDA) region.

- Coastal Management Information System (CMIS)" under Central Sector Scheme namely "Development of Water Resources Information System" of Ministry of Jal Shakti has been developed considering the importance of data on coastal processes towards coastal protection measures. Coastal data collected through CMIS can be used in planning, design, construction and maintenance of site specific coastal protection structures at vulnerable Coastal stretches. Establishment of three sites under CMIS in the State of Kerala, Tamil Nadu and UT of Puducherry has been completed.
- In addition, Indian National Centre for Ocean Information Services (INCOIS), MoES has prepared the Coastal Vulnerability Index (CVI) maps for the entire coastline of India by using seven parameters such as shoreline change rate, sea-level change rate, coastal elevation, coastal slope, coastal geomorphology, significant wave height and tidal range.
- As informed by the Government of Andhra Pradesh, the State is planning to implement the "Great Green Wall (GGW) of Andhra Pradesh," envisaged as a 5-kilometre-wide and 1,053-kilometre-long vegetative barrier along its coastline. The proposed initiative is intended to function as a living ecological shield to mitigate the impacts of climate change, including cyclones, storm surges, tsunamis, sea-level rise, and coastal erosion. The project is proposed to be implemented under the direction of the Department of Environment, Forests, Science & Technology, with the broader objective of enhancing the State's green cover to 50% by the year 2047.

The State-wise shoreline change (1990-2022) details are given below:

Coastal States	Shoreline Change Status (1990-2022) in %		
	Erosion	Stable	Accretion
Gujarat	31.2	46.1	22.7
Daman & Diu	29.4	15.8	7.1
Maharashtra	25.5	64.6	10.0
Goa	15.3	75.0	9.7
Karnataka	23.7	50.1	26.2
Kerala	43.9	35.7	20.5
Tamil Nadu	39.2	40.6	20.2
Puducherry	47.3	44.4	8.3
Andhra Pradesh	31.0	24.9	44.0
Odisha	28.3	17.6	54.6
West Bengal	60.5	14.3	25.2
Total	34.2	39.5	26.3

The shoreline change study for Andhra Pradesh coast was carried for the past 32 years (1990-2022). The study shows that about 31% of the coast is eroding, 24.9% of the coast is stable and 44.0% of the coast is accreting nature. The details of estimated coastline changes along various coastal districts of Andhra Pradesh are given below:

Coastal District	Shoreline Change Status (1990-2022) in %		
	Erosion	Stable	Accretion
Tirupati	22.0	24.5	53.5
Nellore	33.3	39.5	27.3
Prakasam	25.3	34.1	40.6
Bapatla	20.0	5.3	74.7
Krishna	43.8	9.3	46.9
West Godavari	52.5	2.1	45.3
Konaseema	31.1	7.3	61.6
Kakinada	52.8	15.0	32.1
Anakapalli	6.9	36.4	56.7
Vishakhapatnam	25.9	51.3	22.8
Vizhianagaram	3.1	42.9	54.0
Srikakulam	31.6	35.3	33.1
Total	31.0	24.9	44.0

Land loss and gain due to shoreline change were quantified in hectares (ha), by geo-processing between 1990 and 2018 with symmetric difference tools by NCCR.

Coastal District	Land loss (In ha) (Approx.)	Land gain (In ha) (Approx.)
Nellore	266	491
Prakasam	91	399
Guntur	35	1348
Krishna	1834	1322
West Godavari	172	235
East Godavari	2529	2456
Vishakhapatnam	70	224
Vizianagaram	39	41
Srikakulam	65	487

The details of most eroding coast (hot spots), which requires priority attention, are given below as per the shoreline change study by NCCR.

Region along Andhra Pradesh Coast

Coastal District	Location
Tirupati	SHAR
Prakasam	Binginapalli
Krishna	Southern coast of Krishna delta
	Krishna delta region
	Hamsaladeevi beach
	North of Hamsaladeevi beach
	Palathumbalalayem
West Godavari	Pedamaina vanilanka beach
Konaseema	Odalarevu beach
Kakinada	Bhairavapalem
	Coringa Mangroves
	West of Hope Island
	Uppada
	Nemam beach
	Ponnada
Vishakhapatnam	Konapapapetta
	Pedanagamayyapalem
