

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO.3018
TO BE ANSWERED ON 20.03.2023

Erosion of Sea Beaches

3018. SHRI JUAL ORAM:

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

- (a) whether the Government have identified the sea beaches and other sea sides which are facing serious erosion problems;
- (b) if so, the details thereof, Coastal/State-wise;
- (c) the damage caused to each of these sea beaches; and
- (d) the action plan drawn up to repair the damage caused by the erosion?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI ASHWINI KUMAR CHOUBEY)

(a) to (c): Some stretches of India's shoreline are subject to varying degrees of erosion due to natural causes or anthropogenic activities. The coastal erosion does impact coastal communities residing in the erosion prone areas including fishermen communities. National Centre for Coastal Research, (NCCR), an attached office of the Ministry of Earth Sciences, Government of India has monitored the shoreline changes for entire Indian coastline using multi-spectral satellite images along with field-surveyed data for the period 1990-2018. It is observed that 33.6% of the Indian coastline was vulnerable to erosion, 26.9% was under accretion (growing) and 39.6% was in stable state.

Under the shoreline mapping system undertaken by NCCR, 526 maps were prepared for the entire Indian mainland coast for identifying vulnerable areas to coastal erosion in 1:25000 scale, along with 69 district maps, and 9 States and 2 Union Territory (UT) maps. A report on "National Assessment of Shoreline Changes along Indian Coast" was released in July 2018 and the report was shared with various Central and State Government agencies and stakeholders for implementing shoreline protection measures. An updated version of Atlas, along with a digital version of the report, containing all the maps, was released on 25th March 2022.

The study by NCCR reveals that the shoreline changes are combined effect of natural and human activities and the receding coastline will cause loss of land/habitat and the livelihood of fishermen in terms of losing the space for parking boats, mending nets and fishing operations.

The National Centre for Sustainable Coastal Management (NCSCM) has undertaken a detailed study – Statewise, beachwise, the findings of which are given in **Annexure**.

(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 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 of the coastal States/Union territories approved by the MoEFCC.
- ii. MoEFCC has notified Coastal Regulation Zone 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. MoEFCC has framed a national strategy for coastal protection along with guidelines for all Coastal States and Union Territories.
- iv. 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 renders assistance to states which is technical, advisory, catalytic and promotional in nature.
- v. 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.
- vi. NCCR has successfully demonstrated the innovative coastal erosion mitigation measures at Puducherry and Chellanam in Kerala, which helped in restoration and protection of coastal areas lost at Puducherry and flooding at Chellanam Fishing Village. Technical support has been extended to the coastal States in the design of coastal protection measures at vulnerable stretches and preparation of Shoreline Management Plans.

Annexure

ANNEXURE WITH RESPECT TO LOK SABHA UNSTARRED QUESTION NO. 3018
FOR 20.03.2023 ON EROSION OF SEA BEACHES BY SHRI JUAL ORAM

Beach	Status	Area (Sq. m)
Gujarat		
Umbrat Beach	Accretion	110895.32
TIthal Beach	Erosion	69910.56
Suvalli Beach	Erosion	688783.17
Mandavi Beach	Accretion	20471.44
Dandi Beach	Erosion	69434.26
Dabhari Beach	Erosion	1640149.52
Shivrajpur Beach	Erosion	32692.74
Shivrajpur Beach	Accretion	2396.77
Daman and Diu (UT)		
Diu Beach	Accretion	2336.42
Ghoghla Beach	Erosion	13614.04
Ghoghla Beach	Accretion	3430.41
Maharashtra		
Versova Beach	Accretion	1339.07
Vengurla Beach	Erosion	4959.69
Tarkarli Beach	Accretion	1387.88
Sriuvardhan Beach	Erosion	45912.15
Shivaji Beach	Accretion	28662.60
Sasawne Beach	Erosion	59331.47
Nagaon Beach	Erosion	93944.04
Murud Beach	Erosion	20098.49
Marve Beach	Accretion	25165.11
Manori Beach	Erosion	17815.01
Mandwa Beach	Erosion	20595.14
Malvan Beach	Accretion	8957.17
Kihim Beach	Erosion	6808.47
Kelwa Beach	Erosion	34484.03
Kelshi Beach	Accretion	107785.97
Kashid Beach	Accretion	5795.18
Juhu Beach	Erosion	25855.83
Harihareswar Beach	Erosion	31200.00
Guhagar Beach	Erosion	2010.86
Guhagar Beach	Accretion	536.72
Guhagar Beach	Erosion	15407.02

Beach	Status	Area (Sq. m)
Ganpatipule Beach	Erosion	100688.26
Diveagar Beach	Accretion	31948.86
Dahanu Beach	Erosion	196831.94
Bordi Beach	Erosion	114128.18
Awas Beach	Erosion	59849.10
Anjarle Beach	Erosion	0.00
Anjarle Beach	Erosion	30341.50
Alibag Beach	Accretion	1338.05
Aksa Beach	Accretion	91307.51
Velneshwar Beach	Erosion	31409.94
Bhandarpule Beach	Erosion	41675.18
Goa		
Agonda Beach	Erosion	1716.31
Agonda Beach	Accretion	2618.69
Anjuna Beach	Accretion	451.84
Anjuna Beach	Erosion	355.49
Arambol Beach	Accretion	2059.52
Ashvem Beach	Erosion	12734.77
Baga Beach	Accretion	29080.56
Baina Beach	Accretion	10037.84
Benaulim Beach	Accretion	8269.15
Betalbatim Beach	Erosion	8310.65
Betul Beach	Accretion	54167.73
Bogmalo Beach	Accretion	4294.77
caboderama Beach	Accretion	445.35
Calangute Beach	Accretion	48192.09
Canaiguinium Beach	Erosion	2360.52
Candolim Beach	Accretion	2764.31
Candolim Beach	Erosion	5169.59
Cansaulim Beach	Erosion	8377.57
Caranzalem Beach	Accretion	314284.02
Cavelossim Beach	Erosion	678.08
Cavelossim Beach	Accretion	13863.45
Cola Beach	Accretion	834.25
Colva Beach	Erosion	22563.76
Dharvalem Beach	Erosion	925.12
Dharvalem Beach	Accretion	835.28
Galginbag Beach	Accretion	72.18
Galginbag Beach	Erosion	2672.66
Hansa Beach	Accretion	2451.44

Beach	Status	Area (Sq. m)
Kakolem Beach	Accretion	252.30
Kakolem Beach	Erosion	190.02
Kalacha Beach	Accretion	1833.60
Majorda Beach	Accretion	5574.31
Mandarim Beach	Erosion	15829.25
Mobor Beach	Accretion	6713.69
Morjim Beach	Accretion	13764.73
Ozran Beach	Accretion	4278.20
Palolem Beach	Accretion	1326.79
Patnem Beach	Erosion	1265.84
Polem Beach	Erosion	232.21
Polem Beach	Accretion	4398.47
Querim Beach	Erosion	10403.88
Rajban Beach	Accretion	6135.39
Sernabatim Beach	Erosion	7670.26
Sinquerim Beach	Erosion	8339.79
Talpona Beach	Erosion	5659.62
Utorda Beach	Erosion	297.62
Vagator Beach	Accretion	915.93
Vagator Beach	Erosion	753.30
Varca Beach	Accretion	17823.41
Velsao Beach	Erosion	5670.13
Karnataka		
Apsarakonda Beach	Erosion	53073.51
Karwar Beach	Accretion	227480.88
Kaup Beach	Erosion	7267.24
Kudle Beach	Accretion	35522.74
Malpe Beach	Accretion	61125.68
Maravanthe Beach	Erosion	1005.29
Mukka Beach	Accretion	30.68
Mukka Beach	Erosion	47005.63
Murudeshwar Beach	Erosion	14062.86
NITK Beach	Erosion	12501.36
Panambur Beach	Erosion	50743.44
Sasihithlu Beach	Erosion	17696.65
Sasihithlu Beach	Erosion	19078.86
Someshwar Beach	Erosion	317133.03
Tannirubhavi Beach	Accretion	375772.02
Ullal Beach	Erosion	296835.10
Kasarkod Beach	Erosion	67382.31

Beach	Status	Area (Sq. m)
Padubidri Beach	Erosion	44380.15
Kerala		
Allepey Beach	Accretion	29444.73
Allepey Beach	Erosion	36851.46
Chavakkad Beach	Accretion	913318.17
Cherai Beach	Erosion	132473.85
Fort Kochi Beach	Erosion	81615.61
Hawa Beach	Erosion	5661.86
Kanhangad Beach	Erosion	45986.69
Kappad Beach	Accretion	2826.71
Kappad Beach	Erosion	6522.31
Kappil Beach	Erosion	148417.30
Kollam Beach	Accretion	256589.82
Kovalam Beach	Erosion	10518.66
Light House Beach	Erosion	4770.73
Marari Beach	Accretion	166698.28
Meenkunnu Beach	Accretion	545923.22
Muzhappilangad Beach	Accretion	76451.75
Payyambalam Beach	Accretion	23298.40
Samudra Beach	Erosion	22055.28
Shangumughom Beach	Erosion	133403.06
Snehatheeram Beach	Erosion	731778.25
Thirumullavaram Beach	Accretion	938.14
Thirumullavaram Beach	Erosion	13235.73
Tamil Nadu		
Ariyaman Beach	Accretion	124947.44
Kovalam Beach	Erosion	415480.44
Dhankuskodi Beach	Erosion	142770.14
Eliots beach	Accretion	148692.35
Golden Beach	Accretion	16936.42
Kanyakumari Beach	Accretion	36380.83
Kasimedu Beach	Accretion	743.04
Mahabalipuram Beach	Erosion	50197.38
Marina Beach	Accretion	302193.70
Pamban Beach	Erosion	9298.59
Paradise Beach	Accretion	2215.20
Sanguthurai Beach	Erosion	7073.14
Sendumal Beach	Accretion	211057.91
Serenity Beach	Accretion	7748.95
Silver Beach	Erosion	468380.47

Beach	Status	Area (Sq. m)
Sothavilai Beach	Erosion	142462.63
Thiruvanmiyur Beach	Accretion	73520.99
Tiruchendur Beach	Accretion	75327.24
Tuticorin Beach	Accretion	458485.70
Vattakotai Beach	Erosion	29916.55
Velankanni Beach	Erosion	378673.22
Puducherry (UT)		
Auroville Beach	Erosion	173583.02
Karaikal Beach	Erosion	349227.87
Promenade Beach	Accretion	2504.55
Eden Beach	Accretion	268160.98
Yanam Beach	Erosion	421533.99
Andhra Pradesh		
Addaripeta Beach	Erosion	9496.11
Alagayapalem Beach	Accretion	6296.74
Alone Beach	Accretion	88822.57
Antervedi Beach	Erosion	1231329.46
Balarampuram Beach	Accretion	340781.79
Baruva Beach	Erosion	21297.99
Bavapadu Beach	Accretion	138802.27
Bheemili Beach	Accretion	1988.95
Boyapadu Beach	Accretion	12026.85
Budagatlapalem Beach	Accretion	1074003.87
BVS Beach	Accretion	72432.39
Chackicheral Beach	Accretion	127345.51
Chinaganjam Beach	Accretion	339666.78
Chinakaragraharam Beach	Erosion	267724.51
Chintalamori Beach	Accretion	971093.66
Chintapalli Beach	Accretion	7832.59
Chintapalli Beach	Accretion	6919.50
Danvaipeta Beach	Erosion	125620.46
Dindi Beach	Accretion	2052360.94
Dlpuram Beach	Erosion	7959.62
Dokulapadu Beach	Accretion	149296.36
Dragonmouth Beach	Erosion	5088056.51
Etthamukhala Beach	Accretion	176058.88
Gaddipeta Beach	Erosion	417540.47
Gangapatnam Beach	Erosion	1321.40
Gangavaram Beach	Accretion	28340.74
Gavandlapallem Beach	Accretion	55789.17

Beach	Status	Area (Sq. m)
Gollapalem Beach	Accretion	1505327.01
Gopuvanipalem Beach	Accretion	1689118.10
Gudivada Beach	Erosion	23104.89
Guppidipeta Beach	Accretion	150270.46
Gurrajupeta Beach	Erosion	9130.78
Guvundlapalem Beach	Erosion	137489.66
Jeerupalem Beach	Accretion	214805.80
Jodugullapalem Beach	Accretion	6313.45
Kalingapatnam Beach	Accretion	349674.84
Kanakadurga Beach	Accretion	336774.82
Kanuparthi Beach	Accretion	3428.24
Karlapalem Beach	Erosion	30953.41
Katamvaripalem Beach	Accretion	18390.07
Katepalli Beach	Erosion	48298.18
Kaviti Beach	Erosion	14366.70
Kesanapalli Beach	Accretion	318385.82
Kodurivaripalem Beach	Accretion	230665.94
Konada Beach	Accretion	1066757.95
Konada Beach	Accretion	10807.08
Konapapapeta Beach	Erosion	967113.57
Kondurpalem Beach	Accretion	221451.41
Kotcherla Beach	Accretion	53449.62
Kotharevu Beach	Accretion	342075.36
Kothasathram Beach	Accretion	9046.33
Kovvada Beach	Accretion	179862.38
Krishnapatnam Beach	Accretion	12302.34
Kudithipalem Beach	Erosion	2771.44
Kunduvanipeta Beach	Accretion	206054.31
LN Puram Beach	Erosion	124213.86
Machilipatinam Beach	Accretion	2015989.42
Moonside Beach	Accretion	182696.95
Motupalli Beach	Accretion	213343.51
Mypadu Beach	Erosion	5185.80
Nawabpet Beach	Erosion	124943.59
Nemam Beach	Erosion	379181.73
Nizampatinam Beach	Accretion	433528.79
Nuvvalarevu Beach	Accretion	61200.58
Odalarevu Beach	Erosion	1877569.16
Onturu Beach	Accretion	112129.18
Pakala Beach	Accretion	266197.14

Beach	Status	Area (Sq. m)
Pallam Beach	Accretion	35035.37
Pallipalem Beach	Erosion	30967.23
Pandurangapuram Beach	Accretion	302154.94
Pedaganjam Beach	Accretion	183209.78
Pedamainavanilanka Beach	Accretion	322840.84
Pedapatnam Beach	Accretion	725942.03
Pedaramudupalem Beach	Accretion	4494.05
Peddapallepalem Beach	Erosion	845125.46
Pedhatheenarla Beach	Erosion	2030.40
Pentakota Beach	Erosion	20114.08
Perumallapuram Beach	Erosion	425110.42
Pinnivaripalem Beach	Accretion	77074.43
Ponnapudi Beach	Accretion	411513.29
Pothayyapeta Beach	Accretion	93416.41
Rajarampuram Beach	Accretion	537657.18
Rajupalem Beach	Accretion	46462.31
Rajyapeta Beach	Accretion	6248.96
Rambili Beach	Erosion	3556.70
Ramchandrapuram Beach	Accretion	131727.90
Ramyapatnam Beach	Accretion	44598.30
Ramyapattanam Beach	Erosion	74319.89
Raviguntapalem Beach	Accretion	167681.67
Revupolavaram Beach	Erosion	42543.94
RK BEach	Accretion	82099.87
RP Palem Beach	Accretion	124245.14
Rushikonda Beach	Erosion	13338.58
Sagarnagar Beach	Accretion	6658.28
Seethapalem Beach	Accretion	4290.08
Shankaraguptham Beach	Accretion	582580.72
Shiv Beach	Accretion	7978.51
Shivasagar Beach	Accretion	47032.18
ShivasatendraPrajapati Beach	Accretion	6421.41
SSR Port Beach	Accretion	399.50
Sunrise Beach	Accretion	347028.52
Tallapalem Beach	Accretion	1433077.00
Tammayyapalem Beach	Accretion	46367.19
Thanthadi Beach	Accretion	34113.48
Thatichetla palem Beach	Erosion	94118.40
Thotlakonda Beach	Erosion	15664.48
Thummalapenta Beach	Erosion	420848.17

Beach	Status	Area (Sq. m)
Thupilipalem Beach	Accretion	148877.89
Tikkavanipalem Beach	Accretion	241948.82
Turpupalem Beach	Accretion	263938.90
Uppada Beach	Erosion	380688.53
Vasalatippa Beach	Accretion	202384.65
Vatsavalasa Beach	Accretion	630357.56
Vodarevu Beach	Accretion	250844.59
Yarad Beach	Accretion	9218.71
Zard Beach	Accretion	22981.46
Odisha		
Aryapalli Beach	Erosion	676471.18
Astaranaga Beach	Accretion	667896.55
Baleswar Beach	Erosion	108246.70
Chandipur Beach	Accretion	138066.82
Chandrabaga Beach	Accretion	10490.03
Dagara Beach	Accretion	3815427.09
Dhabaleshwar Beach	Erosion	76665.07
Gahirmatha Beach	Accretion	570899.12
ganjam Beach	Erosion	3467.58
Gopalpur	Accretion	7946.11
Hukitola Beach	Accretion	5651304.28
Konark Beach	Accretion	20579.76
Paradeep Beach	Accretion	684719.25
Parikud Beach	Accretion	40901.68
Pentha Beach	Erosion	3645514.06
Puri	Accretion	42295.56
Ramchandi Beach	Accretion	184573.19
Satabhaya Beach	Erosion	4494576.08
Satpada Beach	Accretion	1190005.73
Sonapur Beach	Accretion	3825.56
Golden Beach	Erosion	379979.57
West Bengal		
Bankiput Beach	Accretion	205519.80
Digha Beach	Accretion	7396.33
Junput Beach	Accretion	643921.07
Mandarmani Beach	Erosion	108815.27
Shankarpur Beach	Erosion	826310.08
Tajpur Beach	Erosion	287462.27
Udayapur Beach	Erosion	51357.46
