NCSCM
NATIONAL CENTRE FOR SUSTAINABLE COASTAL MANAGEMENT
Ministry of Environment, Forest & Climate Change, Government of India

File No. 1/9/2023-Admin

Dated: 16.10.2023

TO

The Registrar,
Hon'ble National Green Tribunal,
Principal Bench,
Faridkot House, Copernicus Marg
New Delhi.

Sir,

SUB: SUBMISSION OF REPORT BY NCSCM IN THE MATTER OF OA NO. 625/2023 IN THE HON'BLE NGT (PRINCIPAL BENCH), NEW DELHI.

Ref: Email date 6.10.2023 Notice and copy of the Petition OA. No. 625/2023 sea erosion Increases at Uchila Endpoint houses on verge of getting washed away, Karnataka – REG.

With reference to Notice dated 5.10.2023 of the Hon'ble NGT cited above, the report of the in the matter of OA No. 625/2023 in the Hon'ble NGT (Principal Bench), Faridkot House, Copernicus Marg, New Delhi, is submitted herewith by email, as directed.

Mr S. Janarthanam, Govt. Counsel will be representing NCSCM and will attend the Hearing in virtual/online mode. His email is given in the endorsement below.

A copy of the report is provided as directed.

For the NGT Court cases in which NCSCM is being arraigned as a Respondent, NCSCM depends entirely on project funds to incur expenditure on various studies / surveys no separate budget / Government funding allotted for any purpose, be it legal cases or for conducting events, for attending meetings, or for any other purpose. It is prayed that the Nodal agency may bear all expenses of NCSCM as part of the Joint Committees, if any, constituted or studies to be conducted for the subject case.

DIRECTOR

Encl: Report in the matter of OA No. 625/2023.

Copy to :- Mr. S. Janarthanam, SPC,New No. 4/1, Old. No. 20, Ashoka Nagar, West Street, Arumbakkam, Chennai – 600 106.
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**Report on Sea Erosion at Uchila Endpoint along the Mangaluru Coast, Karnataka in OA No. 625/2023, Hon'ble NGT, Principal Bench, New Delhi**

The News item , titled "Escalating Sea Erosion Threatens Uchila Endpoint, Houses on the Verge of Being Washed Away," which appeared in the Daijiworld Media portal on 30/09/2023, was taken up by the Hon'ble NGT, Principal Bench, Suo Moto, as Original Application No. 249/2023, in the Hon'ble NGT (PB), New Delhi and in accordance with the directives issued by the esteemed National Green Tribunal at Faridkot House, Copernicus Marg, New Delhi-110001 on the 5th of October 2023, NCSCM has diligently compiled a preliminary report on the alarming issue of sea erosion along the Mangaluru coast in Karnataka, particularly at Uchila Endpoint, for submission in the Hon'ble NGT (PB), New Delhi on the 17th of October 2023.

This document will provide a detailed account of the sea erosion situation at Uchila Endpoint, and the subsequent sections will present an in-depth analysis of the following aspects:

**Background**

The coastline of Karnataka, of length around 310 km, is generally aligned in the north-northwest to south-southeast direction, with the Arabian Sea to the west. The south coast of Karnataka is an extension of the Malabar coast and is characterized by long sandy beaches interrupted by estuaries and barrier spit features. Whereas the northern part of the coast is the Konkan coast and is extending up to the southern part of Maharashtra. It is an indented coastline marked by numerous river mouths and creeks, bays, headlands, promontories, and cliffs. The pocket beaches are formed at bays and inlets of the coastline.

It is a well-known fact that the coast experiences high energetic waves during the southwest monsoon season, which lead to erosion at a few locations along the coast and is significantly at the beaches. However, it recovers during fair-weather conditions (northwest monsoon season), but a few of the stretches of the coast are not completely recovered with sediments due to various factors. Most of the sediment sources for coastal regions are riverine sediments from the major rivers of Karnataka. In recent years, anthropogenic interventions and activities such as damming over rivers and intensive mining of sand have caused the scarcity of sediments along coastal regions and been one of the major causes of coastal erosion.

Daijiworld Media Network published a news article titled "Sea Erosion Escalates at Uchila Endpoint, Houses on the Verge of Collapse," in which it was reported that one house stands on the brink of collapsing, and an additional 10 houses are situated

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within the danger zone due to the severe erosion. The article also highlights pronounced erosion at the estuary connecting Talapady and Uchila Endpoint. In response to these threats, local residents have taken temporary measures to protect their homes by stacking sandbags against the erosion and high waves.

**Analysis of scientific study**

A preliminary analysis of shoreline change (erosion and accretion characteristics) was conducted using satellite and Google Earth images for a 5.06 km stretch (2.5 km on each side of Uchil Endpoint) along the Mangaluru coast on short-term timescales (2010–2022). This analysis was performed utilizing the Digital Shoreline Analysis System (DSAS). The details of the shoreline change analysis are depicted in Figure 1, while their particulars and percentages are detailed in Table 1.

The analysis clearly indicates a high erosion rate of approximately 7 m/yr observed at Uchil Endpoint and its surrounding areas. The estimated percentage of high erosion and cumulative percentage of erosion are approximately 27.09% and 57.40%, respectively, along the coastal stretch. Consequently, the Uchil Endpoint area is significantly eroded and necessitates protection by implement the suitable shore protection interventions through the study of coastal processes and sediment transport. Additionally, the study should investigate the causes of the high erosion along the Uchil Endpoint stretch of the Mangaluru coast.

**Table 1:** Shoreline change analysis (in terms of erosion and accretion) at Uchila Endpoint, Mangaluru coast, Karnataka

| Shoreline Classification | Length (km) | % of Erosion and Accretion | Cumulative % of Erosion and Accretion |
|---|---|---|---|
| **Total Length of Coastline** | 5.06 | | |
| **High Erosion Zone** | 1.37 | **27.09** | |
| **Medium Erosion Zone** | 0.53 | 10.39 | |
| **Low Erosion Zone** | 1.01 | 19.91 | **57.40** |
| **Artificial Coast (km): Seawalls** | 1.38 | 27.21 | 27.21 |
| **Stable Coast** | 0.78 | 15.39 | 15.39 |

Summary: It is seen from the above table that more than 84% of the coast, including the stretches that already have seawalls due to erosion, is adversely affected by sea erosion. Thus, it becomes imperative to study the problem more in detail and suggest remedial measures, for which a period of about 3 months would be required to undertake field surveys and prepare a report.

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**Figure 1:** shoreline change analysis at Uchil Endpoint, Mangaluru coast, Karnataka

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