

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH, KOLKATA

In

ORIGINAL APPLICATION NO.70/2024/EZ
(Earlier O.A No.160/2024/PB)

In The Matter of

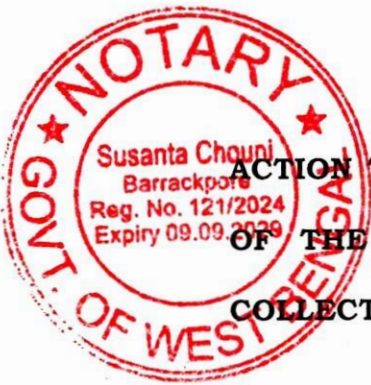
News item titled "Rising Sea,
Shrinking sands erode vibrancy
of Ganga Sagar Mela appearing
in the Hindu dated 15.01.2024

... Applicant(s)

Versus

West Bengal State Coastal Zone
Management Authority & Ors.

... Respondents



**ACTION TAKEN REPORT IN THE FORM OF AFFIDAVIT ON BEHALF
OF THE RESPONDENT NUMBER 03, DISTRICT MAGISTRATE &
COLLECTOR, SOUTH 24 PARGANAS DISTRICT.**

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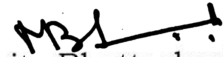
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Date: 22.02.2025

Filed by


Madhumita Bhattacharjee
Advocate
For the State of West Bengal



22 FEB 2025

SL. NO. 2/25

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BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
EASTERN ZONE BENCH, KOLKATA

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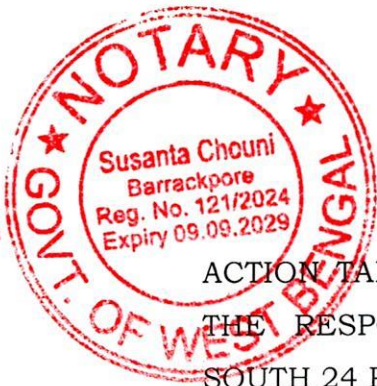
West Bengal State Coastal Zone
Management Authority & Ors.

... Respondents

ACTION TAKEN REPORT IN THE FORM OF AFFIDAVIT ON BEHALF OF
THE RESPONDENT NO.03, DISTRICT MAGISTRATE & COLLECTOR,
SOUTH 24 PARGANAS DISTRICT.

I, Sumit Gupta, Son of Shri S.K. Gupta, aged about 42 years, by religion -
Hindu, by occupation- Government Service, presently posted as the District
Magistrate & Collector, South 24 Parganas, having office at New
Administrative Building, Alipore, Kolkata- 700 027, do hereby solemnly
affirm and say as follows:

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1. That I am working for gain as the District Magistrate, South 24-Parganas, Alipore, Kolkata – 700027. I am competent to swear and affirm this affidavit for and on behalf of myself.
2. That this Action Taken Report in the form of Affidavit is being filed in compliance to the Order dated 07.01.2025 passed by this Hon'ble Tribunal. That in the said order the Hon'ble Tribunal has been interalia pleased to direct the Respondent no. 03i.e. the District Magistrate, South 24 Parganasto file a fresh affidavit to show what steps have been taken with regard to the implementation of the recommendations made by the National Centre for Sustainable Coastal Management (NCSM).
3. That in compliance of the above mentioned order it is submitted that the District Magistrate, South 24 Parganas has issued letters bearing memo nos. 29/NGT/843/R/24-Pt.1 and 29/NGT/844/R/24- Pt.1 dated 05/02/2025 to Executive Engineer, Kakdwip Irrigation Division and Divisional Forest Officer, South 24 Parganas respectively by requesting them to submit a report on the steps have been taken with regard to the implementation of the recommendations made by the National Centre for Sustainable Coastal Management (NCSM).
4. That the National Centre for Sustainable Coastal Management (NCSM) has made the following recommendations:
 - i) Implementation of living shoreline at the eroding sites (Sibpur) to stabilize the coast and safeguard life and property of the coastal community.
 - ii) Improving biological productivity by implementing living coastline structure that would naturally encourage ecological diversity.



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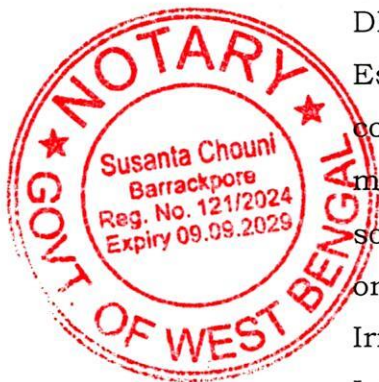
- iii) Accumulation of Sediments through mangrove plantation behind the offshore reef and at specific sites along Sagar Island.
- iv) Especially at Kapil Muni Asharam, implementing periodic beach nourishment with dredged material is strongly recommended.

The recommendations of National Centre for Sustainable Coastal Management (NCSM) are annexed herewith and marked as **Annexure R-1**

5. That in compliance of the order of Hon'ble Tribunal, the Executive Engineer, Kakdwip Irrigation Division has sent a report bearing memo no.197 dated 19.02.2025, which inter-alia states as follows:

"Implementation of living shoreline at the eroding sites (Shibpur) to stabilize the coast and safeguard life and property of the coastal community: -

- For sustainable protection and prevention saline ingress at Shibpur one scheme namely "Raising & strengthening of Sundarban Embankment" for a length of 2000.00 meter from Chainage 20.10 Km to 22.10 Km facing Bay of Bengal at Mouza: Dhoblat & Shibpur, P.S: Sagar, Dist: South 24 Parganas with Estimated Cost Rs.5927.13 Lakh has been prepared. This work comprising of brick block revetment for a slope of length of 38 mtr. (5:1), PCC toe having size 0.9X0.9 mtr and, nature based solution in the form of bullah/logs driving beyond the PCC toe on the sea side. Now, this scheme is under technical scrutiny of Irrigation Department.
- Implementation of living shoreline at the eroding sites (Shibpur) to stabilize the coast and safeguard life and property of the coastal community is under study at River Research Institute (RRI) of Irrigation department depending upon latest or available bathymetry data at the site and adjoining area.



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Periodic beach nourishment with dredged materials is strongly recommended at Kapil Muni Asharam for implementing the following:-

- Irrigation and Waterways Dept. vide memo No 206-IFC/IW/O/IFC/4M-10/2013 dated. 27.08.24 of the Secretary to the Govt of West Bengal has requested the Chairman, Shyama Prasad Mukherjee Port (SMPK), Kolkata towards remedial measures to arrest severe erosion near the Kapil Muni Ashram - pilgrimage tourist spot of India renowned for its Ganga Sagar Mela. On 11.09.2024 the Chief Hydraulic Engineer (CHE), SMPK, Kolkata has written to Prof. Murali, NTCPCW/IIT, Madras requesting to assist I&WD for Beach reclamation at Sagar. Prof. Murali, NTCPCW/IIT, Madras submitted a proposal for conducting mathematical model studies for beach stabilization considering Sand Motor and similar methods near the Kapil Muni Ashram. Subsequent to discussion, finally on 15.11.2024, the Joint Secretary(Works), Irrigation and Waterways Deptt. has in principle accepted the proposal with request to arrange the site visit at earliest to suggest immediate short-term measure which needs to be implemented before Ganga Sagar Mela and also to derive the way forward for long term solutions.

Before Gangasagar Mela, 2025, the damaged river bank was restored from left side and also from Pilgrim Road-01 to Pilgrim Road -03 for length of 530.00Mtr. Apart from that the damaged bank in between Pilgrim Road- 03 to Pilgrim Road- 06 has also been restored for a length of 220 Mtr.

- Restoration of both the above mentioned works have been done by transported earth, bullah driving, geo-synthetic, earth filled poly bags, nylon crates etc.

The report of Executive Engineer, Kakdwip Irrigation Division is annexed herewith and marked as **Annexure R-2**

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6. That in compliance of the order of this Hon'ble Tribunal, the Divisional Forest Officer, South 24 Parganas has sent a report bearing memo no.372/Law/15C-2 dated 19.02.2025, which inter-alia states as follows :

- Recently administrative approval has been received for creation of CSB plantation over 12 Ha. area at Sagar island near the Kapil Muni Ashram along with several naturebased interventions, which will helpin mitigating the issue of coastal erosion in this case.
- Mangrove forest play a crucial role in soil stabilization by trapping sediments and holding soil in place due to the presence of elaborate root system, effectively preventing coastal erosion and protectingshoreline from the damaging effects of waves and tides. Essentially acting as a natural barrier against coastal erosion by accumulating sediment and building land over time.
- Over the years, 24 Paraganas (South) Forest Division has undertaken mangrove & other plantation in Sagar Island and the details are shared below:-

Financial Year	Type of Plantation	Scheme	Total Plantation under Sagar block
2018-2019	Avenue Plantation over 22.9 km	Namami Gange	11.45 Ha.
	Institutional Plantation	Namami Gange	1.87 Ha.
2019-2020	Avenue Plantation over 16 km	Namami Gange	8 Ha.
2020-2021	Mangrove	MGNREGA	165 Ha.
2021-2022	Mangrove	MGNREGA	166 Ha.
	Coastal Shelter Belt Plantation	MGNREGA	20 Ha.
2022-2023	Avenue Plantation	Namami Gange	8 Km




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The report of the Divisional Forest, South 24 Parganas is annexed herewith and marked as **Annexure R-3**

7. That it is most respectfully prayed that this Hon'ble Tribunal may kindly be pleased to pass necessary Order/Orders as is deemed fit for the ends of justice and that the deponent has high regard to the Order/Orders as passed by this Hon'ble Tribunal and the deponent herein undertakes to implement the orders of this Hon'ble Tribunal in letter and spirit.

Identified by me


Deponent
District Magistrate,
South 24-Parganas



**Solemnly Affirmed and Declared
before me on Identification**



SUSANTA CHOUNI
NOTARY, Govt. of W.B.
Regd. No. 121/2024
High Court, Kolkata-700001

22 FEB 2025

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VERIFICATION:

I, the deponent within named, do hereby verify and declare that the statements made in the aforesaid paragraphs are true and correct to the best of my knowledge and information and I believe that nothing material has been concealed there from.

Verified at Kolkata on the _____ Day of February, 2025

Identified by me


Deponent
District Magistrate,
South 24-Parganas



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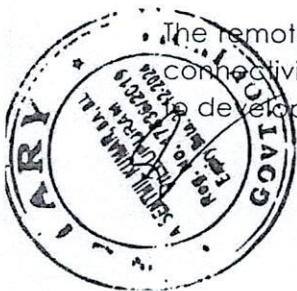
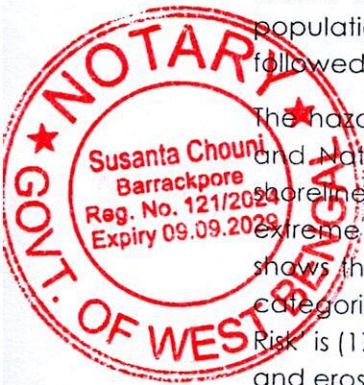
Rising sea, shrinking sands erode vibrancy of Ganga Sagar Mela

West Bengal is the eastern most coastal state in India bordering the Bay of Bengal. The state borders Odisha in the southwest and Bihar and Jharkhand to the west. It shares a border with Bangladesh on the east and with Assam, Bhutan, Sikkim and Nepal to the north. The southern boundary of the state is the Bay of Bengal. The world's largest delta formed by the Ganges and Brahmaputra rivers spread over the Bengal region includes nine districts of West Bengal comprising one third of the delta while the remaining two thirds is in Bangladesh. The Indian Sundarban is in the North and South 24-Parganas districts of West Bengal.

Sagar Island is connected to the mainland only through the sea route. In mid-January every year during Makar Sankranti, there is a huge congregation of pilgrims in Gangasagar at the southern tip of Sagar Island. This influx of pilgrims for the Gangasagar Mela is considered only second to the Kumbh Mela and at this time, there are considerable problems related to wastewater discharge, solid waste generation and disposal. Sagar Island has a perimeter of 71 km, covered mostly by revetment type concrete and earthen embankments. Gangasagar is the only beach in Sagar Island. Mangroves are present at the north-western and the south-eastern part of the island. Shoreline changes are prominent along the Coast of Sagar Island. Predominant areas of erosion along the Sagar Island include the eastern and southern stretches, particularly at Sibpur (Boatkhali). Accretion is observed at the mouth of Sikarpur creek. Cyclonic storm surges and tidal surges cause regular damage with the most recent being Cyclone Aila that made landfall close to Sagar Island. The population is predominantly rural with the major livelihood being agriculture followed by plantation (betel vines), fisheries and tourism.

The hazard line delineated by the MoEFCC through the Survey of India (SoI) and National NCSCM, taking into account tides, waves, sea level rise and shoreline changes has been used for identifying areas affected by long term extreme events. Analysis of the percentage of various risk categories for Sagar shows that major portion (63%) of the area within the hazard line of Sagar is categorized as 'High Risk'. The area at 'Very High Risk' is 18%, at 'Moderate Risk' is (17%) and at 'Low Risk' is 2%, indicating the severity of the risk to flooding and erosion along the coast of Sagar Island.

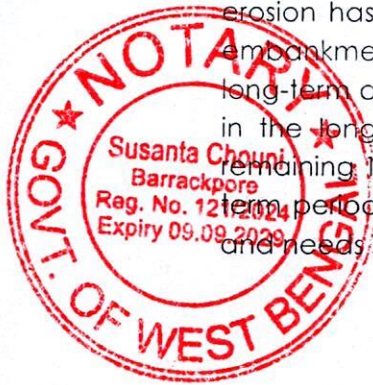
The remote geographical setting of Sagar Island and the associated limited connectivity, currently confined to access only by boat, is a major constraint in development. The topography of Sagar Island is largely flat, with very slight



slope variations which are primarily manmade – of canals and bunds. Because of the low-lying topography and location of Sagar Island, the coastal zone is susceptible to flooding events during cyclones up to even 6 m elevation (the highest point is 15 m). The island is located in the Ganges Delta, with River Hooghly on its western side, River Muriganga (which is a tributary of River Hooghly) on the east and Bay of Bengal on the southern end. This positioning exposes the island to waves, currents and tides, which causes certain stretches of the island to erode at a faster rate.

Erosion is a chronic problem along Sagar Island. Embankments have been built to protect the coast from erosion as well as for reclamation at many locations. Areas of high erosion along the Coast of Sagar Island are indicated in Figure 1. Sagar Island has a perimeter of 71 km, covered mostly by revetment type concrete and earthen embankments. Gangasagar is the only beach in Sagar Island. Mangroves are present at the northwest and the south eastern part of the island. Shoreline changes are prominent along the coast of West Bengal especially at a few locations along the Coast of Sagar Island. Predominant areas of erosion along the Sagar Island include the eastern and southern stretches, particularly at Sibpur (Boatkhal). Accretion is observed at the mouth of Sikarpur creek.

It is observed that almost the entire coast is protected by embankments. Despite the construction of embankments, it is evident from satellite data that erosion has been occurring on the seaward sides and gap areas between embankments. About 44.6% and 54.7% of the coast experiences erosion on long-term and short-term periods respectively. In the case of accretion, 38.7% in the long-term and 19.1% over short-term periods were observed. The remaining 16.7% of the coast is stable in the long-term and 26.2% in the short-term period. Analysis indicates high erosion in the short-term at Sagar Island and needs site-specific interventions to address this major concern.



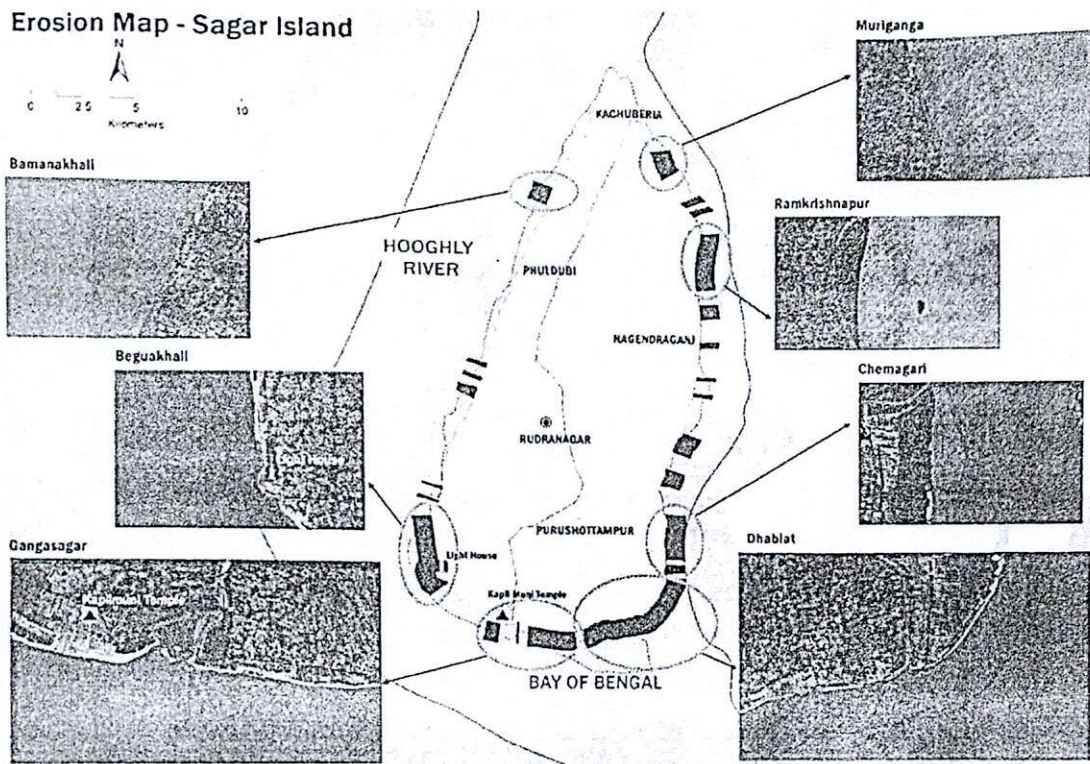


Figure 1: Major eroding stretches of Sagar Island on short-term time scales (2011-2018)

Shoreline changes along the Coast of Sagar Island

Shoreline changes were estimated over two time periods (Figure 2), along Sagar Island: (a) long-term extending from 1975 to 2018 and (b) short-term from 2011 to 2018. Erosion is dominant along the southern part of the coast extending from Beguakhali to Chemagari. Figure 3 provides the percentage of shoreline change along Sagar Island, estimated for long-term (1975-2018) and short-term (2011-2018) using satellite data.



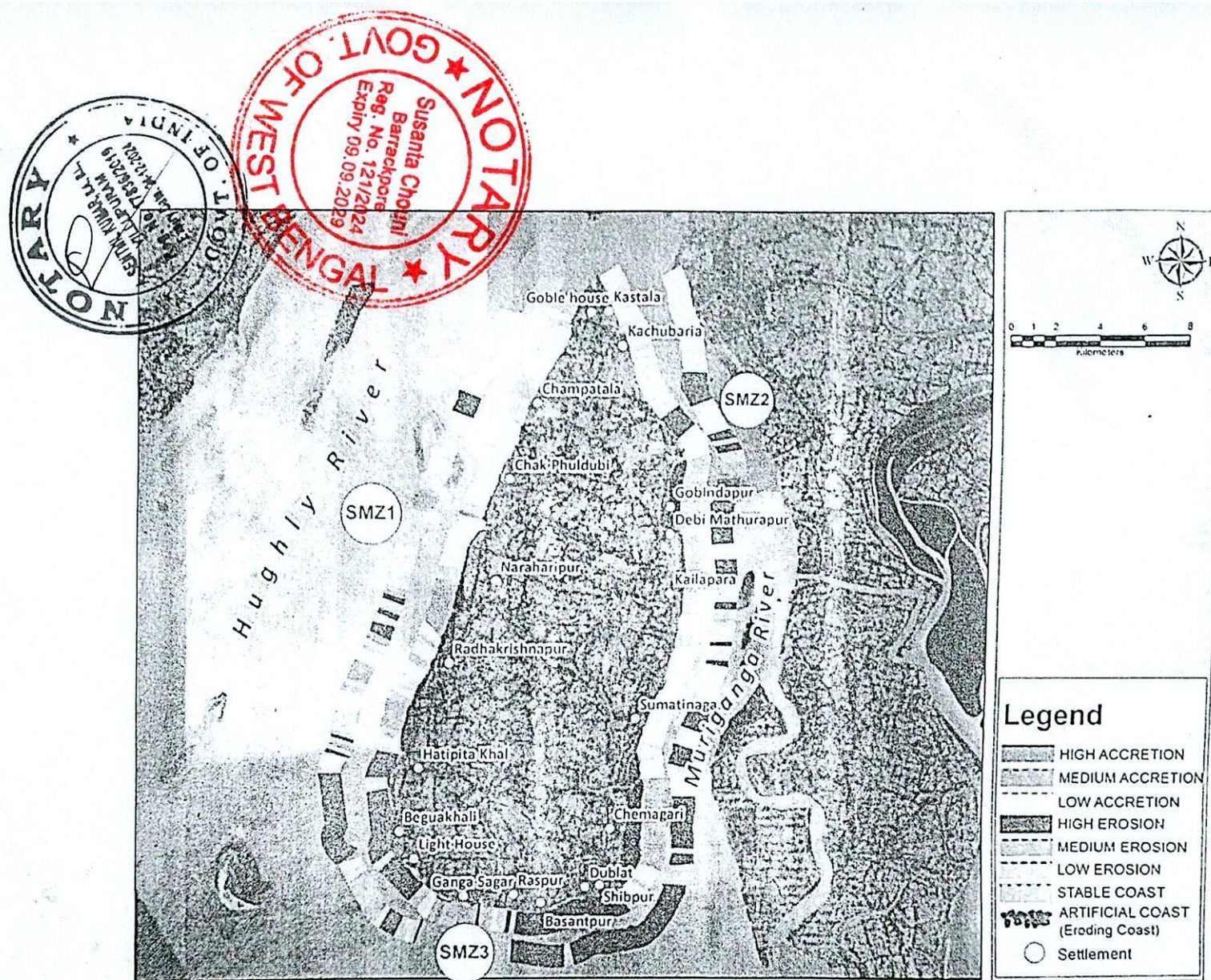


Figure 2: Long-term (Inner Layer) and short-term (Outer Layer) shoreline change status map for Sagar Island

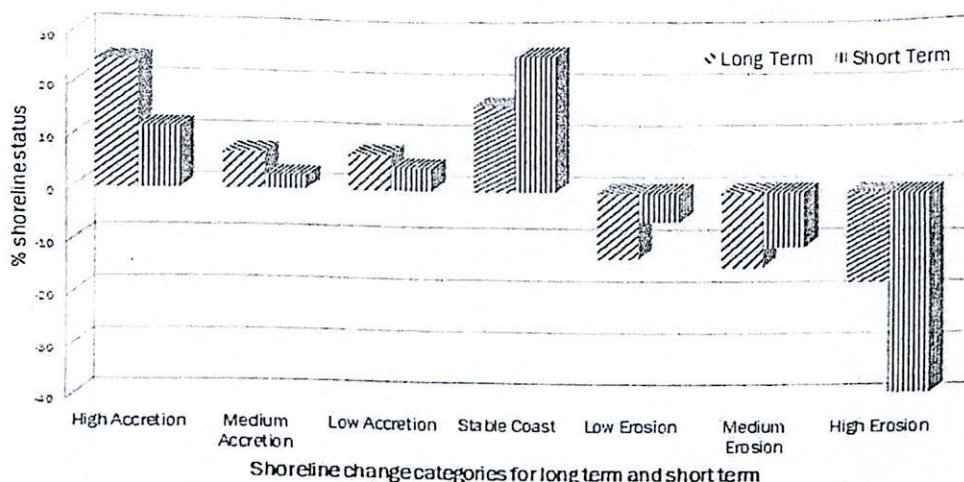


Figure 3: Shoreline change (%) in long-term and short-term along Sagar Island

It is observed that almost the entire coast is protected by embankments. Despite the construction of embankments, it is evident from satellite data that erosion has been occurring on the seaward sides and gap areas between embankments. About 44.6% and 54.7% of the coast experiences erosion on long-term and short-term periods respectively. In the case of accretion, 38.7% in the long-term and 19.1% over short- term periods were observed. The remaining 16.7% of the coast is stable in the long-term and 26.2% in the short-term period (Figure 3 and Tables 1 and 1).

Table 1: Percentage of long-term shoreline change classification

Long-term Classification	Shoreline Length (km)	% Erosion/ Accretion	Cumulative % Erosion/ Accretion
Length of Coastline	71.96		
High Erosion	12.44	17.29	
Medium Erosion	10.37	14.41	
Low Erosion	9.25	12.85	44.55
Stable Coast	12.03	16.72	16.72
High Accretion	17.63	24.50	
Medium Accretion	5.17	7.19	
Low Accretion	5.07	7.04	38.73

Table 2: Percentage of long-term shoreline change classification



Short-term Classification	Shoreline Length (km)	% Erosion/ Accretion	Cumulative Erosion/ Accretion	%
Length of Coastline	72.29			
High Erosion	27.87	38.55		
Medium Erosion	7.64	10.57		
Low Erosion	4.01	5.55	54.67	
Stable Coast	18.97	26.24	26.24	
High Accretion	8.65	11.97		
Medium Accretion	1.89	2.61		
Low Accretion	3.25	4.50	19.08	

The analysis shows that erosion is high in the short-term (Figure 4) at Sagar Island. Analysis of changes from long-term to short-term periods reveal that accretion has changed to high erosion in sections of the coast shown as red circles *a* to *f* (Figure 5). Similarly, other areas show changes from accretion to low/medium erosion and low to medium and medium erosion to high erosion. They are depicted as yellow circles at *g* to *k* in Figure 5. Accretion has moderately decreased to 7% and a marginal increase in stable coast was observed (indicated in blue circles from *l* to *p*). Further, in areas south of *k*, though the length is insignificant, high erosion is noticed.

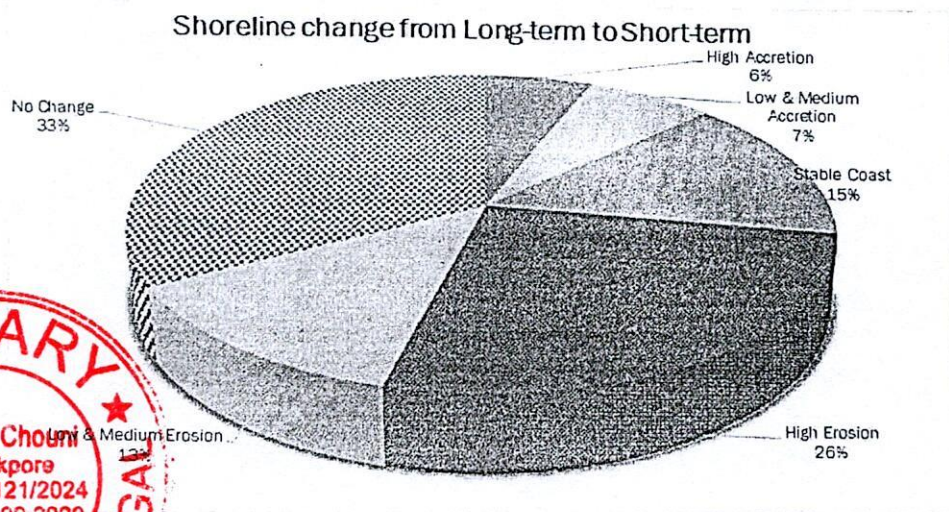
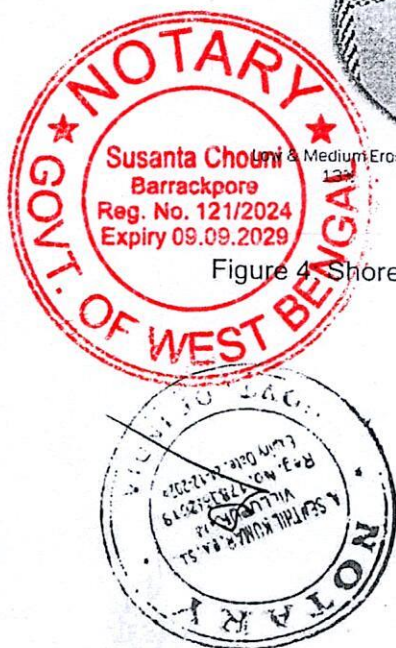


Figure 4 Shoreline change (%) from long-term to short-term along Sagar Island



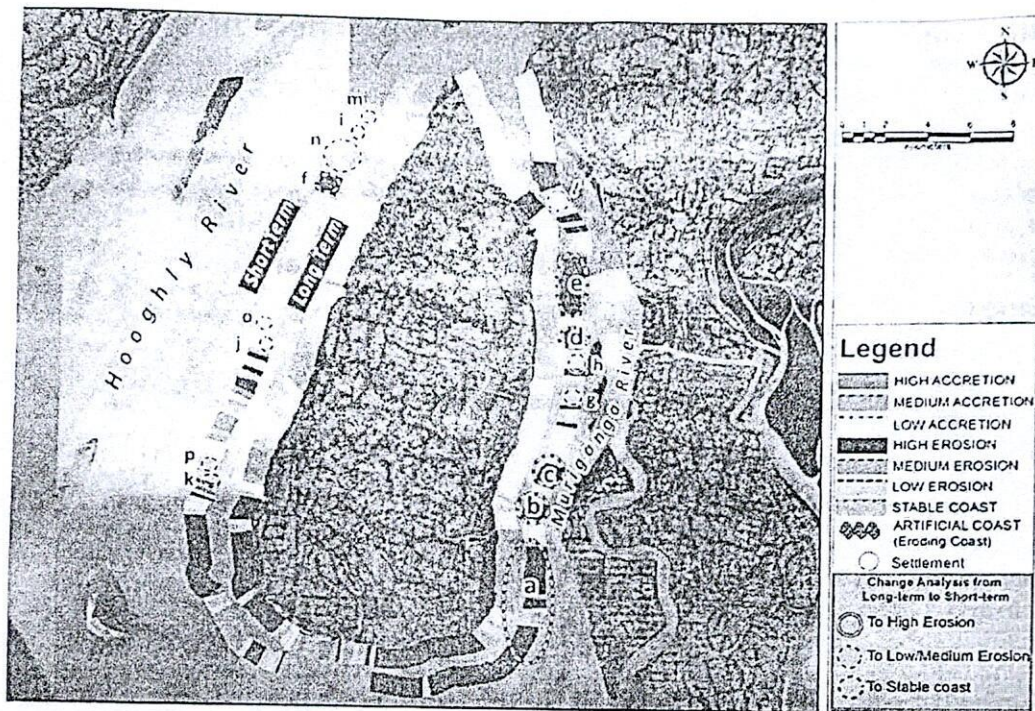


Figure 5: Analysis of change from long-term to short-term for Sagar Island

Based on the geospatial technical studies using DEM data, the coastal areas of Sagar Island that will be inundated due to coastal flooding and coastal erosion are approximately 16%, 10%, and 24% for the time period between 1952 and 2011, 2011 and 2100, and 1952 and 2100, respectively. The net reduction of land area lost under sea (10%) between 2011 and 2100. It is observed that nearly 13 sq. km of cropland will be inundated in the next 100 years.

Mathematical Modelling studies by NCSCM

Numerical models have been run considering the existing structures (sea walls at different) along the coast of shoreline of Sagar Island. The scenarios developed indicated that in course of time, the shoreline would be stabilized and no further erosion would occur. In order to test this hypothesis, shoreline evolution model simulations were carried out with existing coastal structures along the southern coast of Sagar Island for a period of 25 years (2018 to 2043) (Attached as Annex IV).

Detached Offshore Reefs along the south of Sagar Island coast



The model simulation has been carried out to evaluate the impacts of detached offshore reefs with gap of 100m between the reefs at beach locations of Sagar Island to estimate the shoreline change. The detached reef structure facilitates to reduce the wave action and create strong currents to drive the sediments without trapping. It is useful for ease of movement of vessels/boats across the varying tidal conditions. These currents could also prove to be harmful so as to cause a sudden and strong drifts, which is unfavorable in a public area in the vicinity of a pilgrim site. However, it will not be suitable at the Sibpur coast due to the strong tidal current than the wave action.

Groyne Field at Kapil Muni Ashram

Numerical models (Hydrodynamic, Spectral wave and Sediment Transport models) have been configured over the south of Sagar Island and simulated flow conditions, wave transformation and sediment transport with and without the shore protection measures during the monsoon period. Specially, model simulations have been conducted with groyne fields to evaluate the shore stability along the coast of Kapil Muni Ashram and Sibpur, South of Sagar Island. The series of T-shaped groynes implemented in the numerical model from the Low Tide Line and conducted the model simulations for a tidal cycle with the forcing of monsoon wind fields (>7 m/s). It was observed that the currents are diverted from the groyne field and increased the magnitude of current from 0.4 m/s to 0.6 m/s on the southeast region of south of Sagar Island (Figure 6). During flood tide period, the magnitude of current currents from 0.2 m/s to 0.4 m/s predicted behind the groyne field and could cause the removal of shore sediments and scouring at the groyne structure (Figure 7).

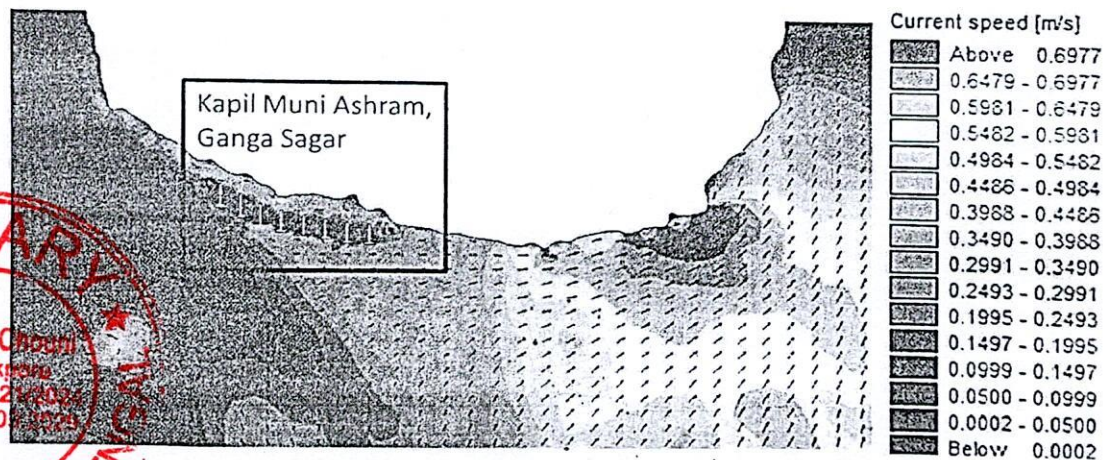


Figure 6: effect of groyne fields on flow environment during flood tide along the south of Sagar Island

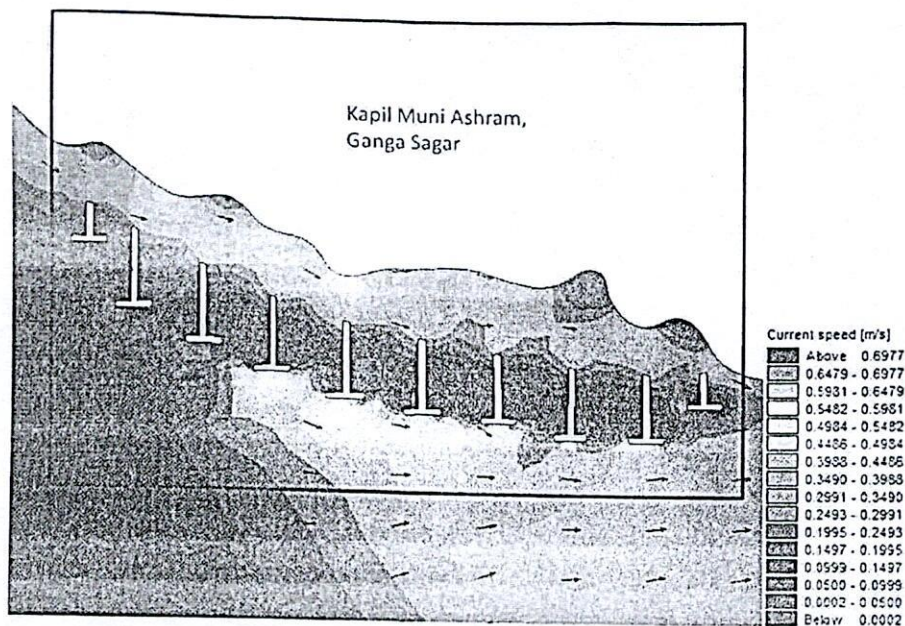
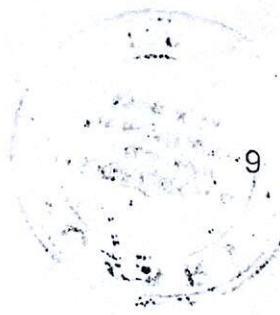


Figure 7: enlarged view of groyne fields on flow environment during flood tide along the southwest of Sagar Island

Spectral wave model simulations have been conducted to understand the wave transformation in and around the groyne field in the vicinity of Kapil Muni Ashram. The predictions clearly indicated the diffraction of the waves by varying the wave height from 0.8m to 1.04 m during the flood tide condition (Figure 8). It also revealed that the effect of wave was nullified when it approached the Coast of Sagar Island. However, the movement of sediments can be trapped by implemented groynes and cause sediment deficient in other regions.



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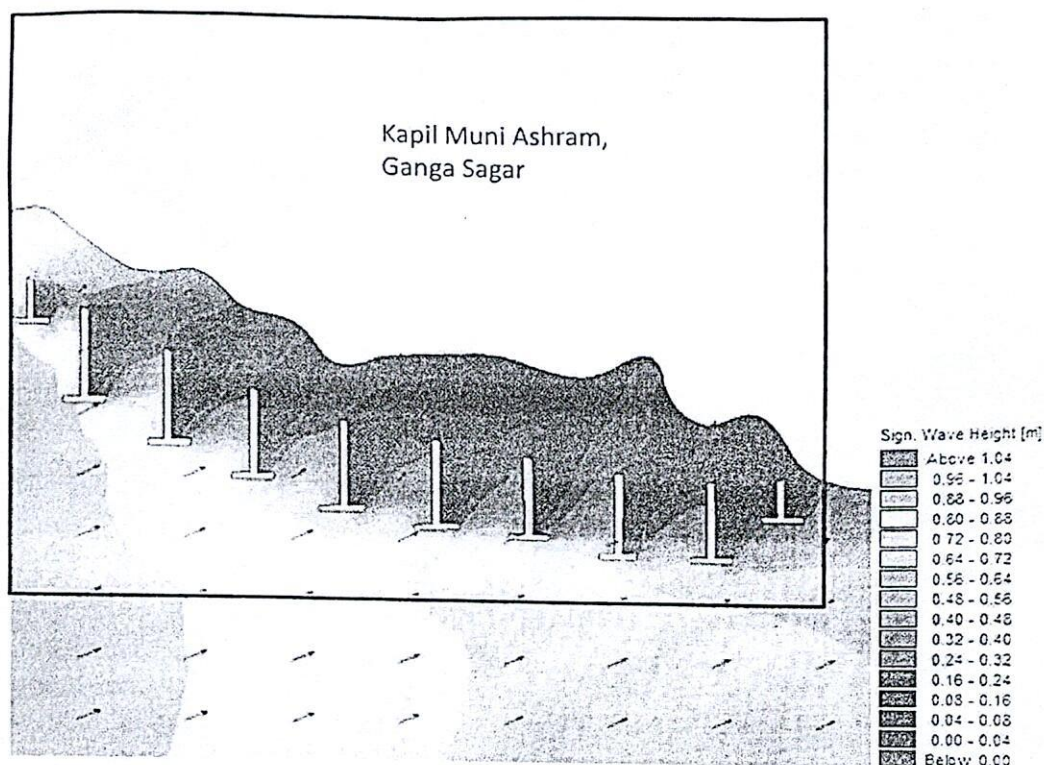
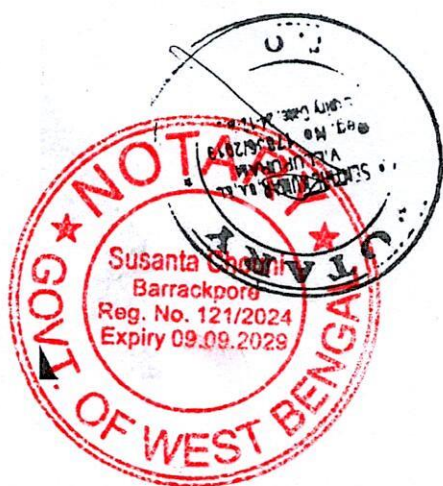


Figure 8: variation of significant wave height at the groyne field in the vicinity of Kapil Muni Ashram

Sediment transport model simulated the sediment transport rate and direction of the net sediment transport using the current and wave conditions with the groyne fields. The rate of sediment is predicted about 1.461×10^{-5} m³/s/m or 0.03873 kg/s/m in the direction of net sediment transport about 54.67°. During the low tide conditions, the rate of sediment transport is about 3.709×10^{-7} m³/s/m or 9.829×10^{-4} kg/s/m in the direction of net sediment transport is 116.13°. The sediment transport model predictions revealed that the high rate of sediment can be trapped at the groynes field during high tide compared low tide period. The sediment concentration profile has shown in the Figure 9 with reference to the mean velocity profile.



The Kármán-Prandtl equation used to compute the velocity profile is generally considered valid in the lower 10% or 20% of the water column.
It is used here over a greater range !

z (m)	U (m/s)	SSC (kg/m ³)
1.5	0.6868	2.276
1	0.6	2.771
0.7	0.5237	3.295
0.5	0.4516	3.88
0.3	0.3423	4.972
0.2	0.2555	6.054
0.1	0.1837	7.125
0.07	0.1531	7.533
0.05	0.136	7.939
0.03	0.1008	8.599
0.02	0.07285	9.161
0.01	0.02512	10.208

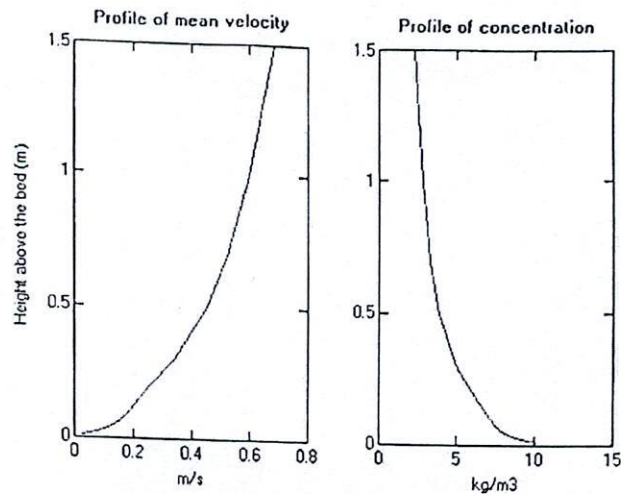


Figure 9: profiles of mean velocity and sediment concentrations in the vicinity of Kapil Muni Ashram during flood tide

The multiple T-shape groyne fields clearly showed that the reduction of wave heights from 1.04 m to 0.4 m ($\approx 60\%$) and trapping of sediments during the flood tide period. However, groyne filed affect the flow environment and transport of sediment. It could be caused sediment deficit in the other regions of the south Sagar Island.

Recommendations by NCSCM

The ICZM Plan was developed based on a framework – by preparing management sub-plans addressing the major concerns such as: coastal erosion (Shoreline Management), need for livelihood diversification (Livelihood Management), degradation of coastal ecosystems and habitats (Conservation Management), pollution due to sewage and solid wastes (Pollution Management), large number of tourists and inadequate tourism infrastructure (Tourism Management), and increased frequency and intensity of hazards (Disaster Management). Water Resources Management was considered as an additional sub-plan to address issues of future water security and sustainability. Baseline data and analysis of current land use, land cover and water resources have been carried out. For the first time, spatial planning of the marine area of West Bengal has been attempted, by preparing the Marine Spatial Plan, which includes components of Blue Economy.

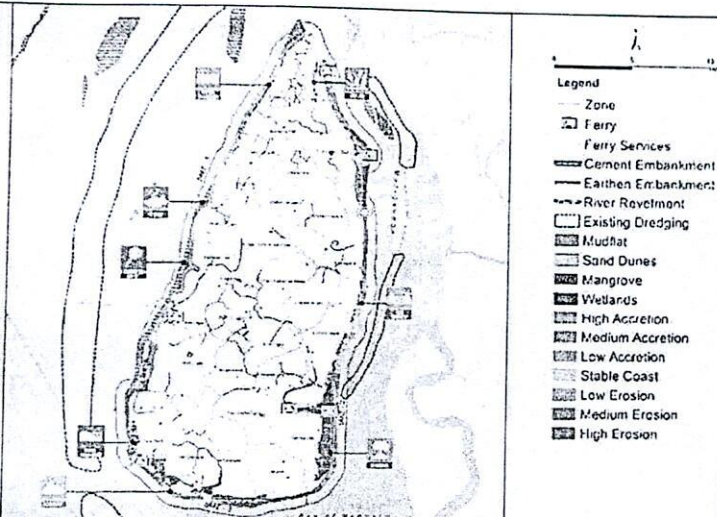
Shoreline Management Plan Recommendations:

Through a comprehensive examination of shoreline change analysis, coastal processes, and numerical modeling, NCSCM has provided detailed intervention plans along the Sagar Island. Specifically, the Kapil Muni Ashramam stretch has been



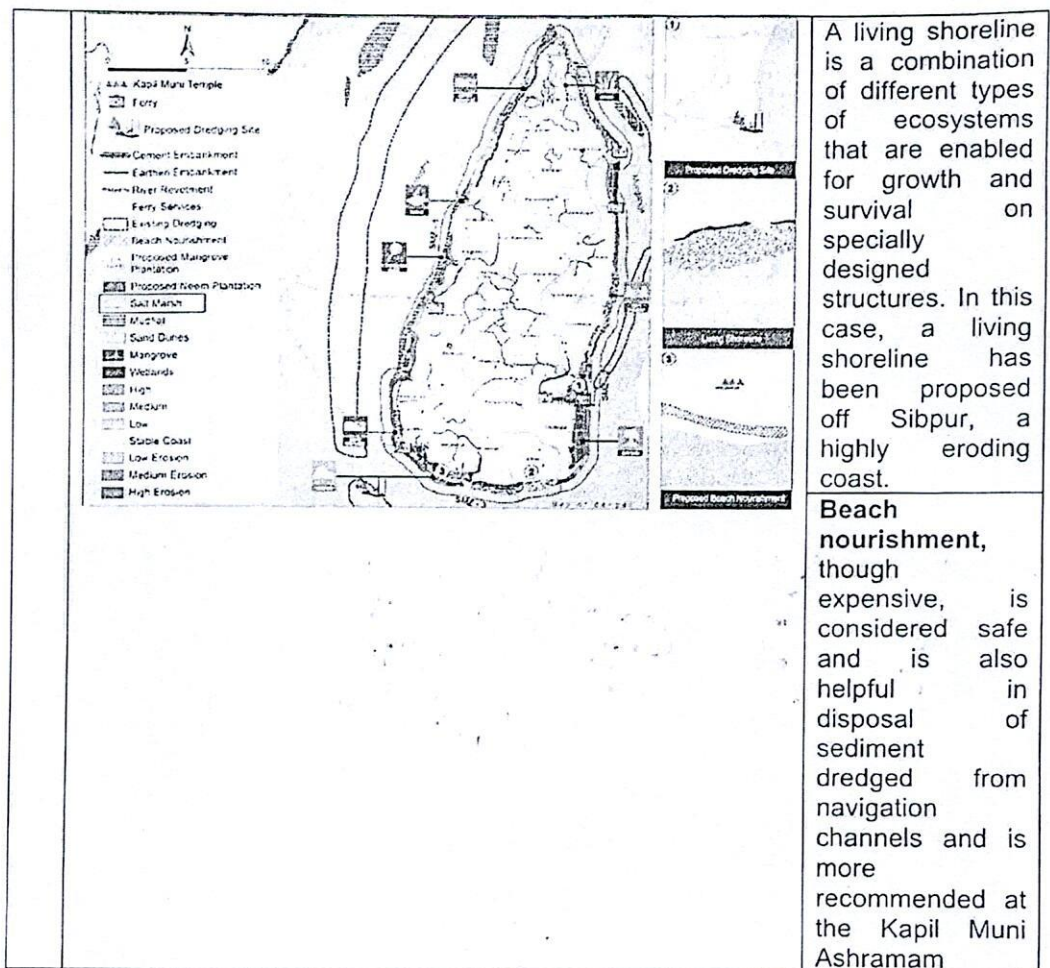
identified as a focal point for beach nourishment using dredged materials. Details are provided in the Table 1.

Table 1: erosion control measures along the Sagar Island and Kapil Muni Ashramam

		Details
Existing		<p>Sagar Island is encircled by embankments, mostly earthen, a few cemented. The island is undergoing extensive erosion in patches. Approachable only through the sea route and surrounded by shipping lanes, dredging activities are also being carried out.</p>
		<p>Dredging of channels is required to enable proper navigation as well as free exchange of water.</p>

Proposed





Key recommendations provided under the shoreline management plan and are listed below:

- **Implementation of living shoreline** at the eroding sites (Sibpur) to stabilize the coast and safeguard life and property of the coastal community
- Improving biological productivity by implementing the living coastline structure that would naturally encourage ecological diversity
- Accumulation of sediments through mangrove plantation behind the offshore reef and at specific sites along Sagar Island.
- Especially at Kapil Muni Ashramam, implementing **periodic beach nourishment with dredged material** is strongly recommended. This proactive measure not only helps to save the beach but also mitigates continuous erosion. Moreover, it



plays a crucial role in maintaining the aesthetic appeal of the beach region. Additionally, in light of rising sea levels due to climate change, such initiatives are vital for protecting coastal areas. Therefore, integrating regular beach nourishment practices is essential for safeguarding the natural beauty and resilience of Kapil Muni Ashramam and its surrounding areas.

For more detailed information, bathymetry, land use, and other relevant data, the ICZM plan of Sagar Island submitted to SPMU of the Integrated Coastal Zone Management Project (ICSMP) phase-1, West Bengal, may be consulted.



[Signature]
A. SENTHIL KUMAR, B.A., LL.B.
ADVOCATE & NOTARY PUBLIC
Government of India
No. 27/B, Kamarajar Nagar,
Tindivanam - 605 001.
Cell: 90942 56442
19/8/2024





Government of West Bengal
Irrigation & Waterways Directorate
Office of the Executive Engineer Kakdwip Irrigation Division,
Kakdwip, South 24-Parganas, Pin Code - 743 347.
e-mail Id eekid18@gmail. Com

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Memo. No. 197

Dated. 19.02.2025

From: Executive Engineer
Kakdwip Irrigation Division

To: ✓ The District Magistrate
New Treasury Building (9th Floor), Alipore
Kolkata- 700 027.

Sub: Reports regarding the steps taken towards implementation of the recommendations made by the National Centre for Sustainable Coastal Management (NCSCM) in the matter of O.A. case no. 70/2024/EZ (earlier O.A. no. 160/2024/PB), NGT.

Ref:- Your Memo No. 29/NGT/843/R/24 -Pt-1 dated: 05.02.2025

Sir,

In pursuance to memo under reference, I am to submit herewith detail reply over recommendations of NCSCM as below:-

1. **Implementation of living shoreline at the eroding sites (Shibpur) to stabilize the coast and safeguard life and property of the coastal community:-** For sustainable protection and prevention saline ingress at Shibpur one scheme namely " Raising & strengthening of Sundarban Embankment for a length of 2000.00 M from Ch. 20.10 Km to 22.10 Km facing Bay of Bengal at Mouza: Dhoblat & Shibpur, P.S:Sagar, Dist: South 24 Parganas with Estimated Cost Rs.5927.13 Lakh has been prepared .This work is comprising of brick block revetment for a slope of length of 38 Mtr(5:1) , PCC toe having size 0.9X0.9 Mtr and , Nature Based Solution in the form bullah driving beyond the toe on the sea side etc. This scheme is under technical scrutiny .Implementation of living shoreline at the eroding sites (Shibpur) to stabilize the coast and safeguard life and property of the coastal community is under study at River Research Institute (RRI) of this department depending upon latest or available bathymetry data at the site and adjoining area.
2. **Improving biological productivity by implementing living coastline structure that would naturally encourage ecological diversity:-** the concept of living coastline structure is being studied by RRI at Shibpur (Boatkhal). After its implementation depending upon viability, biological productivity and ecological diversity may be assessed by appropriate authority , e.g. Environment Department.
3. **Accumulation of Sediment through mangrove plantation behind the offshore reef and at specific sites along Sagar Island:-** This appears to be related to forest department.

4. **Especially at Kapil Muni Ashram , implementing periodic beach nourishment with dredged materials is strongly recommended:-**
• Irrigation and Waterways Dept. vide memo No 206-IFC/IW/O/IFC/4M-10/2013 dated. 27.08.24 of the Secretary to the Govt of West Bengal has requested the Chairman, Shyama Prasad Mukherjee Port (SMPK) , Kolkata towards remedial measures to arrest severe erosion near the Kapil Muni Ashram – pilgrimage tourist spot of India renowned for its Ganga Sagar Mela. On 11.09.2024 the Chief Hydraulic Engineer(CHE) ,SMPK, Kolkata has written to the Prof. Murali, NTCPCW/IIT, Madras requesting to assist I&WD for Beach reclamation at Sagar. Prof Murali, NTCPCW/IIT, Madras submitted proposal for conducting mathematical model studies for beach stabilization considering Sand Motor and similar methods near the Kapil Muni Ashram. Subsequent to discussion through VC on 09.11.2024 that has taken place in connection with aforesaid matter where officials from I&WD ,SMPK , Prof Murali and others were present, finally on 15.11.2024 the Joint Secretary

P.T.O

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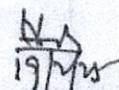
(Works), Irrigation and Waterways Deptt. has informed Prof. Murali, NTCPWC/IIT, Madras that his proposal has been principally accepted with request to arrange his site visit at earliest to suggest immediate short term measure which needs to be implemented before G.S. Mela and also to derive the way forward for long term solutions.

● Before Gangasagar Mela, 2025 the damaged beach was restored from left side and also of PR-01 to PR-03 for length of 530.00m. Apart from that the damaged bank in between PR-03 to PR-06 has also been restored for a length of 220 Mtr. Restoration of both the above mentioned works have been done by transported earth, bullah driving, geo-synthetic, earth filled poly bags, nylon crates etc.

● There is a planning for taking of sea shore protection by nature based solution from left side of PR-01 (Tapabon) to PR-05 in front of Kapil Muni Ashram at mouza-Gangasagar, Block and PS: Sagar for a length of 1192.00Mtr. by double row bullah piling. Expert view on this scheme has also been obtained from Dutch Consultancy firm – Royal Haskoning DHV.

This is for your kind information.

Yours faithfully,



Executive Engineer
Kakdwip Irrigation Division.

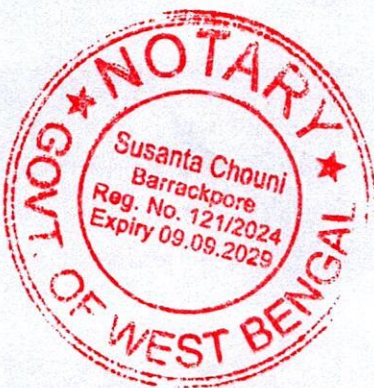
Memo. No. 197/2

Dated : 19.02.2025

Copy submitted for favour of kind information to:-

- 1) The Chief Engineer (South), Irrigation & Waterways Directorate, Jalasampad Bhawan (1st Floor), Salt Lake City, Kolkata-700 091. This has a reference to his Memo No:278-C.I dated: 17.02.2025
- 2) The Superintending Engineer, Eastern Circle, Irrigation & Waterways Directorate, Jalasampad Bhawan (8th Floor), Salt Lake City, Kolkata-700 091.


Executive Engineer
Kakdwip Irrigation Division.





Government of West Bengal
Directorate of Forests
Office of the Divisional Forest Officer
24 Parganas (South) Division
 4th floor, New Administrative Building
 12, Biplabi Kanailal Bhattacharjee Sarani
 Alipore, Kolkata – 700 027.

Tele & fax: (033) 2479 9032, Email – dfo24pgss.fd-wb@gov.in

Annexure-R-3



(26)

No. 372/Law/15C-2

Date: 19.02.2025

To,
 The District Magistrate
 South 24 Parganas

Sub :: Reports regarding the steps taken towards implementation of the recommendations made by the National Centre for Sustainable Coastal Management (NCSCM) in the matter of O.A. Case No. 70/2024/EZ (earlier O.A. No. 160/2024/PB), NGT

Ref :: Your Office Memo no. 29/NGT/844/R/24-Pt.1 Date- 05.02.2025

Sir,

With reference to above subject, kindly find below herewith the report in respect of 24 Parganas (South) Division as desired by you.

Reply to point no. 1 & 2:

As per available records, no proposal related to implementation of living shoreline has been allotted to 24 Parganas (South) Forest Division at the eroding sites (Sibpur) to stabilize the coast.

However recently administrative approval has been received for creation of CSB plantation over 12 Ha area at Sagar island near the Kapil Muni Ashram along with several nature based interventions, which will help in mitigating the issue of coastal erosion in this case.

The Detailed Project Report of the above mentioned work is annexed herewith for the ready reference.

Reply to point no. 3:

Mangrove forest play a crucial role in soil stabilization by trapping sediments and holding soil in place due to the presence of elaborate root system, effectively preventing coastal erosion and protecting shoreline from the damaging effects of waves and tides. Essentially acting as a natural barrier against coastal erosion by accumulating sediment and building land over time.

Over the years, 24 Parganas (South) Forest Division has undertaken mangrove & other plantations in Sagar Island and the details are shared below:-

Financial Year	Type of Plantation	Scheme	Total Plantation under Sagar Block
2018-2019	Avenue Plantation over 22.9 Km.	Namami Gange	11.45 Ha
	Institutional Plantation	Namami Gange	1.87 Ha.
2019-2020	Avenue Plantation over 16 Km	Namami Gange	8 Ha
2020-2021	Mangrove	MGNREGA	165 Ha
2021-2022	Mangrove	MGNREGA	166 Ha
	Coastal Shelter Belt Plantation	MGNREGA	20 Ha
2024-2025	Avenue Plantation	Namami Gange	8 Km

Reply to point no. 4:

Not pertaining to Forest Department.

This is for your kind information & necessary action please.

[Signature]
Divisional Forest Officer
24 Parganas (South) Division



BEFORE THE HON'BLE
NATIONAL GREEN TRIBUNAL,
EASTERN ZONE BENCH,
KOLKATA

ORIGINAL APPLICATION NO.
70/2024/EZ
(Earlier O.A No.160/24/PB)

In The Matter of

News item titled "Rising Sea,
Shrinking sands erode vibrancy
of Ganga Sagar Mela appearing
in the Hindu dated 15.01.2024
... Applicant(s)

Versus

West Bengal State Coastal Zone
Management Authority & Ors.

... Respondents

ACTION TAKEN REPORT IN THE
FORM OF AFFIDAVIT ON
BEHALF OF THE RESPONDENT
NUMBER 03, DISTRICT
MAGISTRATE & COLLECTOR,
SOUTH 24 PARGANAS DISTRICT

Madhumita Bhattacharjee
Advocate
for the State of West Bengal
Mobile-0811785211
E-mail:
office.advocate.madhumita@gmail.com