

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL,**

**PRINCIPAL BENCH, NEW DELHI**

**ORIGINAL APPLICATION NO. 402 OF 2025**

**IN THE MATTER OF:**

**In Re: News Item Titled 'Ravenous Sea Feeds on Sunderbans Shore 40% Of Ghoramara Island To Shrink By 2042' Appearing In The Telegraph Online Dated 04.08.2025**

**...Applicant**

Versus

**Union Of India & others**

**...Respondents**

**REPLY AFFIDAVIT ON BEHALF OF RESPONDENT NO. 3 (THE GEOLOGICAL SURVEY OF INDIA)**

I, Mukesh Verma, S/o Shri Ramji Lal Verma, aged about 43 years working as Director, Geological Survey of India in the M/o Mines, Pushpa Bhawan, New Delhi do hereby solemnly affirm and state on oath as under:

1. That I am competent to swear the present reply by way of affidavit on behalf of Respondent No. 3, i.e., The Geological Survey of India (hereinafter referred to as "GSI"), and I am aware of the facts and circumstances of the case based on the record.



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2. I am duly authorised and competent to swear this affidavit and file this Counter Reply on behalf of the said Respondent.
3. That the contents of the present Original Application, O.A. No. 402/2025, which has been taken up *suo motu* by this Hon'ble Tribunal, based on a news report, have been carefully perused, and the answering Respondent submits its reply as follows.

### PRELIMINARY SUBMISSIONS

1. That the answering Respondent No. 3 is the premier geo-scientific organisation of the nation, established in 1851, and the principal mandate of GSI is the creation and updating of national geo-scientific information and mineral resource assessment. That its functions are primarily scientific and advisory in nature, involving geological, geophysical, and geochemical surveys, specialised investigations, and research.

That it is humbly submitted that GSI is not an implementing, executive, or regulatory authority. The mandate of GSI does not extend to the execution of coastal protection works, construction of embankments, rehabilitation or resettlement of populations, or the enforcement of environmental regulations such as the Coastal Regulation Zone (CRZ) Notification. These functions fall within the purview of other specialised agencies of the Central and State Governments.

2. That the phenomenon of coastal erosion in the Sundarbans delta, including Ghoramara Island, is a complex and dynamic process governed by a multitude of natural and anthropogenic factors. These include eustatic sea-level rise, regional subsidence of the delta plain, sediment budget deficit, high tidal energy, frequent cyclonic storms, and modifications in upstream river discharge. It is a long-term geological process that requires a multi-disciplinary and multi-agency approach for its management and mitigation.

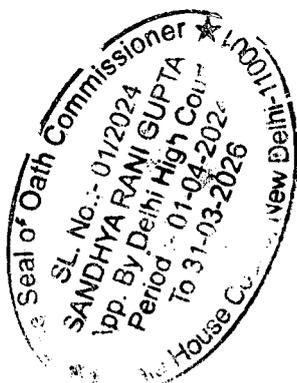


3. That the answering Respondent denies any allegation, imputation or inference suggesting inaction, negligence or omission on its part with regard to the study or monitoring of the erosion processes in the Sunderbans region. The GSI has, in fact, carried out detailed investigations and has periodically generated scientific data to aid evidence-based coastal management and planning.

### REPLY ON MERITS

1. That the GSI, through its Operational Unit East Coast-I, Marine and Coastal Survey Division, has undertaken a comprehensive project titled "*Geological studies in the Western part of Sundarbans towards generating field/lab database for IGC 2020 field excursions*" (IGC Code: ER-001), covering key river systems and island clusters, including Nayachhar, Ghoramara, Chemaguri-Sagar Island, Bakkhali, Henry Island, G-Plot, Kalash Beach, Bonnie Camp, Dobankee, Sajnekhali, Satjelia, and Jharkhali.
2. That it is submitted that GSI has conducted systematic studies on shoreline changes along the West Bengal coast, including the islands of the Sundarbans. These studies involve the use of satellite imagery from different time periods, coupled with field surveys, to assess the rates and patterns of erosion and accretion. The findings of these scientific investigations are periodically published and shared with various stakeholders, including the State and Central Government agencies, to aid in planning and management.

A copy of the Geological studies in the Western part of Sundarbans towards generating a field/lab database for IGC 2020 field excursions along the rivers like



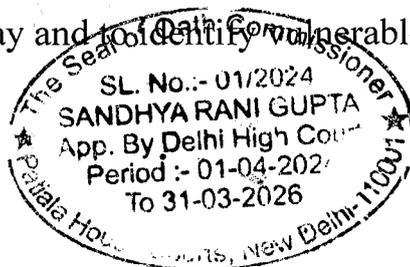
Hooghly, Muri Ganga, Hatalia-Doania, Saptamukhi, Thakuran, Matla, Bidya in the locations like Nayachhar, Ghoramara, Chemaguri-Sagar Island, Bakkhali, Henry Island, G-Plot, Kalash Beach, Bonnie Camp, Dobankee, Sajnekhali, Satjelia, Jharkhali (IGC Code: ER-001) is annexed as Annexure R3/1.

3. That the study revealed that the islands of the Indian Sunderbans have collectively lost over 250 sq. km of land between 1969 and 2019, particularly from the sea-facing and southern estuarine zones. That the erosion is attributed to a combination of natural and anthropogenic factors, including:
- i. Neo-tectonic subsidence and basin instability;
  - ii. Reduction in sediment supply due to upstream impoundments on the Ganges system;
  - iii. Increasing frequency and intensity of cyclonic storms and tidal surges; and
  - iv. Regional sea-level rise estimated at 8 to 12 mm per year.
4. That in particular, Ghoramara Island exhibited a reduction in land area from 8.59 sq. km in 1969 to 3.83 sq. km in 2019, indicating a cumulative loss of approximately 4.76 sq. km over five decades. That the data also recorded progressive shrinkage in other nearby islands, including Bhangaduni and Dalhousie, while minor accretional activity was observed on the inner estuarine banks in northern sectors.

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5. That the observations mentioned in the news report regarding the significant erosion of Ghoramara Island are consistent with the scientific understanding of the dynamic deltaic environment of the Sundarbans. GSI's studies have also indicated high rates of erosion in certain parts of the delta, which is a matter of scientific record. However, attributing this phenomenon to a failure on the part of GSI would be a misinterpretation of its role and mandate.
6. That it is further submitted that GSI has always been at the forefront of providing scientific inputs for coastal zone management. That the data generated by GSI on coastal erosion, sediment movement, and sea-level changes are critical for developing effective and sustainable coastal protection strategies. That the answering Respondent has consistently provided its expertise to various national-level committees and projects concerning coastal management.
7. That the responsibility for designing, funding, and implementing structural and non-structural measures to mitigate coastal erosion, such as the construction of sea walls, groynes, mangrove afforestation, and the relocation of affected communities, rests with the competent executive authorities of the State and Central Governments. That the GSI's role is limited to providing the scientific and technical data to enable these authorities to make informed decisions.
8. That the answering Respondent is committed to continuing its scientific endeavours in the Sundarbans region. That the GSI is prepared to undertake further specialised studies, as may be directed by this Hon'ble Tribunal or requested by the implementing agencies, to better understand the intricate processes at play and to identify vulnerable coastal stretches.



9. That GSI is a repository of invaluable geo-scientific data and expertise. The answering Respondent is willing to extend its full cooperation and provide all necessary technical assistance and advisory support to the concerned implementing agencies to formulate a comprehensive and scientifically sound action plan for the protection of the Sundarbans islands and their inhabitants.
10. That the answering Respondent has not been vested with any regulatory or enforcement mandate under the Environment (Protection) Act, 1986 or the Coastal Regulation Zone (CRZ) Notification, 2019. The GSI's role is confined to scientific assessment and provision of technical inputs for informed decision-making by competent authorities.
11. That, in light of the submissions made hereinabove, it is evident that the answering Respondent has been diligently fulfilling its scientific mandate. The issues of environmental degradation and the plight of the inhabitants of Ghoramara Island, while deeply concerning, require action from the executive agencies responsible for coastal protection and disaster management.
12. That the Answering Respondents seek leave to make additional submissions, if required, during the course of the proceedings as and when directed by this Hon'ble Tribunal.

  
DEPONENT

डॉ. मुकेश वर्मा / Dr. Mukesh Verma  
निदेशक एवं नोडल अधिकारी (विधि) / Director & Nodal Officer (Law)  
महानिदेशक शिविर कार्यालय / D.G. Camp Office  
भारतीय भूवैज्ञानिक सर्वेक्षण / Geological Survey of India  
ए-11, पुष्पा भवन, मदनगिर रोड़ / A-11, Pushpa Bhawan, Madangir Road  
नई दिल्ली-110062 / New Delhi-110062



**VERIFICATION**

**21 NOV 2025**

Verified at New Delhi on the day of November, 2025, that the contents of the above affidavit are true and correct to the best of my knowledge and belief and/or are in the nature of legal submissions which I believe to be true and no material has been suppressed herewith.

*Ser*  
I identified The Deponent who has signed & thumb in my presence.



*(Signature)*  
DEPONENT

डॉ. मुकेश वर्मा / Dr. Mukesh Verma  
निदेशक एवं नोडल अधिकारी (विधि) / Director & Nodal Officer (Law)  
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नई दिल्ली-110062 / New Delhi-110062

VERIFIED THAT THE DEPONENT  
Shri/Smt./Km. *Mukesh Verma*  
S/o W/o D/o. *Director of Camp*  
R/o. *Geological Survey of India*  
identified by *Ser*  
has sworn that the contents of the affidavit which has  
been read & explained to him are true and  
**21 NOV 2025**  
*Ser*  
Oath Commissioner, Delhi