

International Conference “Coastal Dynamics: Geology, Economy and Environment”
8-10 January, 2025 held at FM University, Balasore.

Coastal zones are dynamic and ever-changing environments shaped by the interactions of ecological, oceanographic and atmospheric forces. Coastal geomorphology describes the shape and evolution of coastlines, including the formation of deltaic coasts, estuaries, beaches, dune fields, tidal flats and mud flats, salt marshes, swamps, coastal lagoons, lakes, beach ridges, spits, barrier islands and cliffs etc. which are gradually being lost to the cultural practices. It helps in comprehending the impacts of waves, tides, currents, and sea-level changes, fluvial and biological processes on coastal landscapes. Coastal natural hazards, viz. cyclones, storm surges, tsunamis and coastal erosion pose risks to coastal human settlements and offshore infrastructure. Marine geology, on the other hand, explores the seafloor and its composition, structure, and processes, including plate tectonics, sedimentation, and natural hazards like submarine volcanism, earthquakes and tsunamis.

An International Conference “Coastal Dynamics: Geology, Economy and Environment” was organised by Geology Dept. of FM University, Balasore in collaboration with IGO, Bhubaneswar during 8-10 January, 2025 which brought together the researchers, academics, scientists, mining professionals, and entrepreneurs, from within the country and abroad to exchange ideas and share their experiences on the exciting studies on coastal geology, geomorphology, mineral resources and environment and mitigation of natural hazards. The scientific themes of the Conference included :

A. Coastal geomorphology, B. Offshore geology, C. Conservation of coastal eco-system
D. Global climate change and its impact on coast, E. Economic potential of mineral resources of coast and offshore and F. Coastal Hydrology

The inaugural session was chaired by Prof. Santosh Kumar Tripathy, Vice Chancellor, FM University, Balasore and MSBD University, Baripada. Prof. Madhumita Das, Former VC, FM University, Prof. Bhaskar Behera, Chairman, PG Council, FM University, Shri Jayant Kumar Nanda, President, IGO, Prof. L. Elango, Rtd. Professor, Anna University, Chennai and Dr. Satyabrata Nayak, Geoscientist, Petronas, Malaysia, were the guests. on the dais. The abstract volume of the seminar was unfolded.

In the first technical session chaired by Sh. Girija Prasad Mohapatra, Former ADG, GSI and Prof. Madhumita Das, Former Vice Chancellor, FMU, five papers were presented covering various aspects of coastal geomorphology and coastal Hydrology. Dr. Anny Cazenave, Space Geodesist, LEGOS, Observatoire Midi-Pyrénées presented important observations and causes on the Sea level change from global to local scales on virtual mode from Paris. Dr. S.B. Ray, Former DyDG, GSI presented the interesting aspects of the geomorphic landforms and processes on Odisha coast, Dr. R. Srinivasan, Former DyDG, GSI deliberated on some intriguing aspects of past and present Coastal Processes along Tamilnadu Coast and its impact on society. Prof. Elango talked about the sustainable management of coastal groundwater resources in the context of changing climate and Shri G.C. Pati, Former Chairman, CGWB vividly outlined the the prospects and bottlenecks in coastal aquifers of Odisha. .

The second technical session covering Offshore geology, Economic potential of mineral resources of coast and offshore was chaired by Dr. S. B. Ray, and Prof. Vibhuti Rai, Rtd. Prof. Lucknow University. Dr. B.M. faruque, Former Director, GSI presented paper on Glacio-eustasy and Shelf

Sediments off Indian Coastal zone followed by Prof. Raj Kumar Singh, School of Earth, Ocean and Climate Sciences, IIT Bhubaneswar on Ecological implications of seasonal monitoring of coastal lagoons and their paleoclimatic significance. Dr. Sisir Kumar Dash, Scientist F, National Centre for Coastal Research (NCCR), Ministry of Earth Sciences, Government of India, Chennai elaborated the scope of India's Blue Economy Potential, Dr. Satyabrata Nayak, Geoscientist, Petronas, Malaysia presented "Sustainable Energy Transitions: Bridging the Gap with Geoscience" and Er. Maheswar Behera, Formerly with IREL and Consultant, Aluminium Industries made a review of Beach Minerals of Odisha, Valuable mineral's recovery and their utilisation and Dr. A.C. Dinesh, Former Director, GSI presented the updates on Offshore Mineral Resources along the West Coast of India:

The third session chaired by Prof. L. Elango and Prof. R.N. Hota, adjunct Professor, FM University covered conservation of coastal eco-system, Global climate change and its impact on coast. Prof. Abhijit Mukherjee, IIT, Kharagpur presented Groundwater Future of India: Science and Policy intersection followed by Dr. Partha Sarathi Jena, Researcher University of Sao Paulo, Brazil on Coupling between deep ocean circulation and terrestrial climate change: lessons from the past, Dr Archana Jagdish Godbole, Director, Applied Environmental Research Foundation, Pune presented an interesting aspect on Mangroves of Western Coastal Maharashtra, Challenges and Opportunities. Prof. Vibhuti Rai, Formerly Professor, Lucknow University, Lucknow presented the smart solutions for coastal vulnerability to natural disasters. Dr. Sandeep N. Kundu, Department of Geology, Ravenshaw University, Cuttack deliberated on Coastal Dynamics and Coastal Infrastructure and Dr. Kirti Mallick, Utkal University on coastal dynamics. This was followed by a workshop on Basics of Chasing hydrocarbon: Connecting Shelf to Deep Water conducted by Dr. Satyabrata Nayak, in which all the students and research scholars participated with interest.

In the valedictory function, Prof. Tripathy reiterated the need for interdisciplinary synergy for proper understanding of the dynamics of the coast and to take up mitigation measures. He assured full administrative support for establishing a centre of excellence for coastal studies. Dr. Rosalin Das, HOD and convener along with Dr. M. Mohanty and J.N. Das of IGO expressed their immense satisfaction in organising the seminar. Dr. Smruti Rekha Sahoo offered vote of thanks.

In the penultimate day, a field training for PG students and research scholars was conducted in the emerging sand bar at the confluence of River Budabalong with Bay of Bengal and the mud flat at Chandipur. S/Shri G.P. Mohapatra, Dr. S.B. Ray, Dr. B.M. Faruque, Shri C.R. Moharana, resource persons from IGO and Shri J.K. Nanda. Shri J.N. Das, Dr. M. Mohanty, office bearers of IGO guided a strong contingent of 97 participants from various universities of the country.



Inaugural Function on 8th January, 2025



Releasing of Abstract Volume



Shri G.P. Mohapatra, Former ADG, GSI receiving the Momento



Dr. S.B. Ray, Former President, IGO receiving the momento



Field Training at Sand Bar, Chandipur



A big contingent of 97 students, research scholars and faculties of several universities participated in the field work.



Cultural Programme organised by the PG students of FM University