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Shoreline change detection and their morphological analysis of the coastal regions of Bangladesh using remote sensing techniquesMd Jashim Uddin¹, Tanzider Iquebal¹, Abu Saleh M Mohiuddin¹ and Mozammel Haque Sarker²¹University of Dhaka, Bangladesh²Space Research and Remote Sensing Organization, Bangladesh

Statement of the Problem: The coastal regions of Bangladesh covers 710 kilometer along with three distinct geographical parts: western, central and eastern. This lies between 21°30' to 22°30' north latitudes and 88°01' to 92°00' east longitudes. It comprises the most active portion of the complex delta of the Ganges-Brahmaputra-Meghna River system in Bangladesh. Many reported that about 2.5 billion tons/year sediments loaded in the Bay of Bengal through the river systems. The impact of climate change may also aggravate the situation in a serious turn. As a result, erosion and accretion games are common phenomenon in the coastal regions. For this reason, a study was initiated to understand the shoreline and morphological change of the coastal regions of Bangladesh.

Method: Landsat imagery was collected for three different time series level viz. 1973, 1989 and 2010. The study involves remote sensing data collection, their pre-processing, data/layer generation, data analysis, finally extraction of coastal morphological datasets and shoreline change detection, etc. ERDAS Imagine 9.1 was used for image processing and analysis.

Findings: The study revealed that during 1973 to 2010, more erosion and accretion took place in the central part while deposition took place in the western part. The western part is less stable whereas the eastern part is more stable due to nearby hilly morphology. Land area is decreasing and water covered area is increasing due to erosion and water logging in the central part than the other areas. Shoreline change rate at central region is more visible than the other regions.

Conclusion: The above study reveals the hydrodynamic nature of the major rivers of Bangladesh and also the future prediction story of shoreline movement. Thus, it is urgent to make a green policy to combat erosion and accretion processes in the coastal regions of Bangladesh.

Biography

Md Jashim Uddin is a Professor of Department of Soil, Water and Environment in the University of Dhaka, Bangladesh. He has completed his PhD from the Kingston University, London, United Kingdom. He has served at Soil Resource Development Institute and Bangladesh Rice Research Institute. He is specialized in soil carbon and land use dynamics and climate change related issues. He bears vast experiences of using GIS and Remote Sensing technology. He published more than 45 research articles in national and international journals.

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