Morpho-Dynamics of the Coastal Landforms and the Shoreline Changes along Balasore Coast, North East Coast of India Using Satellite Data

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Abstract

The 480 km. stretch of Orissa coast is directly influenced by both fluvial and marine activities. These act as natural determinant on the coastal configuration and eventually effect social structure of the region. An understanding of the coastal and nearshore processes require a repetitive, synoptic data along and across the shore. Landsat TM and IRS- IA, ID LISS-III imageries were used in assessment of morphological dynamism and monitoring the processes involved. The nearshore region of the coast has been mapped to an accuracy limited by spatial and spectral resolution. Detailed analysis of the coastline changes along the Balasore coast and Subarnarekha estuarine region has been attempted in the present study. The zone of accretion and erosion together with the drifting of beach has been studied.

Strand line maps indicating palaeo-shoreline around Balasore coast from Burhabalang river mouth to Subarnarekha river mouth indicate that the erosion and accretion processes are both active along the Chandipur coastline The Subarnarekha deltaic plain not only exhibits transgressive ridges (traditional chenier), but also shows development of intermediate regressive ridges (beach ridges) and laterally accreted ridges (spits) in its different stages of delopment. The present paper aims to study the offshore landforms along the Balasore coast and their morpho-dynamics and their role in shaping the morphology of the changing coastline.

Keywords: Morphodynamics, Burhabalang, Balasore coast, Subarnarekha delta, Shoreline changes, Coastal erosion.