COASTAL EROSION OF SOUTHERN PART OF TRINCOMALEE HARBOUR AND ITS IMPACT ON THE COMMUNITIES IN MUTHUR COASTAL AREA

By

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ABSTRACT

The coastal zone is a highly dynamic zone being influenced by both human and natural processes. Human activities such as resource extraction, industrialization, tourism, and urbanization have a huge influence on the environment of the coastal zone.

The coastal belt or shoreline keeps changing according to the environmental changes. Changes in the coastal area occurred due to wind, sea water waves, currents, cyclone and storms.

The coastline around the Sri Lanka is about 1640 km. The causes and the intensity of the erosion vary from place to place. At present, some changes in the shoreline have occurred in the Muthur Divisional secretariat coastal region in Trincomalee District. Significant coastal erosion can observe in 2014 -2015.

This study assessed and mapping the coastal zone changes using Geographic Information System and Remote Sensing. ArcGIS extension of Digital Shoreline Analysis System (DSAS) was used for mapping of shoreline change from 2002 to 2022.

The study revealed that the period from 2002 to 2014 End Point Rate recorded as - 0.49 m/Y and for the period from 2014 to 2022 recorded as - 0.76 m/Y. The cumulative rate for the period from 2002 to 2022 recorded as -0.51 m/Y. This is clear indication of rate of erosion is increased from 2014 2015 period and makes negative impact to the coastal zone. Significant erosion observes in Thakqwanagar area in Mutthur Divisional Secretariat.

The impact on the community found as lost their land and settlement, it has directly affected to the livelihood of fishermen. Loss Land cover with vegetation area, impacts to the Infrastructures such as roads, government buildings, electricity power supply lines, Limit the tourism, culture and social barriers raised due to the coastal erosion. Health and education sectors also got damage.

Coastal erosion is being continuing due to natural phenomena as well as by human activities. The study result convinced that continues monitoring of shoreline change is required to management the coastal zone in the study area. The analytical findings is provided the details for updating coastasetbacksck, further engineering intervention for coastal zone management

Keywords- GIS, Remote Sensing, DSAS, End Point Rate