

## **Beach width analyses in beach erosion hazard assessment and management at Bamburi beach, Mombasa, Kenya**

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### **Abstract**

Beach erosion was identified as one of the major coastal problems at Bamburi beach shoreline causing destruction on expensive shoreline developments which threatened the economic and social welfare of the beach-dependent coastal communities. Beach erosion was manifested in beach morphology changes and this study adopted beach profile width change rate as a tool in assessing beach erosion vulnerability and suggested management strategies to alleviate the problem at Bamburi beach. Beach profile width measurements were taken twice a month during spring low tide and data processed and analyzed to establish site-specific erosion vulnerability. Potential beach erosion hazard map was generated using the ArcView GIS 3.2a programme. Beach erosion vulnerability tended to vary from one site to another along the beach, probably due to the configuration and intensity of shoreline developments that affected the site-specific hydrodynamics. It was found out that beach sites characterized by diminishing beach widths required management strategies that retain beach sediment for relatively longer time with consistent refilling, while areas with accreting beach widths can recycle the beach sediment to areas that experience erosion. It was recommended that beach erosion management to adopt strategies that considered site-specific beach width characteristics on the shoreline.