A geospatial study on coastal erosion in Krishna-Godavari delta region, Andhra Pradesh, India

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The present study is focused on spatio-temporal changes of land use/land cover and mangroves on identification of coastal erosion zones along the 339 km long coastline of the Krishna-Godavari (KG) delta region, Andhra Pradesh, India. This study analyzed multi-date satellite imagery of Landsat 4, 5, 7 and 8 TM and ETM sensors of 2002, 2011 and 2017 which reveals rapid changes in land use/land cover, deforestation of mangroves and coastal erosion. There is a decrease in area of about 28 km² of mangroves and an increase in coastal erosion of 6.485 km² is delineated from 2002 to 2011. Contrary to this, from the year 2011 to 2017 there is a considerable increase of 93 km² in mangroves. During 2002 to 2017, severe beach erosion of 0.184 km² and 0.418 km² occurred at Uppada-Konapapapeta coast and Nilarevu river mouth, respectively. Similarly, an accretion of 0.526 km² is observed at Vakalapudi in Godavari delta sea coast. In Krishna delta, the coast near Machilipatnam is getting eroded. No major coastal erosion is observed on the Krishna delta coast in comparison to Godavari delta coast. The results of this show that mangrove degradation and coastal erosion is taking place along the K-G delta region and suggests construction of sea walls, beach nourishment and prevention of the conversion of mangrove areas into aquacultural and agricultural land; these are the most suitable measures to arrest the coastal erosion.

Biography

Peddada Jagadeeswara Rao is working as a Professor and Chairman, Board of Studies, Department of Geo-Engineering and Centre for Remote Sensing, College of Engineering (A), Andhra University. He has published research articles on groundwater resources, watershed management, solid waste management and HIV/AIDS in reputed national and international journals. He has guided 10 Research Scholars for their PhDs and he has been a consultant on water resources, remote sensing and GIS.

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