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Evaluating coastal erosion and deposition using remote sensing and GIS: A case study on Tranquebar coast, Tamil Nadu, India

Saranaathan S E
Sastra University, India

Development of space technologies, improvement of remote sensing devices and new methods of obtaining and processing satellite images have resulted in the generation of large amount of usable information for decision-makers. During poly-phase deformation and tectonic events, it has become virtually difficult through traditional mapping whereas spatial technology is very effective to do even in inaccessible areas. Satellite remote sensing of the dynamic coastal zone is a cost effective method of inventorying and monitoring the coastal erosion and deposition. The coastal zone is a frontier area characterized by rich natural resources and intensive human activities. Hence, there is an urgent need for inventorying and monitoring the different erosional and deposition of coastal land forms. Spatial data is one of the important tools to effectively identify appropriate changes, quantification and monitoring coastal zones compared to other conventional sources. The present study illuminate the effect of depositional and erosional coast line changes with reference to field data observed along the Tranquebar coast, Tamil Nadu. The survey of India toposheet is used to identify the shore line changes using IRS 1A LISS II 1991, IRS 1C LISS III 2004 and IRS P6 LISS IV and IRS 1D PAN merged data 2006. The survey of India toposheet (1852 and 1972), survey land records village map and GPS are also supplemented for this study. The present study exposed that 180 m receding of shoreline occurred during past 155 years near Fort area and about 60 m deposited sand present in Chinnakudi area.

Biography

Saranaathan S E has completed his PhD at the age of 40 years from Indian School of Mines, Dhanbad, and from 1986 Research Associate in Institute of Remote Sensing, Anna University, Chennai, from 2001 Project Leader in DSM software, from 2002 Project Manager in Soham Geomatics, Hyderabad, from 2003 Professor in Sastra University, Thanjavur, Tamil Nadu. Since 1986, he has been Member of Geological Society of India and Indian Society of Remote Sensing. He has published more than 52 papers in reputed international and national journals and has been serving as a review member of reputed journals.

esaranathan@yahoo.co.in