



WEB BASED GIS APPROACH FOR GEOMORPHOLOGIC CHANGE DETECTION ON THE MOUTH OF RIVER "KALU", SRI LANKA

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Geographic Information Systems (GIS) can be identified as a powerful technology which supports better decisions in many disciplines. Recent past, traditional GIS has engaged with a trend of transforming towards web based GIS applications that are encouraging more users to retrieve benefits. This study has been focused on the geomorphologic change detection on the mouth of river Kalu that located at the Kalutara district in Sri Lanka. During the period of several years, high resolution GeoEye satellite images were taken and visual interpretation was done. The shoreline and the changes of river mouth has been detected in a significant way by using shoreline detection tools with ArcGIS software. According to the results, it can be detected that both physical factors as well as human activities have influenced for many changes. Using the identified land forms, a web based GIS application has been developed to understand the changes using an interactive web map. The time aware datasets were uploaded to this system and they were able to represent temporal variations in an effective way. Most important process was the development of tools which are embedded to the web application for particular operations. The ability to detecting changes within a period of time, then derive a map with results, downloading the necessary data sets and exporting the changes in tabular formats are some important functions which can be executed by running the tools. As the conclusion, the main fact which was identified that the change detection methodology in GIS has been enhanced with web technologies while preserving the same abilities of traditional GIS. The advantage is that, the application can be used with more users as the simplicity and accessibility is convenient. Therefore, decision supporting ability of GIS has been increased in a user friendly manner.

Keywords: Geographic Information Systems, Web GIS, Geomorphologic Changes, Decision support