

REMOTE SENSING AND GIS APPLICATION IN WATERSHED MANAGEMENT

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Abstract:

The digital revolution in the last few decades made possible the modeling of watershed by integration of different hydrologic processes occurring on the watershed. The recent advances in watershed modeling are the integrated use of numerical methods, remote sensing and GIS technologies. Numerical methods are used in the solution of the prevailing equations for the soil erosion modelling, sediment yield estimation, and rainfall runoff simulation. Remote sensing technology solved the problem of data needs of watershed modeling. ArcGIS made its utility in the processing of large quantities of data, which is essential in watershed modeling. In the present poster, characterization of watershed for the key parameters such as morphometric analysis, slope analysis, LULC change pattern analysis by using GIS / RS data has been discussed. Morphometric and slope analysis have carried out by DEM based model, soil erosion modelling based on USLE model, surface runoff modelling based on SCS model, and sediment yield estimation based on InVEST model have been presented in this poster, and has prepared the watershed characteristic maps. LULC of the watershed has been derived from remotely sensed data, which has used as an input of all analysis/modelling. The methodology can be used in various watershed development schemes.