Estimation of Soil Erosion rates in different spatial and time scales. A Geoinformatics approach.

Soil erosion is considered as a major environmental problem since it seriously threatens natural resources, agriculture and the environment. This study aims to assess the impacts of a changing climate, land use and vegetation cover on the quantity of erosion processes in different catchments in the island of Crete / Greece. Modelling techniques are used to project the influence of changes of the above mentioned factors on the major determinants erosion processes at various time and spatial scales. Regional climate models from CORDEX experiment provide the essential information on shifting precipitation, and feed into erosion model in order to assess the changes in seasonality, amount, and incidence of extreme events in the catchment areas. Sophisticated classification algorithms are applied to Landsat 8 images to collect new data sets of Land Use / Land Cover (LULC), topography and vegetation. Ca-Markov approach is employed to project the LULC changes in the broader future. The current and projected soil erosion risk is estimated with the use of RUSLE model.

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