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GIS-Based Model to Assess Erosion Sensitivity in Northern Morocco. Laou Watershed Case Study

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Author(s)

Ahmed Raissouni, Lamiae Khali Issa, Abdelkrim El Arrim, M. Maâtouk, Roberto Passalacqua

ABSTRACT

This application on the Laou watershed represents the first part of study results that concerns the development of a model for mapping soil susceptibility at a regional scale in northern Morocco using spatial databases and geographic information systems (GIS). The model uses qualitative decision rules and hierarchical organization of data represented by different thematic maps. Those laters are derived from input erosion parameters which are coded according to their sensitivity to water erosion. Superposing effect of several layers: geology, geomorphology, land use and topography, allows we the obtaining of a qualitative map showing the potential sensitivity to erosion per unit area. The obtained map shows that severe erosion affects the Southern and North-western sectors of the basin, even if they present the least erodible lands of all the basin and have, as well, a relatively dense plant cover. It may be concluded that both high gradient and damaged terrain state represent the main factors of water erosion in the Laou watershed.

KEYWORDS

Soil Erosion; Laou Watershed; Environment; GIS

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