

The Use of GIS and Remote Sensing for Spatialization of Water EROSION: Application to the Rheraya Catchment (High Atlas, Morocco)

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The land management against water erosion requires long and expensive studies, but specific measurements, even if they are very precise, cannot lead to the synoptic vision which the scientists and the managers need. The complexity of this phenomenon and the extent of the study area require the use of methods and powerful means for the geographical information management. In this context, this work aims at mapping the risks of water erosion in the Rheraya catchments (228 km²), through the spatialization of some measurements achieved on erosion plots (140 m²) using a Geographical Information System (GIS). This extrapolation is based on a stratification of the basin in physical units characterized by the combination of the type of soil, the vegetation and ground surface features. This stratification is obtained through the use of visual interpretation of satellite SPOT 4 image (20 m resolution) and a geological map within a GIS. The results of the erosion plots installed on the main soils of the Rheraya catchments are extrapolated for all the polygons of the same class for the entire basin providing a map of erosion assessment. These results are validated by measurements of the suspended matter carried out at the outlet of Rheraya catchments.

Key words: erosion, GIS, remote sensing data, spatialization.