



## **Runoff and water erosion assessment for a small Tunisian cultivated catchment using Wepp**

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Most of Mediterranean countries show nowadays an intensification of agricultural practises related to an increasing of human supplies. Because of their specific climate and soil sensitivity, soil erosion due to water has indeed reached a worrying level. Soil loss from cultivated lands and the decrease of water storage capacity in reservoirs are examples of the negative incidence of this phenomenon on soil and water resources. Therefore, accurate estimation of soil water erosion at catchment scale for various land-use and climate scenarios is an important key to define sustainable management policies. In the last decades, several studies have been carried out to build models suitable for quantifying soil erosion. Among these models, the Water Erosion Prediction Project (WEPP, Flanagan and Nearing, 1995) is a physically based, distributed parameter model that has been developed and mainly validated in USA. But only few studies have investigated its applicability to environmental conditions that differs from those where the model was developed. The aim of this work is to test the efficiency of the Wepp model to quantify soil erosion at catchment scale in a Mediterranean semi-arid area. To this end, soil erosion measures collected at the outlet of an experimental catchment (Kamech catchment, 2,45 km<sup>2</sup>, Cap Bon, Tunisia) since 1994 were used. This large data set (more than 200 erosive events) allows us to analyse Wepp performance during a continuous period of 10 years. The differences between observed and simulated values are finally analysed and discussed.

Reference:

Flanagan, D.C. and Nearing, M.A. (1995). USDA-Water Erosion Prediction Project: Hillslope profile and watershed model documentation. *NSERL Report 10*, USDA-ARS National Soil Erosion Research Laboratory, West Lafayette, IN, USA. (available at <http://topsoil.nserl.purdue.edu/nserlweb/weppmain/wepp.html>)