Mapping surface water erosion potential in the Soummam watershed in Northeast Algeria with RUSLE model

Authors
Youcef Sahli, Elhadj Mokhtari, Belkacem Merzouk, Benoit Laignel, Christophe Vial, Khodir Madani

Publication date
2019/7/1

Journal
Journal of Mountain Science

Volume
16

Issue
7

Pages
1606-1615

Publisher
Science Press

Description
The present study aims to estimate the annual soil loss in the Soummam watershed in the northeast of Algeria, using the Revised Universal Soil Loss Equation (RUSLE), geographic information system (GIS), and remote sensing (RS). RUSLE model has been used for modelling the main factors involved in erosive phenomena. The Soummam watershed covers a surface area of 9108.45 km^2 of irregular shape, northeast —southwest towards southeast. It is characterized by an altitude varying between 2 m in the northeast and 2308 m in the northwest. Results showed that the average erosivity factor (*R*) is 70.64 (MJ·mm)/(ha·h·year) and the maximum value reaches 140 (MJ·mm)/(ha·h·year), the average soil erodibility factor (*K*) is 0.016 (t·h·ha)/(MJ·ha·mm) and maximum values reach 0.0204 (t·h·ha)/(MJ·ha·mm) in the southeast regions of the watershed, the average slope length and steepness factor (*LS*) is 9 …