عنوان مقاله:

Assessment of Changes in Soil Erosion Risk Using RUSLE in Navrood Watershed, Iran

محل انتشار:

مجله علوم و فناوری کشاورزی, دوره 19, شماره 1 (سال: 1395)

تعداد صفحات اصل مقاله: 14

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خلاصه مقاله:

Risk assessment of soil erosion, one of the most important land degradation problems worldwide, is very essential for land and water resources management, and development of soil conservation methods. In the present study, the temporal changes of soil erosion risk were assessed from ۱۹۸۷ to ۲۰۱۰, based on the Revised Universal Soil Loss Equation (RUSLE) using Remote Sensing (RS) and Geographic Information Systems (GIS) for the Navrood Watershed, Iran, with an area of ۲۷۰ km۲. Two Landsat satellite imageries obtained in ۱۹۸۷ and ۲۰۱۰ were used to assess the changes in vegetation cover during this period, and to obtain the Cover factor (C) of RUSLE. Rainfall and soil texture data and a digital elevation model were used to calculate the rest of RUSLE factors, which were taken as constant for the study period. The results showed that the average annual soil loss over the watershed ranged from ۰ to ۱,۰۵۶ t ha-۱ y-۱(Cumulative percentage> ۹۹.۹%). The area mapped as very high erosion risk (> ۱۰۰ t ha-۱ y-۱) increased from ۱۰% in ۱۹۸۷ to ۱۲% in ۲۰۱۰, and the area of the next risk class (۵۱-۱۰۰ t ha-۱ y-۱) increased from ۸ to ۹%. These changes cover an area of about ۸۰۰ ha in the watershed, in which erosion risk has been doubled or tripled in the last ۲۳ years. Forest clearing and rangeland overgrazing were identified as the most important reasons for the increase in erosion risk.

کلمات کلیدی:

Forest clearing, Overgrazing, Soil loss, Water erosion, Vegetation cover