

Assessment of Rainfall Erosivity, Comparison among Methods (Case of Kakheti, Georgia)

SUMMARY

Rainfall intensity change is one of the main indicators of climate change. It has a great influence on agriculture as one of the main factors causing soil erosion. Our study provides the region with precipitation erosion potential using modern methods. R_{30} values quantified till 90s was used for each weather station in Kaxeti during our research. Our study provides the assessment of rainfall erosivity potential with use of modern research methods in Kakheti region. Rainfall erosivity potential will be determined for every meteorological stations in Kakheti region from literature among them scientific papers and records from meteorological stations. Then the same factor will be determined by the selected methods (for each method separately), and the outcomes will be compared, which will allow us to determine the validity of a particular method for the study area. Finally, the method which determines the above-mentioned factor for Kakheti climate better will be selected and exactly the same method will be used to determine rainfall erosivity potential since 1990s.

From the three used methods (Loureiro & Couthino; Asaro & Santoro; Renard & Freimund) method by Renard & Freimund was connected to the climate of Kakheti better. According to the results of the thierd method, the maximum value of rainfall erosivity potential was observed in Lagodekhi-34.28, while the minimum value was observed in Telavi-20.58, during the I period, acoordingly 23,08 and 1,66 in GURjaani and Sagarejo. In II period maximum value of R factor was observed in Lagodekhi-31.65 again. From these results 7.7% decrease of R factor value was observed in Lagodekhi while 9.7% increase was observed in Telavi. R factor value increased 7.1% in Sagarejo and decreased 3.5% in Gurjaani. In III period maximum value of R factor was observed in Telavi-20.77. This number is 1.8 less then it was in II period. In III period the minim value was observed in Dedoplistskaro-14.40, which is 5.4 % less then in II period.

