

## **Erosion and Soil Productivity in Kvemo Kartli**

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Erosion, from the point of view of relief formation, is one of the main geomorphological processes. In accordance with the methodology of the doctoral thesis, the RUSLE methodology was selected and used for the study of erosion processes on the lands of Kvemo Kartli. The works for determining the erosion index of sediments in the research area have been completed.

The RUSLE methodology is adapted to GIS technology, and accordingly, based on the electronic map of land use, electronic maps will be prepared for each factor of erosion manifestation.

Theoretical work was carried out to study the processes of soil formation, denudation and depletion of soil-forming rocks. Based on the literature study was established the productivity of soil formation that is inversely proportional to the thickness of the soil/exhaustion crust (Regolith-Saprolite). Recent research with cosmogenic radionuclides has shown that the productivity of soil formation decreases exponentially with increasing soil depth. According to the conducted investigations, based on the climatic data of the study region, the maximum productivity of soil formation was determined, which is in Bolnisi 106.9 t/km<sup>2</sup>, in Gardabani - 87.6 t/km<sup>2</sup> and in Tsalka - 69.1 t/km<sup>2</sup> years.

Work is underway to determine geological denudation rates in river basins of the study region. The mentioned information will allow us to determine the real balance between surface erosion of the territory, physical and chemical depletion and tectonic movement for Kvemo Kartli river basins. All of the above will allow us to create a first approximation of the evolutionary development of the landscapes.