

## Estimating Soil Erosion Using Universal Soil Loss Equation and Gis in Algash Basin

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**Abstract :** Soil erosion is globally known for adverse effects on social, environmental and economical aspects which directly or indirectly influence the human life. The area under study suffers from problems like water quality, river and agricultural canals bed rise due to high sediment load brought by Algash River from upstream (Eritrea high land), the current study utilized from remote sensing and Geographical Information System (GIS) to estimate the annual soil loss using Universal Soil Loss Equation (USLE). The USLE is widely used over the world which basically relies on rainfall erosivity factor (R), soil erodibility factor (K), topographic factor (LS), cover management factor (C) and support practice factor (P). The result of the study showed high soil loss in the study area, this result was illustrated in a form of map presenting the spatial distribution of soil loss amounts which classified into seven zones ranging from very slight zone (less than 2 ton/ha.year) to very severe (100-500 ton/ha.year), also the total soil loss from the whole study area was found to be 32,916,840.87 ton/ha.year. These kinds of results will help the experts of land management to give a priority for the severely affected zones to be tackled in an appropriate way.

**Keywords :** Geographical Information System, remote sensing, sedimentation, soil loss

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