PREFACE

Top soil & productivity of agricultural land in steep terrain is a serious problem brought on by soil erosion. Due to the dependence of Indian economy (which accounts for 36% of national GDP) on agriculture, estimates of soil erosion is crucial for developing erosion management strategies. Through the use of RUSLE model, the current work makes a first attempt to estimate the soil loss of Nepal. Additionally, it examines how slope exposure and LULC affect soil erosion.

Due to land deterioration, agricultural intensity, and other anthropogenic activities, soil erosion has become a important issue. Planning and conserve projects in the basin benefit from evaluation of soil erosivity. Under a variety of circumstances, modelling can offer a quantitative and reliable method for estimation of soil loss and sedimentation output. In this study, Soil loss in the Tapi river basin in central part of India has been estimated using the soil loss RUSLE model , along with GIS.

Respectively, estimated RUSLE factor rainfall erosivity, Soil erodible, crop management and topographic ranges from 119.148 to 217.148 MJ /mm·ha^{-1}hr^{-1}/year, 0.2 to 0.41 t ha^{-1}·MJ^{-1}·mm^{-1} , 0.56 to 2833, 0 to 1 respectively. Area of soil erodibility in Hecatres are calculated for 1864.08 (very low) , 30.6 (Low) , Moderate (260.1), High (302.13) & Very high (83.79).

The conservation practice is comparable to the support practice factor, which evaluates how effectively a practice cuts down on surface runoff and, as a consequence of this, water-induced erosion. The P factor is ratio between the soil erosion that is induced by preservation techniques and the soil loss that is caused by farming in straight rows up and down the slope. This ratio demonstrates the effect that support practices have on the average yearly soil erosion rate. The factor demonstrates how measures taken to save soil might have an impact on the typical annual rate of soil erosion. Therefore, the P factor indicates the proportion of soil erosion that is caused by conserve practices in comparison to the soil loss that is caused by farming in straight rows. When compared to other basin regions, the Tapi river basin is situated in a higher elevation terrain that has a high P-value on the western and northern sides. The P values range with places that do not implement any form of resource conservation being assigned the highest value.