

## ABSTRACT

Soil is a medium which supports a number of biological activities and for this reason its degradation must be minimized in order to enhance its productivity. In Kenya, much government attention has been directed towards salinization and water logging problems not forgetting that soil erosion risk is the most significant. Soil erosion poses a serious threat in tropical areas as the push for more agricultural land and grazing activities intensifies. Such transformations on the ecology have strongly influenced soil erosion rates. The problem of soil erosion in Kenya is attributed to the arid and semi-arid climate (about 83 percent of land mass), poor management of land and intensified agricultural activities. Several studies have demonstrated that the rate of soil erosion accelerates substantially in areas where natural vegetation has been removed. Catchments are heterogeneous in nature given the different biophysical factors at play. This paper summarizes the review findings of soil erosion rates and estimation methods in Kenya. The purpose of this review was to establish the potential threat to soil degradation due to erosion through comparison of erosion rates in selected areas to acceptable soil loss. It was established from the review that soil erosion rates in most rural catchments in Kenya are above the permissible annual rates of between 2.2 to 10 t ha<sup>-1</sup> yr<sup>-1</sup> obtained using various methods most of which integrate the use of GIS framework in erosion degradation assessment. The findings reveal that most rural catchments are susceptible to soil degradation by erosion. Findings from the review would be useful in establishing methodology for identifying hotspots in the planning of targeted intervention for conservation to minimize further degradation by soil erosion and sedimentation.

*Keywords— Soil erosion; Erosion modelling; catchment; prediction; RUSLE*