

Impacts of Land Use/Land Cover Change on Catchment Hydrology of Kulfo Watershed: An Assessment Using Hydrologic Model, SWAT

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Abstract. Rates of deforestation, agriculturalization, urbanization, wet land drainage, and several other types of land use change have accelerated as a function of the growth of human populations. Soil erosion and related land degradation are considered as serious threats to development endeavors in many parts of Ethiopia. Particularly in Southern Nation, Nationalities and People Regional State (SNNPRS), situated on high and step-faulted western sides of the Ethiopian rift system, the issues of land degradation is becoming of vital concern. Kulfo River Basin, which is in the Southern part of Ethiopia, has been seriously affected by extreme soil erosion and land degradation since steep slopes have been cultivated for many centuries. Since the last few years there are many watershed based soil and water conservation activities practices in this sub-basin of the Ethiopian Rift Valley. These practice range from simple infiltration trenches to engineering structures such as check dams and rainwater harvesting structures. Kulfo River represents the major tributary to Chamo Lake, which is the largest lake in Ethiopia next to Abaya Lake. This study aims to assess the impacts of land use/ land cover change on catchment hydrology of Kulfo watershed. Hydrological models will be used for analyzing hydrological characteristics of the basin based with and without intervention of soil and water conservation practices.