

Abstract

Land use and land cover changes are important factors in the hydrological cycle and the spatialtemporal variations in the distribution of natural resources. The objective of this study was to assess trend in land use and land cover change in River Gucha Catchment. LANDSAT MSS, ETM and ETM+ images of 1976, 1993 and 2010 respectively of the study area were classified and percentage changes of land use and land cover types determined for the period between 1976-1993 and 1993-2010. Agriculture, which is the main land use in the catchment, covered about 92% of the catchment's area. Forest covered about 4%, while settlement covered the remaining 4%. Forest cover decreased by 62.94 and 68.49%, agricultural land increased by 30.36 and 7.53% and residential area increased by 7.35 and 32.89% of the original area for the period between 1976-1993 and 1993-2010 respectively. The reduction of forest cover could be attributed to clearing of forests to give room for cultivation and settlement. This reduction in forest cover and expansion of agricultural and settlement area could result to increased peak flows, soil erosion and reduction in base flow of the River. Understanding the trend in land use/cover types will enable planners to formulate policies towards minimizing the undesirable effects of future land use/cover changes on natural resources.