

## Assessment of Land Use and Land Cover Change in Lake Ol Bolossat Catchment, Nyandarua County, Kenya

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**Abstract :** Land use changes caused by demographic, natural variability, economic, technological and policy factors affect the goods and services derived from an ecosystem. In the past few decades, Lake Ol Bolossat catchment in Nyandarua County Kenya has been facing challenges of land cover changes threatening its capacity to perform ecosystems functions and adversely affecting communities and ecosystems downstream. This study assessed land cover changes in the catchment for a period of twenty eight years (from 1986 to 2014). Analysis of three Landsat images i.e. L5 TM 1986, L5 TM 1995 and L8 OLI/TIRS 2014 was done using ERDAS 9.2 software. The results show that dense forest, cropland and area under water increased by 27%, 29% and 3% respectively. On the other hand, open forest, dense grassland, open grassland, bushland and shrubland decreased by 3%, 3%, 11%, 26% and 1% respectively during the period under assessment. The lake was noted to have increased due to siltation caused by soil erosion causing a reduction in Lake's depth and consequently causing temporary flooding of the wetland. The study concludes that the catchment is under high demographic pressure which would lead to resource use conflicts and therefore formulation of mitigation measures is highly recommended.

**Keywords :** land cover, land use change, land degradation, Nyandarua, Remote sensing

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