

Assessment of Land use, Land cover change Dynamics using GIS AND REMOTE SENSING of Soro district, Hadiya Zone, Southern Ethiopia.

Meseret Demeke*¹, Sintayehu Legesse Gebre^{2,3} and Dessalegn Obsi Gemed²

¹Jimma University, Department of Geography and Environmental Studies, Ethiopia

²Jimma University, Department of Natural Resources Management

³Faculty of Engineering, CIB, KU Leuven, Celestijnenlaan 300A, 3001 Heverlee, Belgium.

Abstract

Land use and land cover change resulting from various complex interactions between a human being and the environment. This study aims to identify and compare land use land cover change. In this study, Landsat imageries were used to analyze land use land cover change of Soro district, Hadiya Zone, Southern Ethiopia. Three sets of remotely sensed data: Land sat MSS (1987), TM (2002 and Land sat ETM+ imagery (2017) were used to produce the LULC maps at different periods using maximum likelihood supervised image classification algorithm. Remote sensing application software, ERDAS IMAGINE, and Arc GIS were used to analyze the LULC change dynamics. The overall classification accuracy and kappa coefficient of the Landsat image of the year 1987, 2002, and 2017 is 87.5 % (0.8318), 86.6 % (0.835) and 88.57 % (0.8456) respectively. This indicates that there is a strong agreement and accuracy in the LULC classification output. The LULC change dynamics showed that forest land cover increased in the first study period from 1987 – 2002 and decreased in the second study period from 2002 – 2017. Wetland decreased in all study periods and shrubland area decreased during 1987 -2002 and increased 2002 – 2017. Cultivated land decreased in the first study period and increased in the second study period. Out of all land use land cover classifications, wetlands are the most converted land cover type during the entire study period. Therefore, there should be a proper land use planning at the local scale for better sustainable watershed management to increase agricultural productivity and enhance food security of the rural community.

Keywords: Soro; Image Classification; GIS; Land Use/Land Cover Change; and Remote Sensing.

Email: sintsyehulegesse@gmail.com; sintayehulegesse.gebre@kuleuven.be.

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