CHANGE DETECTION IN LAND USE AND LAND COVER USING REMOTE SENSING AND GIS

(A case study of Narok town and its hinterland)

BY

JOSIAH G. KAHUTHU

BES/1001/2012

Research Project Submitted in Partial Fulfillment of the requirement for the award of the Degree of Bachelors of Environmental Science of Maasai Mara University

MAY, 2016

ABSTRACT

This project examines the use of GIS and Remote Sensing in mapping land use and land cover in Narok town and its surrounding between 1986 and 2015 so as to detect the changes that has taken place. Land use and land cover are two fundamentals describing the terrestrial environment in connection with both natural processes and anthropogenic activities. In achieving this, four general classes were developed and change detection was carried out through image differencing and finally the rate and trend of change was determined. In order to use land optimally, it is not only necessary to have the information on existing land use and land cover but also the capacity to monitor the dynamic of land use resulting out of both changing demands of increasing population and forces of nature acting to shape the landscape. The result of this work shows a steady growth in built-up area throughout the study period (1986 to 2015), with a rapid increase of 0.7% annually in the period between 2010 and 2015, which was concentrated around the town. Agricultural land and the range land are the dominant classes in the area. These two classes had shown direct relation, where increase in agriculture between 1986 to 2010 result to decrease range land in the same period. The bare land also witnessed steady increase as the agricultural land increased and the range land decreased in the area. Nevertheless in the period of 2010 and 2015 the increase in range land with decrease in agricultural activities resulted to decrease in bare land. Suggestions were therefore made at the end of the work on ways to use the information as contained therein optimally