


IMPACT OF LAND-USE ACTIVITIES ON WATER QUALITY OF RIVER
KAROROHA, MALEWA CATCHMENT, NYANDARUA COUNTY, KENYA

OUNDO DICKSON DANCAN: B. Ed (Arts)

REGISTRATION NUMBER: I56/CE/21015/2012

Signature.......... Date..... 11/08/14

DEPARTMENT OF GEOGRAPHY

A research proposal submitted in partial fulfillment for the degree of Master of Science in
Hydrology and Water Resources in the School of Pure and Applied Sciences of Kenyatta
University

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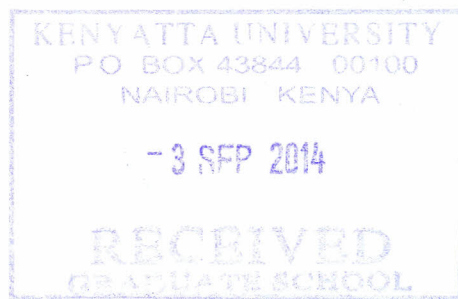
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ABSTRACT

Water is the most important resource on the earth surface without which living organisms cannot survive. Human developments of any kind have a direct/indirect impact on water quality and quantity. It should be an objective of every individual to ensure that water quality is maintained at all costs. This research examines the quantitative effects of land use activities on the water quality of River Karoroha in Malewa catchment in Nyandarua County, Kenya. The general objective of the study is to identify the impacts of land use activities on water quality of a river basin and model a relationship between land-use activities and the water quality. The research will employ an experimental research design to achieve this objective. Water samples will be drawn from the river and water quality parameters will be measured both in situ and in a laboratory. The water quality parameters are total suspended solids (TSS), total dissolved solids (TDS), temperature, p^H , color, phosphorous, nitrogen, biological oxygen demand (BOD) and dissolved oxygen (DO). The obtained results will be compared to the set standards both by WRMA and WHO. Sampling and water collection will be done during both hydrological extremes between Sept-Dec so as to make a conclusive comparison. The land use activities in the area will be identified by use of satellite images, observation and focus group discussions with the resource persons in the sub county. The obtained results will be used to establish a relationship between land-use activities and water quality using ANOVA (analysis of variance) and regression analysis. The results of this research will be useful both to the country and the Nyandarua County. The proposed research is vital in helping the government meet its vision 2030 especially under the social pillar flagship projects of rehabilitating and protecting the five water towers, inventory of illegal effluent discharge and water monitoring in cities and comprehensive mapping of land use patterns in Kenya. The research will also help meet Nyandarua county strategic plan on water which is a key priority area for the county as it aims at investing in provision of clean water for domestic use as well as protecting the water catchment areas (Republic of Kenya 2013). This research is vital and has potential benefits to all stakeholders once undertaken.