



Effects of Land Use/Cover Change on the Soil Properties in River Sio Catchment

Barasa, Bernard^{1,*}, Majaliwa, Jackson-Gilbert Mwanjalolo¹, Lwasa, Shuaib²,
Obando, Joy³, Bamutaze, Yazidhi⁴

¹*Institute of Environment and Natural Resources, Makerere University, P. O. Box 7062, Kampala Uganda;* ^{2,4}*Department of Geography, Makerere University, P. O. Box 7062, Kampala Uganda;* ³*Department of Geography, Kenyatta University, P. O. Box 43844, 00100 Nairobi, Kenya*

Received June 06, 2010; Accepted October 02, 2010

Abstract: The diversity of land use/cover change in affecting the quality of physical and chemical properties of soils and reducing vegetation cover is of a growing concern in Uganda today. Specifically, the study intended; to determine the effects of land use/cover change on the soil properties in River Sio catchment. The effects of land use/cover utilization types on soil properties were dependent on conversions of grasslands to the growing of sugarcane, cassava & maize, perennial to annual crops, soil depth and watershed positions. A composite soil sample was randomly collected from each location along the selected transects totalling to 272 soil samples taken at two soil depths (0-15cm & 15-30cm) for comparisons. The results showed that; the effect of the conversion of grasslands into agricultural fields primarily induced changes in nitrogen for the topsoil (0-15cm) while in nitrogen, organic matter and phosphorous for the subsoil (15-30cm) in both mid and downstream sections of the watershed. Therefore this study information on the physio-chemical soil properties will help natural resource managers and other stakeholders to understand how soil properties are affected under intensive management systems and this will help them to determine better farming practices which can retain soil nutrients to be undertaken by the farmers to reduce on soil degradation.

Key Words: *upstream/downstream, soil physio-chemical properties, land use/cover change*

* *Corresponding: E-Mail: benviromgt@yahoo.com. Tel: +256-712-712525*