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NR > Vol.3 No.3, September 2012

OPEN ACCESS

Changing Trends of Natural Resources Degradation in Kagera Basin: Case Study of Kagera Sub-Basin, Uganda

PDF (Size: 1313KB) PP. 95-106 DOI : 10.4236/nr.2012.33014

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ABSTRACT

In many respects, river basins are extremely convenient natural resources management units and hence calls for an integrated approach in case of transboundary nature. Environmental resources in Kagera basin are under great threat due to demographic factors leading to wide spread environmental degradation. Land degradation and biodiversity loss are central issues in the basin, but the extent and severity of the degradation pressures are not yet clearly illustrated and their implications largely unknown. To date, natural resource mapping in Kagera basin has been based on isolated case studies for specific purposes and not much has been done in mapping resources and classification of resources degradation by remote sensing applications considering the whole basin. In this study, basin-wide mapping approach was adopted and hot spot areas associated with natural resources use in the basin identified and trends over time established. However, this paper presents results from Kagera River sub-basin, Uganda. Mapping exercise was done by using landsat images and aerial photos of Kagera basin covering the years 1984-2002. Overall, bushland in Kagera sub-basin, Uganda increased by 78% and woodland cover showed mere 6% gain; but a 53% decrease in open woodland sub-type and 29% decrease in closed woodland. Significant shift occurred in cultivation with herbaceous crops (mainly banana) from year 1984-2002 moving from east to west of Kagera sub-basin, Uganda representing 167% increase. Area occupied by permanent swamp decreased 31%. Over the same period, land cover change detection matrix indicates main land cover changes include conversion to bushland (59.34%) followed by conversion to grassland (7.29%) and cultivated land (7.16%), with only 24.19% of the land cover remaining unchanged. It is concluded that the observed changes are, a result of human-induced factors and show unsustainable utilization of natural resources as most of the changes make the land susceptible to degradation.

KEYWORDS

Natural Resources; Degradation; Mapping; Kagera Basin; Uganda

Cite this paper

C. Tolo, E. Majule and J. Perfect, "Changing Trends of Natural Resources Degradation in Kagera Basin: Case Study of Kagera Sub-Basin, Uganda," *Natural Resources*, Vol. 3 No. 3, 2012, pp. 95-106. doi: 10.4236/nr.2012.33014.

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