THE RUSHEBEYA-KANYABAHA LANDSCAPE, KABALE DISTRICT, UGANDA

A Case Study

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1.0 INTRODUCTION

The Kanyabaha-Rushebeya landscape in Kabale district in the Kigezi highlands, South-western Uganda presents landscape problems and options in Uganda's highlands. Kigezi highlands are one of the most densely populated areas in Uganda facing severe environmental problems that reflect on people's livelihoods. The Kanyabaha-Rushebeya landscape is shared between the three sub-counties of Bukinda, Rwamucucu and Kashambya all in Rukiga County, Kabale district. This landscape is described by the Rushebeya-Kanyabaha wetland and its associated catchment area. The wetland in particular is a resource of common interest to the people living the landscape. It is delineated by the boundaries of seven parishes that share border with the wetland. The parishes are: Kangondo and Kyerero in Bukinda sub-county; Rushebeya-Kanyabaha wetland and Kitunga in Kashambya sub-county and Burime, Nyakagabagaba, Kitojo in Rwamucucu sub-county.

2.0 LANDSCAPE DIMENSIONS AND ATTRIBUTES

The Rushebeya-Kanyabaha landscape is quite rich, involving an interaction of major natural resources. Its primary assets include; the long-stretching wetland, water resources, vast low-lying land and a wide range of hills. People have also planted trees for fuelwood and timber. The trees are mainly planted as woodlots, along farm boundaries and in a few cases scattered on the fields. The common tree species planted or regenerating naturally are eucalyptus and black wattle.

Rainfall in the landscape is bimodal. The long heavy rains are from March to May while the short rains are from October to November. June, July and August are generally the driest months of the year. The mean annual rainfall varies from 800-1000mm. Mean annual minimum and maximum temperatures are 10.9º C and 24.4º C respectively (NEMA, 2001). There has been a rise in average minimum temperatures of 0.7º C since 1995 in Kabale district. This is higher than the world average

rise and has resulted in many changes in microclimates of the valleys and hills (Kabale district council 2000).

The wetland has a mosaic of natural vegetation, crops and open water patches. The dominant vegetation is *cladium* spp and cyperus papyrus species and these are scattered with *Miscanthidium violaceum*. The swamp is rich in birds with globally threatened species such as Papyrus Yellow warbler (*Chloropeto graciliroshtris*), Papyrus gonolek and others. Besides the sitatunga, the swamp is also home for the IUCN red data listed Congo clawless otter (*Aonyx congica*) and Grey- crowned crane. The intact wetland is embedded in a long broad valley surrounded by steep hills. It is a permanent swamp but is seasonally flooded in some places. The wetland receives water from rivers Bufureka and Kabigodi and drains North East into Lake Edward. At its heart is a small lake believed to be very deep. The wetland is also rich in fish such as *Clarias* and *Protopterus* species.

3.0 DEMOGRAPHIC CHARACTERISTICS

The population around the Rushebeya-Kanyabaha landscape is mainly composed of one tribe, the Bakiga who are predominantly subsistence cultivators. The population of the three sub-counties, estimated at 67,406 people, is one of the highest in Uganda. The population density of Kabale district is at 290 persons per km^2 (UBOS, 2002). The high population densities in the area constitute a high pressure on the resources in this area particularly agricultural land. Almost all available land has been cleared for agriculture leaving the wetland as the next option source of land for cultivation. The settlement pattern is characteristic of the Kigezi highlands where settlements are mainly located in the lowlands and concentrated in a few places.

Table 1. Human Population in Rushebeya-Kanyabaha landscape

Sub-county	Area (km^2)	Male	Households	Female	Total	Av. HH Size
Bukinda	57.83	9,467	3,863	9,844	19,412	4.9
Kashambya	130.04	11,381	5,006	12,646	23,670	4.7
Rwamucucu	110.55	3,724	4,989	12,806	24,324	4.9
Total	298.42	24,572	13,858	35,296	67,406	

Source: *Uganda Population and Housing census 2002*

4.0 ECONOMIC ACTIVITIES

The main economic activity in Rushebeya-Kanyabaha landscape is agriculture. This is practiced for both subsistence and commercial purposes. The wetland provides livelihood for the densely

populated local communities in form of farming, grazing, fishing, raw materials for building and handcraft, water for domestic purposes as well as hunting and bee keeping. Harvesting of craft materials is one of the major activities of the communities surrounding this wetland and according to WID (2001), about 162 specialized craft makers are reported to be involved in the harvesting of materials from the wetland for crafts. Fishing, fish farming and wild animal hunting are among major activities in the wetland. There are an estimated 45 specialized sitatunga hunters from surrounding areas. The hunters kill the animals and also destroy the wetland that harbors the animals through bush burning.

A list of major crops grown and their respective markets beyond the landscape was compiled and presented as below.

Table 2. Major crops grown and their market

Crops	Markets	Means of transport	Challenges
Irish Potatoes	Kampala, Rwanda, Rukungiri	Vehicles, Bicycles	Marketing and selling coordinated by middlemen, low prices to farmers, no group marketing
Bananas	Kabale, Rukungiri	Vehicles, Bicycles	
Sorghum	Kabale, Kampala, Mbarara, Rukungiri	Vehicles, Bicycles	
Cabbages	Kampala	Mainly vehicles	

Irish potatoes, sorghum and vegetables (mainly cabbages) are the major crops grown in the landscape. Other crops include sweet potatoes, maize, beans, peas, millet, egg plants, tomatoes, groundnuts, rice and yams. Producers are in two categories-individual farmers and farmer groups. Whereas individual farmers produce for both home consumption and for sale, farmer groups mainly produce for sale. Sorghum is mainly grown and sold for making local brew (*Omuramba*). Farmers usually add value by fermenting the sorghum for it to fetch a higher market value. On average a kilogram of sorghum costs 300 Uganda shillings, while a fermented one costs 500. Unfortunately, this is only where value (local) is added to the products. All others are just sold in their raw form. It should be noted also that the common means of transport used locally for transportation of farm produce are bicycles. Vehicles are used on long marketing routes like to Kabale town, Rukungiri, Kampala and and across the boarder to Rwanda.

5.0 THREATS TO THE RUSHEBEYA-KANYABAHA LANDSCAPE

Threats to the Rushebeya-Kanyabaha landscape are diverse and take different dimensions. However, these threats can generally be grouped as:

5.1. Degradation of landscape resources

- Wetland drainage
- Degradation of streams
- Severe run-off and sedimentation of valley bottoms.
- Hunting of wild animals
- Soils fertility loss resulting into stunted crops, especially bananas
- Soil erosion leading to degraded hill sides
- Overgrazing and farming on steep slopes
- Overgrazing

5.2. Institutional arrangements

- Limited coordination among actors in the landscape
- Limited capacity of local institutions due to
- Inadequate implementation of policies and laws
- Poor management practices
- Limited financing
- Poor management practices

5.3. Others

- High population growth
- Land degradation/depleted soils.

- Erosion due to downhill cultivation.
- Food and nutritional deficits
- Lack of wood (for fuel, poles, stakes, timber)
- Fragmented farms
- Poor markets for agricultural products
- Loss of diversity. Increased hunting of wild animals in the wetland, especially the Statunga.

The soils are under intensive continuous cultivation with a net loss of fresh organic materials especially from the annual hillside cropping systems (Briggs and Twomlow, 1998). Mounting demographic pressure has forced farmers to abandon shifting cultivation, the indigenous soil replenishment method, for continuous cultivation. This is coupled with the terrace scouring phenomenon, caused by down slope cultivation and soil erosion (Siriri, 1997). Consequently, harvest from the upper third of terraces usually does not exceed 12% of the entire field though farmers manage the entire plot uniformly. Some areas with Eucalyptus trees have no undergrowth leading to dry soils and water runoff. This has resulted into increased lake silting and floods. Farmers occasionally use animal manures and crop residues for soil fertility replenishment. However, the amount of these organic resources, and their quality are often insufficient to meet crop nutrient demands. Alternative organic resources are agroforestry trees and shrubs (Siriri & Raussen, 2001). Yield gradients over the narrow terrace benches (typically 5 - 15 m wide) results in negative net benefits and low returns to labour, and have serious food security implications on this low input farming system.

The Rushebeya-Kanyabaha wetland is home to the Sitatunga (*Tragelaphus spekii*), commonly known as the water antelope. The Sitatunga is hunted for meat and as a control of crop raiding. It is listed by IUCN as a lower risk near-threatened species (IUCN, 2006). This semi-aquatic species is so specialized that it is found only in swamps and permanent marshes or wetlands dominated by bulrushes, reeds, and sedges where it frequents the deepest parts of swamps (Estes, 1991; Owen, 1970). The wetland was in the past, and in present times, partly encroached, reclaimed and silted due to unsustainable land management practices in the hillside catchment area (MWLE and Kabale district local government, 2001). Originally, the wetland was estimated to be 859 ha (National Biomass Study, 1995) but approximately 363 ha (43%) has already been converted to farmland.

6.0 CURRENT APPROACHES TO ADDRESS THE PROBLEM

6.1. Planning

The district has developed the district environment action plan and sub-county environment action plans. The plans have however not been implemented and need to be rolled out as their period has come to an end. Landscape planning would provide an opportunity to validate and roll out the sub-county environment action plans.

The Kanyabaha-Rushebeya Community Wetland Management Plan (2001- 2005) was developed over a period of almost two years in a consultative process that involved the National Wetlands Programme, the Kabale District Administration and the neighbouring villages of this extensive wetland complex. A key aspect of the plan is the promotion of multiple -use wetland management systems, which enhance wetland benefits for local communities, while at the same time safeguarding their vital functions for off-site users. At the heart of this approach is a process of community consultations, resulting in a resource users plan, wetland user zones, a monitoring plan and a wetland investment plan. A unique feature of the management plan is the establishment of a sitatunga sanctuary situated in the main breeding ground of the antelope and in this area, hunting is not allowed.

Other features of the plan are a range of investments in the wetland area to increase community benefits from wetland products or to reduce the negative impacts of the wetland on community livelihoods. For example, two footbridges were constructed to ease crossing of the wetland, apiary activities were to be promoted and professionalized, and a canoe was bought for boosting the local fisheries. The required investments for the implementation of the Kanyabaha-Rushebeya Community Wetland Management Plan are about US$ 50,000. About one third of this is paid by the Government of Uganda through the Poverty Action Fund. The remaining investments are financed by the UNDP/GEF Small Grants Fund. Upon completion of the plan, the NWP contracted a number of NGOs to do the actual fieldwork, and analyse the process. The district was eventually supposed to take over the responsibility for the process. It is however important to note that there have been minimal additional investments if any beyond what were provided by the government and UNDP/GEF Small Grants Fund.

Agricultural programs operating in the Kanyabaha-Rushebeya landscape include; the Natitional Agricultural Advisory Services (NAADS) and the Area Based agricultural Modernization Program (AAMP).

7.0 PRINCIPAL STAKEHOLDERS AND THEIR PERSPECTIVES

A number of stakeholders operate in the Rushebeya-Kanyabaha landscape. These are both government and non-government. They work on different aspects mainly related to environmental conservation and improved agricultural productivity. Different organizations are involved in different activities. The problem at hand is that each organization works on its designated activities. No coordination of the organizations' activities has been realized in the landscape, an indication that such organizations do their activities independent of each other. The other challenge is that most of the activities are project-based and last for a few years. Some of such organizations have for instance wound up their activities in the landscape.

7.1. Producers

The producers in the landscape are basically local individual farmers. Some individual farmers own land in the landscape, while others rent the plots seasonally where they do their farming. Households have many scattered plots throughout the landscape. Land has been fragmented to pieces much smaller than one acre (0.4 hectares). A good portion of the plots is located over an hour's walk from the home and incentives to manage such plots is low (NEMA, 2001, Raussen *et al,* 2002). Farmers organize themselves into groups for joint marketing purposes. This is mainly done for the marketing and sale of Irish potatoes and cabbages which are the main crops grown in the landscape. Most of the produce is bought by the middlemen who take it to bigger towns like Kabale, Kampala and Rwanda for higher incomes. In such cases, farmers are always paid much lower prices than their produce fetch on bigger markets. This is because, local farmers do not have the facilitation to reach and sell their products in such markets for higher incomes. For nearly all major commodities, prices have a single peak period, around January and February and then begin a slow but eventually profound fall in price (Raussen et al, 2002). The marketing structure is poor. There is tendency for most farmers to sell at harvest time, when the price is low. They have poor storage facilities and there are thefts of food from granaries. Farmers lack forum to address their problems and participate in policy issues. Because of low production, farmers have less surplus, and are generally poor. Consequently, there is little money to cater for their basic needs (NEMA, 2001).

There is a striking difference between the options that exist for crop production in Rushebeya-Kanyabaha landscape and the narrow range of options, which are actually used. Not only are most improved varieties and cultivars not usually found in farmers fields, but also management in farmers' fields differs widely from recommended practices.

7.2. Consumers

Products from Rushebeya-Kanyabaha landscape are consumed both locally and internationally. Rwanda is one of the major consumers on the international scene. Kampala city and other major towns like Mbarara, Kabale, Rukungiri, Kanungu form another category of consumers. The rest of the produce is consumed locally by the local communities. Apart from consumption at the community level, the linkage between the consumers and producers is generally done by the middlemen. This arrangement creates an unfair trade between the two parties because of the need to maximize profits/returns and mainly affects the producers who are paid little for a lot of products sold.

7.3. Government

The Government works through Kabale District local government to implement agricultural and biodiversity conservation programs in the landscape. This comes against the backdrop that implementation of agricultural and conservation of wetlands and agricultural biodiversity is a decentralized function.

Table 3. Government Agencies/Programmes

Agency	Nature	Focus
National Environmental Management Authority (NEMA)	A national agency mandated to co-ordinate, monitor and supervise environmental management in the country	Monitoring and regulation of environmental practices and standards
GEF/UNDP		Bee keeping, tree planting, piggery, fruit farming
NAADS	The Uganda National Agricultural Advisory Agency	Agricultural advisory services, livelihood improvement
AAMP		Road works and agriculture production
Wetland Inspection Division (WID)	A national programme for the inspection of wetland resources	Constructed a foot path in the wetland, advisory on wetland management

7.4. Non-Governmental Organisations (NGOs)

There are some NGOs working in the landscape. They work on different activities and no coordination between their activities is registered.

Table 4. NGOs operating in the landscape and their activities

Name	Nature of Organisation	Activities
Africa 2000 network	An agricultural-based NGO	Provision of seed, good farming practices in cassava, Bananas, passion fruits, Apples, livestock and poultry, fish farming.
CARE International in Uganda	International development organization	Savings and credits
Nature Uganda	National Conservation Organization	Biodiversity conservation and fish Farming
World Vision	International development organization	Building schools and health centres, agricultural services

7.5. Private sector

There are no large private sector companies operating in the landscape.

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