

# Highlights of the Uganda Atlas of Our Changing Environment

## WETLANDS

Uganda has extensive wetland coverage, although the information about the exact size and distribution is yet to be established. Current estimates put the total area of wetlands at 33,000 Km<sup>2</sup> covering about 13% of the country's total area. Wetlands perform important chemical, hydrological, ecological and social economic functions. The major functions and values include; source of products such as water, fish, forage and grazing resources, wood fuel, building and craft materials, sand, clay and medicines; provision of services such as purification of water through filtering of both silt, and industrial and domestic affluent; regulate water flow and enhance ground water recharge; moderation of climate; retention of carbon; and provision of landscape aesthetic resources for recreation and eco- tourism. Furthermore, wetlands have important attributes including habitat for aquatic life, biodiversity and genetic resources conservation.

Uganda wetlands are faced with a number of threats of degradation especially resulting from population pressure and economic development. Wetlands throughout the country are increasingly being encroached upon and reclaimed mainly for agriculture and settlements. Specifically the main human activities that are leading to degradation of wetlands include drainage for agricultural purposes, sand and clay mining, over harvesting of biomass, dumping of solid waste and pollution through release industrial affluent and domestic wastes. The impact of all these, is far-reaching and threatens the integrity and sustainability of these vital resources. The current and potential impacts include increased floods, shortage of building and crafts materials, and reduction in fish productivity, for example, disappearance of endangered species such as mud fish, decline in water quantity and quality, reduced ground water recharge and decline in the water table as exemplified by the disappearance of springs.

### Bunyonyi-Iyamuliro-Mutanda

Lake Bunyonyi was formed due to a combination of intense rifting and back tilting of landscape by earth movements that occurred in this area during the Tertiary times, in association with formation of the Western Rift valley in East Africa; and later the volcanic lava damming of rivers flowing on the raised and tilted landscape. The lake covers an area of 46 km<sup>2</sup> and has an average depth of 39 m. Lake Mutanda was also formed due to river valley drowning and lava damming on the arena-like Kisoro plain; but the valley was not so deep in comparison with the case of Lake Bunyonyi, hence, the resultant lake is not so deep. The lake covers 22 km<sup>2</sup> in area, with an average depth of 22 m. Water from the lake escapes through a breach in this lava band in form of a min-rapid, and marks the beginning of the river flowing through the formerly vast and deep Iyamuliro Wetland System into the Ruhuma through a narrow valley across the Kabale-Kisoro border into Lake Mutanda in Kisoro District. Because of its great depth and narrow shores, and due to characteristically low temperatures of the highland region, the lake's productivity in terms of fish is low. There are other lava dammed lakes in this same area of Kisoro District namely Murehe, Chahafi and Kayumba, but these are smaller and even shallower, and are at the verge of being killed by heavy silting. Out of Lake Mutanda, flows River Kaku, which crosses the Uganda-Democratic Republic of Congo (DRC) border to form part of the upper River Semliki system, a major tributary of the River Nile.

These lakes are increasingly facing threats of demise due to silting from rapidly eroding soils on the slopes flanking the lakes. The reduction of water storage capacity will have serious implications on the water resources in this area, both in terms of quantity and quality, and given the added threats of climate change. Current trends indicate progressive shrinkage of the lake sizes through

stages, beginning with silting of the immediate shores that are later occupied by swamps which, in turn, are encroached upon and reclaimed for cultivation; for example the expanse swamp fringing Lake Mutanda. Silting and encroachment on the lakeshores interfere with fish breeding and aquatic biodiversity in general and has been partly blamed for the low productivity of these lakes.

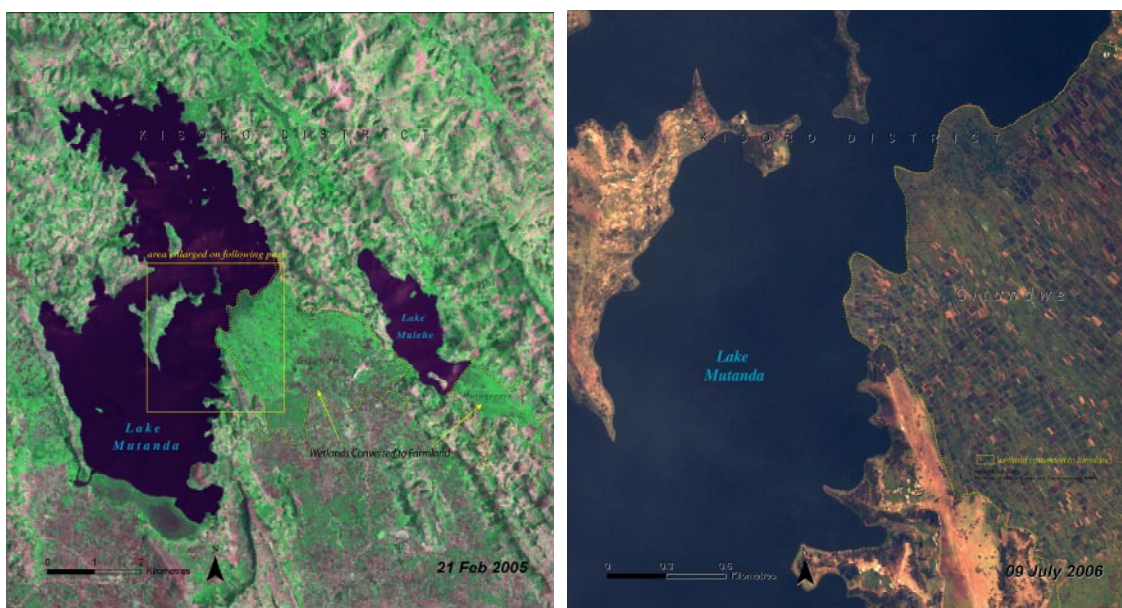


Figure 1: Lake Mutanda wetlands

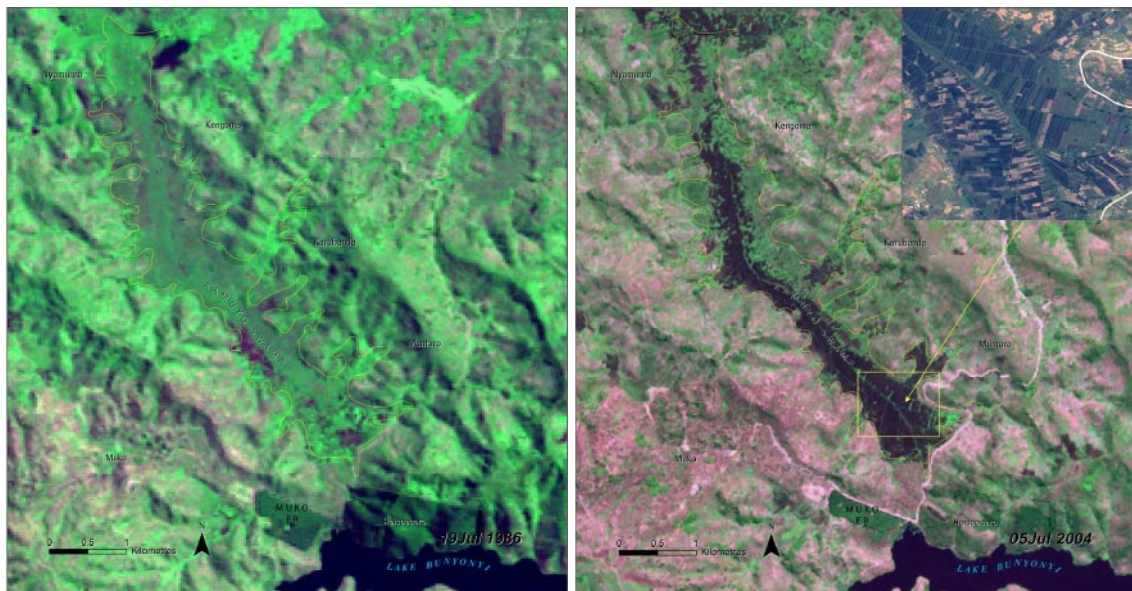


Figure 2: Iyamuliro wetland was almost intact in 1986. By 2006 the whole wetland had been converted into farms.

## Lake Wamala

Lake Wamala is situated in Mityana District. The system receives numerous minor affluent watercourses and drains via the Kibimba River to the Katonga River. Direct precipitation over the lake is estimated at 1,200 mm/yr. This, plus the contribution of the inflow, is lost by evapo-transpiration. The swamps throughout the system are dominated by *Cyperus papyrus*. The area of the lake has been shrinking over the years. The lake had an area of 164 km<sup>2</sup> in 1990 and by 2000 the area had reduced to 87 km<sup>2</sup> which is 50% reduction. The fish in Lake Wamala has declined since the lake was stocked in 1956 and opened to fishing during the 1960s. The lake produced an average of 4,000 - 6,000 tonnes of fish annually from 1960s through 1970s. Total fish catches decreased from a maximum of 7,100 tonnes in 1967 to less than 500 tonnes by 1990s.

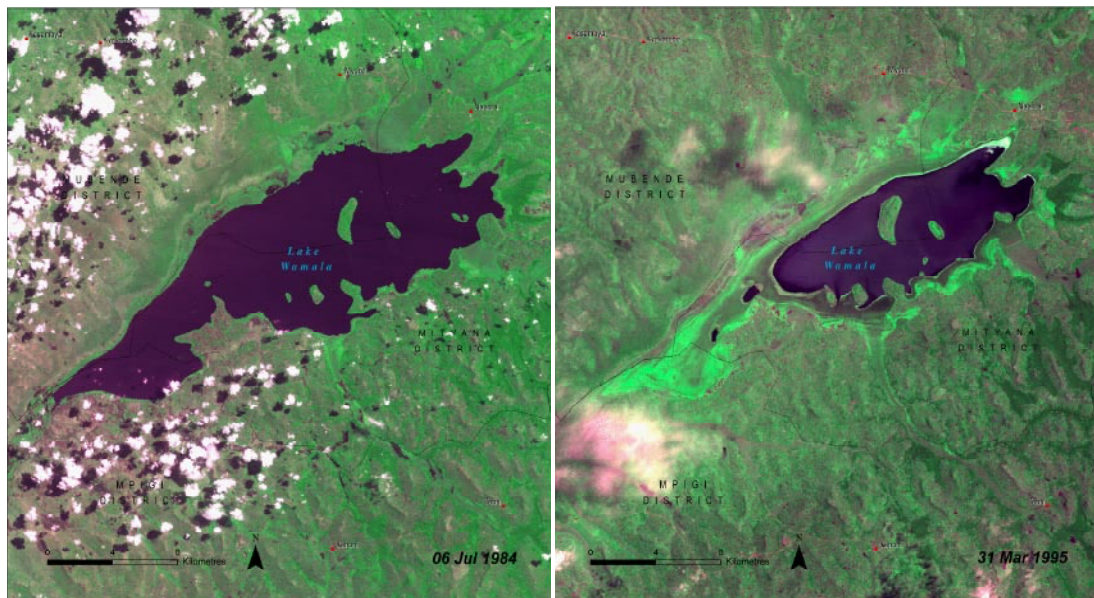


Figure 3: Lake Wamala has shrunk in size to almost 50% from 1984 to 1995.

## Recommendations

- Government in the year 1995 declared the lakeshores and riverbanks as fragile ecosystems and accorded them special protection through designation of protection zones around lakeshores and along riverbanks. For example, lakes Bunyonyi and Mutanda have a protection zone of 200 m from the lowest water mark, where no active land use practices are allowed without permission and regulation.
- There have been daunting challenges, however, in enforcing this regulation in such an area with severe land shortage and other shortcomings in enforcement.
- The smaller lakes of Murehe, Chahafi and Kayumba, in order of decreasing size, are more vulnerable to demise from silting due to their size, making their near future very grim. Cultivation along the lakes should be halted.