

LAKE VICTORIA EXTINCTION AND HUMAN VULNERABILITY IN UGANDA

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Introduction

Hydroelectric power is central to Uganda's economic prosperity, but to ensure a stable and sustainable power production, environmental policies and practices must meet climate mitigation measures. This paper establishes the nexus between hydropower exploration, production and water supply on one part, and climate change and human livelihoods on the other. The United Nation's Intergovernmental Panel on Climate Change has in the past noted that: developing and / or poor countries as of necessity must always factor issues of climate change in all their poverty reduction policies as well as in their development and investment agendas. The panel has also noted that water resources, more than most other resources, are susceptible to global warming. The power sector in Uganda and its impacts on the social and economic human livelihoods and its associated human struggles are therefore discussed in the United Nations Intergovernmental Panel context.

The Scope

This paper discusses the social and economic impacts of the water reduction in East Africa's Lake Victoria and River Nile on the people of Uganda and on those in Kampala city in particular. Whereas electricity directly and indirectly is consumed by everybody in Uganda, the people who have direct access to the grid are the most affected by the looming and harsh changes in climatic conditions. The discussion below, with various pictures, illustrates the impact of climatic changes on Lake Victoria and hence power generation in Uganda. It also discusses how Ugandans are responding to impacts of climatic changes.

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Nalubale dam: Power generation capacity has reduced from 180mw to 60 mw due to water reduction in Lake Victoria

Lake Victoria

Lake Victoria is situated in East Africa and lies between longitudes 31 degrees E and 35 degrees E, and latitudes 1 degree N and 4 degrees S. The Lake straddles the equator at 1,135m above sea level. It is the second largest freshwater Lake in the world with a surface area of approximately 69,000km². The total area of the lake's surrounding catchments is estimated to be 184,000 km out of which 32,000 km (16%) lie in Uganda. It is a source of the River Nile, which accommodates the Nalubale/Owen falls Dam and Kiira Dam the main source of hydro electricity in Uganda. In 2001, the government of Uganda invested a total of over US\$ 260m in the two dams to produce 380mw of electricity but due to drying of Lake Victoria, the two dams currently can only produce 120mw.

Biological and Natural Habitat of Lake Victoria

Lake Victoria has an average depth of 40m and gets its waters from over 19 tributaries/rivers from the countries of Uganda, Kenya, Tanzania, Rwanda and Burundi. A total of over 30 million people live in its basin drawing most of their water and food needs from the lake. According to the Uganda's Ministry of Energy, Lake Victoria's shallowness is very prone to climatic changes, especially to hot conditions. All of the meteorological centers of the above five countries have indicated that the East African region since 2003 has experienced high evaporation on water bodies leading to reduction in water levels. In Uganda, evidence available from the Ministry of Water and Environment, dispel any speculation that the reduction of Lake Victoria waters has been as a result of over releases by the Nalubale and Kiira dams situated parallel to each other on River Nile. To confirm that the drying of Lake Victoria is not due to dams on River Nile, the government recently availed evidence indicating that the hot climatic conditions have not only affected Lake Victoria but also the water levels of other water bodies in the

country where there are no dams. The other water bodies that have been affected include among others: Lake Wamala in Mubende district, Lake Kyoga and R. Ruizi in Western Uganda.

Contrary to the past, in the last two years Uganda has experienced constant rainfall throughout the year. This has not done much to fill the ever decreasing water levels of Lake Victoria. Meteorology experts say that the rate of evaporation is so high. Even with the recent extra ordinary over flooding of rivers in the Eastern part of Uganda, the water levels in Lake Victoria have not increased, yet these rivers have a direct link with Lake Victoria. Since 2004, Lake Victoria alone reduced four meters in depth leading to power crisis in Uganda. This can be substantially attributed to the climate change effect, says Mr. Alloysius Kagoro, a principal meteorologist from Uganda's Meteorologist Department.



River Nile's source: Lake Victoria waters can no longer cover the former gauge concretes that used to be under water

The two dams, Nalubale/Owen Falls Dam and Kiira Dam on River Nile, whose power generation capacity was hitherto 380mw reduced to less than 120mw by the end of 2005. In June 2006, a Ministry of Energy and Mineral Development report indicated that due to evaporation, Lake Victoria lost 4 cm of water in depth as a result of a long drought in the Lake region.

As a result of water reduction as indicated above, Owen Falls and Kiira dams can no longer produce enough electricity for both domestic and industrial consumption. This water reduction has also affected the National Water and Sewerage Corporation (NWSC), the supplier of safe water to Kampala residents. Early this year, the NWSC was forced to extend water pipes deep into Lake Victoria at a cost of Uganda Shillings 7.5 billion (US\$ 4.4m). This has led to water price escalation amidst deteriorating water quality. To date, the national press is still carrying stories indicating that the current water being supplied

by the NWSC is contaminated with human feces from the surrounding communities. Though the allegation of feces has been refuted by the NWSC Managing Director, Mr. William Muhairwe, the MD has not explained why Kampala's water colour has turned green. In effect, water reduction in Lake Victoria has led to reduction in power generation, poor water quality and increased power and water tariffs in Uganda.

Population

The power and water problem caused by the drying of Lake Victoria are affecting the entire population of Uganda's 27million people (National Population Secretariat, 2006). It should be noted that over 37% of the Ugandan population to date still live below the poverty line (Poverty Eradication Action Plan report 2004). The increase of power tariffs from 16 US cents in 2004 to 30 US cents in 2007, caused by power generation short falls is an endemic economic strain to the poor people in Uganda.

Economy

Kampala is the capital city of Uganda and therefore a cosmopolitan town with mixed population. It has both Uganda's rich and poor. The population of Kampala city alone is estimated at over 2 million people (National Population Secretariat-Kampala 2006). Out of this population, the slum dwellers often live in acute poverty. The low levels of income and high power and water tariffs restrict access to essential utilities of water and electricity. This affects the well being and economic activities of the people. Ugandans through their Umbrella, Save Mabira Crusade, as exemplified by their 12th April 2007 Mabira demonstration, are more determined to defend their environment from abuse by the government and private investors. They believe that there are these abuses which are behind the worsening climatic conditions in the country. A recent effort by the Government to allocate part of Mabira central forest reserve saw massive public protests and demonstrations that culminated into the death of five innocent citizens.

Efforts by the government

To solve water crisis in Kampala, the National Water and Sewerage Cooperation (NWSC) has extended the water pipes far deep into the Lake to draw sufficient quantity and quality water. Then to solve power crisis, 80 million free energy saving bulbs at a cost of US\$4m have been imported and distributed to households by the government to reduce power consumption but also reduce the consumers' ever increasing power bills. Another initiative to deal with the power problem in the country is the on-going construction of Bujagali dam by Bujagali Energy Limited (BEL) and the creation of Energy Fund by the government. This dam is estimated to cost over \$750 million and to add 250mw of electricity into the grid by the year 2011. It is hoped that the power from Bujagali dam will reduce power tariffs by eliminating the use of expensive and environmentally thermal generators which are used despite their disastrous environmental hazards in order to supplement the current power shortage.



Public rush to save Lake Victoria

Having realized that environmental degradation and its consequent climatic changes is the main cause of water level reduction in Lake Victoria and therefore the source of the current electricity and water crisis in Uganda human rights and environmental activists last year formed a coalition known as “Save Mabira Crusade” to protect forest and water resources including Lake Victoria and its catchment areas. The crusade was formed to curtail government’s plans to allocate 7,100 hectares of Mabira’s 28,000 hectares of forest land and give it to an investor for sugar cane growing. Yet the forest is located at the shores of Lake Victoria and along River Nile.



Part of Mabira forest

To defend the above forest in the name of environment, on 12th April 2007, over 5,000 members of Save Mabira Crusade (SMC) held a peaceful demonstration against the government’s decision to degazette the reserve. Unfortunately, this well-intentioned peaceful demonstration turned violent as five people including an Indian expatriate lost their lives. The crusade still stands firm to save Uganda’s environment in view of the prevailing and unstable climatic conditions in Uganda and particularly around Lake Victoria.

The crusaders with a banner during the demonstration



Uganda's military clobbering demonstrators



A torched motorcycle of the Indian who was killed by Charged demonstrators after military's violent actions