

PILOT BASINS IN FLOOD AND DROUGHT MANAGEMENT TOOLS PROJECT: LAKE VICTORIA BASIN

Lake Victoria is Africa's largest lake and is part of the Nile Basin. The basin is shared among five countries: Tanzania, Kenya, Uganda, Rwanda and Burundi.

The Lake Victoria Basin is one of the 3 pilot basins in the Flood and Drought Management Tools Project (FDMT) which will be testing the decision support system (DSS) which provides information to integrate flood and drought information into planning.

The basin was selected because it is a major lake basin and is part of the larger Nile Basin. The project is actively collaborating with the Nile Basin Initiative as a DSS has been developed for the Nile basin to guide water resource planning and investment decisions. The pilot basin is also providing an opportunity to study both floods and droughts in the basins draining to the lake and the lake level fluctuations.

The vast majority of the population depends on natural resources and small holdings of one hectare or less. Agriculture and fisheries are the two most important livelihoods in the basin. Other activities include bee keeping, trading, quarrying and sand mining, mining of gold and other minerals, agrochemical production and food processing.

Some of the key issues impacting social and economic development and environmental sustainability include:

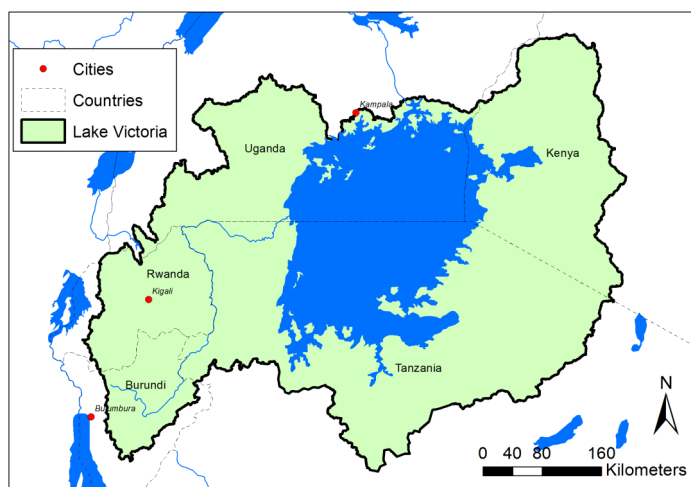
- ⇒ Land degradation
- ⇒ Conversion of wetlands
- ⇒ Deforestation
- ⇒ Water pollution
- ⇒ Land pollution
- ⇒ Overfishing
- ⇒ Widespread poverty
- ⇒ Irregular flood and drought events
- ⇒ Poor governance and compliance with regulations
- ⇒ Growing population

Catchment area: 263,000 km²

Population: 35,000,000

Urban population: 32%

Major urban areas (>80,000 people): Kampala, Jinja, Kisumu, Mwanza, Bukoba, Musoma



The **Flood and Drought Management Tools (FDMT) project** is funded by the Global Environment Facility (GEF) International Waters (IW) and implemented by UNEP, with the International Water Association (IWA) and DHI as the executing agencies. The project is developing a computer software-based decision support system (DSS) which has tools to support planning from the transboundary basin to water utility level by including better information on floods and droughts. The project is being implemented from 2014 - 2018, and 3 pilot basins (Volta, Lake Victoria and Chao Phraya) have been identified for development and testing of the DSS.

Projects and initiatives of key relevance for the FDMT project

The Lake Victoria Environmental Management Project Phase II (LVEMP-II) is an East African Community (EAC) regional initiative coordinated by the Lake Victoria Basin Commission (LVBC) and currently implemented by the five EAC partner states. The purpose of LVEMP-II is to contribute to the EAC's Vision and Strategy Framework for the Management of the Lake Victoria Basin – a prosperous population living in a healthy and sustainably managed environment providing equitable opportunities and benefits.

The Lake Victoria Region Water and Sanitation Initiative phases 1 and 2, was initially launched in 2004 by UN-HABITAT in association with the Governments of Kenya, Tanzania and Uganda to address the water and sanitation needs of the population, particularly the poor. The first phase was aimed at small towns in Uganda, Kenya and Tanzania, and the second phase involves 15 additional towns in Rwanda and Burundi.

The Sustainable Water and Sanitation in Africa (SUWASA) is a regional initiative of the US Agency for International Development (USAID) and implemented by Tetra Tech. Designed to spread effective models of reform at the water utility and sector levels, it aims to facilitate innovative financing approaches for African water providers. Projects are implemented in a number of countries including Kenya and Uganda.

Impact of Flood and Drought

Both floods and droughts are serious issues in the basin impacting livelihoods, public health and the environment. The root-causes of floods are irregular seasonal and year to year variability in rainfall patterns, combined with mismanagement of land and water resources, leading to soil erosion and increased run-off. Droughts are the consequence of long and pronounced dry seasons, which increased in number and severity in recent years due to changes in weather patterns, including rainfall and temperature.

Droughts and floods often result in disasters in the riparian countries. Heavy rainfall in upstream catchments results in flooding downstream. Rivers often burst their banks and submerge communities resulting in the displacement of people and loss of property and livelihoods. Droughts in the basin affect food production, availability of water, and generation of hydroelectric power for industrial and domestic consumption.



Future changes

Lake Victoria has been facing abrupt fluctuations in the water level and anomalous hydrological behaviour during the last century. The variability of the lake has significant consequences in terms of its effect on the downstream countries dependent on the Nile, particularly Sudan and Egypt. It has been observed that the fluctuations are highly dependent on rain water. Changes in precipitation patterns due to climate change are already causing more intense and unpredictable extreme events of flooding and drought, jeopardising the availability of water resources, the health of aquatic ecosystem and the main socio-economic activities in the basin, such as agriculture and fisheries.

Key stakeholders

ORGANISATIONS

Lake Victoria Basin Commission (LVBC)

WATER UTILITIES

Kisumu Water and Sewerage Company (KIWASCO), National Water and Sewerage Corporation-Jinja (NWSC-Jinja), Mwanza Urban Water and Sewerage Authority (MWAUWASA), Bukoba water supply and sanitation (BUWASA), Musoma urban water and sewerage authority (MUWASA).

FDMT project in the basin

Although the Lake Victoria basin spans over five countries, the project will concentrate on Kenya, Uganda and Tanzania, which occupy around 80% of the catchment area. The remaining countries – Rwanda and Burundi – will indirectly be included through the LVBC.

At the transboundary level, the project is working with the LVBC, which acts as advisor in defining and specifying functionality of the DSS and helps disseminating information to its member countries within the basin. At the basin level, the project benefits from a close collaboration with the Nile Basin Initiative (NBI), which has valuable experience and insight into the process of developing a DSS for the Nile River Basin. The project is also engaging with local catchment organisations, which provides useful information for the development of the DSS and takes part to training sessions and workshops to strengthen capacity.

Project website: <http://fdmt.iwlearn.org/>

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