

**Our Waters, Our Life. The Role of National Environment Management Authority (NEMA)  
Library in the Collection, Storage and Dissemination of Environmental Information  
for the Conservation of Lake Victoria in Uganda**

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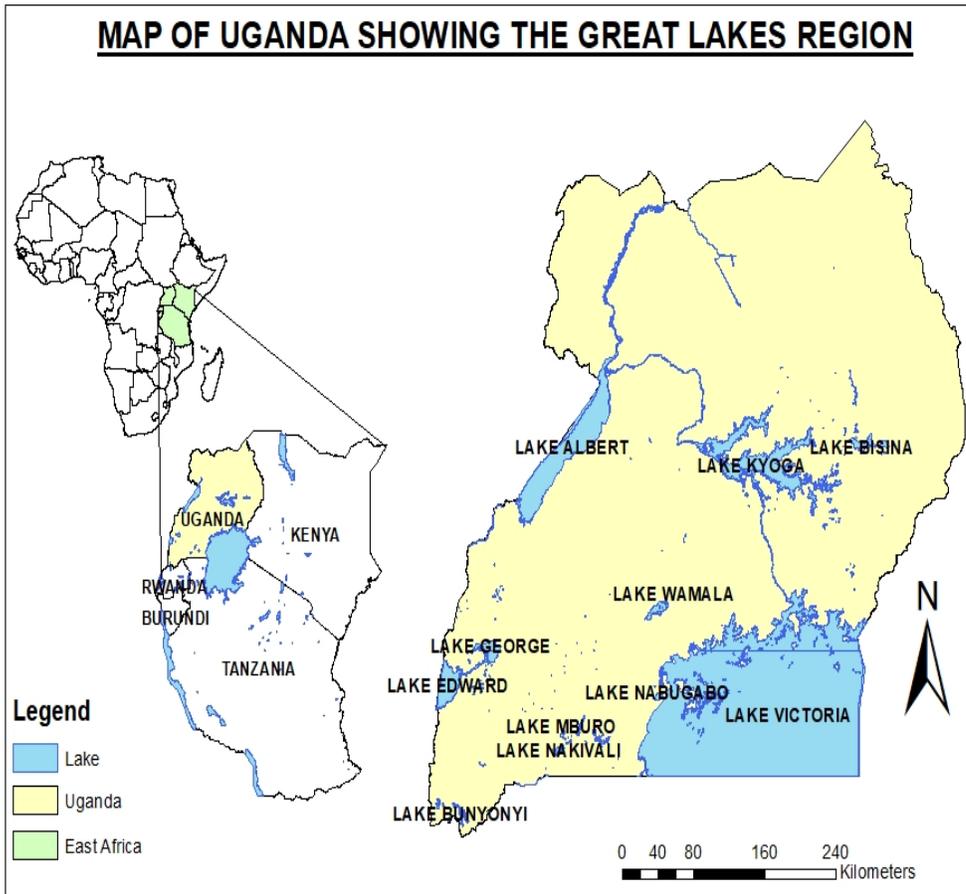
**Abstract**

Uganda is located in the Great Lakes Region of Africa. With a total area of 241,550.7 km<sup>2</sup>, open water covers 36,527.4 km<sup>2</sup> (15.3%), wetlands 4,500 km<sup>2</sup> (1.9%) and land 200,523.2 km<sup>2</sup> (83%). Uganda's water resources have large storage capacity in lakes and rivers some of which include Lakes Victoria, Kyoga, Albert, George and, Edward and rivers include The Nile, Semliki, Kafu, among others. For centuries, Indigenous Peoples and Local Communities (IPLCs) along the lake shores, riverbanks and wetlands have been engaged in conservation activities to conserve these resources. However, recent developments have led to environmental degradation along the shores. The National Environment Management Authority (NEMA) has since its inception in 1995 been promoting sound environmental management for sustainable development through collection, processing, storing and disseminating environment information to the public, with particular attention on the protection, conservation and management of lake shores and riverbanks, especially in the Lake Victoria region. NEMA Librarians and other staff have been engaged in baseline surveys, reconnaissance visits, community meetings, and transect walks among other activities to collect information and develop educational materials. Collaborative efforts to improve community livelihoods are emphasized. Monitoring progress is done through media platforms, assessment meetings and observation visits to ensure improved service delivery and identifying gaps in information dissemination.

**Keywords:** Lake Victoria, Uganda, conservation, libraries, environmental management.

**Introduction**

The availability of consistent, up-to-date and relevant environmental information is a pre-requisite for rational and cost-effective decision-making processes. Among the efforts undertaken by the Uganda National Environment Management Authority (NEMA) over the past 24 years has been the promotion of effective environmental information management for decision making. As early as 1994 the Government of Uganda under the then Ministry of Natural Resources realized that most institutions in the country needed to collect, update and transform their data into formats that can be used in environmental analysis. The National Environmental Information Center (NEIC), established during the same year, played a leading role in laying the foundation for capacity building in the use of tools such as Remote Sensing and Geographical Information Systems (GIS) among government institutions that formed the Environment Information Network (EIN). These tools have greatly enhanced the production of the National State of Environment reports, Environmental Atlases in Uganda and other information materials that have been used for environmental education and awareness (NEMA, 1996).



Source: NEMA GIS Information

*Figure 1. Geographical Location of Uganda (The Pear of Africa).*

**Lake Victoria Basin (All photos by NEMA staff)**



***Kiyindi Landing site***



***Settlement on shores of Lake Victoria***



***Transport on lake victoria***



***The beautiful scenery of the Lake***



***Oil Palm processing on Kalangala Island***



***Water transport on Lake Victoria***



***The crested crane found in the wetlands  
Along shores of Lake Victoria***



***Lake Victoria shoreline***



***Fishing in the wetland***



***Lutembe Beach receiving migratory birds***



***Lutoboka Beach on Kalangala island***



***Eco-Tourism Facility on Kalagala Island within Victoria  
Nile***

## **Lake Victoria**

Lake Victoria is located in East Africa, popularly known as the Great Lakes Region because of the many water bodies found within the region. The first European to discover the lake was John Speke in 1858, who named it after the then reigning Queen of England, Queen Victoria. The Lake lies between three East African Countries namely, Kenya, Uganda and Tanzania, and it covers approximate 69,000 km squared (MWE, 2013). Along its magnificent and beautiful shores in Uganda are approximately 84 islands whose clusters include Ssese Islands on its western shores and Buvuma Islands located on northern shores. These islands form one of the most treasured tourist attractions in Uganda because of their natural environments, tropical wildlife, flora and fauna. Lake Victoria is Africa's largest tropical freshwater lake and comes second only to Lake Superior in North America. The River Nile, one of the longest river in Africa, begins its journey from the source of the Nile in Jinja (On the northern shores of the lake) through Bujagali falls, drains in Lake Kyoga, meanders through Karuma Falls in Murchison Falls National Park to Lake Albert in the north western part of Uganda, then through Sudan and finally pours its waters in the Mediterranean sea through Egypt.

## **Why Conserve Lake Victoria**

The conservation of Lake Victoria has for long been a priority to the government of Uganda. Being in the heart of the East African region, a lot of studies on how best to conserve it have been carried out but this information has for long not been readily available to the public due to its scientific nature. However, the communities found along the lake shores have for centuries been engaged in traditional conservation activities which have seen some parts of the lake shores conserved for performance of rituals.

Bordering three East African nations, namely Uganda, Tanzania, and Kenya, Lake Victoria has over 3,000 inhabited islets. Its outflow, the River Nile, is primarily used for generating hydroelectricity and currently four major dams are to be found along its route. The Lake and its catchment supports about one third (30 million people) of the population of the East African Region estimated to be 90 million (LVMP, 2003). The Lake provides food (fish), hydropower generation, transport and communication, tourism, water for domestic agricultural and industrial use as well as recreation. About 3 million people earn their living directly or indirectly from the fish industry practiced on Lake Victoria in the three countries. Lake wide fish production is estimated at between 400 – 500 metric tons with Tanzania landing 40%, Kenya 35% and Uganda 25%. The landed value of this catch is around USD 300 annually. The lake is also vital for weather and climate modulation where two rainy seasons are experienced every year, hence the two planting seasons. Over 70% of the population of the three countries is engaged in agricultural production mostly as small scale farmers producing sugar, tea, coffee, maize, cotton, livestock, horticulture etc. within the including the lake catchment area (EU/World Fish 2016).

## **Major Threats to the Lake**

The rapidly growing urban centers in the Lake Victoria basin are playing an increasingly important role in the economic development of the region. (UNHABITAT, 2004) But most of these towns are experiencing unplanned settlements and spontaneous growth. The run-down and often non-existent basic infrastructure and other services in most of them pose a major threat to their sustainability. This is further increased by the following:

1. The multiple economic activities in the lake and its catchment area that have increasingly come into conflict with each other;

2. Population pressure which is increasingly producing wastes that include human waste, runoff from the many mushrooming urban centers along its shores, effluent discharges from industries and processing plants, car washing bays and abattoirs;
3. Chemical residues from use of herbicides and pesticides;
4. Unsustainable utilization of the major wetlands through agricultural activities and livestock keeping;
5. Introduction of an exotic species. The Nile Perch currently constitutes 80%, has led to the loss of locally favored fish species, known for their medicinal and cultural values;
6. Unsustainable fishing practices and gears which have altered lake Victoria species composition of the fauna and flora;
7. Nutrients (phosphorus and nitrogen) whose inflow has given rise to increase in algae growth on the lake, threatening the survival of deep water-fish

### **Legal and Policy Framework to Support the Conservation of Water Bodies in Uganda**

Environmental management of lakes, rivers and natural beaches has been of great importance since Uganda's Independence. In collaboration with the relevant lead agencies, NEMA has supported conservation of natural resources for the common good of the people of Uganda. Below are some of the laws enacted by parliament, policies and guidelines put in place to support this course. The relevant clauses or issues concerning water management are indicated under each act or policy.

#### **1. *The National Environment (Wetlands; River Banks and Lake Shores Management) Regulations, 2000***

To provide for the conservation and wise use of wetlands and their resources in Uganda; ensure water catchment conservation and flood control; ensure the sustainable use of wetlands for ecological and tourist purposes for the common good of all citizens; ensure that wetlands are protected as habitats for species of fauna and flora; provide for the regulated public use and enjoyment of wetlands; enhance research and research related activities; and minimize and control and pollution.

#### **2. *The Water Act CAP 152***

An Act to provide for the use, protection and management of water resources and supply; to provide for the constitution of water and sewerage authorities; and to facilitate the devolution of water supply and sewerage undertakings.

#### **3. *The National Policy for the Conservation and Management of Wetland Resources 1995***

The policy aims at curtailing the rampant loss of wetland resources and ensuring that benefits from wetlands are sustainable and equitably distributed to all people of Uganda.

#### **4. *The National Environment Act 5 2019***

To provide for the management of the environment for sustainable development.

#### **5. *National Environment (Wetlands, Riverbanks, Lake Shores Management Regulations No. 3 2000***

For the management of wetlands and wetland resources along lake shores and riverbanks.

#### **6. *Guidelines on the management of riverbanks and lake shores.***

These guidelines contain principles of and rules for the management and conservation of river banks and lake shores in Uganda They define functions and duties of Environment Officers and Local Councils and the duties of landowners notably in respect to: (a) soil engineering; (b)

agroforestry; (c) mulching; (d) bunding; (e) grassing; (f) control of livestock grazing; and (g) terracing. Specified activities with respect to riverbanks and lake shores are controlled.

### **NEMA's Role in the Conservation of Lake Victoria**

Established in 1995 as the principal agency in Uganda charged with the responsibility of coordinating, monitoring, regulating and supervising environmental management in the country, the National Environment Management Authority (NEMA) is a semi-autonomous institution. One of NEMA's statutory functions as per section 2.4 (ix) of the Environment Act 2019 is to undertake research, and disseminate information about the environment; prepare and disseminate the National State Of The Environment Report (NSOER) once in every two years; and undertake public awareness and literacy to support environmental management. The information department in collaboration with the Department for Environment Education and the Department of Corporate Affairs ensure that environment information is collected, processed and disseminated. The Library plays a leading role in the collection of information as well as processing and storing it.

#### **1. The Information Collection Process**

Information is collected according to thematic areas or studies done and the need at the time. Some of the thematic areas most commonly considered when gathering information include:

- Environmental status of the lake;
- Its Catchment and the economic activities practiced by the communities living along its shores and on the islands;
- Environmental problems of the lake and its catchment, .ie., water hyacinth control;
- Land use management;
- Sustainable utilization of the wetlands;
- Climate change;
- Waste management;
- Urbanization along the Lake;
- And many other areas.

The process of collecting information normally begins with a **needs survey** which considers the following aspects:

- Identification of the issues and/or opportunities for collecting this data (what does NEMA need to know, who will benefit from the information, who we are collecting it for);
- Setting goals and objectives according to prioritized issue(s) and/or opportunity(ies) available;
- Plan an approach on where the data is to be collected (geographical location), the communities, non-government organizations to be consulted and the District Local Governments that are in the selected area for data collection;
- How data shall be collected (qualitative or quantitative);
- Methods of collecting data - focus groups, interviews, survey data, observation baseline surveys, reconnaissance visits, community barazas (meetings), transect walks;
- Available data sources, **(both primary and secondary)**;

- Timeframe for the data collection;
- Inform the relevant stakeholders on when data will be collected and thereafter proceed to collect data (**setting limits as to how much information NEMA is to collect**).

### 1. Data Collection Activities



*Data collection and mapping exercise of the Lake Victoria boundaries.*

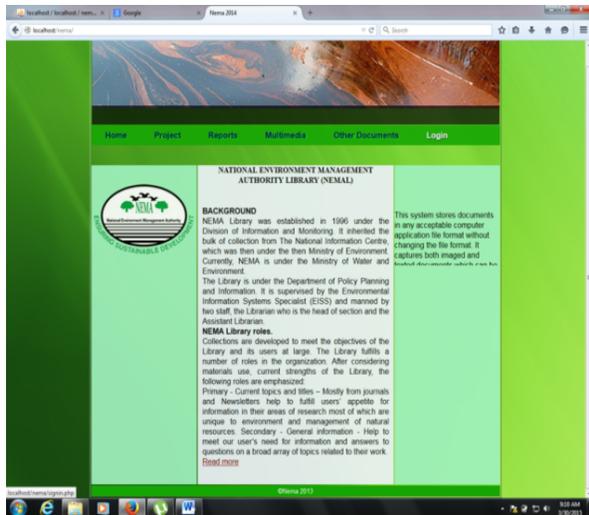
*Consultative Meeting with district leaders and technical officers.*

### 2. Information Processing

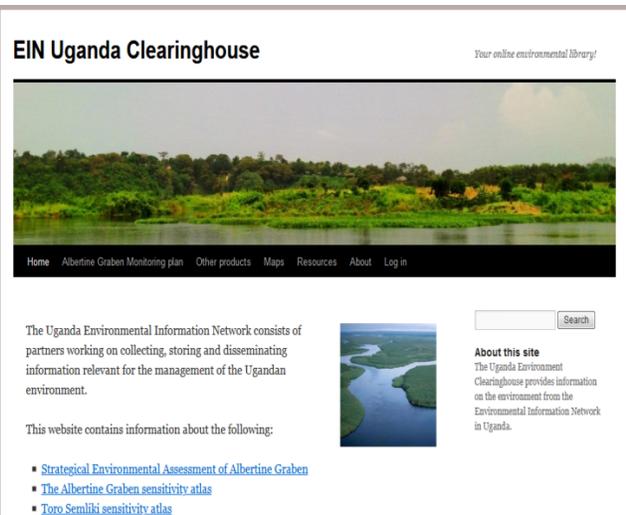
Once data is collected, a meeting is held to analyze, organize, interpret and store the information. This is when gaps in the data collected are identified and recommendations are made on how to fill the gaps. Reports are then generated and information for environmental awareness and education is sorted and compiled. With the assistance of the Education and Awareness Department, a stakeholder workshop is held to produce environmental information and communication materials drafts and these are thereafter pretested with the selected communities to ensure that the message embedded therein is well understood and cannot be misinterpreted.

### 3. Information Storage, Retrieval and Dissemination

Information retrieval and dissemination is the most important phase in the information cycle. NEMA Library fully participates in this vital stage of information storage, display, retrieval and distribution. Reports are stored in databases, some of which include the following:



*NEMA Library E- Board*



*CHEIN – Uganda Environment Information network*

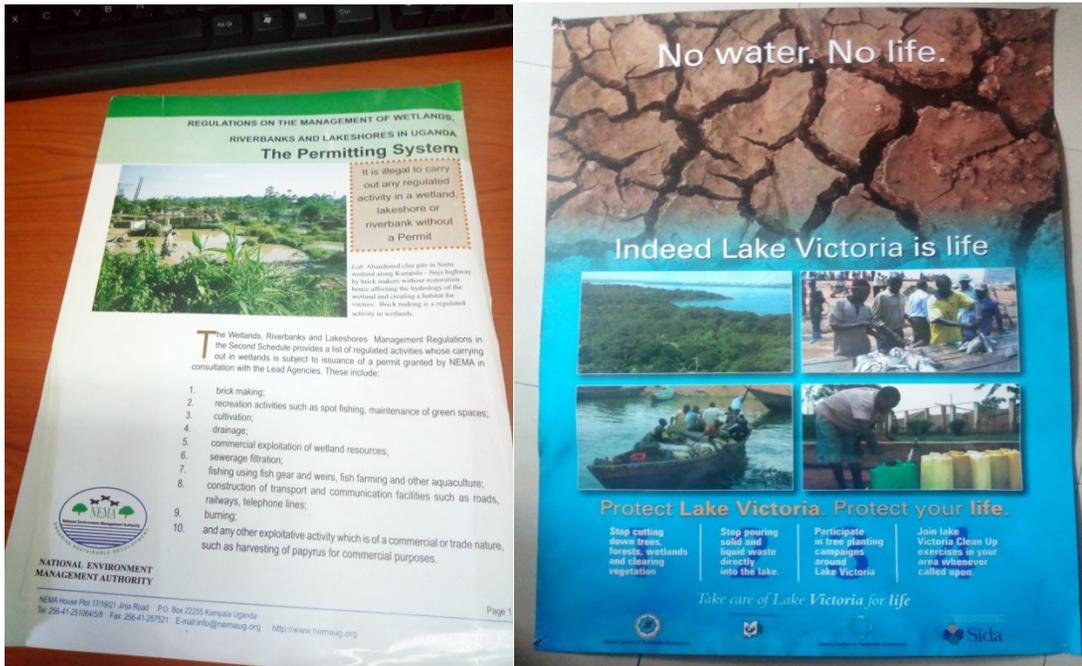
The following are the channels through which environmental information is disseminated to the public:

- Dissemination through **print media** - Paper leaflets, video, brochures, NEMA news, newspapers and Fact Sheets. Production of these materials is always participatory through stakeholder workshops and seminars. Drafts produced are pretested to ensure that they carry information that is understandable and agreeable to the public;
- Dissemination through **face to face contacts** / or through training and educational programs which include - Exhibitions, Barazas, Community Meetings, Conferences, Workshops and Seminars;
- Dissemination through **electronic media** (press, social media such as Whatsapp, Facebook and Twitter), radio (over 200 stations all over Uganda). These are effective ways of reaching a wide audience - particularly with an awareness-raising messages;
- Dissemination through **partners and lead agencies** like the non-government organizations and community-based organizations who in turn reach the grassroots through their Education and awareness programs on how to improve community livelihoods.
- Dissemination through **information service systems** – i.e., libraries in the District Local Governments in the districts around Lake Victoria – Kyotera, Masaka, Mpigi, Wakiso, Jinja, Mayuge, Mukono – and resource centers are set up.

## Products for Information Dissemination (EIC Materials)



Books



Fact sheets and posters



Posters

**Information Dissemination for the Conservation of Lake Victoria (Pictorial)**



*Community sensitization on the need to respect the distance boundaries along Lake Victoria*



*Information dissemination during World Environment Day 2018*



*Handing over an Established NEMA Regional Resource Center in Mbarara*



*Handing over a library established in Rakai District Local Government*

### **Monitoring the Impact of Information for Conservation of Lake Victoria**

This is mainly done on those dissemination channels that promote wider coverage and understanding. Issues identified are used to inform the decision to change the strategies to be used for future dissemination of information. In collaboration with the education department and the public relations office, evaluation meetings and workshops with partners and lead agencies are organized to monitor performance and identify gaps in the whole process. Librarians fully participate in field visits that collect views from the public about the information disseminated as well as collect new thematic areas to be used for future planning. Furthermore, observation visits are regularly carried out to monitor areas of interest especially on Lake Victoria boundary encroachment and solid waste disposal issues. Information platforms are monitored by the IT department and reports generated are used for future planning.

## Way Forward and Conclusion

- There is a need to continue collecting, organizing and disseminating information that supports Lake Victoria conservation initiatives to ensure sustainable use of this great natural resource. This can only be achieved with support from development partners, government and the public that depend on it both economically and socially.
- Enhancing access to environment information needs to be promoted through the use of information technology to support the collection exercise, storage and retrieval of information.
- A lot can be achieved through continuous public awareness and education.
- More capacity building, expertise and equipment is required to assist the staff to carry out this exercise effectively.
- Networking as well as bench marking with other organizations is good for improving how work is done.
- **As new thematic areas emerge, more IEC Materials shall be required to inform the public on how best to protect Lake Victoria.**

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