

DEVELOPING A WATER RESOURCES INFORMATION SYSTEM FOR THE LAKE VICTORIA BASIN

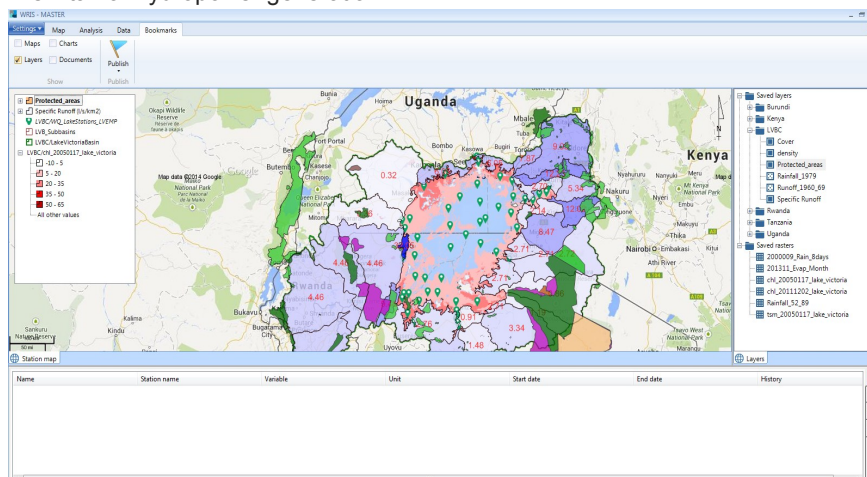
Helping to improve information management

Several East African countries depend on Lake Victoria – the world's second largest freshwater body – for transportation, hydropower generation, food, and water. Environmental changes in recent years have highlighted the need to coordinate various water resources and environmental initiatives in the basin. Working with the Lake Victoria Basin Commission (LVBC), we developed a Water Resources Information System (WRIS) based on MIKE INFO – our software for data and information management. The WRIS will serve as a data and knowledge repository for the region, enabling stakeholders to access, share, and evaluate available basin data.

IMPROVING WATER RESOURCES AND ENVIRONMENTAL MANAGEMENT PRACTICES

The 68,800 km² Lake Victoria is the second largest freshwater body in the world. The lake's basin is a vital trans-boundary resource shared by the East African Community (EAC) – Kenya, Tanzania, Uganda, Rwanda, and Burundi. Part of the upper Nile River Basin system, the Lake Victoria Basin (LVB) and the lake itself support a wide diversity of habitats, flora and fauna, making it ecologically significant. It is also economically important for the EAC, as the basin:

- supports a large fishing industry – both for export and local consumption
- is an important source of water
- provides a means of transportation
- is vital for hydropower generation



Combining station network and analysis results into displays that are easy to interpret © DHI

CLIENT

Lake Victoria Basin Commission (LVBC)

CHALLENGE

Need to:

- obtain an overview of available data from multiple sources
- easily share data and results from past and on-going projects
- store, analyse, and publish data for decision making purposes
- pinpoint environmental hotspots

SOLUTION

Development of a Water Resources Information System (WRIS) – a data and knowledge repository that enables stakeholders to easily identify and access available information

VALUE

- Makes data and metadata easily accessible
- Enables stakeholders to display monitoring network and associated data records
- Enables analysis of hydrological and environmental data to support decision making
- Supports data and knowledge sharing among LVBC Partner States
- Creates incentive to contribute with high quality data for shared use
- Increases knowledge of environmental conditions in the basin

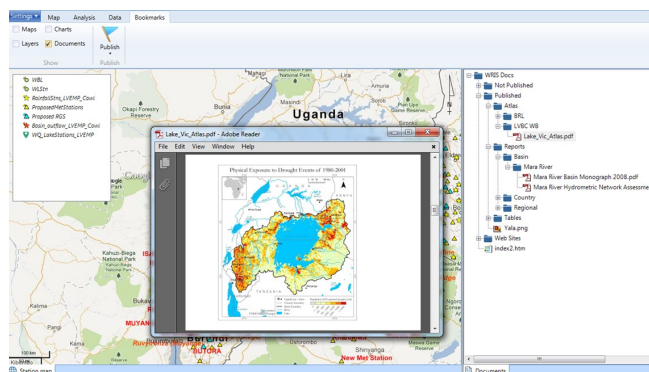
LOCATION

Lake Victoria Basin, East Africa

SOFTWARE USED

MIKE INFO

In 2001, the EAC established the Lake Victoria Basin Commission (LVBC) to serve as a mechanism for coordinating various water resources and environmental initiatives in the basin. Today, it is a centre for the promotion of studies, investments, and information sharing among the various stakeholders.



Knowledge products are available to users through an easily accessible library @ DHI

CUSTOMISED TO SERVE LVBC'S SPECIFIC NEEDS

Well-documented environmental changes have occurred in Lake Victoria's and the basin's ecosystems over the past several decades. Increased strain on the basin's water resources has led to water quantity and quality issues. This could potentially impact the natural flora and fauna habitats in Lake Victoria and its basin.

Concerns about these changes led to the creation of the large-scale Lake Victoria Environmental Management Project (LVEMP), supported by the Global Environment Facility (GEF) and the Government of Sweden. With the goal of improving the livelihood of the communities that depend on the natural resources of the Lake Victoria Basin, the long-term, trans-boundary LVEMP is designed to:

- improve the collaborative management of natural resources
- identify and reduce environmental stress in hotspots and selected degraded sub-catchments
- better utilise water resources

LVEMP is now focussed on developing a Water Resources Information System (WRIS) to monitor surface water, groundwater and water quality, and making this key information available. It includes a GIS-based database for land-use, hydrology, and biodiversity in the Lake Victoria Basin.

As part of the LVEMP, we are developing and operationalising a WRIS for use by multiple stakeholders, including technical and managerial personnel. The WRIS will also be used to provide information to the public. In addition, this project will contribute to the development of guidelines and methodologies for data exchange between stakeholders.

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For more information, visit: www.dhiigroup.com

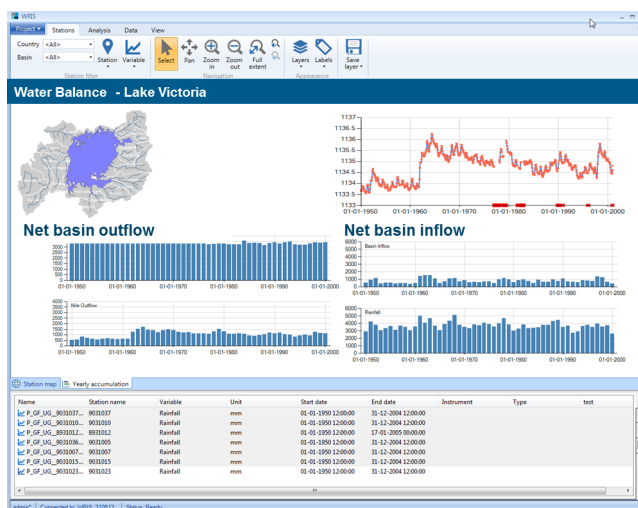
GOOD DATA MANAGEMENT – ESSENTIAL

The WRIS is an innovative customised solution based on MIKE INFO - MIKE Powered by DHI's software for data and information management. Tailored to the needs of the users, it allows them to easily access basic data in order to evaluate conditions within the Lake Victoria Basin and the lake itself. The simplicity of the system enables professionals without in-depth training to use the WRIS in order to aid their assessments and decision making. With easy and robust data exchange, the system helps to:

- facilitate shared use of information
- provide a sustainable and expandable knowledge repository with information from past and future projects

The WRIS contains relevant national and regional data, supporting assessments with a regional perspective. It is not intended as a substitute for national information systems, but instead complements existing one. An important platform, it will enable stakeholders to make better use of data and utilise study findings. This will encourage the creation and sharing of knowledge, leading to improved management and planning.

The WRIS is installed at the LVBC Secretariat in Kisumu, Kenya. There are additional installations at relevant national agencies in the basin – populated with relevant approved data – in each of the five LVB countries. By fostering efficient data and information management at the LVBC, the WRIS will improve and facilitate data collection, transfer, storing, analysis, and knowledge sharing. It will provide a platform through which the LVB countries can make data and information available (via agreed protocols) while allowing them to also use the WRIS for their own purposes.



Powerful display of analysis results © DHI