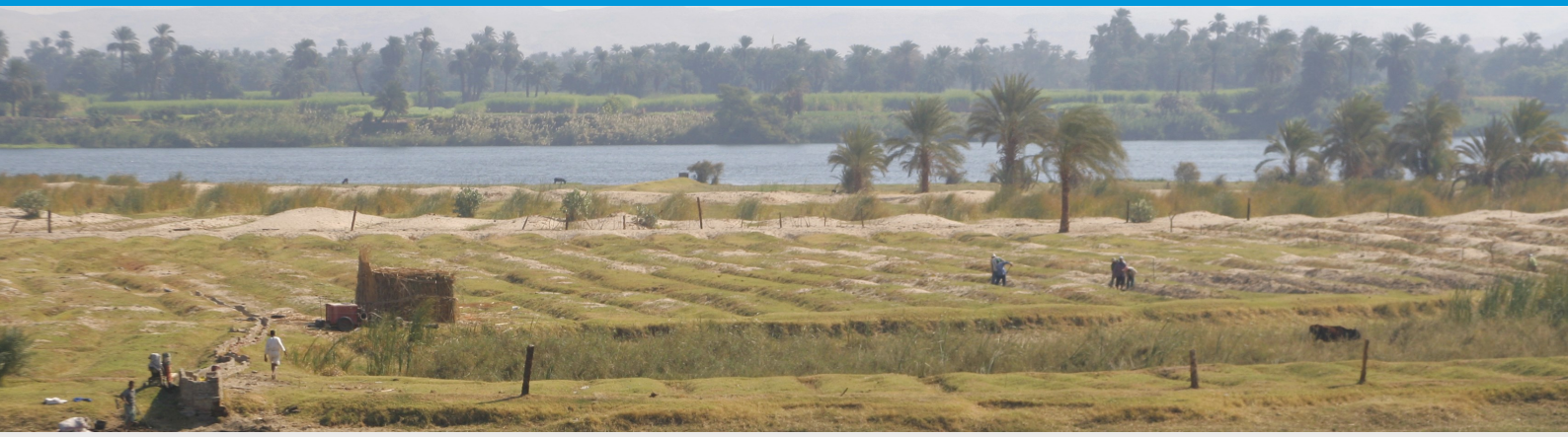


EQUITABLY SHARING THE NILE RIVER

Using Nile Basin DSS to foster cross boundary water management

The Nile River – the world's longest – is shared by 11 riparian countries. More than 200 million people depend on the river for their livelihoods. All the countries that share the Nile face rising demand for food and energy due to economic and population growth. Thus, management of the water resources of the Nile is a transboundary issue that requires collaboration between the riparian countries. To foster this, the Nile Basin Initiative (NBI) asked us to develop the Nile Basin Decision Support System (NB DSS). Driven by our MIKE PLANNING software, the shared and accepted water resources management and decision support tool aids in the sharing of information between NBI countries. This transparent and objective system will help improve the livelihood of people living along the Nile River Basin as water is shared more equitably.

GROWING POPULATION, LIMITED WATER RESOURCES

Irrigation is a major consumer of water in the Nile River Basin. In the downstream arid and hyper-arid areas, it accounts for close to 90% of the total water demands, with the rest used for domestic and industrial purposes. Almost all of the river runoff that more than 65 million Egyptians depend on, however, is generated in upstream countries, primarily in the Ethiopian highlands and in the Lake Victoria region.

Population and economic growth in Egypt and the upstream countries will put additional strain on the resources of the river. This could potentially lead to conflicts over water and lost cooperative development opportunities. Uncertainties related to the impact of climate change further complicate the situation.

The Nile Basin Initiative (NBI) is composed of ten of the Nile riparian countries. Its goal is the sustainable socio-economic development of the Nile River. To do this, the NBI countries have agreed to:

- develop the water resources of the Nile River in a cooperative manner
- share socio-economic benefits
- promote regional peace and stability

In order to equitably manage the resources of the 3 million km^2 Nile River Basin, a shared and accepted water resources management and decision support tool was essential. As such, the NBI asked us to develop the Nile Basin Decision Support System (NB DSS).

CLIENT

Nile Basin Initiative

CHALLENGE

- Increased strain on the water resources of the Nile River
- Inability of Nile River Basin countries to share information and work cooperatively

SOLUTION

A Decision Support System (DSS) for water resources management

VALUE

- Assists authorities in making sound water management decisions
- Improves information sharing capabilities
- Enables Nile River Basin countries to work together to equitably share water resources
- Reduces strain on the water of the Nile River

LOCATION

Nile River Basin

SOFTWARE USED

MIKE PLANNING, MIKE BASIN, MIKE 11, MIKE SHE

WORKING TOGETHER

The NB DSS was created as a result of a highly cooperative approach. During the NB DSS development, we worked closely with the client's project management team and with representatives from all ten countries. This team took part in all phases of the project including software requirements, design and testing.

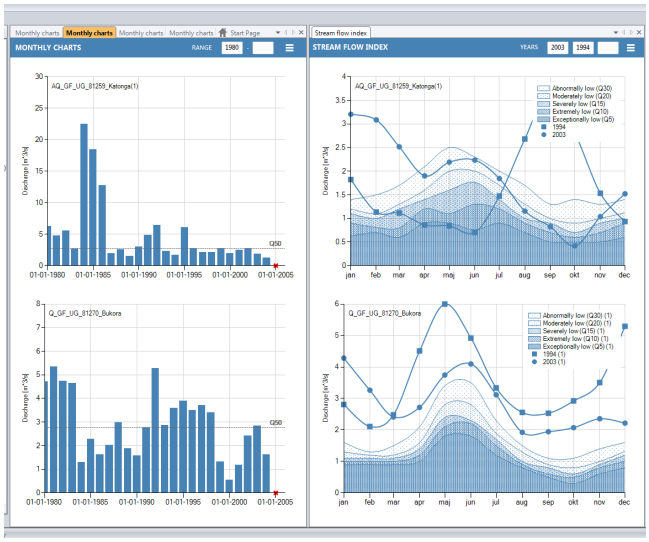
Training activities took place in parallel with the software development activities as intermediate software releases were made. The trained staff took ownership of software testing activities under the leadership of an experienced and independent software tester. This cooperative process was very important. It ensured that the NB DSS was designed to meet key water management objectives in the basin. It also created a very strong sense of ownership and acceptance of the final product among the NBI countries.

Driven by MIKE PLANNING – MIKE Powered by DHI's scenario analysis and DSS software – and designed jointly with the NBI, the NB DSS integrates climatological, hydrological and environmental data with:

- water simulation tools
- scenario analyses tools
- cost-benefit and multi-criteria analyses tools

It provides scientifically accepted methods for quantifying the value of water. It also allows the ten NBI countries to publish and share data, models and information among themselves. The transparency and objectivity provided by the NB DSS helps to build trust among the countries. This enables authorities to manage the waters of the Nile in a cooperative and sustainable manner.

Workshops and frequent interactions with water professionals from the Nile countries were very important to ensure that the NB DSS was designed to meet specific water management challenges in the Nile Basin. © DHI



The NB DSS supports the NBI in water management. It includes tools for hydrological analysis, water allocation modelling and decision making. © DHI

The NB DSS is being deployed among water management authorities throughout the NBI countries. It has become the standard framework for water management in the Nile Basin. New systems are emerging, such as the Lake Victoria DSS, which are compatible with the NB DSS. This allows for further exchange of data, information and knowledge.

PROMOTING UPSTREAM DEVELOPMENT

The Nile Basin is a water scarce region, which makes meeting the ever increasing water demands of the riparian countries a challenge. The NB DSS could help identify ways to promote further development without negatively impacting the reliability of the water supply that is depended on for many uses. For example, using the NB DSS may help identify projects that could increase:

- agricultural production
- hydropower generation
- safe navigation
- flood protection

For people living in the Nile Basin, this could have long ranging positive impacts, including:

- improved access to safe water supplies
- better power supplies
- safer food production

CLIENT TESTIMONIAL

> *The Nile Basin Decision Support System offers the data and tools needed for cooperatively planning and managing water resources, thus providing the basis for consensus on the development of sustainable water resources projects in the Nile Basin.*
> *Dr. Abdulkarim H. Seid — Head, Water Resources Management, Nile Basin Initiative Secretariat*

Contact: info@dhigroup.com
For more information, visit: www.dhigroup.com