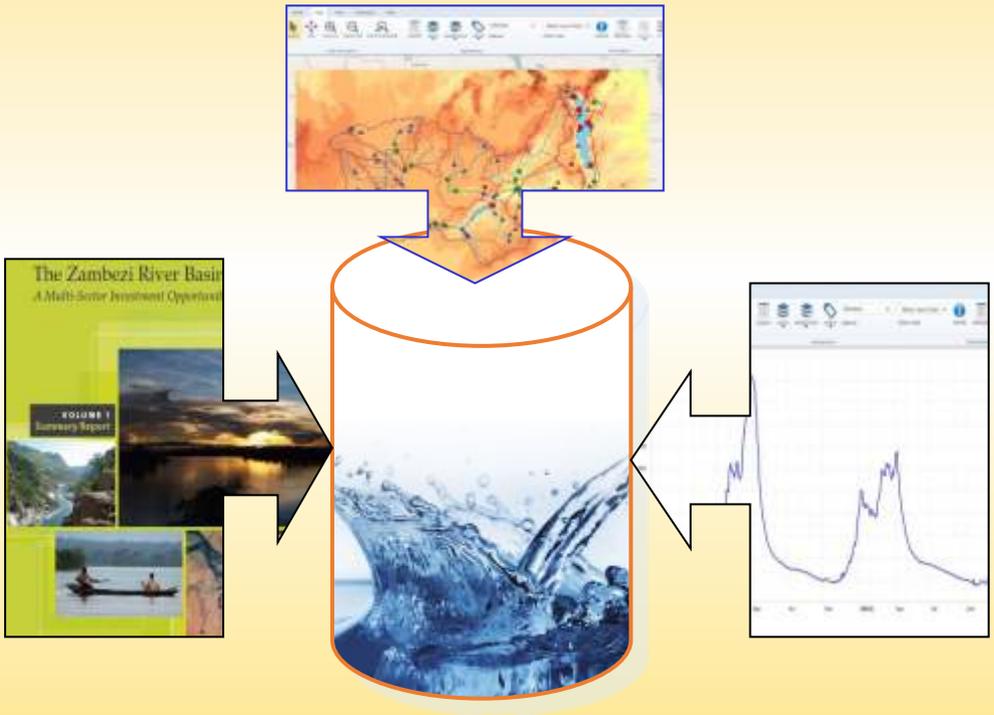


ZAMBEZI WATER RESOURCES INFORMATION SYSTEM (ZAMWIS)



Win-win cooperation/ Cooperacao, ganhas tu, ganho eu

Background

The mission of ZAMCOM is to promote the equitable and reasonable utilization of the water resources of the Zambezi Watercourse as well as the efficient management and sustainable development thereof. In that regard, one of the functions of the Commission is to collect, evaluate, and disseminate all data and information on the Zambezi Watercourse as may be necessary for the implementation of the Agreement.

The Zambezi Water resources Information System (ZAMWIS) is therefore essential in supporting informed decision making and planning processes in the Zambezi Basin for the benefit of cooperative human and economic development.

What exactly is ZAMWIS?

Zambezi Water Resources Information System (ZAMWIS) is an interactive, web-based data and information portal for the Zambezi Watercourse Commission (ZAMCOM) based on contemporary and historical spatial data, hydrological time series, earth observation information and other related information.

The system supports the Zambezi Watercourse Commission to fulfil some of its functions as stated in the ZAMCOM Agreement.

Two versions of the system are presently deployed.

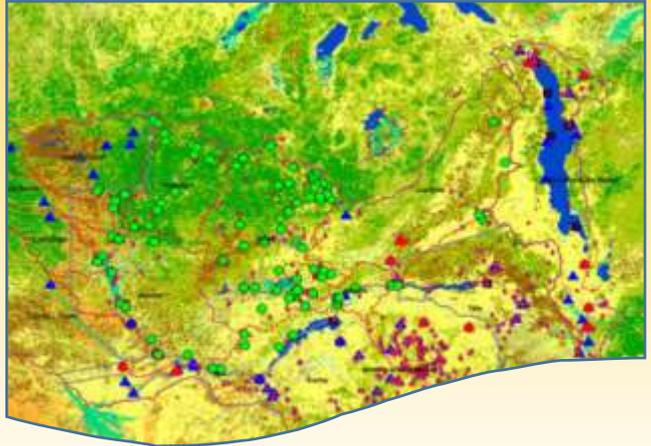


Figure 1. Example of ZAMWIS Products

- a) An interactive web based spatial data platform accessible to the public at zamwis.zambezicommission.org; and
- b) The windows version that is installed at ZAMSEC and Zambezi Basin Riparian States.

What are the key features of ZAMWIS?

1) **Integrated Interface:**

Spatial data, hydrological time series data and knowledge products (various documents related to the Zambezi Basin), are integrated into one platform.

Furthermore, the system is integrated with other systems such as QGIS and Hydstra which are the most common software applications in the Riparian States.

2) **Flexible system:**

Integration of three types of data (GIS, knowledge products and time-series) makes the system very flexible. Selection of a station on the map, for example, provides access to time series data with associated knowledge documents, history files and photos.

The system also has various hydrological analysis tools that can be customised to the needs of the user. Data can be downloaded in many different formats depending on the user requirements.

3) **Earth Observation technology:**

ZAMWIS interfaces with QGIS/ESA WQIS to facilitate automated download and processing of spatial data products such as land cover, Standard Precipitation Index, Rainfall and NDVI.

4) **Intuitive and easy to use:**

The system is simple and easy to use and has functionalities focusing on viewing and downloading of the data and information as well as sharing of data and information.

5) **Data and information sharing:**

The system is available as both a Web-version and a Windows-version. The Web-version is meant for publicly shared data whereas the Windows version is for internally shared data among Riparian States and ZAMSEC.

Figure 2. Features of ZAMWIS

Why is ZAMWIS important in the implementation of the ZAMCOM Agreement?

According to Article 5 of the ZAMCOM Agreement, the Commission has the following functions:

- 1) ***Collect, evaluate and disseminate all data and information on the Zambezi Watercourse as may be necessary for the implementation of the Agreement.***
- 2) Promote, support, coordinate and harmonize the management and development of the water resources of the Zambezi Watercourse.
- 3) Advise Member States on the planning, management, utilization, development, protection and conservation of the Zambezi Watercourse as well as on the role and position of the Public with regard to such activities and the possible impact thereof on the social and cultural heritage matters.
- 4) Advise Member States on measures necessary for the avoidance of disputes and assist in the resolution of conflicts among Member States with regards to the planning, management, utilisation, development, protection and conservation of the Zambezi Watercourse.

- 5) Foster greater awareness among the inhabitants of the Zambezi Water course of the equitable and reasonable utilisation and the efficient management and sustainable development of the resources of the Zambezi Watercourse.
- 6) Cooperate with institutions of SADC as well as other international and national organisations where necessary.
- 7) Promote and assist in the harmonisation of national water policies and legislative measures.
- 8) Carry out such other functions and responsibilities as the Member States may assign from time to time.
- 9) Promote the application and development of the Agreement according to its objectives and the principles.

ZAMWIS therefore plays a critical role in nearly all of the above functions to be carried out by the Commission. As such, ZAMWIS is an indispensable tool for daily operations, supporting a well-documented and objective dialogue among the Riparian States on matters related to water resources management and development in the Zambezi Basin. More importantly, ZAMWIS supports the equitable and reasonable

utilisation of the water resources as described in Article 13 of the ZAMCOM Agreement.

What is the current Content of ZAMWIS?

- Contemporary and historical hydro-meteorological data and information from strategic river gauging stations in the Zambezi Basin

- GIS/spatial data including remote sensing products

such as land cover, rainfall, evaporation, land use, hydrological characteristics of the basin

- Knowledge products such as studies, reports, water master plans, policies and IWRM plans

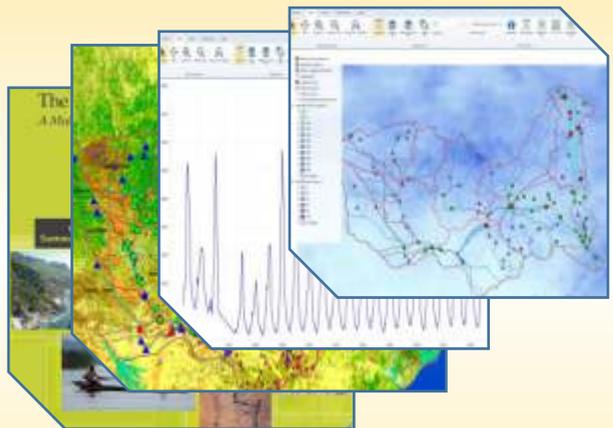


Figure 3. ZAMWIS Products

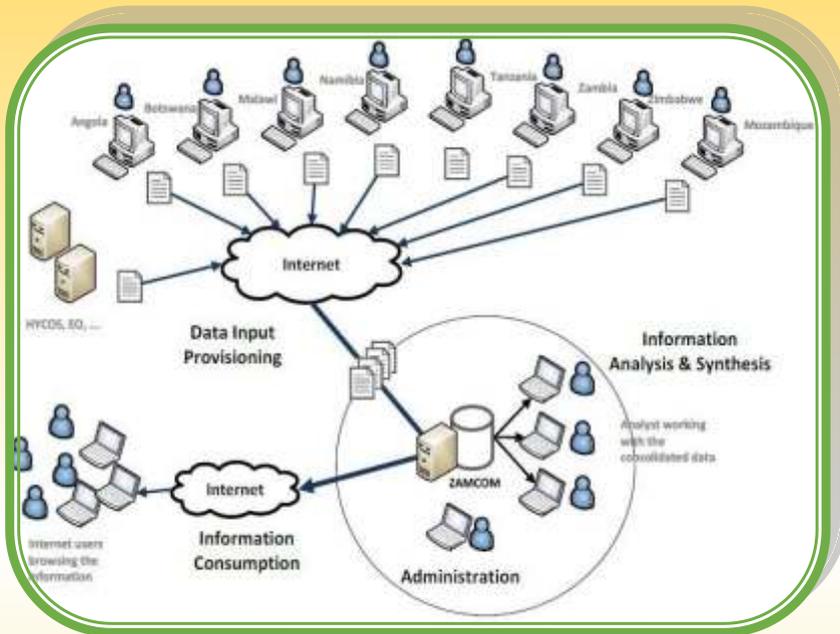


Figure 4. Overall ZAMWIS design and user interaction

What are the benefits to the Riparian States and the Southern African Region generally?

ZAMWIS is expected to benefit Riparian States in the following ways:

- Play an essential role in providing the overarching information management system for the Zambezi River Basin that is necessary for the cooperative and coordinated management and development of the Zambezi Basin

- Support water resources strategic planning in the basin for the mutual benefit of all Riparian States in the basin
- Serve as a data and information depository for planning, sustainable utilisation and efficient and equitable use of the water resources of the Zambezi Basin
- Provide a platform for storage, visualization and presentation of GIS and earth observation data

Who are the Key Users of ZAMWIS?

1. Riparian States, decision makers, Water resources managers/ planners, and infrastructure developers
2. The general public and stakeholders with an interest in the management of the Zambezi River Basin
3. Academicians/Scholars and researchers
4. Inhabitants of the Zambezi Basin

What are the next Steps!

ZAMCOM has now embarked on further enhancing the ZAMWIS to include a Decision Support System (DSS). Through the DSS, further integration of flow forecasting and monitoring tools, multi-objective optimisation, multi- criteria decision analysis, environmental and socio-economic analysis and determination of e-flows will become possible.

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