THE OLIFANTS RIVER BASIN, SOUTH AFRICA

The Olifants River is the main tributary of the Limpopo River in Southern Africa. It takes its rise in the Highveld grasslands at an altitude of 2300 m in South Africa and drops progressively to sea level as it flows eastwards to join Limpopo in Mozambique. The South African sub-basin has an area of 54570 km^2 with an annual runoff of 2400 million m^3. There are numerous small wetlands scattered throughout the catchment area, covering about 1% of the river basin in total.

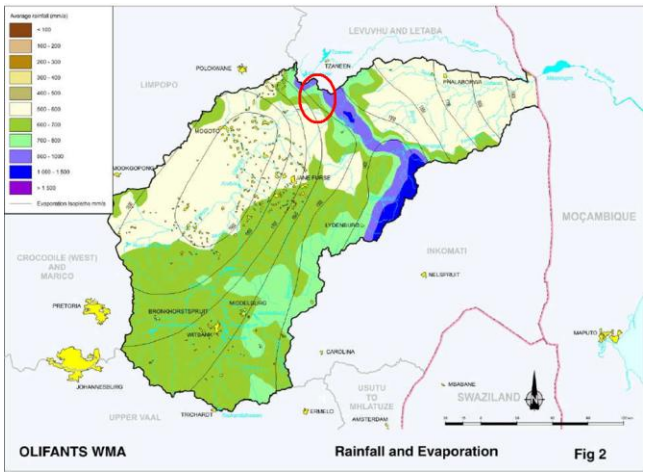
SOCIO-ECONOMIC DESCRIPTION

Population of the basin is estimated at 3,2 million people, 75% of which has no monthly income. 60% of inhabitants concentrate in the former homelands, which make up only 26% of the basin area. The upper reaches of the catchment are characterised by intensive mining, agricultural and power generation activities, with over thirty dams. In the lower reaches, the Kruger National Park and private games reserves can be found.

Wetlands make a significant contribution to the welfare of rural people, particularly the poor, who rely on them for food production and direct ecological services. Increasing population undermines ecological security of wetlands and their capacity to provide these services.

INSTITUTIONS

Water licensing is managed at national level by the Department of Water Affairs and Forestry (DWAF), which supervises the catchment management agencies (CMAs) that are responsible for managing resources in individual water management areas. CMA for the Olifants is still to be legislated. Non-governmental organizations incorporated into the institutional framework such the Olifants River Forum (ORF), play a prominent role in water management. With its varied membership of stakeholders, ORF strives for the promotion of voluntary cooperation between parties to help sustainable existence of the Olifants river and tributaries. Establishment of an Olifants CMA is a prime aim of the ORF.



WETWIN PROJECT

The GaMampa wetland of the Mohlapitsi River catchment is one of seven cases studied in the WETwin project. Mohlapitsi is a tributary of the Olifants river. Despite its relatively small size, Mohlapitsi is perceived as important due to its significant contribution to the flow of the lower Olifants, particularly in the dry season.

The wetland covers approximately 1 km^2 in a predominantly rural area, with an estimated population of 1700. The most important services of the GaMampa are crop production, grazing ground for livestock, provision of edible plants and raw materials, as well as water for domestic and irrigation use.

The main pressures on the wetland arise from its increasing use for agriculture. Key impacts are: depletion of organic matter, increased erosion, decreased biodiversity and reduced capacity for flood attenuation, flow regulation and nutrient assimilation.

There are numerous wetlands in the Olifants basin similar to GaMampa. Their aggregate impacts on catchment scale processes are significant.

The main research questions of WETwin with regard to the Ga-Mampa wetland are:

What are the tradeoffs between food-production and A) hydrological regulation B) other uses?

What is the “best compromise” wetland management strategy that results in a right balance among these ecosystem services?

How can we upscale the results at GaMampa onto the system of multiple wetlands connected to the river network in the basin?

How management of small wetlands contributes to water management in the basin?

The primary tool for answering these questions is a complex STELLA-based model, which has been set up with the aim to simulate physical, ecological and economic processes on the wetland. Above modelling, institutional analysis and stakeholder involvement also play a key role in the research activities of WETwin related to the GaMampa/Olifants system.

ADDITIONAL INFO ON WWW.*WETWIN.NET*)

ABOUT TWIN2GO

Twin2Go reviews, consolidates, and synthesises research on adaptive and integrated water resources management in basins around the world. The aim is to draw insights relevant to policy and research on issues around adaptive water governance in the context of climate change, and to make them transferable to other basins. Twin2Go further promotes sharing of research results with practitioners and high level decision makers through effective dialogue.

Twin2Go receives funding from the European Community's Seventh Framework Programme under grant agreement n° 226571.