

## Public private partnership to address regional water issues

Limpopo, South Africa

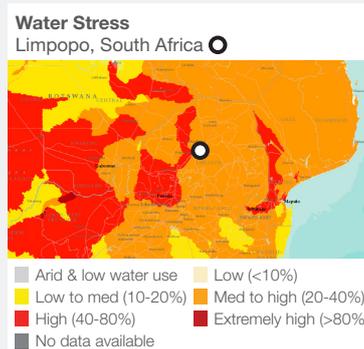
### water scarcity impact

Reduced withdrawal	
Reduced consumption	
Improved water quality	
Increased productivity	
Net basin benefit	●

volumetric impact  
**118 000 000 m<sup>3</sup>/yr**

capital cost  
**\$554 000 000**

estimated unit cost of water  
**30 ¢/m<sup>3</sup>**



**Water Stress Map:**  
F. Gassert, P. Reig, T. Shiao, M. Luck and M. Landis, 2015. "Aqueduct Global Maps 2.1."

**Confidence level**  
● Low ● Medium ● High

**Water Scarcity Impact Key**  
● Main ● Minor

**Credits**  
We would like to acknowledge Peter Gunther of Anglo Platinum for their input in the preparation of this case study.

### Project Overview

The Olifants River Water Resources Development Project (ORWRDP) is to increase the availability of freshwater in the Olifants catchment and to deliver bulk water for social and economic development in the Strategic Development corridor in Limpopo Province. This is one of the South African governments strategic integrated projects (SIPs), which aims to speed up development and growth across South Africa through job creation and basic service delivery.

Activities have included raising of the Flag Boshielo Dam and the construction of the De Hoop dam together with associated delivery infrastructure. Half of the new infrastructure capacity is reserved for 800 000 domestic users, with the rest targeted towards economic growth.

The initial phase of the intervention was completely funded by the mining sector while later phases are publically funded.

### Key Elements

- Public Private Partnership (PPP) to develop water resources for economic and social wellbeing in an area of national strategic value.
- Significant increase in storage capacity within the Olifants River of 546 million m<sup>3</sup>, and over 300km of bulk water pipelines with associated pump stations and balancing reservoirs.
- All envisaged Phases of the ORWRDP's scheme are part of the PPP with linked funding mechanisms and participation at different levels.

### Key Outcomes

- Increased yield for the catchment of 118 million m<sup>3</sup> per year.
- Increased availability of water to more than 800 000 people and over 23 large mining businesses in the mineral rich Limpopo Province.
- Mining business investment worth \$2.8 billion, creating as many as 90 000 jobs and generating an additional income of \$160 million a year in wages.
- Delivery of basic human needs and services relating to water and sanitation through local authorities (municipalities).



Limpopo, South Africa

## Intervention Features

- Capture of surface water
- Public private finance model

## Project Levers

### (1) Strategic national, provincial and local planning

The key project driver was to establish additional water capacity securing ongoing economic development and meeting human needs. It was recognised that this could not be done without addressing:

- Bulk water infrastructure construction at a rate faster than was planned by the National Regulator;
- The inclusion of the social (over 2 million people without access to running water) and environmental water needs in the region.

### (2) Catchment optimisation

South Africa has the highest number of inter-catchment transfers in the world. Utilising this knowledge, but taking a catchment optimisation approach, the project increased the storage, catchment yield and conveyance capacity in the Olifants River catchment to reduce barriers to economic growth.

### (3) Finance model

A Public-private finance model was established based predominantly on the agreement that the Flag Boshielo Dam was fully funded by the mining industry. De Hoop dam and further infrastructure is based on public funding with an elevated tariff structure for businesses of between \$0.7 and \$1.4 per m<sup>3</sup>. All water assets will default to state ownership or be purchased from private entities where required.



Above: De Hoop Dam wall (© Government ZA. Flickr) .

## Outcomes and Challenges

Large PPPs are very difficult to manage and sustain. They deliver outcomes that are greater than any single entity could achieve, but have significant challenges. These included:

- Extensive time lines: with initial discussions in 2002/3 and the project still in implementation, the
- ORWRDP experienced several delays due to funding, institutional setbacks, inadequate regional and municipal infrastructure.
- Changes to deliverables: a significant challenge for the ORWRDP was the changing yield caused by increasing catchment use and altered calculation methodologies. Adjustments were critical to ensure the catchment sustainability and ongoing delivery on commitments to society and investors.
- Co-ordination and management of expectations: as the ORWRDP involves significant catchment changes the co-ordination and synchronisation of infrastructure was important. It was also vital that the expectations from stakeholders and municipality demands were managed.
- Financial security: changes in the economic situation impacted negatively on commodity markets resulting in lower than expected commitment by the mining industry.

The main outcomes of the intervention has been the long term allocation of a secure water resource to the mining industry, which in turn has enabled economic growth, and the extension of reliable water supplies to a significant number of domestic users.

Additional mining business investment worth \$2.8 billion has been achieved which has created as many as 90 000 jobs and generated an additional income of \$160 million a year in wages. These business developments will potentially double over the next few years, with employment increasing by up to a thousand people.