THE MOKOLO RIVER CATCHMENT STUDIES

INFORMATION PAMPHLET NO 1

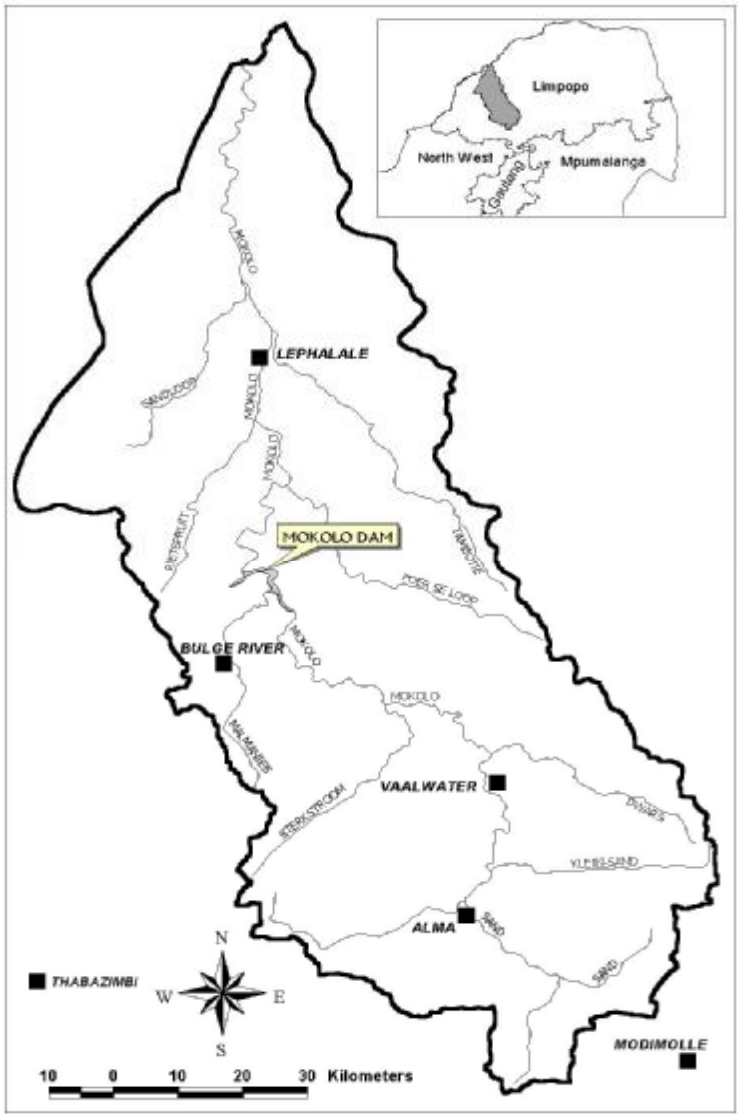
The Department of Water Affairs and Forestry has commissioned three investigations that together are called the Mokolo River Catchment Studies. Collectively, the studies are part of Integrated Water Resources Management that is required to ensure the equitable and most beneficial allocation and use of water in all Water Management Areas of the country, including the Mokolo River Catchment. The three investigations are primarily technical in nature but, importantly, are underpinned by Public Participation. The Public Participation Process is being undertaken as a single consultation exercise in order to enable stakeholders to participate meaningfully across all aspects of the Mokolo River Catchment. The Public Participation component of the studies will encompass various activities, one of which is the issuing of three information pamphlets. Information Pamphlet No.1 (this document) is aimed at introducing the Mokolo River Catchment Studies to the general public.

Situated in Limpopo Province, the Mokolo River catchment covers an area of 8 387 km². The catchment stretches from the Waterberg Mountains through the upper reaches of the Sand River, and includes the Mokolo Dam and a number of small tributaries that join the main Mokolo River up to its confluence with the Limpompo River.

Current water use in the catchment broadly comprises:

- 87% for agricultural activities.
- 13% for the industrial, mining, power generation and domestic water supply service sectors (municipalities).

Currently, water availability and water use are in balance. However, within the provisions of the National Water Act as stipulated in the National Water Resources Strategy, there is a need to meet the water requirements of the Reserve (Basic Human Needs and Ecological) in terms of water quantity and quality. Taking these requirements into account, there is insufficient water to maintain the current balance. Added to this, it is anticipated that water demand will increase with new developments proposed in the Mokolo Catchment, such as new or expanded mining activities and new power stations.



Map of the Mokolo Catchment Study Area

water & forestry

Department:
Water Affairs and Forestry
REPUBLIC OF SOUTH AFRICA

The Mokolo River Catchment Studies are made up of the following three investigations:

- Updating the hydrology and systems models of the Mokolo River Catchment (including an investigation on the presently unsatisfactory functioning of the Mokolo Dam).
- Verification and validation of existing water use.
- Water Conservation and Water Demand Management.

The outcomes of these three investigations will enable the Department of Water Affairs and Forestry to know how much water is in the system, how it is presently being used and where there may be imbalances.

Arising from this, ultimately, the Department of Water Affairs and Forestry will be in a position to issue licenses for lawful water use. However, it is recognised that there is potential to reduce demand and one key outcome will be the Water Conservation and Water Demand Management Business Plan.

The three studies will comprise the following interlinked main activities:

Updating the hydrology and systems models of the Mokolo River Catchment

This investigation is aimed at providing the Department of Water Affairs and Forestry with an updated understanding of how much water (yield) is presently available in the catchment.

This work will be based on the analysis of historical rainfall patterns, streamflow, ground and surface water resources.

The study team will also analyse the performance of the Mokolo Dam under different water abstraction scenarios. This study will provide valuable information to the verification and validation team on existing lawful water uses and the potential of the catchment to support new developments and new water uses.

Verification and validation of existing water use

Use will be made of satellite images, aerial photographs and registered water use information. The information will be used to determine actual water use

This study has three key aspects:

- Validation
  - How much water is currently being used by the different use sectors?
- Verification
  - To establish the lawfulness of the water users and to determine the existing lawful water use.

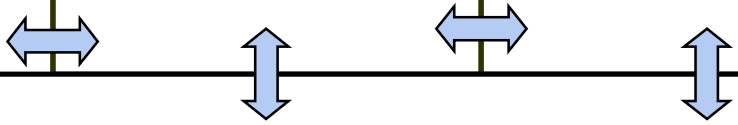
This information will assist the DWAF with the issuing of licenses and the evaluation of new licence applications.

Water Conservation and Water Demand Management

Water Conservation means “minimising water losses and/or wastage and the use of water in an efficient and effective way”. Water Demand Management is the adoption and implementation of action plans to influence the demand for and use of water by consumers.

While it is recognised that some sectors in the Mokolo River Catchment are already practicing Water Conservation and Water Demand Management (WC/WDM), additional efforts are required to realise additional water conservation and efficient use of this valuable resource.

The outcomes of WC/WDM will feed into the updated hydrology and systems models (reduced demand) as well as into validation and verification (via improved efficiencies).



With regard to verification and validation, the public participation process will enable the study team to interact with water users to validate existing data and to obtain new information about registered users and those who have not yet registered their water use. In terms of WC/WDM, the public will be involved via a social survey that will be carried out to understand the **K**nowledge of stakeholders around conservation and water demand management, their **A**ttitude towards water conservation and their water use **P**ractices. This so called **KAP** survey will be undertaken via interviews and administering questionnaires. The outcomes will inform future communication strategies around WC/WDM.

Anticipated outcomes

"Some for all, for ever, together" is the Department of Water Affairs and Forestry's policy for the management of water resources in the country. As South Africa is one of the countries in the world with the lowest average rainfall, it is always at risk of experiencing water shortages due to drought. The Department therefore has the responsibility of making sure that there will be enough water to supply the country so that people will always have water for their basic needs and that the economy can grow and provide jobs and eradicate poverty.The three investigations that comprise the Mokolo River Catchment Studies are expected to inform the Department of Water Affairs and Forestry on three important aspects that will contribute to the management of water resource in this catchment:

- The updated hydrological study will show how much water is available for use by all sectors in the catchment. Together with the outcomes of the verification and validation exercise, the Department of Water Affairs and Forestry will be in a position to know how water is being used by each sector.

- This will enable the reconciliation of the water balance taking due consideration of the requirements of the Reserve. Added to this, modelling will show the requirements of new water users (proposed new developments, e.g. power generation and mining) and, critically, will highlight shortfalls.

- The WC/WDM outcomes will show where and how much water use demand can be reduced. These outcomes will be fed into the modelling and will influence positively the water balance. In addressing possible shortfalls to meet demand, the outcomes of the study will inform the Department of Water Affairs and Forestry of realistic water saving projections (bearing in mind that it has been shown that the cost of implementing WC/WDM measures can be as little as 25% to 35% of the cost of augmenting supplies), possibilities for the improved operating efficiencies of the Mokolo Dam and whether water augmentation from another catchment is required.

The Mokolo River Catchment Study Team

Department of Water Affairs and Forestry

Zacharia Maswuma (Regional)
Beyers Havenga (National)
Cain Chunda (National)

Updating the hydrology and systems models	**Verification and validation of water use**	**Water Conservation and Water Demand Management**
WRP Consulting Engineers DMM Development Consultants Golder Associates Africa	Schoeman & Vennote Karin Bowler Enterprises Copad Engineers	Water for Africa (Pty) Ltd ACER (Africa) Environmental Management Consultants

Public Participation

All the major water user groups, such as Irrigation Boards/Water User Associations, Industry, Mines and Municipalities, will be consulted directly. There will also be radio programmes and public meetings. Please note that the first round of public meetings will be held as follows:

Date	Time	Venue
19 July 05	09h00 – 16h00	Alma Farmers' Association Hall
20 July 05	09h00 – 16h00	Vaalwater Farmers' Association Hall
21 July 05	09h00 – 16h00	Machauke Lodge, Lephalale

These meetings will last for about three hours. However, the Project Team will be available for discussions until 16h00 on each day.

If you wish to register as a stakeholder please fill in the appropriate enclosed registration form and return to the address below. You can also contact the individuals by phone or email. Please note there are different contact details for the different investigations.

Public Participation Team Contact Details

Validation and Verification, and Hydrology

Joseph Masilela or Karin Bowler
083 565 2395 082 809 7624
Karin Bowler Enterprises
13 Sydney Carter Street, Roosevelt Park, 2195
Tel/Fax: (011) 782 4744
E-mail: josephbow@iafrica.com

Water Conservation & Water Demand Management

Bongi Shinga
ACER (Africa) Environmental Management Consultants
P O Box 503, Mtunzini, 3867
Tel: (035) 340 2715
Fax: (035) 340 2232
E-mail: wcwdm@acerafrica.co.za

Information Pamphlets 2 and 3 will provide feedback on matters arising from the public meetings as well as initial outcomes arising from verification and validation, the KAP survey, and the WC/WDM Business Plan. Importantly, Information Pamphlet 3 will detail the way forward with regards to Integrated Water Resources Management and water use in the Mokolo River Catchment.