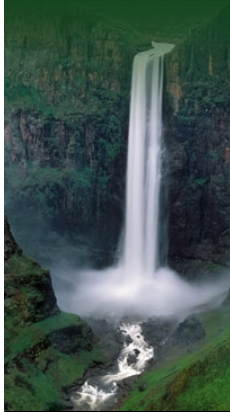



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Resource Management

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Water Demand in the Basin: Water Demand Management: Basin Country Policies and Strategies for Water Demand Management

The [Revised SADC Protocol on Shared Watercourses](#), as discussed in the [Governance](#) theme, focuses on regional integrated water resources development, utilisation and management on the basis of balance, equity and mutual benefit of the riparian states. All four basin states have ratified the Protocol. However, the rate at which the countries have reformed their national policy and legal frameworks to align them with the policy objectives has differed. As a result, the implementation of integrated water resource management is at different stages in each riparian country.

Botswana

The Botswana National Water Master Plan (1992) is an effective policy tool in Botswana. Its major objectives are:

- Estimate water demands throughout the country from 1990 to 2021
- Determine present availability and development potential of all water resources in the country
- Determine sustainable water resource development policies and programs and identify funding requirements, environmental and social impacts, legal requirements and requirement institutional support (WHO 2000)

In addition to the Master Plan, Botswana has a National Water Conservation Policy and Strategy Framework document (1999) and has established a water conservation unit within its Department of Water Affairs (DWA). Water Demand Management is part of its strategy, with an overall goal of reducing water consumption and developing of alternative water resources from the existing conventional sources. The strategy focuses on three main actions and incentives: "pricing and other economic instruments, technical measures, and public education/awareness initiatives" (Sandstrom and Singh 2000).

Key Documents:

- [Water Works Act \(1962\)](#)
- National Water Master Plan for water (1992)
- [National Water Conservation Policy and Strategy Framework document \(1999\)](#)
- [Draft Water Bill \(2005\)](#)
- [Policy Brief on Botswana's Water Management \(2006\)](#)

Lesotho

In Lesotho the main legislation dealing with water demand management is the Water Resources Act (1978). The Act is concerned with the control and conservation of water resources, as well as water use. More recently the LHWP Treaty (1986) with South Africa addresses the protection of water quality and quantity in Lesotho (NeWater 2005). Although "the treaty is one of the most comprehensive and detailed water-related contracts in sub-Saharan Africa" (Turton 2003), it does not address transboundary water demand issues not directly related to the Lesotho Highlands Water Project (LHWP).

Key documents:

- [Water Resources Act \(1978\)](#)
- [Lesotho Water and Sanitation Policy \(2007\)](#)
- [Water Act \(2008\)](#)



Katse Dam reservoir, part of the Lesotho Highlands Water Project.

Source: Kruchem 2011
(click to enlarge)

Namibia

Namibia has prepared a Water Management Strategy, and is currently preparing a new Water Act to replace the Water Act (1956) as part of a review of water policy and strategy (Sandstrom and Singh 2000). Water Demand Management is fully integrated into all aspects of water management and planning in Namibia, which is evident in the success story of the capital city (Windhoek). The capital city today uses no more water than it did 20 years ago, despite significant population growth and development. Namibia is considered to be at the same level as South Africa in terms of its institutional and legislative capabilities in the field of

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Water Demand Management. This, however, also applies to the serious difficulties to implement the measures at the local level.

Box 1: Water Demand Management Measures Implemented in Windhoek, Namibia

Namibia, flanked by both the Namib Desert and Kalahari Desert, is amongst the most arid countries in the world. More than 80% of the country consists of desert or semi-desert. The annual rainfall in the capital city, Windhoek, is 370 mm, while the potential surface evaporation rate is between 3 200 – 3 400 mm/a. The city's water demand is met by the use of surface water and groundwater. The rainfall is uncertain and long spells of severe drought are often experienced. Therefore, water supply is unpredictable. This situation forced the city council of Windhoek in 1994 to approve an integrated water demand management program that included policy changes, legislation, education, technical and financial measures.

The major policy issues within the integrated water demand management program are to maximise wastewater re-use and promote saving of water. In addition to wastewater reuse, the city has introduced special measures for water savings through municipal bylaws. During times of severe drought, these measures are rigorously enforced. Consumption-related, progressive water pricing also played an important role in achieving set water-saving targets. Water savings achieved by households have, however, been counterbalanced by population growth. The population growth was mainly due to an above-average migration to the capital of approximately 5% per year over the last 15 years, as a result of urbanisation. Per capita consumption has however been reduced to a minimum by technical improvements and public relation activities. Technical measures implemented are mainly focused on leakage control (lowering of "unaccounted-for-water") and efficient watering of gardens. In order to reduce water losses both leakage detection and water audits are being done on a continuous basis. Additionally, repairs as well as systematic pipe replacement programs have been implemented and proper management of water meters is carried out. Due to these measures, water losses in Windhoek are only 10%, which represents the lowest comparable value in southern Africa.

Source: Lahnsteiner and Lampert 2007

Key Documents:

- [Water Act \(1956\)](#)
- New Water Act (currently being drafted)
- Water Resource Management Strategy (1998)
- [Water Resources Management Act \(2004\)](#)
- [National Water Supply and Sanitation Policy \(2008\)](#)

South Africa

To meet urban, industrial and agricultural irrigation requirements, South Africa depends heavily on surface water resources, supplied via extensive water management infrastructure (dams, transfers and canals, etc.). These resources are increasingly strained, and some basins are reaching "closure": the point at which there is little or no more water to supply. With "future options for further augmentation of water supply by the development of physical infrastructure being limited" (DWA 2004), Water Conservation and Water Demand Management are increasingly important in South Africa. The National Water Resources Strategy (DWA 2004), proposes a mix of water supply and demand-side measures to ease the strain on resources.

South African policies have developed as a result of strong stakeholder participation and consultation (LBPTC 2010). The Department of Water Affairs (DWA) is responsible for guiding the development and implementation of Water Demand Management measures. South Africa approved a revised Water Services Act in 1997 (WSA) and a National Water Act in 1998 (NWA). Although these Acts enabled Water Demand Management they were not designed specifically to address the issue. Subsequently, a draft Water Conservation and Water Demand Management National Strategy Framework (WC/ WDM) were produced (DWA 1999).

The following Sections present the South African National Strategy Framework by describing the Objectives and Goals

Objective A: Create a culture of WC/DM within all water management and water services institutions

Objective B: Support water management and water services institutions to implement water WC/DM

Objective C: Create a culture of WC/DM for all consumers and users

Objective D: Promote international co-operation and participate with other Southern African countries, particularly basin sharing countries, in developing joint WC/DM strategies

Objective E: Enable water management and water services institutions to adopt integrated resource planning (IRP)

Objective F: To promote social development and equity

Objective G: Contribute to the protection of the environment, ecology and water resources

Objective H: Contribute the parameters of water economics to development planning processes

Source: DWA 1999

National Water Resource Strategy

Chapter 2 of the National Water Resource Strategy (2004) includes an assessment of South Africa's Water Situation and Strategies to Balance Supply and Demand. Chapter 3, Part 2 deals with Water Conservation and Water Demand Management. This document provides a comprehensive overview of the water resources of South Africa and a series of options for meeting water requirements, including Water Conservation and Water Demand Management and

sectoral approaches, which address the major water use groups.

The Lesotho Highlands Water Project

The [Lesotho Highlands Water Project](#) was established between South Africa and Lesotho as a means of meeting growing water demand in the Gauteng area. Please, look for detailed information on this project in the [Dams and Infrastructure](#) chapter.

Key Documents

- [The LHWP Treaty \(1986\)](#)
- [Water Services Act in 1997](#)
- [National Water Act in 1998](#)
- [Water Demand Management National Strategy Framework \(1999\)](#)
- [National Water Resource Strategy \(2004\)](#)

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