

The SA water landscape

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OUR PENDING WATER CRISIS

South Africa is a water scarce country and is among the World Resources Institute's Top 50 countries at risk of a water crisis. The water stress levels are determined by the country's annual water consumption as a proportion of "available and ground water supply". The list is dominated by Middle Eastern and North African countries, and South Africa is second only to Botswana among the Southern Hemisphere countries on the list.

South Africa has a semi-arid climate, with an average annual rainfall of 465mm, compared to the world average of 860mm. Most of South Africa's fresh water comes from catchments that receive the highest rainfall. Large transfer schemes have thus been developed to service various demand centres, due to the skewed nature of the strategic water source areas.

Major catchment areas: river delivery system	Developed
The Vaal River System - LHWP	2007 / Now in phase 2
The Orange River System ⁸³	2014
The KZN Coastal Metropolitan Bulk Water Supply System	2010
The Richards Bay Water Supply System ⁸⁴	2014
The Mbombela Bulk Water Supply System ⁸⁵	2014
The Western Cape Water Supply System	2007 / Now in phase 2
The Amatole Bulk Water Supply System	2008
The Algoa Water Supply System	2010
Limpopo Water Management Area North	2016
The Olifants River Supply System ⁹²	2011
The Crocodile west River System ⁹³	2009 / phase 2 complete
The Greater Bloemfontein Bulk Water Supply System ⁹⁵	2011

Source: National Water and Sanitation Master Plan Volume1: version 10.1 (January 2019)

The country's water security is mainly reliant on fresh surface water, with ground water and return flows underutilised. Government has identified 22 strategic water source areas (including those listed alongside) occupying 8% of the land, and providing 50% of the surface run-off (i.e. water in wetlands, streams, and rivers). These strategic water source areas support the water needs of approximately 60% of the population and 67% of the national economic activity, and supply approximately 70% of irrigation water. A large section of the population still has no access to clean water.

GOVERNMENT'S PLANS

The National Development Plan (NDP) states that a water secure future is one of the biggest challenges facing South Africa in the 21st century. South Africa is currently 65% urbanised and the NDP estimates that urban populations will grow by 10% every two decades. Increasing urbanisation will place more pressure on cities to deliver affordable and reliable water and sanitation services to larger numbers of poor households.

NDP Water & Sanitation Targets	Target date
Achieve universal, sustainable sanitation provision	2020: 90% 2030: 1000%
Achieve universal, sustainable and reliable water supply provision	2019: 90% 2030: 100%

Source: National Water and Sanitation Master Plan Volume 1: Version 10.1 (January 2019)

The challenges that confront the country are varied. Old/aging, poor quality and poorly maintained infrastructure is contributing to high levels of water wastage and the pollution of rivers and groundwater with sewage. Climate change is driving the country towards a warmer and drier future, with longer, more extreme droughts and more intense floods predicted.



Image source: LHDA.org.ls

CONSUMPTION

According to the 2018 National Water and Sanitation Master Plan, South Africa’s water supply deficit was projected to be 10% by 2030. Without proper demand management, the currently planned infrastructure development and broadening of the water mix will not be sufficient to balance supply and demand. The water demand by the year 2030 is estimated to be 17 559m³ whereas available water is estimated to be 15 926m³. If urban water losses are reduced from 35% to 15%, the water deficit would be reduced to 5%, while a further reduction in municipal demand from 237m³ to 175m³ per day would enable the country to have a water surplus of 3%. Therefore, the country urgently needs to increase supply and reduce demand to pre-empt the projected water crisis.

The majority of our water (60.9%) is consumed by the agricultural sector, and municipal consumption is currently at 27%. Along with the projected population increase, municipal water consumption is projected to account for 36% by the year 2030. It is also noteworthy that 45% of the water in South Africa comes from rivers shared with neighbouring countries, mostly Lesotho. The Lesotho Highlands Water Project is currently in its second phase, and is intended to contribute to increased ground and surface water by harnessing the waters of the Senqu/Orange River in the Lesotho highlands. Other strategies in place to increase water supply include desalination, acid mine drainage (AMD) and water re-use.

THE VAAL RIVER SYSTEM (VRS) - LESOTHO HIGHLANDS WATER PROJECT (LHWP)

VRS (LHWP-2 and AMD) supplies water to:

- Rand Water – 75%
- Eskom – 8%
- Sasol – 5%
- Midvaal Water Company – 3%

Other water users are municipalities such as Ermelo, Sedibeng, Lekwa etc. in the surrounding regions.

The Lesotho Highlands Water Project (LHWP) is a bi-national water infrastructure project between the governments of the Republic of South Africa and the Kingdom of Lesotho. The purpose of the project is to provide additional water to the Vaal River System (VRS) in South Africa and to generate hydro-electric power in Lesotho. The project consists of various proposed phases of which Phase 1 (cost of completion R20 billion) was completed during November 2003 and Phase 2 (LHWP-2) is in the early stages of implementation.

The project is managed by the Trans-Caledon Tunnel Authority (TCTA) and is the cheapest augmentation option available. The

project aims to facilitate an increase in yield and a curb in water dilution wastage, in order to generate an excess supply of water by 2030. The project's target completion date is October 2027.

A STRONG INVESTMENT CASE FOR INVESTING IN WATER INFRASTRUCTURE

Futuregrowth prides itself in investing in socially impactful sectors, and the water sector is one of the enabling sectors for the rest of the economy to function optimally. By investing in the water sector, we are channelling our clients' funds into assets that are enabling sustainability for the country and guaranteeing livelihoods for many of its citizens. LHWP-2 and AMD collectively have R34 billion of funding raised from the market, the majority of which is through TCTA's government guaranteed bond programme.

The capital expenditure (LWHP-2) is expected to increase significantly from the 2022/23 financial year, as construction ramps up. The combined debt of the augmentation schemes in the VRS must be repaid within 20 years after completion of LHWP-2, with estimated water delivery in 2027.

The project is aligned to the Department of Water and Sanitation (DWS) Strategy, as the transaction enjoys a government guarantee and the associated income streams in the form of tariffs. The associated debt is serviced by way of indexed tariffs payable on the water supplied by the project. Tariffs are payable to the DWS and are passed through to the TCTA. The agreed mechanism sets out that funding requirements and current debt are assessed annually, and the resulting tariff is set, based on the income needed to cover the requirements.

According to the Income Agreement between the DWS and TCTA in relation to the project, the TCTA is entitled to receive tariffs to recoup project capital expenditure. The Minister sets the tariff in accordance with the National Water Act and the National Water Pricing Strategy and water users then pay that tariff, which includes TCTA's Capital Unit Charge (CUC), to the DWS.

Assuming that the project will reach financial close in FY27, the long-term CUC tariff trajectory assumes future decreases in tariffs (beyond 2027) to ensure debt repayment 20 years after construction, as allowed for as a reasonable period in the Raw Water Pricing Strategy.

The investment case is strong, as the long-term investment is underpinned by government support, and the project is critically important to the country. The investment was not only considered with a profit motive, and an improvement in the water yield, but also had to carefully weigh up: (i) the social impact of the displacement, relocation and health of the residents of Lesotho; (ii) the impact and rehabilitation of the surrounding environment; and (iii) demonstrable positive social impact (such as increased employment) over the long term.

The Lesotho Highlands Development Authority (LHDA) meets on a quarterly basis to ensure that both the economic projections (project implementation against budget) and social objectives are met, with active community engagement occurring at ground level.

With phase 1 successfully completed, the project is testament that the partnership between the South African and Lesotho Governments is benefitting both countries in tandem. The project also serves as a success story of an investment that encapsulates the importance of economic, environmental (rehabilitation) and social objectives on a long-term basis, thereby meeting several of the UN Sustainable Development Goals (SDGs).

Futuregrowth recently invested in this area in the form of five-year funding that was provided to the Trans-Caledon Tunnel Authority as debt capital for phase 2 of the important Lesotho Highlands Water Project. This will be utilised for the further augmentation of this important water supplier into large areas of the country, including aspects such as pipelines, a further dam, and a hydro-electric facility.

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