

Siavonga Border Town Water Supply and Sanitation

DECEMBER 2019

OVERVIEW

The project will provide water supply and sanitation (WSS) to 23,000 residents of Siavonga and an estimated 120,000 cross-border travellers per year. It will improve health outcomes, build resilience to climate change and provide economic opportunities.

INVESTMENT REQUEST

£3.9 million of grant funding to rehabilitate and expand the water supply and sanitation system.

PROJECT SUMMARY

Siavonga in Zambia is strategically located on the North–South Transport Corridor, one of the major transport corridors linking Southern African countries to Beira Port in Mozambique and Durban Port in South Africa. The corridor development is a flagship Southern African Development Community (SADC) project and is prioritised in SADC’s Regional Master Plan (2012–2027). It is critical to enhancing regional and international trade competitiveness, particularly for landlocked countries such as Zambia.

Siavonga and neighbouring Kariba in Zimbabwe both draw their water from Lake Kariba. Water levels in the lake are declining and droughts are becoming more frequent under climate change. The existing infrastructure is inadequate under these lower and more variable lake water levels, resulting in regular failure to access the water. Growing demand could make this situation worse. Siavonga has significant potential for growth due to investment into the transport corridor, experiences almost constant congestion at the nearest border post, Chirundu, and is located on Lake Kariba, nationally important for regional power generation and tourism.

The Siavonga Water Supply and Sanitation Project involves the expansion and upgrading of the existing WSS system, in parallel to the upgrade of the WSS in Kariba. It leverages CRIDF investment in a new climate-resilient water intake works and the rehabilitation of the water treatment plant, as illustrated in Figure 1. The CRIDF investment provides the backbone for a sustainable scheme by ensuring a reliable raw water supply, thereby unlocking the potential to expand the distribution to currently unconnected areas of Siavonga. Funding is now sought to maximise the full potential of the system. It will deliver climate resilience, economic gains and significant health impacts. If a grant for the capital expenditure is secured, revenues will be sufficient to sustain operational costs.

MAIN SPONSORS



KEY FACTS

Water infrastructure type	Lake abstraction, treatment, storage and distribution
Country, location	Siavonga, Southern Province, Zambia
Main sponsor(s)	Southern Water and Sewerage Company (SWSC)
Financing requirement – capital expenditure	£3.9 million
Financing requirement – project preparation	£180,000
Co-funding secured	£462,000 from CRIDF
Financial instrument(s)	Grant funding

DEVELOPMENT IMPACT

- Water provision to over 23,000 people in Siavonga and 120,000 cross-border travellers and traders per year.
- Improved hygiene and reduction of waterborne diseases.
- Strengthened climate resilience of the Siavonga population.
- Economic benefits for women through time saved on water collection and widened scope of entrepreneurial activities.

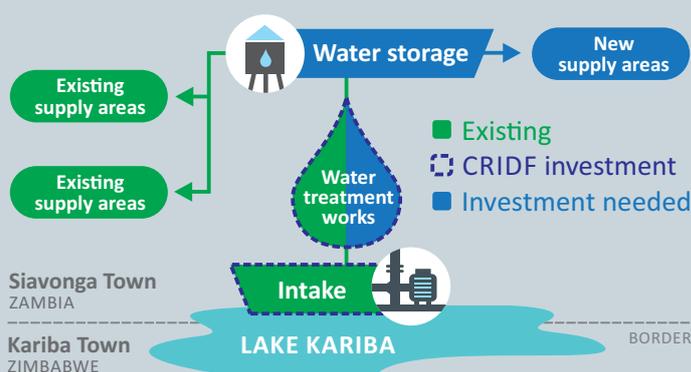


Figure 1. Existing and required investment in water intake and treatment at Siavonga, Zambia

SOCIAL ISSUES

- Zambia has one of the highest levels of inequality globally, and 62% of people living in the Southern Province are below the poverty line.
- The population of Siavonga is predicted to grow from 23,000 to 33,500 by 2038.
- Livelihoods are centred on fishing, fish trading, tourism and hydropower generation.
- There is severe water rationing due to distribution challenges. Some areas have no connections at all. Residents are forced to access untreated water directly from the lake, presenting health challenges and crocodile attacks.
- There is no sewerage system and most residents use traditional pit latrines. At times, effluent is discharged directly into the lake.
- Diarrhoea and dysentery are prevalent and there was a cholera outbreak in 2018.

TECHNICAL

The project will upgrade and expand the WSS system through:

- Decommissioning the existing lake intake works and installing a new climate-resilient submerged pumps intake.
- Upgrading the existing water treatment works from a capacity of 225 m³/h to 450 m³/h.
- Increasing water storage capacity from 1,800 to 6,000 m³ and implementing an efficient control system.
- Renewing and expanding the distribution network pipelines by 70 km.

INSTITUTIONAL AND LEGAL

- SWSC will own and operate the infrastructure.
- SWSC is one of the best-run water utilities in Zambia, and receives asset management support from Vitens, a Dutch water utility, and Water and Sanitation for the Urban Poor (WSUP).
- The financial strength of SWSC has steadily been increasing. It will be important to develop measures to avoid illegal connections and maintain high collection rates.
- The national regulators for WSS (NWASCO), water resources management (the Water Resources Management Authority), Siavonga District Council and the Ministry of Water Development Sanitation and Environmental Protection (MWDSEP) are important stakeholders and should be consulted early to secure approvals.

MARKET AND END USERS

- SWSC has a good relationship with its customers and has been recognised by the national regulator, the National Water Supply and Sanitation Council (NWASCO), as the best performing utility in Zambia for the last three years.
- The current connection rate of residents is low at 900 connections serving 5,000 households. The project will increase the connections in a phased approach to 11,000 by 2039 to supply all households.
- There is a willingness to pay amongst users, and revenue collection rates by SWSC are very high.
- A detailed affordability analysis should be conducted with a focus on new populations migrating into Siavonga who may have a lower/no monthly income.

CLIMATE AND ENVIRONMENT

- Siavonga's climate is one of the hottest and driest in Zambia, and includes extreme climate events.
- This causes high variations in dam water levels and affects water intake operations.
- The climate change risk assessment shows that higher temperatures, more erratic precipitation, and increased extreme events are anticipated.
- This is already impacting negatively on health, water resources, agriculture and infrastructure, and will be exacerbated by future climate pressures, increasing population growth and growing traveller numbers and water demand.
- The project will increase resilience by enabling water extraction from the lake at varying lake levels, securing a safe and reliable water supply.
- Environmental assessment showed that positive impacts are greater than the negative, and proposed measures to mitigate smaller negative impacts.
- The environmental project brief has received approval from the Zambia Environmental Management Agency.

What is CRIDF?

The Climate Resilient Infrastructure Development Facility (CRIDF), UK Aid-funded programme. A major aim of CRIDF is to work with governments, businesses and other organisations in the Southern African Development Community to scope and design key transboundary water projects using best practice in order to ensure that they are both pro-poor, and fundable/bankable investment opportunities. Work ranges from detailed technical inputs and project preparation, to policy work that aims to change thinking.

For further information, please contact Sharmala Naidoo: sharmala.naidoo@cridf.com or enquiries@cridf.com

CRIDF

