

Tshego Mpete: Embracing green opportunities in the water sector

OVERVIEW

Climate change will have drastic impacts on South Africa's economy and society and the need to adapt is urgent. As the country embarks on a just transition to a low-carbon, climate-resilient and environmentally-sustainable economy, an opportunity exists to develop domestic small, green businesses. This case study forms part of a broader initiative on small business development in South Africa's climate change space. It presents the journey and experience of Tshego Mpete, a South African entrepreneur active in water conservation and demand management.

Trade & Industrial Policy Strategies (TIPS) is a research organisation that facilitates policy development and dialogue across three focus areas: trade and industrial policy, inequality and economic inclusion, and sustainable growth

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FROM FINANCE TO NAVIGATING THE WATER AND SANITATION TERRAIN

Tshego Mpete is originally from a township called Mabopane, near Pretoria. The third of four siblings, Tshego holds a Bachelor's in Financial Accounting from the University of Cape Town. She has vast working experience in the corporate sector, having started her career in the retail sector, followed by the banking sector and then the telecommunications sector. Her telecommunications role saw her working throughout the continent, including in Malawi, Congo Brazzaville and Nigeria.

Tshego's tremendous entrepreneurial journey started in 2012 while based in Lagos, Nigeria. The exposure to various African countries sparked an entrepreneurial spirit within her. Tshego started her own company in the water sector as she came to understand and appreciate the importance of proper access to water, a challenge throughout Africa.

Lack of commercialisation within the water sector and the lack of black female businesses further intrigued her. She observed that most commercial players were white-, family- and foreign-owned entities. Waste-Intrigue Services (WIS) was then formed to enter the commercial space, with a particular focus on deploying

innovative technologies to promote water conservation and demand management.

WASTE-INTRIQUE SERVICES (WIS)

WIS seeks to provide reliable, quality, and sustainable water services so as to contribute to economic efficiency, social development and social equity, and environmental protection.

It is a 100% black-owned company, with 55% of it belonging to female shareholders. Tshego heads the company and is joined by a staff complement of eight people.

WIS's value proposition aims to provide solutions with quick returns on investment, low maintenance costs, green job creation, sustainable technologies, and quick project implementation timelines. This is accomplished by embracing water conservation and demand management as central tenets. Specifically, WIS seeks to meet the following objectives:

- Assist clients to meet their basic water and sanitation needs;
- Provide efficient, sustainable and beneficial solutions and services;
- Provide a full range of design, installation and maintenance services;
- Encourage local community involvement in projects; and
- Implement social programmes as part of corporate social responsibility.

WIS has a wide array of clients, spanning municipalities, commercial and industrial property facilities, food and beverage companies, mining houses, and government departments.

Its service offering includes infrastructure services, water demand management, water treatment, water storage and water quality control. Infrastructure services comprise installation, repairs, and maintenance of water infrastructure. Water storage comprises of in-line buffer/back-up systems. Treatment systems target water and wastewater treatment, including grey water as well as acid mine drainage treatment.

WIS helps its clients manage their water demand by evaluating different water source options and determining the optimal source mix to enhance water access, generation, reclamation, and reuse. Some of the water source options include boreholes, municipal water, atmospheric generation (air to water), and rain water harvesting.

Other services focus on water quality management and monitoring. These include water use audits, water use analysis, water quality assessment, ground water monitoring, water compliance monitoring, and testing and reporting. Water management systems entail automated water balance systems, water meters and verification systems, water analysis systems, water pressure systems, and water temperature monitoring.

Operations and maintenance are key service offerings for WIS. The company ensures that every facility deployed has quality operation and monitoring from a centralised scheduling and monitoring centre. WIS also targets user education, which helps in the operation and maintenance of infrastructure, on the presumption that well-informed users are able to take good care of the infrastructure.

THE TECHNOLOGY

Innovation is an important contributor to the success of business entities, and this is no different in the water and sanitation sector. A key strength for Tshego is the ability to develop and apply process innovation in exploring opportunities in the sector. Partnerships and networks are also key to WIS's success. Even though WIS does not directly do research and development for hard technology systems, it sources the latest and most appropriate technologies from both local and international manufacturers and innovators. For instance, when WIS was established about six years ago, it partnered with a local company based in George that provides package plants

THE NEED TO CLOSE THE WATER GAP

The Global Risks Report (2016)¹ ranks water crises as the third most impactful global risk, and ninth risk most likely to occur. The Strategic Overview of the Water Services Sector in South Africa Report (2015a)² highlights that the country ranks as the 30th driest country in the world, with average annual precipitation of 450mm — well below the world average of 860mm. The water gap in South Africa is projected to grow if no appropriate measures are implemented. According to the 2030 Water Resources Group, the country will demand 17% more water in 2030 than exists. While there are many demand-side factors and supply-side factors that reinforce the water gap, climate change has become an additional and determinant stressor.

that are contributing to tackling the backlog in the water sector.

More recently, the company has partnered with the University of Johannesburg to improve the performance of the membranes of the package plants. It has also partnered with a local company in deploying hydro-sensing (used to detect aquifers) and borehole technology. The functionality, durability and suitability of some of the systems have been assessed by the Water Research Commission. Internationally, WIS partnered with an Israeli company in sourcing leak detection technology. WIS embraces the latest technology in expanding its market presence. This includes developing a mobile app to facilitate and enhance plumbing service provision. The app will provide an easy and convenient way to link consumers to the services.

THE JOURNEY

WIS originated from humble beginnings. Initially, business was secured by approaching clients directly. Increasingly, the company is exploring larger procurement markets through bidding for both public and private tenders. Part of its growth strategy includes expanding its potential market to include more Johannesburg Stock Exchange (JSE)-listed companies. So far, it has made inroads with some mining companies in providing dewatering services. It has also established good business relations with private property developers, and it intends to target specific public sector institutions, such as schools.

¹ WEF. 2016. The Global Risks Report 2016 (11th Edition). Geneva: World Economic Forum.

² DWS. 2015a. Strategic Overview of the Water Services Sector in South Africa 2015 (Version 4). Department of Water and Sanitation, Republic of South Africa.

An in-line water back-up system



Water storage system



Source: WIS

WIS previously worked on a pilot involving 15 schools with the Gauteng Provincial Government. The company also intends expanding into the agricultural sector.

WIS has worked to overcome competition in the sector by providing a differentiated service offering support, with a strong value proposition around its black and women ownership. It has adopted a turnkey approach and offers specialised services. WIS is planning to adopt a build, operate, transfer (BOT) approach in its projects. WIS is not only concerned with doing business but also seeks to contribute to socio-economic development. Youth development is one of the objectives. WIS has partnered with non-governmental organisation Somafco Trust to empower youth in the water and sanitation sector.

NON-REVENUE WATER

Non-revenue water (NRW) is a big challenge in South Africa's water system. It is the result of aged and leaking infrastructure, wasteful and inefficient usage, and poor metering and billing. According to the No Drop Report (2015b)³, the total volume of NRW from the metros was 923.5 million m³/annum in 2014, with the average NRW for the metros being 34.5%. These losses equate to about R5.5 billion per annum. The average Infrastructure Leakage Index is an indication of the current physical losses versus the expected physical losses. It stood at 5.4 for all metros in 2014, indicating that, in the current system, leakage is 5.4 times the expected minimum leakage.

CHALLENGES AND BARRIERS

Tshego highlighted a number of barriers in the sector. Resources are needed to build capacity, however, the lack of access to funding is a key barrier. Self-financing is inadequate because of the need to meet both personal and business financial needs. This is worsened by the fact that some of the opportunities are short term, which makes cashflow uncertain. Some clients want evidence of an organisation's capacity to undertake a particular project, and this might include initial deposits or presenting a portfolio of past work.

There are other unique barriers to Tshego's situation. As a black business, it is a challenge to become well-established in the sector. Moreover, as a woman, there is the need to go an extra mile to convince potential clients, and prove that the capability is there.

WIS's eight employees include interns, civil engineers and plumbers. Tshego highlighted that one of the difficulties is attracting highly skilled personnel as this is very expensive.

A key challenge relates to the time taken to secure business from a client. A relationship and trust has to be established first, which requires patience.

³ DWS. 2015b. No Drop Report: The Status of Water Losses & Water Use Efficiency in Metropolitan Municipalities. Department of Water and Sanitation, Republic of South Africa.

Wastewater treatment packaging plants



Source: WIS

Tshego is happy with the progress so far – what started off simply as a business plan has grown into a sustainable business entity, with good prospects for growth. The journey has had its challenges, but these have strengthened Tshego’s determination and resilience. She has had to compromise tremendously due to the transition from having had well-paying jobs in big corporates to the uncertainty and insecurity associated with entrepreneurship in the water sector.

Market access is another challenge. Barriers arise when trying to do business with the public sector. Tshego highlighted that interactions with government can be a little slow. For example, engagements with the Department of Water and Sanitation have not yet borne fruit. However, engagement with the Department of Basic Education has been fruitful, leading to a pilot project. The government takes time to process and approve projects, which has also driven WIS to change its business model.

Overall, the interaction with private players has been more dynamic than with the government. Hence the increased focus on opportunities offered by big business and industries spanning the property sector, mining, and agriculture.

Tshego also highlighted that the current legislation and building codes are not promoting widespread

water conservation and demand management. Thus, there is a need to incorporate into the building codes a requirement for every house or building to have a water reuse strategy.

Looking at future prospects, Tshego intends to expand the operations of WIS not just in Gauteng and North West but to other provinces. The rest of the continent also has good prospects. That option will be explored once the footprint in South Africa is well established. Tshego’s vision is to broaden the scope of WIS and position it as a renowned consulting engineering firm in Africa.

MAKING CONTACT

Tshego is charting her path to success to open doors for fellow scientists, researchers and entrepreneurs who, like her, have the passion at heart to support South Africa’s just transition to a low-carbon, climate-resilient and environmentally-sustainable economy and society. Her passion and effort is contributing to much-needed solutions in the sector. To help her grow her business and revolutionise South Africa’s water treatment and management space, get in touch Tshego at:

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This case study forms part of a broader initiative by TIPS with support and funding from the Government of Flanders. It is complemented by a main report, *Small Business Development in the Climate Change Adaptation Space in South Africa*, which summarises the research findings on the topic, as well as five other case studies on South African-based entrepreneurs active in the adaptation space. These are available on the TIPS website at www.tips.org.za.