



UNDER CURRENTS

SA'S WATER INFRASTRUCTURE IS CRUMBLING FAST. CAN GOVERNMENT AND THE PRIVATE SECTOR COLLABORATE AND CO-OPERATE TO FIX IT?

Last September, the South African Human Rights Commission released a damning report into water challenges in KwaZulu-Natal's municipalities. In March half of Johannesburg experienced weeks of severe water shortages, right in the middle of a late-summer heatwave. In July, large parts of Ekurhuleni were without water as the system struggled to recover from maintenance work by Rand Water. That was after flash floods hit the Western Cape, forcing at least 4 500 people from their homes as the province's stormwater systems failed to cope.

It never rains, but it pours. SA's ongoing water crisis – characterised by wild swings between floods and droughts – is bringing the crumbling state of its water infrastructure to the surface.

'Upgrading infrastructure to better manage erratic weather patterns is paramount,' says Robert Erasmus, MD at Sanitech. 'This includes maintaining stormwater infrastructure, building new dams with improved capacity to cope with floods and droughts, as well as repairing existing ones to minimise leakage.'

Andries Fourie, senior technologist at SRK Consulting, agrees. 'It's more economical to begin with the upkeep of stormwater infrastructure, restoring it to its intended capacity. This approach may not be a complete fix but offers a more practical starting point than constructing new facilities,' he says. 'After all, if funding isn't allocated for maintaining essential systems, it's improbable that it will be there for initiating new developments.'

He adds that before looking at building new dams, for instance, existing structures should be monitored to ensure they are achieving the storage capacities for which they were designed. If they are becoming silted up – as invariably happens over time – then the necessary dredging must be conducted.

'This kind of maintenance becomes more important as climate change leads to intense weather events that test – and sometimes exceed – the design limits of our infrastructure,' says

Fourie. 'Ensuring this work is done methodically and regularly demands that municipalities rebuild their institutional memory and technical capability, much of which has been lost – especially in the smaller municipalities.'

Erasmus, whose work at Sanitech naturally gives him a focus on water quality, says the national water crisis is fuelled by a confluence of challenges. 'Climate change acts as a major catalyst, amplifying existing vulnerabilities. Erratic rainfall patterns disrupt water availability, leading to both devastating floods and prolonged droughts.'

'Floods overwhelm South Africa's already fragile infrastructure, disrupting sanitation services and causing widespread contamination, while droughts deplete water reserves, limiting access to clean water for basic needs like drinking and hygiene. This is especially worrisome for rural communities who already struggle with inadequate sanitation infrastructure.'

Anthony Turton, a professor and water specialist at the University of the Free State, agrees – but is quick to emphasise that the problem in SA is less about climate change and more about the ageing infrastructure. 'Climate change is definitely something we should monitor in the background, but it is not a root cause of any water shortages,' he told eNCA in a recent interview. 'In fact, many dams are the fullest they've been for a long period of time. Ultimately, it all comes down to infrastructure and long-term planning. The recent implementation of water shifting clearly indicates that the system has failed.'

Turton cited the country's municipalities, which he said had 'done nothing since 1994 to adapt to the needs of the evolving cities'. Johannesburg, he pointed out, has only five years left in its infrastructure design cycle.

In a joint report published in January this year, the World Bank and the Development Bank of Southern Africa (DBSA) estimated that, in order to meet its UN Sustainable

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Development Goals (SDG) targets, SA would need to spend between R4.8 trillion and R6.2 trillion from 2022 to 2030 on upgrading its basic education, basic transportation, water and sanitation and technical and vocational education and training infrastructures.

The report states that SA has a good track record of water and sanitation infrastructure delivery for new services at scale, which resulted in the rapid expansion of access to water and sanitation between 1994 and 2019. However, it adds, 'access to services has historically been measured based on the type of service and proximity to households and not the more stringent requirements for safety and reliability provided in the SDGs. As a result, 46% of all households in the country still do not have access to a safely managed water supply and 49% of households do not have access to safely managed sanitation services. The largest share of the water gap, 48%, is due to quality and reliability issues, and the largest sanitation gap, 44%, is due to inadequately managed faecal sludge. The remaining service challenges are concentrated in informal settlements and rural areas.'

Over and above the issues with reliability and quality, SA's ageing water infrastructure also leads to problems with high levels of non-revenue water. Citing the Department of Water and Sanitation's 2018 numbers, the World Bank and DBSA noted that non-revenue water makes up approximately 41% of the system input volume – with 85% of that being due to technical losses like leaks and bursts. 'Most losses are due to poorly maintained infrastructure or slow responses to reports of leakage,' the report states.

In Gauteng, for example, Rand Water claims that the average water consumption is more than 300 litres per person per day, compared to a global average of 173 litres per person per day. But almost half of that is lost before it even reaches the consumer. The Department of Water and Sanitation's 2023 Blue Drop report found that more than 47% of SA's clean and treated water was either lost through leaks or could not be accounted for.

However, in March 2024, Parliament passed the National Water Resources Infrastructure SOC Bill, which creates the South African National Water Resources Infrastructure Agency

(NWRRIA) as a state-owned company. In July, Water and Sanitation Minister Pemmy Majodina confirmed that the NWRRIA will own all the national water resource infrastructure assets and obtain the revenue streams associated with those assets. This, she said, will enable the agency to borrow additional funds on the strength of its balance sheet.

Majodina also announced a collaboration between the Department of Water and Sanitation, DBSA and the South African Local Government Association to form a governmental office that will support municipalities in establishing water infrastructure partnerships with the private sector.

This is a solution that Mergence Investment Managers has been discussing with authorities – public-private partnerships to manage private water concessions, which are responsible for the operation, repairs and management of the water infrastructure as well as the supply of water, which they either buy from a water board or obtain through the production of their own potable water, according to Kasief Isaacs, head of private markets at Mergence.

He uses as an example Siza Water in KwaZulu-Natal and Silulumanzi in Mpumalanga – two 30-year private water and sanitation concessions created in 1999. In 2018, Mergence acquired a majority equity stake in both Siza Water and Silulumanzi, and has since been actively involved in their management via a special purpose vehicle, South African Water Works (SAWW). The result has been a marked improvement in water quality and delivery to communities, he says.

'Through the two concessions, SAWW serves more than 450 000 customers daily, and manages more than 1 500 km of pipeline and 900 km of sewerage network,' says Isaacs, adding that technical water losses at the SAWW concessions average just 20%, compared to a national average of 37%. Siza Water has since achieved Green Drop certification.

With every litre of clean water that's lost to another leak, every stormwater drain that overflows and every dam that dips below its safety levels, the argument grows ever stronger for a national solution to the national water crisis. Government cannot provide that answer on its own, but neither can the private sector. 🐾



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