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# **REAL ECONOMY INSIGHT: WATER**



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# Real Economy Yearbook: Water

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Global temperatures reached a record high for the third consecutive year in 2016, and reports of extreme weather continued worldwide.

Drought and water scarcity, often associated with an El Niño weather pattern, have gripped Southern Africa over the past two years. This has had a severe and detrimental impact on the economic development of many sectors, but especially the agriculture sector, as fewer crops have been produced, affecting food availability.

## South Africa's drought

South Africa has been affected by El Niño and seems to be on a collision course with a future of physical water scarcity. The country has been in the throes of its most severe drought in more than 35 years, with more than half of the population having experienced water shortages or supply interruptions since 2015. By September 2016, all nine provinces had been affected by the drought in "all its forms – meteorological, hydrological, socioeconomic and agricultural", Cooperative Governance and Traditional Affairs Minister and drought task team chairperson Des van Rooyen said at the time.

The Western Cape has been one of the provinces most severely affected by the drought, struggling with the worst drought in its recorded history of more than 100 years.

Water restrictions have been in place since 2015, and despite dramatically reducing water consumption, dam levels are dropping daily. Dam levels in the Western Cape dropped to 21.2% in May this year, or an effective 11.2%, as the last 10% of dam water is not usable. This prompted the City of Cape Town to issue a critical warning to all water users to cut all nonessential water use with immediate effect, as the city reached a critical point in the drought crisis.

The province's extremely low reservoir levels are, to some extent, the result of an accumulated two to three years of comparatively low winter rainfall, which, in turn, has restricted the extent to which reservoirs have

## The politics of drought

According to a report – 'A harvest of dysfunction: Rethinking the approach to drought, its causes and impacts in South Africa' – released by independent nongovernmental organisation Oxfam South Africa, drought, in the South African context, "is a slow-onset disaster; not just an event involving diminished rainfall".

The report notes that there are dynamics other than rainfall that affect the amount of available water, including wind, heat and the capacity of soil to absorb water.

Social factors include an array of human activities and choices associated with land and water use, water storage and conservation, ecological management and human settlement patterns.

Governance of water resources and distribution thereof, and planning for and responding to reduced rainfall, all affect the impacts of drought on people, agriculture and ecology. A drought disaster in the humanitarian sense is the result of a combination of these factors and processes.

A more general definition of drought is 'a water shortage for some activity, group, or environmental sector'. The drought in this sense is the result of the 'interplay between the natural event (less rainfall than expected) and the demand people place on water supply' (US National Drought Mitigation Center).

Drought, El Niño events and climate change, thus, have social and political dimensions, which are often disregarded by scientists and other technical assessors relying only on narrow Standardised Precipitation Index indicators.

Source: Oxfam South Africa – 'A harvest of dysfunction: Rethinking the approach to drought, its causes and impacts in South Africa'

refilled during winter. Increased water demand has also impacted on water levels.

"We are well beyond the point that Gauteng was at when it declared a disaster," City of Cape Town executive director of informal settlements, water and waste Gisela Kaiser told delegates at Africa Utility Week in May.

The future outlook remains bleak, as South Africa's top climate experts agree that it will take more than one season to completely replenish the deficit of surface water reserves in the region. Further, a substantial amount of evidence contained in published research has been assessed, by the Intergovernmental Panel on Climate Change, supporting the reasonable

expectation of a relatively drier future for the Western Cape by the 2030s and 2040s.

There is little doubt that the Western Cape needs to prepare, in the longer term, for a drier climate, although, ongoing drought conditions will affect everybody.

Analysts are predicting that the country will face physical water scarcity by 2025 and a water deficit of 17% by 2030, and this shortage will only be worsened by climate change.

South African Weather Service chief forecaster Dr Eugene Poolman said in his presentation to the National Disaster Management Advisory Forum in March this year that South Africa had not seen the last of El Niño weather patterns.

“Forecasting systems currently indicate an increased likelihood of an El Niño phase to develop towards the spring season,” Poolman said, adding that “as we near the winter period, these forecasts improve in reliability”.

The devastating effects of the current drought, however, are not only because of poor rainfall or the El Niño weather phenomenon, but also because of South Africa's disappointing record in dealing with known structural vulnerabilities and, in some instances, the complete lack of water-management ability in many water institutions.

## Water management

Section 27(1)(b) of the South African Constitution grants the right to clean and sufficient water. In addition to this manifest stipulation of individuals' rights to access basic water and sanitation, Section 27(2) of the Constitution, as well as the National Water Act, sets out the management of water resources as a national competency, of which the Department of Water and Sanitation (DWS) is the public custodian.

The DWS, under current Minister Nomvula Mokonyane, must, therefore, ensure that water is protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner, for the benefit of all persons and in accordance with the department's constitutional mandate.

To comply with this mandate, the then Department of Water Affairs initiated the Blue Drop and the Green Drop certification programmes in 2008.

The Blue Drop scheme mainly measures the micro-biological compliance of South African tap water, the purpose of which is to improve the quality of such water

through compliance monitoring of the drinking water provided by the country's municipalities. The Green Drop scheme measures the ability of municipalities to treat sewage properly to reduce river pollution.

The inception of the Blue Drop Certification Programme resulted in an immense improvement in drinking water from 2009 to 2012, with 98 systems achieving Blue Drop status in 2012, compared with 25 systems in 2009. This improvement was also observed in the national average Blue Drop score, which increased from 51.4% in 2009 to 87.6% in 2012.

However, the highly anticipated 'Blue Drop 2014' report, which was released only in 2016, paints a far less optimistic picture of South Africa's water quality. The report shows an 8% reduction in the national average Blue Drop score from 87.6% in 2012 to 79.6% in 2014. Further, of the 1 036 systems assessed, only 44 achieved Blue Drop status.

Blue Drop score card 2014					
Performance category	2009	2010	2011	2012	2014
National Blue Drop score	51.4%	67.2%	72.9%	87.6%	79.6%
Number of water services authorities assessed	107	153	162	153	152
Number of systems assessed	402	787	914	931	1 036
Number of systems achieving Blue Drop status	25	38	66	98	44

Source: DWS – Blue Drop 2014

The DWS's 'Green Drop' report, which covers July 2013 to June 2014, is also disappointing. The report shows that most of South Africa's wastewater treatment plants are in the high-risk (259 plants) and medium-risk (218 plants) categories, with 212 plants in the critical-risk category and only 135 plants in the low-risk category.

This has raised concerns by the Organisation Undoing Tax Abuse (Outa) about what it terms “the widespread violation of the public's Constitutional right of access to clean drinking water and a healthy environment”.

Outa contends that water management is deteriorating yearly and the root cause of the problem is a lack of monitoring and enforcement by government.

Outa says that, according to current figures on the DWS website, 71% of South Africa's wastewater treatment facilities are noncompliant and discharge an estimated four-billion litres of toxic wastewater into South Africa's water resources every day, which threatens the quality of drinking water, food security and public health.



Despite requests by Outa – through a Promotion to Access of Information Application – that Minister Mokonyane publish various Blue Drop, Green Drop, Non-Revenue Water and Regulatory Performance Monitoring System reports dating from 2014 to 2016, the DWS has not complied, citing a lack of human and financial resources.

In January this year, at a Blue Drop/Green Drop report DWS briefing, the Auditor-General red-flagged the fact that neither of the progress reports completed in 2015 had been released, and that it was unworkable to deliberate on the completion of the 2015/16 progress reports when it was already 2017.

However, the department has said that it plans to complete a draft 2016 Blue Drop report by the end of October 2017.

### Water consumption

South Africa's drought has highlighted the difficulties and inability of municipalities and users to reduce their consumption when required, with commentators emphasising that people's attitudes to water use need to change.

Despite being a dry country, South Africa's water-conservation record is poor, with its domestic water consumption of 235 ℓ/d per person being 35.8% higher than the global average of 173 ℓ/d per person. Outdated and inadequate water and

sewage-treatment infrastructure, combined with an insufficiently skilled workforce, compound the situation.

The DWS again warned in May this year of dwindling water reserves in South Africa's dams, and pleaded with users to continue saving water and for the water service authorities to implement water conservation and water demand management strategies. The department further urged water users to "inculcate the culture of using water more wisely", as most dams across the country continued to decline on a weekly basis.

Analysts have urged that water-use strategies being adopted to manage water shortfalls and prevent further drought damage must translate into good long-term water-use habits by all citizens, not only those in drought-stricken provinces.

Power and water trade publication ESI-Africa editor and session chair at Africa Utility Week Nicolette Pombo-Van Zyl has said that "considering that water is increasingly becoming a scarce commodity, the time has come for us to become extra mindful of our water usage as a way of life going forward, even after the restrictions are lifted in the future".

A new report 'Scenarios for the future of water in South Africa', published by the World Wide Fund for Nature South Africa and the Boston Consulting Group in March this year, has suggested that for South Africa to become more water-conscious, it needs



Picture by Bloomberg

to be equipped with sufficient knowledge and skills in the water sector.

It adds that it also needs to educate the population on the value of water and water conservation while encouraging and sharing best practices from water stewardship partnerships and programmes. This would be undertaken through an online platform aimed at promoting the protection of water resources, developing skills and providing job opportunities in water management and wastewater treatment, to mention a few.

The report also suggests:

- the implementation of strong water governance, with resilient stakeholder partnerships;
- the establishment of water-use compliance and disclosure-reporting requirements for JSE-listed companies;
- incentivising the private sector through water stewardship programmes to plan, invest in and implement water management systems and infrastructure;
- the regulation, enforcement and effective collection of water tariffs; and
- the enforcement of punitive action for noncompliance with water-use entitlements and wastewater treatment requirements.

It further advocates that, to manage water supply and demand more effectively, and protect water resources, water tariffs be differentiated across various industries and consumption levels; the cost of water use over certain consumption thresholds be increased; stakeholders be incentivised to monitor and rectify their contribution to water pollution; a “fit for purpose” domestic water policy be established; and critical water infrastructure be fast-tracked by resolving bottlenecks identified as delaying the infrastructure pipeline.

Ultimately, the management of water resources must become a long-term priority for everybody in South Africa, not just government. Without such steps, the availability of water will worsen and so will economic growth.

## Outlook

Minister Mokonyane indicated in her Budget Vote 2017/18 speech in May that South Africa had not fully recovered from the drought and that it would take several years for the country to fully recover. The Western Cape would feel the brunt of it, with climate scientists remaining noncommittal on rainfall predictions for the drought stricken province.

She said that water storage for the present and the future remained critical for creating certainty for

## Declaration of a national drought disaster

The Southern African Development Community declared the El Niño-induced drought a regional disaster in mid-2016. By October 2016, the South African government had yet to declare a national drought disaster, with Water and Sanitation Minister Nomvula Mokonyane telling Parliament's Portfolio Committee on Water and Sanitation on October 20 that she had “no authority to declare a disaster. Once the relative authorities, including the Treasury and the Department of Cooperative Governance [and Traditional Affairs] agree . . . then we can declare a disaster”.

A declaration of a national drought disaster is based on the Disaster Management Act (2002).

A declaration is necessary to coordinate government responses and release funds allocated to other government priorities.

To declare a disaster, government draws on the Standardised Precipitation Index (SPI), which determines the probability of rain occurring compared to the rainfall climate in a specific location over a long-term period. A negative SPI value means a rainfall deficit, whereas a positive SPI value indicates rainfall surplus. The higher the negative value relative to 0, the greater the intensity of the drought. SPI values of less than –2 indicate extremely dry conditions.

The SPI, among other sources, determines whether the impacts of rainfall deficit conform to the legal definition of disaster, which includes the extent and severity of the event. A declaration may be made only if existing laws and contingency arrangements are judged inadequate for the government to deal effectively with the disaster, according to the South African National Disaster Management Center.

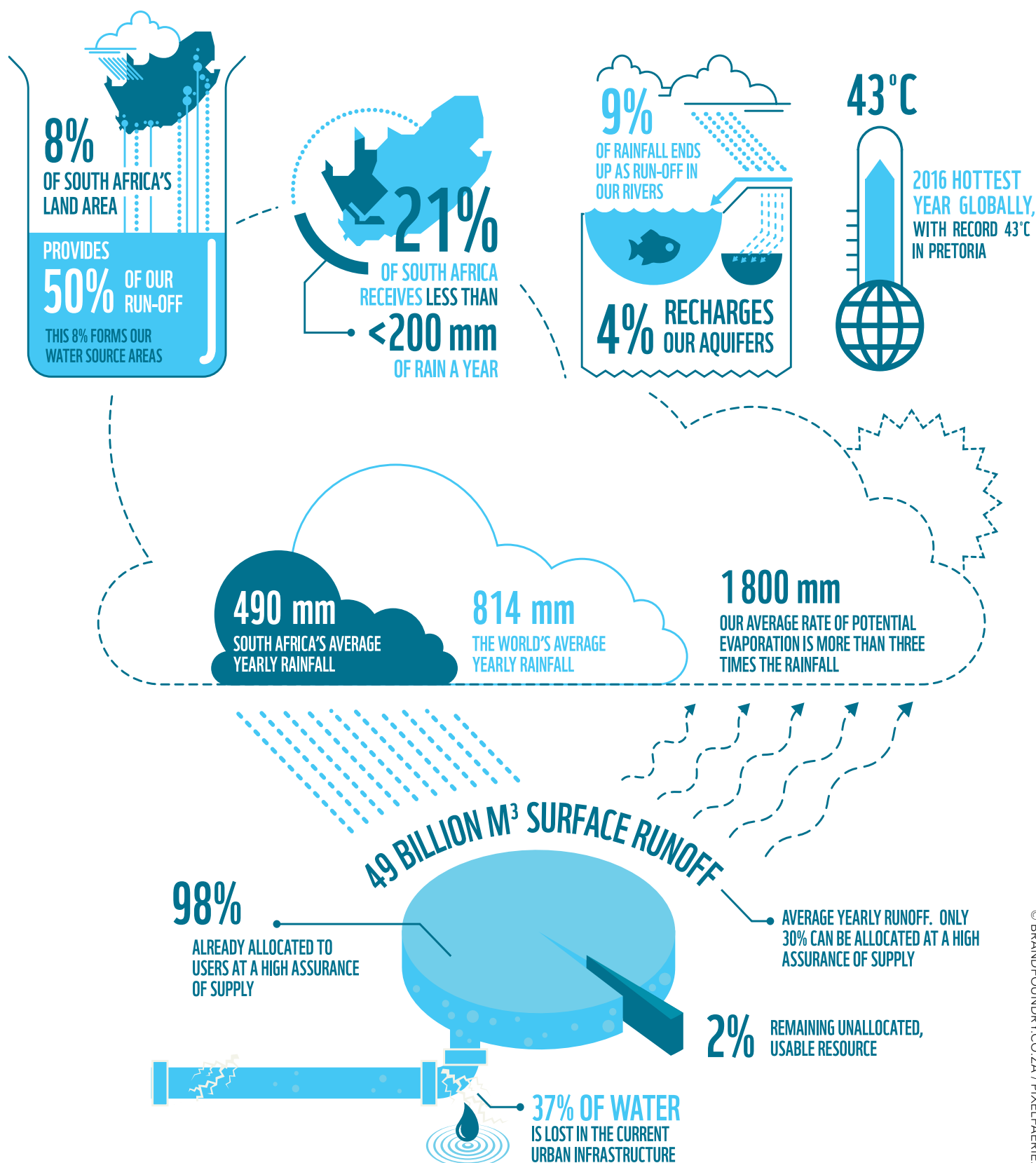
Disasters are declared for three months at a time, and declarations can be renewed for a month at a time thereafter.

Source: News24, Oxfam South Africa – ‘A harvest of dysfunction: Rethinking the approach to drought, its causes and impacts in South Africa’

economic and social development of South Africa, and called for more water infrastructure to be built that would address unemployment, inequality and poverty.

This being said a budget of R15.12-billion was tabled, with R1.63-billion allocated for administration; R816.46-million for water planning and information management, which will include the feasibility study for uMkhomazi project and the Lusikisiki surface and ground water study, as well as the Syferfontein development in western part of Gauteng; R12.25-billion for water infrastructure development, which includes the Mzimvubu, Clanwilliam, Hazelmere, Tzaneen/Nwamitwa, Vaal Gamagara, Gariep augmentation, and the Olifants bulk distribution system water projects; and R410.82-million for water sector regulation.

## South Africa water facts



Source: WWF and The Boston Consulting Group – Scenarios for the Future of Water in South Africa 2017





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