

EXECUTIVE SUMMARY



EXECUTIVE SUMMARY

The Department of Water and Sanitation, the custodian of the nation's water resources and a public trustee, is obliged by the National Water Act (Act No. 36 of 1998) to establish monitoring networks and information systems and report on the status of water resources in the country. The current report, which is published annually, communicates the available water resources information to the public and aims to assist water users in decision-making, evaluate the implementation of legislation, highlight identified problem areas, and outline measures taken by the department to eradicate highlighted issues and balance the water demand and supply.

During the summer months of the reporting period, the monthly maximum temperatures were above average by up to 4 degrees Celsius in some areas, mainly in the Western Cape Province and southern parts of the Eastern Cape Province. The Western Cape Province again experienced higher-than-average maximum temperatures in the winter months.

The rainfall received during the hydrological year 2021/22 was above normal for almost all parts of South Africa, apart from a strip on the southwestern coastline of the Western Cape Province. The Western Cape Province winter rainfall region has shown a drying trend or phase from July to September, which may intensify drought conditions. Rainfall was significantly above (>200% from normal) for the Northern Cape Province, covering the Orange WMA, Middle, and Lower Vaal WMAs. The country's eastern half has received significantly above-normal rainfall in the past two hydrological years (2020/21 & 2021/2022). This has resulted in decrease in number of areas in the country experiencing drought conditions over the past four hydrological years. The Nelson Mandela Bay, Sarah Baartman, Sekhukhune, Namakwa, City of Cape Town, Eden, Overberg, West Coast, and the Cape Winelands Districts Municipalities have been affected by meteorological drought in the last 24 months and require close monitoring and interventions.

The country also experienced a significant flood event in the KwaZulu-Natal Province, where the South African Weather Service (SAWS) reportedly measured rainfall ranging between 200-500 mm between April and May 2022. The rainfall resulted from a strong cut-off low weather system off the east coast of Southern Africa. The heavy rains led to a rapid increase in dam levels as most of the dams were already at their full supply level before heavy rains between the 11 and 12 of April 2022. On the 13 of April 2022, the KwaZulu-Natal floods were declared a provincial disaster. At the end of May 2022, approximately 448 fatalities were reported, and the homes, businesses, roads, bridges, electricity and water infrastructure were damaged or destroyed. An estimated 130 000 people were affected, with more than 19 182 houses and 264 schools destroyed.

The most affected Municipal District areas in April 2022 were Ugu, eThekweni, King Cetshwayo, uMgungundlovu, and iLembe. While in May 2022, Hluhluwe, eThekweni, Jozini, KwaDukuza, Mandeni, Maphumulo, Mkhambathini, Mthonjaneni, Mtubatuba, Ndwedwe, Nongoma, Ulundi, uMdoni, uMhlabuyalingana, uMhlathuze, uMlalazi and uPhongolo District Municipal areas were most affected. A severe decline in water quality was observed in the affected areas following the flood event, mainly emanating from the failure of WWTW, resulting in untreated sewage discharging directly into the watercourses between March and April 2022. *E.coli* counts in some rivers reached unacceptable levels of 10 000 cfu/100ml.

Although the country may have received above-normal rainfall in some parts, the river flow data has demonstrated that most South African rivers continuously deviate from the historical flows. The changes in flow regime are both natural and anthropogenic, driven by rainfall temporal and spatial variation, population increase, land and water use changes, and dam operations (flood management, abstractions, and curtailment) playing significant roles. Flows were above average for the Orange River in the past two hydrological years. In contrast, flows were below normal for the Tugela River for the past eight years, below or near normal for the Gamtoos River in the past seven years, while the Olifants has only experienced one year (2020/21) of above-normal streamflow in the past eight years.

The national dam storage levels for the past two hydrological years - 2020/21 and 2021/22, have been the highest for most of the months in the past five hydrological years. At the end of the hydrological year (September 2022), approximately 4% of the dams were at critical storage levels, 11% were at risk, and over 85% were either spilling or at optimal storage levels. Most of the dams at critical storage conditions at the end of the reporting period were in the Eastern Cape, Limpopo, and Western Cape. Notably, all median storages for the 2021/22 hydrological year are higher than the past year for all WMAs, apart from the Berg Olifants and Breede Gourits WMAs. The Algoa Water supply systems (WSS) in the Eastern Cape remain with water restrictions in response to the low water storage levels.

The national average groundwater levels Status (GwLS) has been showing an upward recovery trend since October 2019, and the GwLS was just below 60% (normal) at the end of the reporting period. This can be attributed to the above-normal rainfall received in the current and previous years, which has recharged aquifers. Regarding groundwater quality, the Strategic Water Source Areas with groundwater quality exceeding the SANS 241 drinking water quality guidelines/limits for Nitrate/nitrite were in the Free State and Limpopo Regions. All the exceedances within the SWSAs had nitrate/nitrite concentrations ranging from 13 mg/l to 62 mg/l indicative of impacts of land use activities that should be prevented or controlled before significant groundwater pollution occurs.

There is a severe challenge of microbial contamination in the South African water resources (Rivers and Dams). More than half of the sampled sites presented a high

health risk if water from the source was used for irrigating crops that were eaten raw, and only 42% indicated a low risk. The results also revealed that water in 64% of the sampled sites was unsuitable for recreational activities. Using these sites for such activities would be associated with a high risk of infections.

The trophic status calculation revealed that fourteen sites were hypertrophic, one eutrophic, nine mesotrophic, and 32 oligotrophic. Eutrophication potential was classified as serious (26 sites), significant (13 sites), moderate (10 sites), and negligible (14 sites). The sites characterised by serious eutrophication problems were catchments hosting densely populated urban developments, poorly functioning sewer networks, and wastewater treatment work.

The Department has taken initiatives to address South African water resources quality. One of the successful projects was the development of the Eutrophication Management Strategy of 2022, which will be used as a tool to address issues related to the degradation of the water resources due to excessive nutrient enrichment in the water resources. Moreover, the Department has also made commendable progress in the surface water resource classification process. To date, several resource classification and Reserve determination studies have been either finalised or are in the final stages. As of September 2022, the Department is only left with the Orange River System, which has outstanding water resource classes and the Resource Quality Objectives determination study.

The Blue Drop and Green Drop assessments were both conducted in 2021 (01 July 2020 to 30 June 2021), and the reports for the said audit period have been published. The Blue Drop programme thoroughly assesses drinking water quality compliance, and plant and process controller registration to calculate the Blue Drop Risk Rating (BDRR) for each system. 144 Water Services Authorities in South Africa comprising 1186 water supply systems were assessed during the assessment period. It was established from the Blue Drop assessment that 48% of water supply systems are in the low-risk category (The large proportion of low-risk supply systems are in the Gauteng and Western Cape), while 34% of systems reside in the high-risk and critical risk categories.

The Green Drop programme assesses the design and operating capacity of WWTWs, compliance of the effluent to agreed standards, local regulation and infrastructure management and condition. A total of 144 municipalities were audited during the 2021 Green Drop certification process, and it was established that most rural municipalities struggle to score more than 50%. Only 5% of rural municipalities achieved this score in comparison to 75% of systems in Gauteng. In the assessment, only 22 Water Services Institutions were Green Drop certified, led by Western Cape (12), Gauteng (7), and KZN (3).

The Department has noted significant progress that South Africa has made in addressing the sanitation backlog and providing appropriate sanitation to poor

households in the country since 1994. The country has achieved 84% sanitation delivery, and the percentage of households with access to improved sanitation increased by 22,4 percentage from 61,7% in 2002 to 84,1% in 2021. The most improved provinces are the Eastern Cape, where the percentage of households with access to improved sanitation increased by 58,3%, and Limpopo which increased from 31,6% to 58.6% in 2021.