

January 2025



# MONTHLY STATE OF WATER BULLETIN

WATER IS LIFE - SANITATION IS DIGNITY



**water & sanitation**

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA



## Overview

South Africa experiences varying weather conditions with different rainfall seasons due to its unique geographical location and long coastline spanning 2,800 kilometres. The cold Atlantic Ocean on the west coast and the warmer Indian Ocean on the south and east coasts significantly influence both the climatic and weather conditions. The country's southwestern tip has a Mediterranean climate with hot, dry summers and cool, wet winters. Winter rainfall occurs in the southwestern parts of the country and summer rainfall occurs in the eastern parts.

The South African climate is currently in a neutral El Niño-Southern Oscillation (ENSO), with predictions of weakening further. At the end of January 2025, the national dam levels were 81.4% of Full Supply Capacity (FSC). This level is lower than last year, at the same time when national storage levels exceeded 91.7% of FSC. At least 28.8% of the national dams were above 100% of FSC (either full or spilling), while 60.8% were between 50 and 100% of FSC, 9.4% were between 10 and 50% of FSC, and 1.0% were below 10% of FSC (critically low).

The most recent 24-month Standardised Precipitation Index (SPI) revealed that several District Municipalities (DM) experienced severe drought in the last 24 Months, including the ZF Mgcawu DM in Northern Cape, Bojanala DM in North West, Thabo Mafutsanyane DM in Free State, Gert Sibande DM in Mpumalanga, and Capricorn and Mopani DMs in Limpopo. Moreover, district municipalities such as the Zululand DM in KwaZulu-Natal, Ngaka Modiri Molema DM in North-West, Sekhukhune DM in Limpopo, and Sedibeng DM in Gauteng only experienced moderate drought.

The collaborative maintenance operation being carried out by the Trans-Caledon Tunnel Authority (TCTA) and the Lesotho Highlands Development Agency (LHDA) is in progress. It commenced after the closure of the tunnel system on 1 October 2024. This essential undertaking aims to ensure the long-term functionality and safety of the tunnel infrastructure, which plays a vital role in the region's water supply. The goal is to reinforce the infrastructure to withstand the test of time and ensure reliable operation for the next 20 to 30 years.

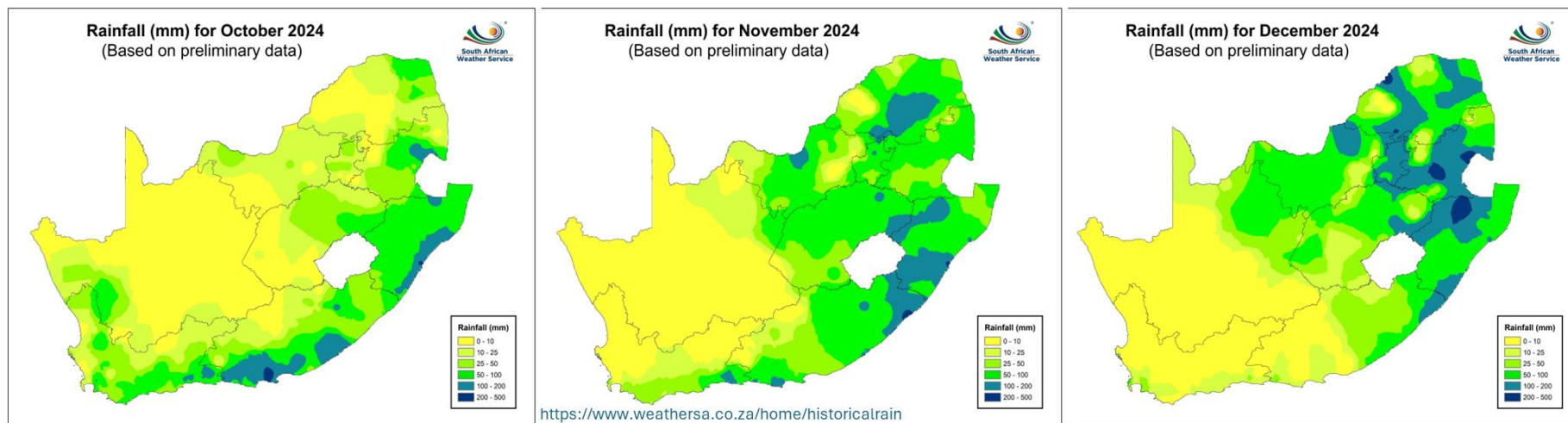
## Rainfall

The South African climate is currently in a neutral El Niño-Southern Oscillation (ENSO) and is predicted to weaken further. However, current South African Weather Service (SAWS) predictions are uncertain whether it will weaken towards a La Niña state during our next summer season. The monthly rainfall distribution for the current hydrological year, covering October 2024 to December 2024, is presented in Figure 1, while the weekly rainfall for the first three weeks of January 2025 is presented in Figure 2. In January, significant rainfall was recorded in some parts of the country, with North West, Mpumalanga, KwaZulu-Natal, and Limpopo receiving more than 200 mm.

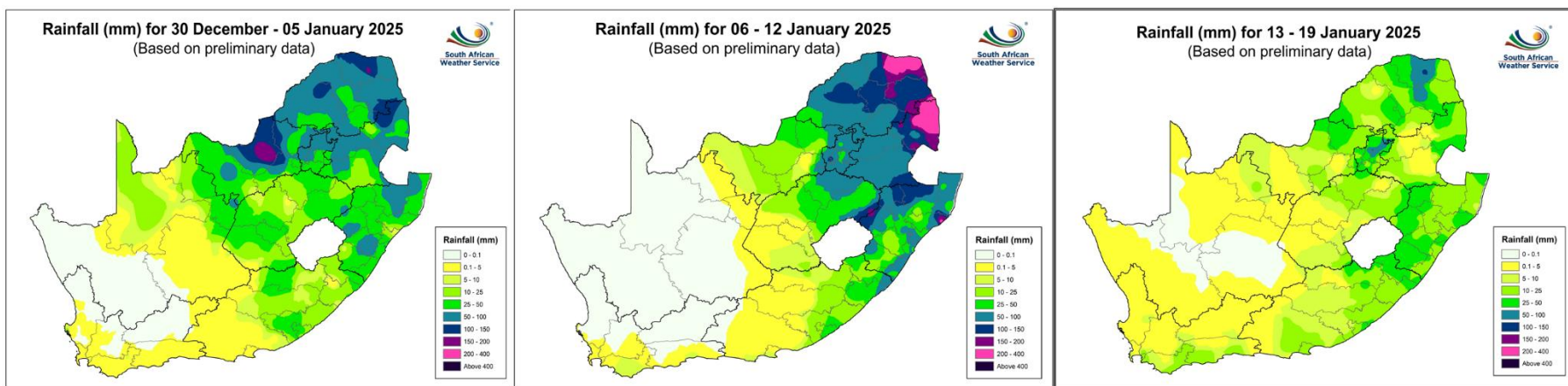
The monthly rainfall anomalies for the current hydrological year, expressed as a percentage of normal rainfall for October 2024 to December 2024, are presented in Figure 3. Above-normal rainfall (>100 mm) was received in isolated parts of KwaZulu-Natal, Limpopo, Mpumalanga, Gauteng, Free State and Northern Cape.

The SAWS multi-model rainfall and temperature forecast predictions indicate above-normal rainfall for parts of the north-eastern central and coastal areas, with most parts of the summer rainfall areas expected to receive below-normal rainfall. During the latter parts of summer (Feb-Mar-Apr), there will be an increase in chances for above-normal rainfall over the summer rainfall areas, potentially indicating a very late influence from the potential La Niña event. Minimum and maximum

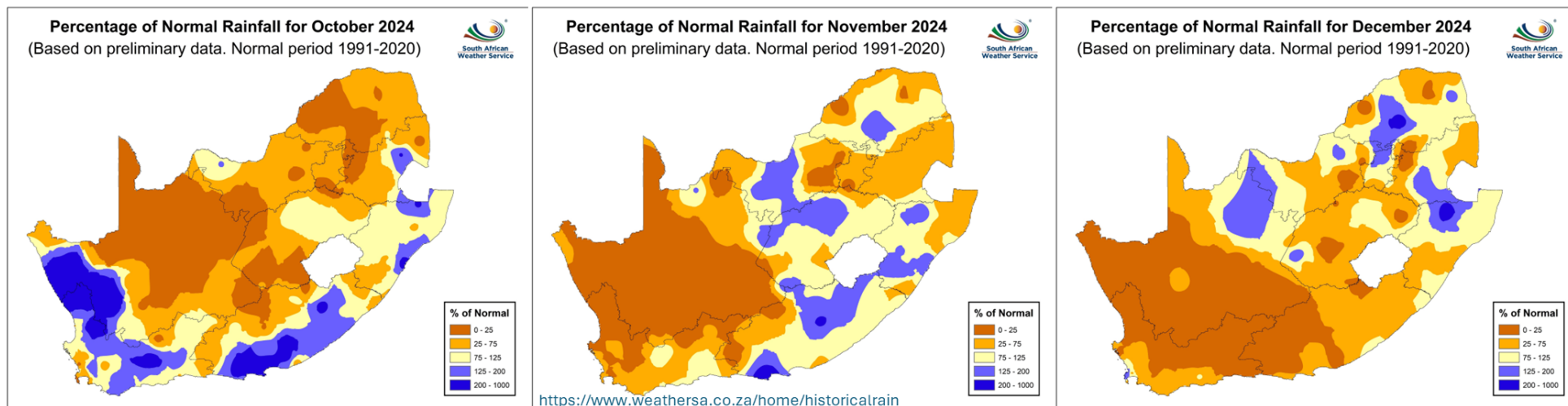
temperatures are expected to be mostly above-normal countrywide for the forecast period. However, the southern coastal areas indicate that below-normal temperatures are more likely to persist throughout the summer season.



*Figure 1: Monthly rainfall distribution for October 2024, November 2024 and December 2024*



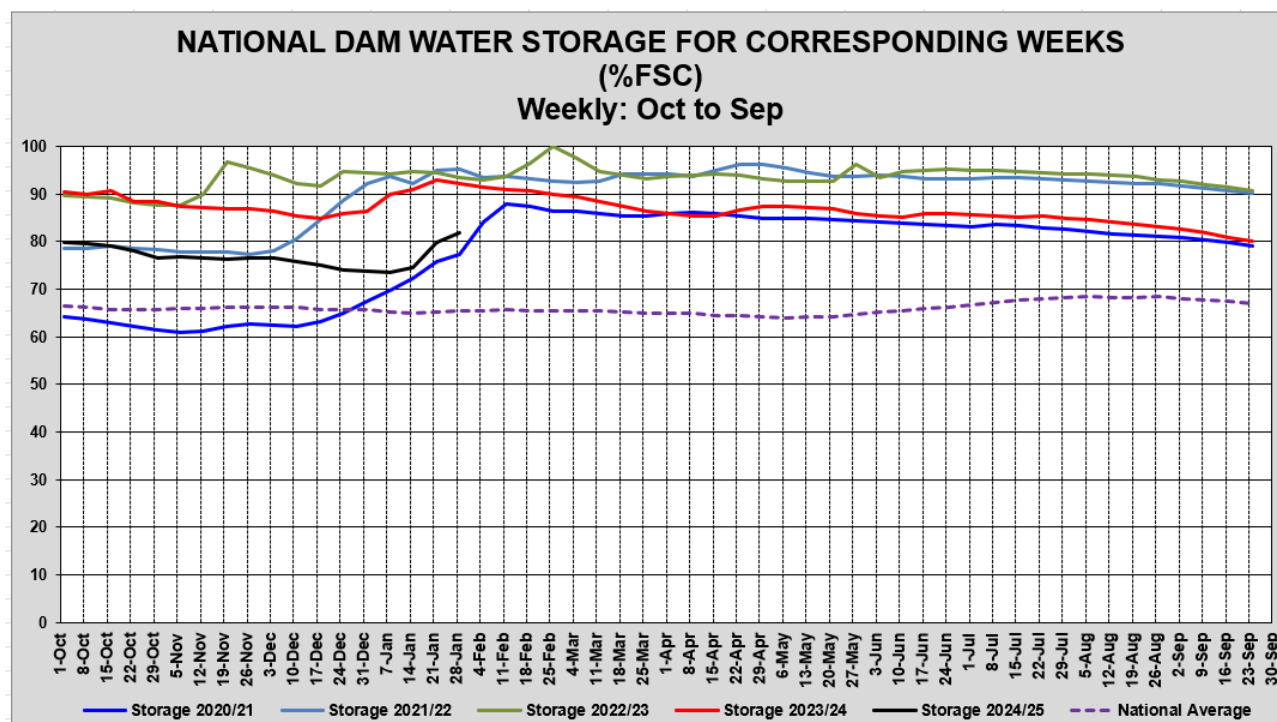
*Figure 2: Weekly rainfall distribution for January 2025, Week 1, Week 2, and Week 3.*



*Figure 3: Summer season Percentage of normal rainfall for October 2024, November 2024 and December 2024.*

## National Dam Storage

The national water storage trends since 1981 are presented in Figure 4 at the end of January 2025, the national dam levels were 81.4% of Full Supply Capacity (FSC). This level is lower than last year, at the same time of reporting the national storage levels were at 91.7% of FSC.



*Figure 4: National Dam Storage at the end of January 2025*

At least **28.8%** of the national dams were **above 100% of FSC** (either full or spilling), while **60.8%** were between 50 and 100% of FSC, **9.4%** were between 10 and 50% of FSC, and **1.0%** were below 10% of FSC (critically low). The comparison between January 2024 and January 2025 of the country's five largest dam storage (% of FSC) is presented in Table 1. The surface water storage in the Gariep Dam, one of the country's largest dams decreased by 22.9% FSC, year on year (Table 2). In Limpopo, the Middle-Letaba remains the only dam at critical levels, while the same is true for Leeugamka Dam in Western Cape.

*Table 1: Storage Levels comparison for the Five Largest storage dams (by volume) to last year*

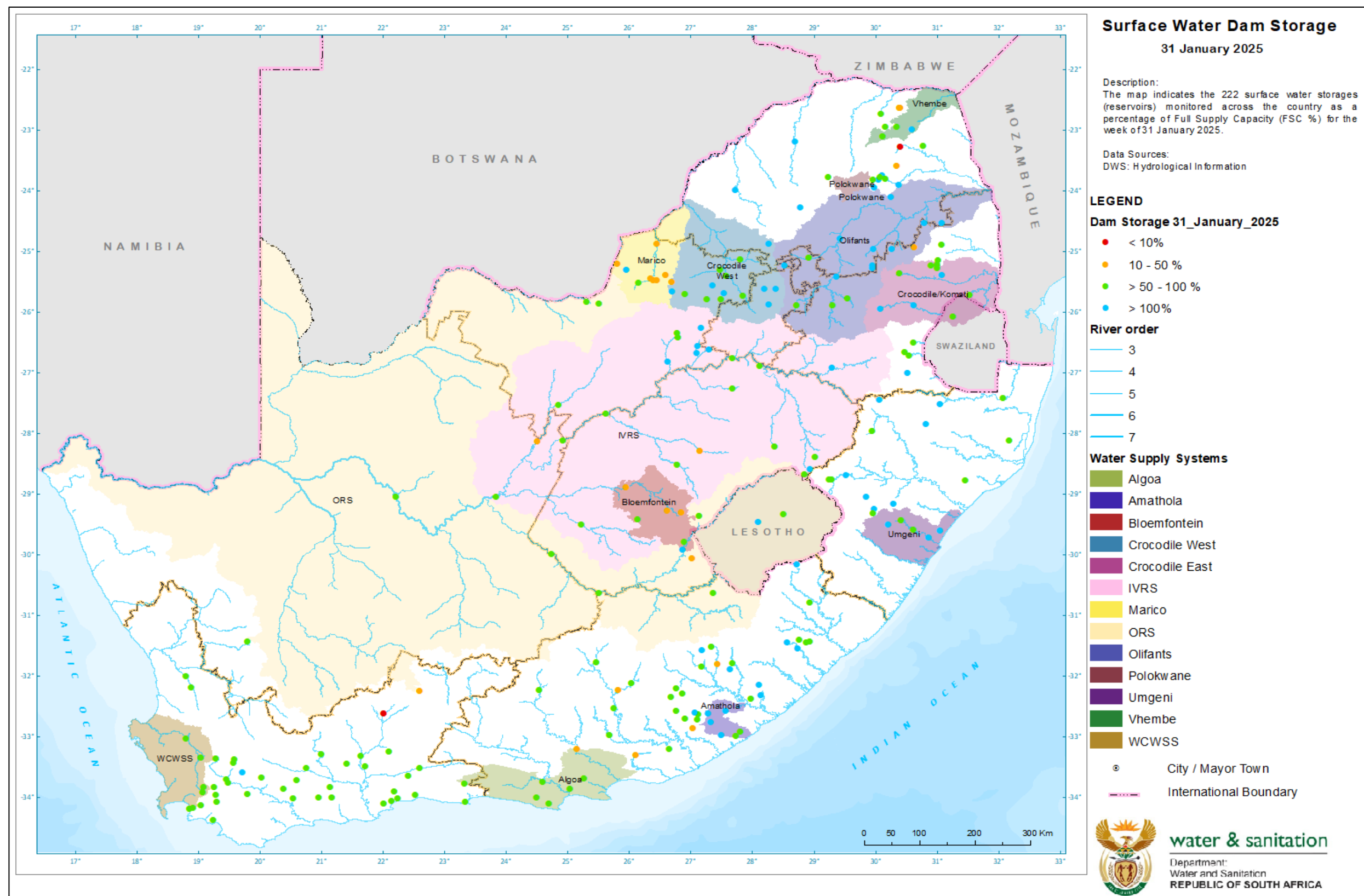
| Reservoir               | River                | Province      | Full Supply Capacity (Mm <sup>3</sup> ) | 27 January 2024 (% FSC) | 27 January 2025 (% FSC) | Difference (%) |
|-------------------------|----------------------|---------------|-----------------------------------------|-------------------------|-------------------------|----------------|
| <b>Gariep Dam</b>       | Orange River         | Free State    | 4903.45                                 | 99.6                    | 76.7                    | -22.9          |
| <b>Vanderkloof Dam</b>  | Orange River         | Free State    | 3136.93                                 | 101.3                   | 73.7                    | -27.6          |
| <b>Sterkfontein Dam</b> | Nuwejaarspruit River | Free State    | 2616.90                                 | 99.8                    | 98.3                    | -1.5           |
| <b>Vaal Dam</b>         | Vaal River           | Free State    | 2560.97                                 | 71.1                    | 61.7                    | -9.4           |
| <b>Pongolapoort Dam</b> | Phongolo River       | KwaZulu-Natal | 2395.24                                 | 80.6                    | 87.0                    | +6.4           |

*Table 2: Dams currently below 10% of Full Supply Capacity compared to last year*

| Reservoir                | River               | Province     | Full Supply Capacity (Mm <sup>3</sup> ) | 27 January 2024 (% FSC) | 27 January 2025 (% FSC) | Difference (%) |
|--------------------------|---------------------|--------------|-----------------------------------------|-------------------------|-------------------------|----------------|
| <b>Leeugamka Dam</b>     | Leeu River          | Western Cape | 13.41                                   | 7.9                     | 0.2                     | -7.7           |
| <b>Middel-Letaba Dam</b> | Middel-Letaba River | Limpopo      | 171.93                                  | 3.5                     | 6.6                     | +3.5           |

The spatial distribution of the dams showing the classified range of their storage levels as of 27 January 2025 is presented in Figure 5. The majority of national dams across the country were at storage levels of between 50 and 100% of FSC.

Figure 6 presents the 24-month Standardised Precipitation Index (SPI) for December 2024. An observation is made that several district municipalities (DM) have experienced severe droughts in the last 12 months. These include ZF Mgcawu DM in the Northern Cape, Bojanala DM in North West, Ngaka Modiri Molema DM in the North West Thabo Mafutsanyane DM in the Free State, Gert Sibande DM in Mpumalanga, and Sedibeng DM in Gauteng



*Figure 5: Surface Water Storage Levels – January 2025*

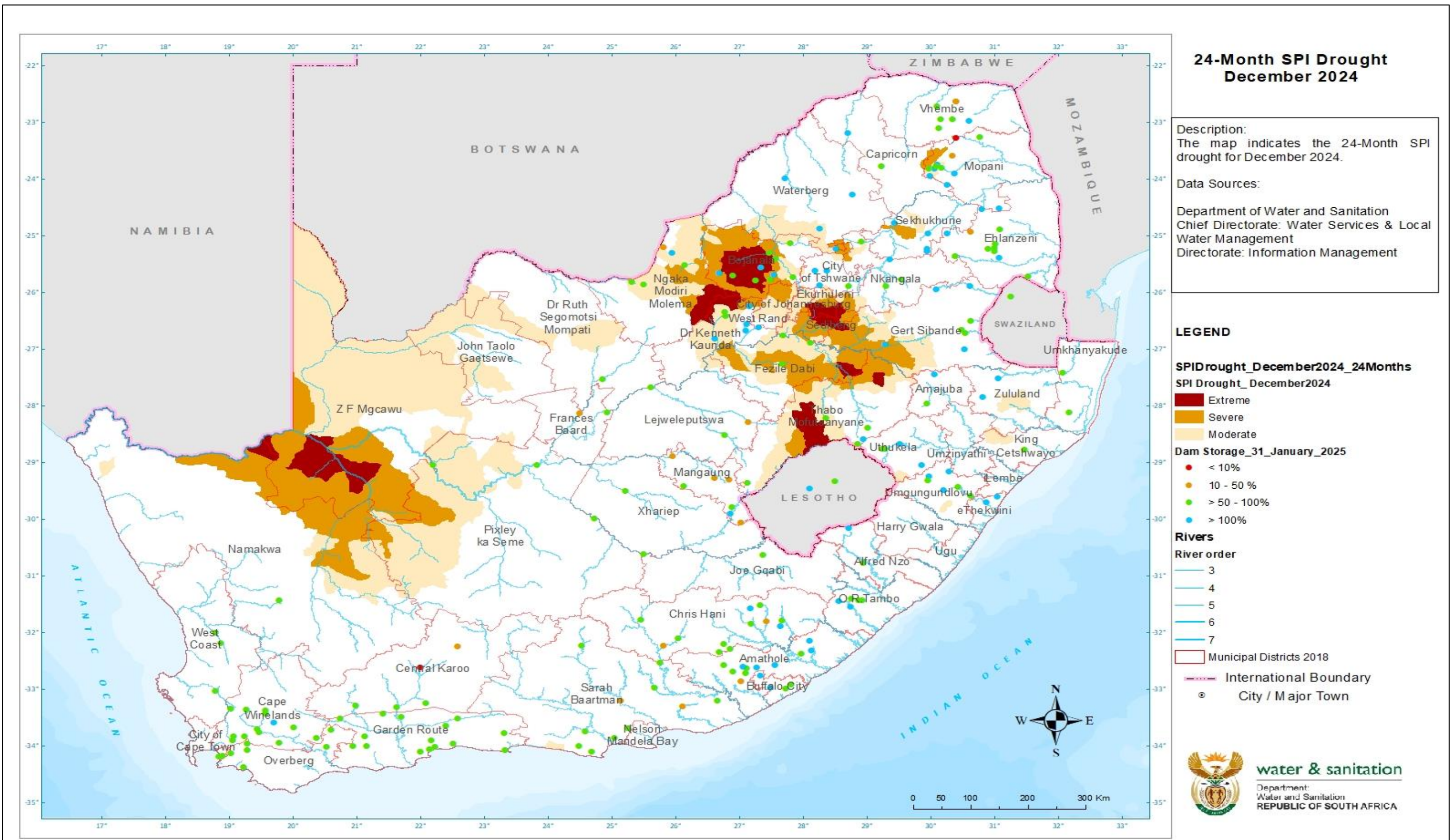
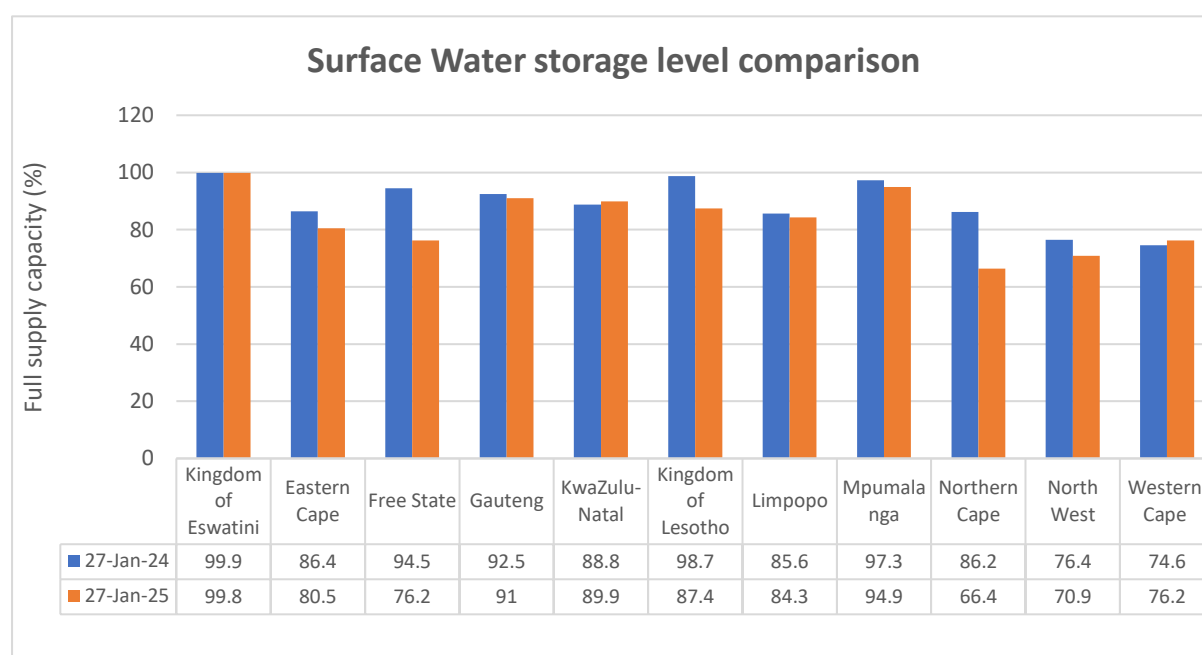


Figure 6: 24-Month Standardised Precipitation Index (SPI) and dam levels-December 2024

District municipalities such as Zululand DM in KwaZulu-Natal, Ngaka Modiri Molema DM in North-West, Sekhukhune DM in Limpopo, and Sedibeng DM in Gauteng only experienced moderate drought. These areas are experiencing drought due to below-normal rainfall received during the previous summer rainfall season.

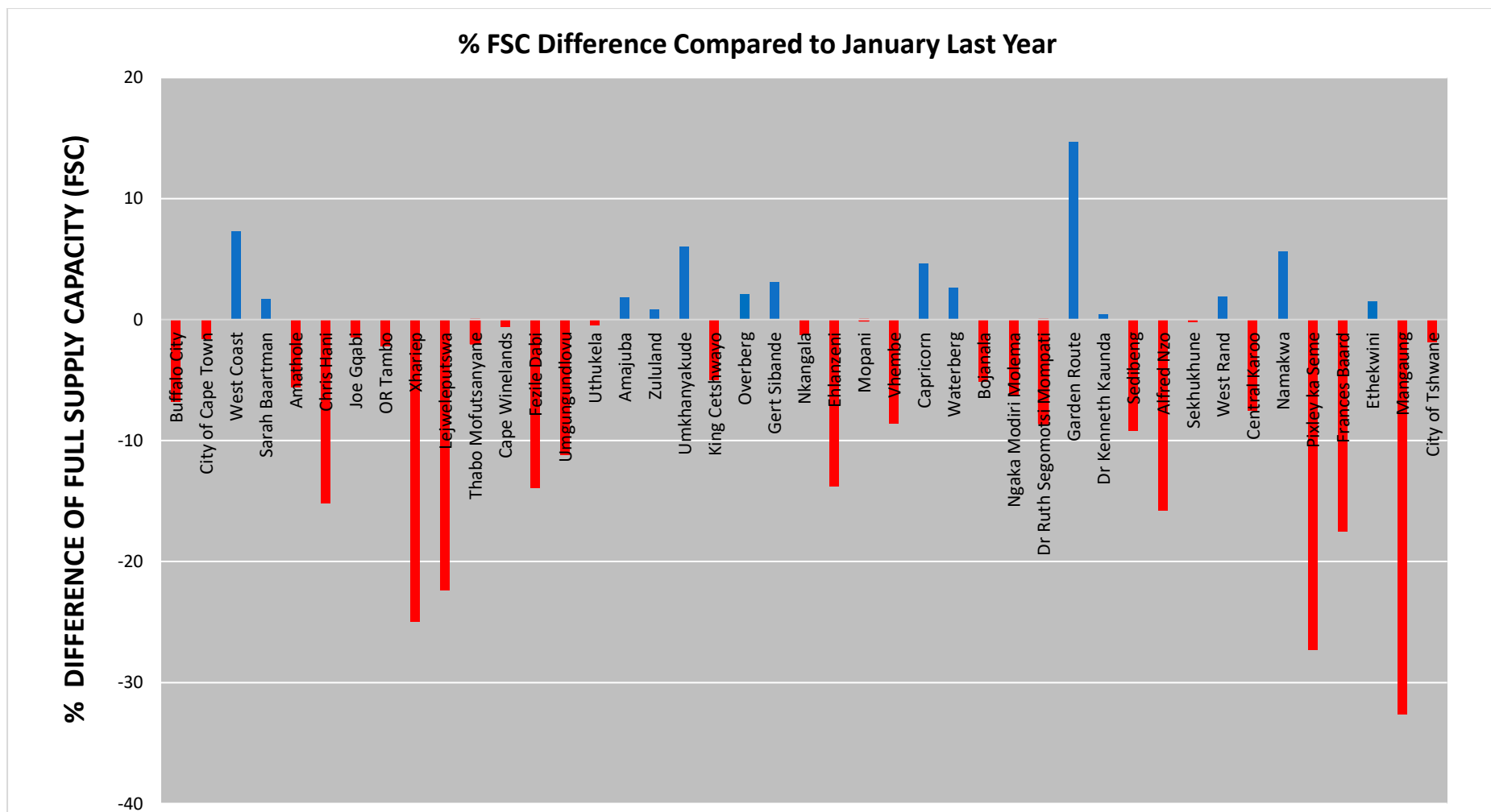
The comparison of the storage levels per province and international areas for January 2025 to the same time last year is presented in Figure 7. KwaZulu-Natal and Western Cape are showing an increase in storage levels at 1.1% and 1.6% respectively, indicating normal to above-normal rainfall received in January 2025. The provinces showing significant declines (>-10%) in dam storage levels compared to the previous year are Free State (-18.3%) and Northern Cape (-19.8%). The Kingdom of Lesotho has also shown a significant decline of -11.3% in dam storage compared to the previous year.



*Figure 7: Water Storage Levels January 2024 vs. January 2025*

## District Municipalities

The year-on-year comparison of water storage levels per district municipality is presented in Figure 8. Only the Garden Route DM experienced a significant increase (>10%) in dam storage levels compared to last year. Four district municipalities experienced significant declines (>-20%) in dam levels compared to the same time last year, namely, Xhariep DM, Lejweleputswa DM, Pixley ka Seme DM, and Mangaung DM. Based on the 24-month SPI, some of these DMs have been experiencing drought in the last 24 months.



*Figure 8: Comparison of water storage levels per District Municipality January 2024 vs January 2025*

The dam storage levels in water supply systems (WSSs) and applicable restrictions are presented in Table 3. The Algoa WSS decision date was changed from 1 June to 1 November, and a new annual operating analysis for the decision date was performed, resulting in an update of water restrictions which were in effect from 1 November 2023 to 31 October 2024. However, these restrictions are yet to be gazetted.

The water supply systems with restrictions are given in Table 4. Due to infrastructure limitations, permanent restrictions are applicable for the Polokwane and Bloemfontein WSSs.

*Table 3: Water Supply Systems storage levels January comparisons*

| Water Supply Systems/clusters       | Capacity in 10 <sup>6</sup> m <sup>3</sup> | 27 Jan. 2024 (% FSC) | 20 Jan. 2025 (% FSC) | 27 Jan. 2025 (% FSC) | System Description                                                                                                                                                                                                                                                                                                               |
|-------------------------------------|--------------------------------------------|----------------------|----------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Algoa System</b>                 | 282                                        | 77.3                 | 79.1                 | 78.3                 | <u>5 dams serve the Nelson Mandela Bay Metro, Sarah Baartman (SB) DM, Kouga LM and Gamtoos Irrigation:</u><br>1. Kromrivier Dam<br>2. Impofu Dam<br>3. Kouga Dam<br>4. Loerie Dam<br>5. Groendal Dam                                                                                                                             |
| <b>Amathole System</b>              | 241                                        | 102.5                | 98.4                 | 98.3                 | <u>6 dams serve Bisho &amp; Buffalo City, East London:</u><br>1. Laing Dam<br>2. Rooikrans Dam<br>3. Bridle Drift Dam<br>4. Nahoon Dam<br>5. Gubu Dam<br>6. Wriggleswade Dam                                                                                                                                                     |
| <b>Klipplaat System</b>             | 57                                         | 99.6                 | 87.7                 | 85.5                 | <u>3 dams serve Queenstown (Chris Hani DM, Enoch Ngijima LM):</u><br>1. Boesmanskrantz Dam<br>2. Waterdown Dam<br>3. Ockraal Dam                                                                                                                                                                                                 |
| <b>Butterworth System</b>           | 14                                         | 100.2                | 98.0                 | 99.8                 | <u>Xilinx Dam and Gcuwa weirs serve Butterworth</u>                                                                                                                                                                                                                                                                              |
| <b>Integrated Vaal River System</b> | 10 546                                     | 90.9                 | 83.8                 | 83.9                 | <u>14 dams serve Gauteng, Sasol, and ESKOM:</u><br>1. Vaal Dam<br>2. Grootdraai Dam<br>3. Sterkfontein Dam<br>4. Bloemhof Dam<br>5. Katse Dam<br>6. Mohale Dam<br>7. Woodstock Dam<br>8. Zaaihoek Dam<br>9. Jericho Dam<br>10. Westoe Dam<br>11. Morgenstond Dam<br>12. Heyshope Dam<br>13. Nooitgedacht Dam<br>14. Vygeboom Dam |
| <b>Luvuvhu</b>                      | 225                                        | 101.0                | 99.0                 | 98.7                 | <u>3 dams serve Thohoyandou etc:</u><br>1. Albasini Dam<br>2. Vondo Dam<br>3. Nandoni Dam                                                                                                                                                                                                                                        |
| <b>Bloemfontein</b>                 | 219                                        | 97.4                 | 69.6                 | 69.4                 | <u>4 dams serve Bloemfontein, Botshabelo and Thaba Nchu:</u><br>1. Rustfontein Dam<br>2. Groothoek Dam<br>3. Welbedacht Dam<br>4. Knellpoort Dam                                                                                                                                                                                 |

| Water Supply Systems/clusters | Capacity in 10 <sup>6</sup> m <sup>3</sup> | 27 Jan. 2024 (% FSC) | 20 Jan. 2025 (% FSC) | 27 Jan. 2025 (% FSC) | System Description                                                                                                                                                                          |
|-------------------------------|--------------------------------------------|----------------------|----------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Polokwane</b>              | 254.27                                     | 100.6                | 103.6                | 101.9                | <u>2 dams serve Polokwane</u><br>1. Flag Boshielo Dam<br>2. Ebenezer Dam                                                                                                                    |
| <b>Crocodile West</b>         | 444                                        | 93.5                 | 92.8                 | 88.7                 | <u>7 dams serve Tshwane up to Rustenburg:</u><br>1. Hartbeespoort Dam<br>2. Rietvlei Dam<br>3. Bospoort Dam<br>4. Roodeplaat Dam<br>5. Klipvoor Dam<br>6. Vaalkop Dam<br>7. Roodekopjes Dam |
| <b>uMgeni System</b>          | 923                                        | 100.5                | 90.6                 | 91.5                 | <u>5 dams serve Ethekwini, iLembe &amp; Msunduzi:</u><br>1. Midmar Dam<br>2. Nagle Dam<br>3. Albert Falls Dam<br>4. Inanda Dam<br>5. Spring Grove Dam                                       |
| <b>Cape Town System</b>       | 889                                        | 80.9                 | 83.5                 | 81.6                 | <u>6 dams serve the City of Cape Town:</u><br>1. Voelvlei Dam<br>2. Wemmershoek Dam<br>3. Berg River Dam<br>4. Steenbras-Lower Dam<br>5. Steenbras-Upper Dam<br>6. Theewaterskloof Dam      |
| <b>Crocodile East</b>         | 159                                        | 100.6                | 83.4                 | 85.8                 | <u>Kwena Dam supplies Nelspruit, Kanyamazane, Matsulu, Malelane and Komatipoort areas &amp; Surroundings</u>                                                                                |
| <b>Orange</b>                 | 7 996                                      | 100.3                | 75.3                 | 75.5                 | <u>2 dams service parts of the Free State, Northern and Eastern Cape Provinces:</u><br>1. Gariep Dam<br>2. Vanderkloof Dam                                                                  |
| <b>uMhlathuze</b>             | 301                                        | 100.2                | 94.7                 | 95.2                 | <u>Goedertrouw Dam supplies Richards Bay, Empangeni Towns, small towns, surrounding rural areas, industries and irrigators, supported by lakes and transfer from Thukela River</u>          |

*Table 4: Water Supply Systems with Restrictions*

| Water Supply Systems    | Restrictions                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Algoa WSS</b>        | The decision date was changed from 1 June to 1 November 2023, therefore new AOA was conducted, and water restrictions were imposed as from 1 November 2023, Urban (Domestic and Industrial) = 5%, Irrigation = 15% for Kouga Sub-system and Urban (Domestic and Industrial) = 40%, Irrigation = 50% for the Kromme Sub-system, Gazetted on 26 April 2024 (Notice No. 50569) |
| <b>Bloemfontein WSS</b> | A 15% restriction has been recommended on Domestic and Industrial water supply when the system drops below 95%, notice is yet to be gazetted                                                                                                                                                                                                                                |
| <b>Polokwane WSS</b>    | 20% restrictions on Domestic and Industrial                                                                                                                                                                                                                                                                                                                                 |

## **LESOTHO HIGHLANDS TUNNEL CLOSURE**

The collaborative maintenance operation being carried out by the Trans-Caledon Tunnel Authority (TCTA) and the Lesotho Highlands Development Agency (LHDA) is in progress. It commenced after the closure of the tunnel system on 1 October 2024. This essential undertaking aims to ensure the long-term functionality and safety of the tunnel infrastructure, which plays a vital role in the region's water supply. The TCTA is specifically managing the maintenance work on the Delivery Tunnel North, located in South Africa, while the LHDA is focused on the transfer tunnels connected to the Muela hydropower station in Lesotho.

According to the Department of Water and Sanitation (DWS, 2024), the previous maintenance shutdown in 2019 revealed alarming issues, such as extensive wear and tear on the steel liners of the tunnels, necessitating urgent repairs on both the South African and the Lesotho sides. The scope of the current work is comprehensive, it includes grit-blasting the steel-lined sections around the entire circumference of the tunnels, which aims to remove corrosion and prepare the surfaces for reapplication of protective coatings. This crucial step, along with various other maintenance and repair activities identified during the 2019 shutdown, is planned to take ample time.

The goal is to reinforce the infrastructure to withstand the test of time and ensure reliable operation for the next 20 to 30 years. However, this extensive shutdown comes with considerable implications for water supply among users along the Liebenbergsvlei River and its many tributaries. The Liebenbergsvlei River, which is fed directly by outflows from the tunnel, is crucial for the towns of Bethlehem, Reitz, and Tweeling, as well as for local licensed irrigators. To mitigate challenges in water supply, preparations are to fill the Saulspoort Dam at the onset of the shutdown. DWS analysis shows that a fully stocked Saulspoort Dam will be capable of meeting local water demands—including those of Bethlehem, Reitz, and Tweeling—for an impressive duration of up to nine months, which comfortably exceeds the expected six-month closure of the tunnel.

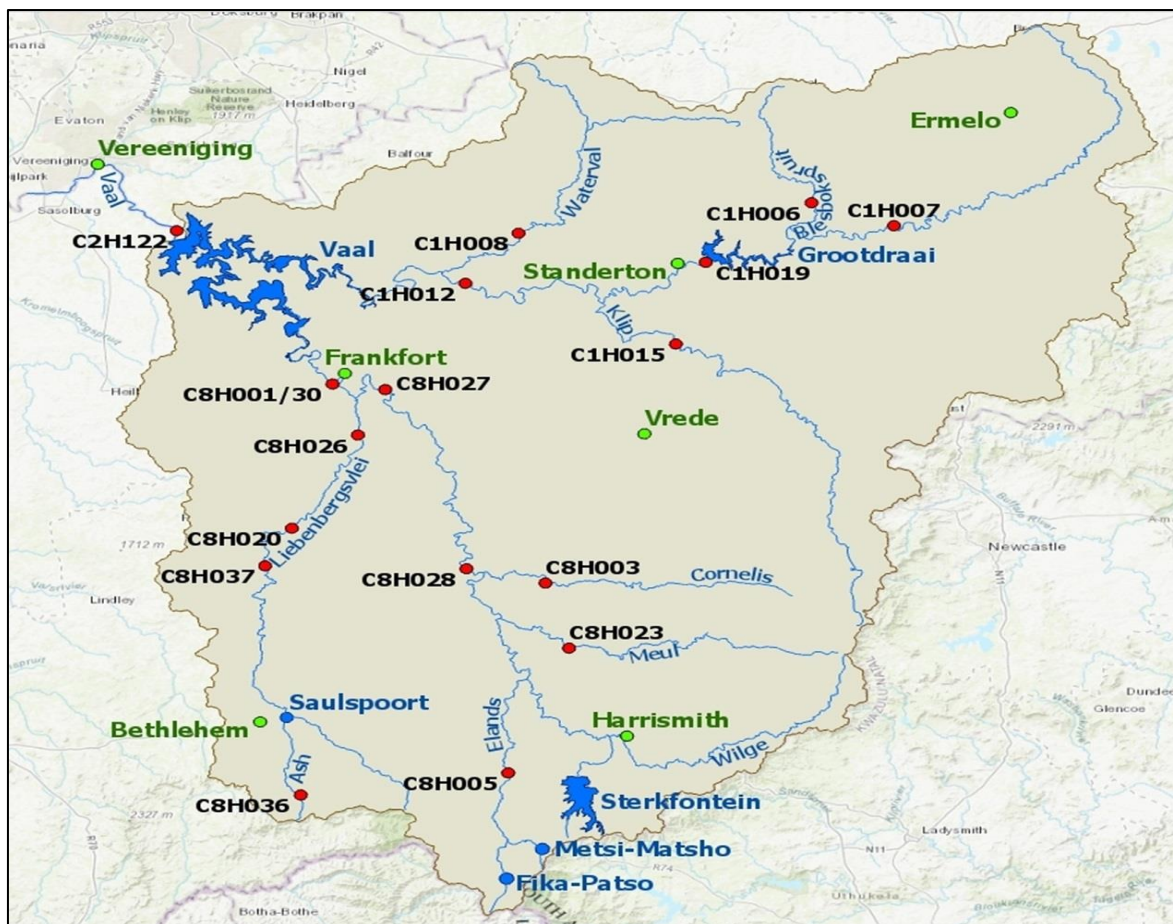
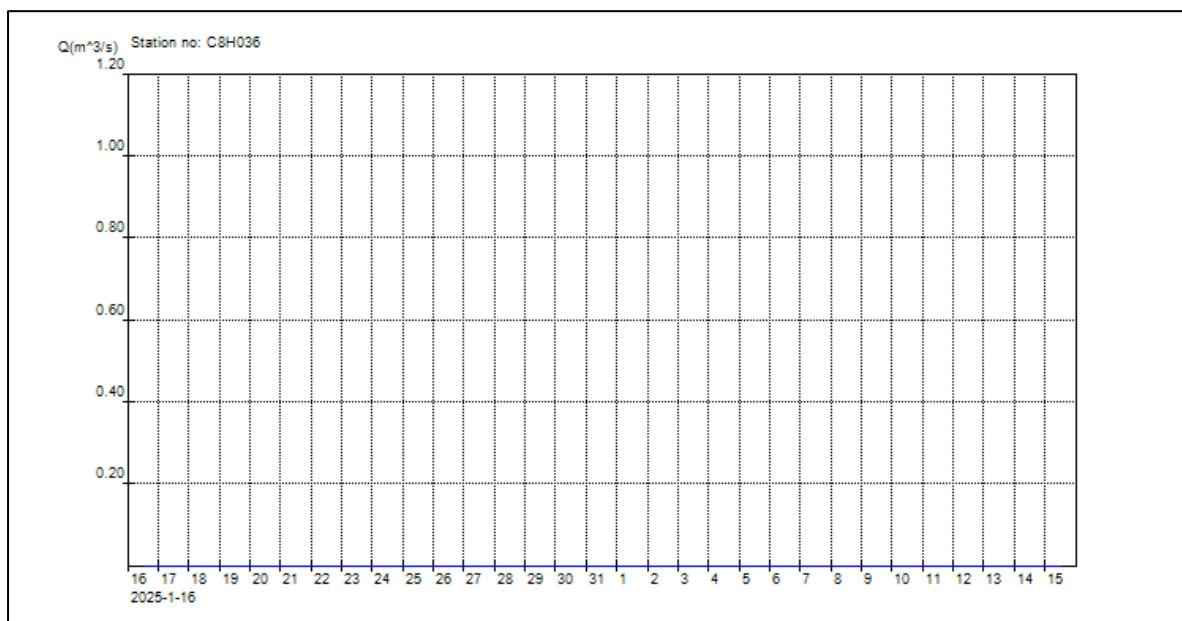


Figure 9: Upper Vaal Flow Monitoring sites (Green Dot – Towns, Blue Dot – Standalone Dams, Red Dot – Flow monitoring Point). Source <https://www.dws.gov.za/hydrology/Unverified/Home/OrangeVaal>

## FLOWS

The current flow conditions of the Ash River Outlet are presented in Figure 10. On 31 January 2025, the outlet at gauging station number C8H036 continued to experience a complete termination of water flow. This is due to the tunnel closure and is expected to remain unchanged for the next few months.



*Figure 10: Ash at outlet from Katse Dam*

*source: <https://www.dws.gov.za/Hydrology/Unverified/FlowDetail/6671>*

As of 31 January 2025, the Saulspoort dam sits at an impressive 77.83% of its FSC, reflecting the significant impact of recent rainfall (Figure 11). The abundant precipitation has resulted in multiple inflows, contributing to a robust water level. During a stakeholder meeting on 12 January 2025, DWS shared that the current volume of water stored in the dam exceeds initial predictions by 5.2 million cubic meters. This notable difference highlights the strong influence of recent weather patterns on the dam's capacity. The forecasts are that the water levels will remain stable and manageable until the end of March, providing a sense of security for both, the dam's operations and the surrounding communities.

Figure 12 depicts that on 31 January 2025, the water flow at the Liebenbergsvlei River at Reward C8H037 recorded a flow rate of approximately 0.025 m³/s. In comparison, on 18 January 2024, the flow rate was around 1.68 m³/s. This indicates a slight decrease in the water flow. The increase in water flow at Liebenbergsvlei River can be attributed to high temperatures causing evaporation

Additionally, the gauging weir, designated as storage weir station number C8H026, is essential for providing water to the Reitz area. This infrastructure is critical for maintaining water supply in the region. As depicted in Figure 13, the flow data presents a concerning downward trend; on 18 January 2025, the flow rate was measured at a 1.68 m³/s. However, by January 31, 2025, this figure decreased to 0.33 m³/s, highlighting a significant reduction in water availability over a short period.

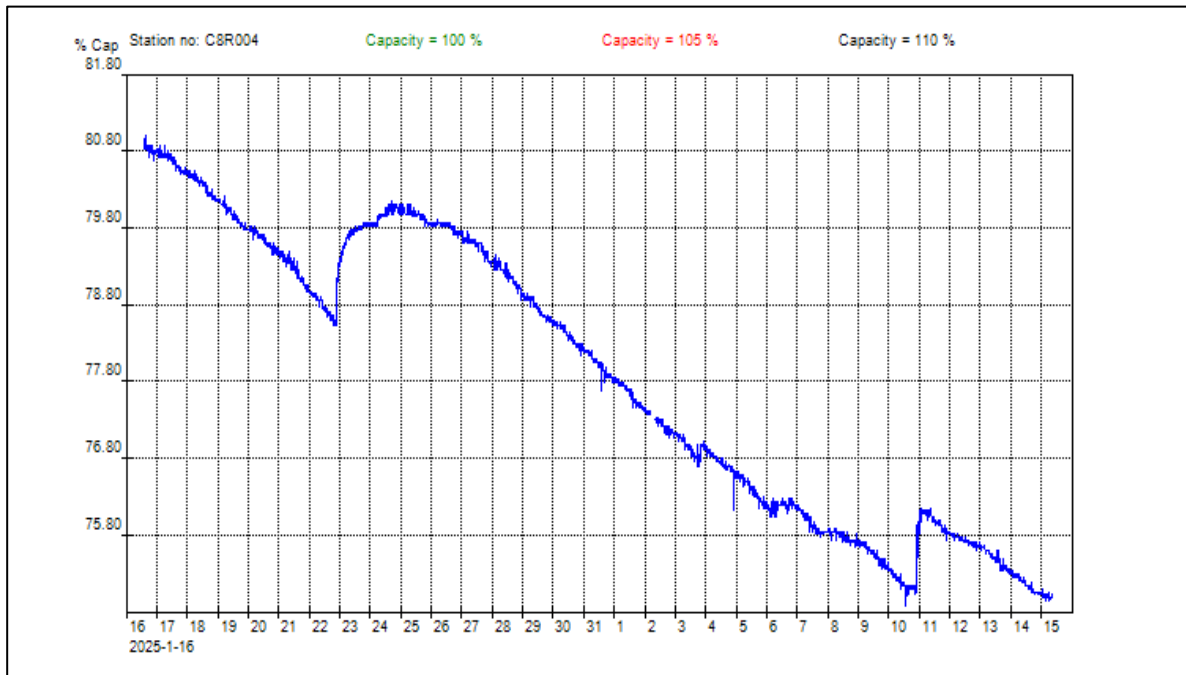


Figure 11: Liebenbergsvlei at Saulspoort Dam

Source: <https://www.dws.gov.za/Hydrology/Unverified/FlowDetail/1122>

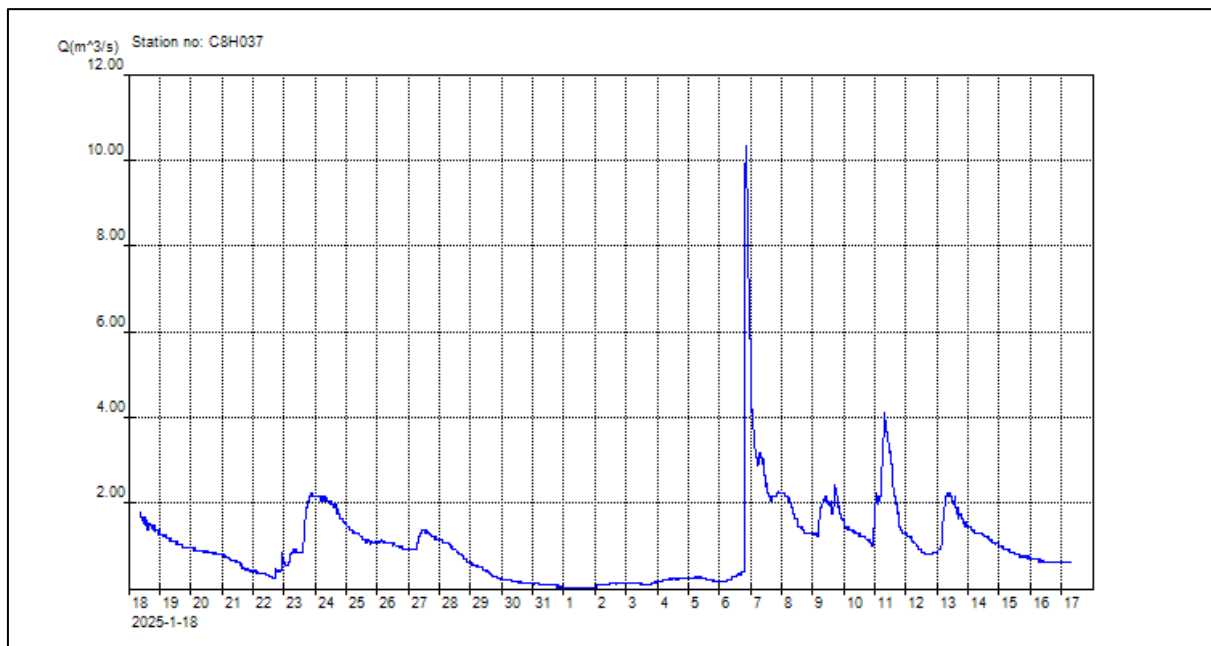
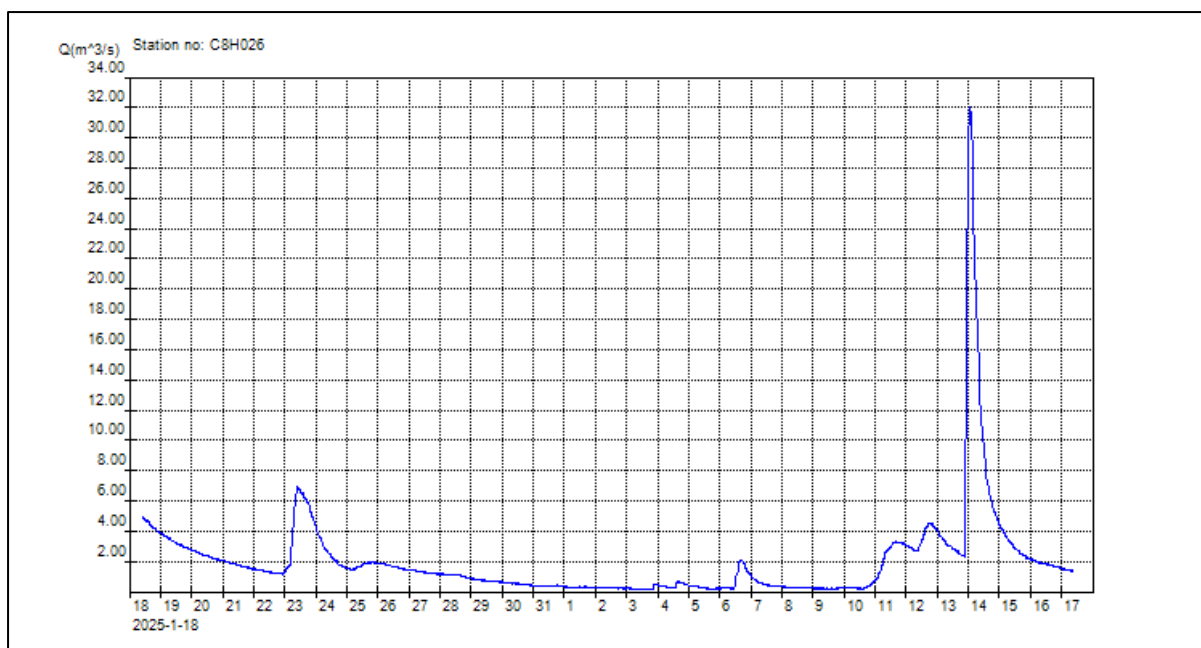


Figure 12: Liebenbergsvlei at Reward

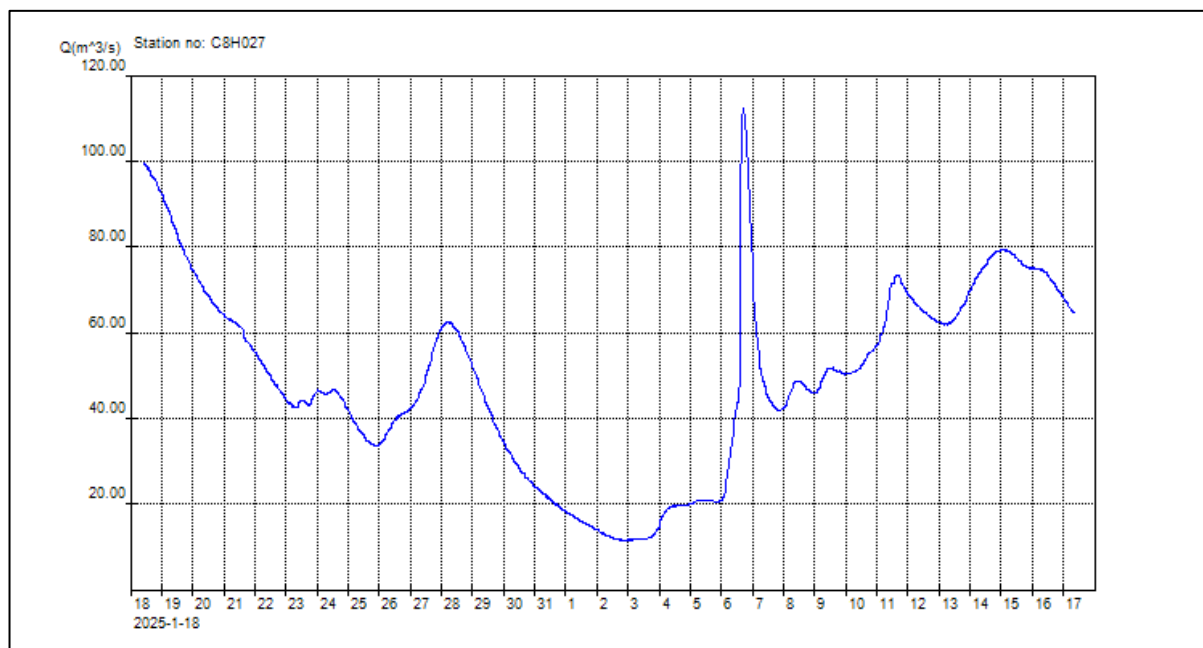
Source: <https://www.dws.gov.za/Hydrology/Unverified/FlowDetail/6703>



*Figure 13: Liebenbergsvlei at Frederiksdal.*

*Source: <https://www.dws.gov.za/Hydrology/Unverified/FlowDetail/2793>*

A comprehensive analysis of the data from gauging station C8H027, as depicted in Figure 14, reveals critical observations regarding the water levels of the Wilge River over a short period. On 18 January 2025, the river experienced a robust flow rate of 99.1 m<sup>3</sup>/s, indicating healthy water levels likely supported by preceding rainfall in the catchment area. However, this situation changed intensely within just two weeks; by January 31, 2025, the flow rate had dropped to 18.3 m<sup>3</sup>/s. This significant decline in river flow highlights a trend that can be correlated with a notable reduction in rainfall in the surrounding catchment area, replenishing the river's flow.



*Figure 14: Wilge at Ballingtomp. Source*

*<https://www.dws.gov.za/Hydrology/Unverified/FlowDetail/2252>*

## CONCLUSION

The substantial decreases in water flow and levels observed at various monitoring stations indicate a declining availability of water. The current trends show a concerning situation regarding the catchment area's ability to provide a reliable water supply to municipalities affected by the LHWP tunnel closure.

However, the Department of Water and Sanitation (DWS) continuously monitors water levels and flow rates at various gauging stations to quickly detect any changes in river flows. This proactive approach allows for timely interventions and informed decision-making to manage water resources effectively. Recently, rainfall has significantly improved the dam's capacity, with the Saulspoort Dam currently at 77.83% of its full supply capacity. This suggests that the region has received considerable precipitation, positively affecting water storage levels. The dam ensures a sustainable water supply for the local municipalities of Dihlabeng, Nkeotana, and Mafube, which are situated along the Liebenbergsvlei River.

The DWS is actively engaging with stakeholders to share updates and forecasts. This collaborative approach assists in planning and implementing measures to address any water supply challenges. The positive aspects of proactive monitoring, recent rainfall, intervention measures in the municipalities, stakeholder engagement, and effective water management strategies provide a strong foundation for addressing these issues and ensuring a sustainable water supply during the LHWP tunnel closure.

## ***TCTA Update: Progress on the South African Side***

The maintenance and refurbishment of the Lesotho Highlands Water Tunnel have been ongoing since its closure on October 31, 2024. The repair work is currently on schedule, and the tunnel is expected to reopen at the end of March this year. As of January, the painting has been proceeding in the tunnel however, the rainfall has increased humidity. The refurbishing of the valves is also underway. The Department of Water and Sanitation (DWS) is closely monitoring the progress of the repairs and is confident that the work will be completed as planned

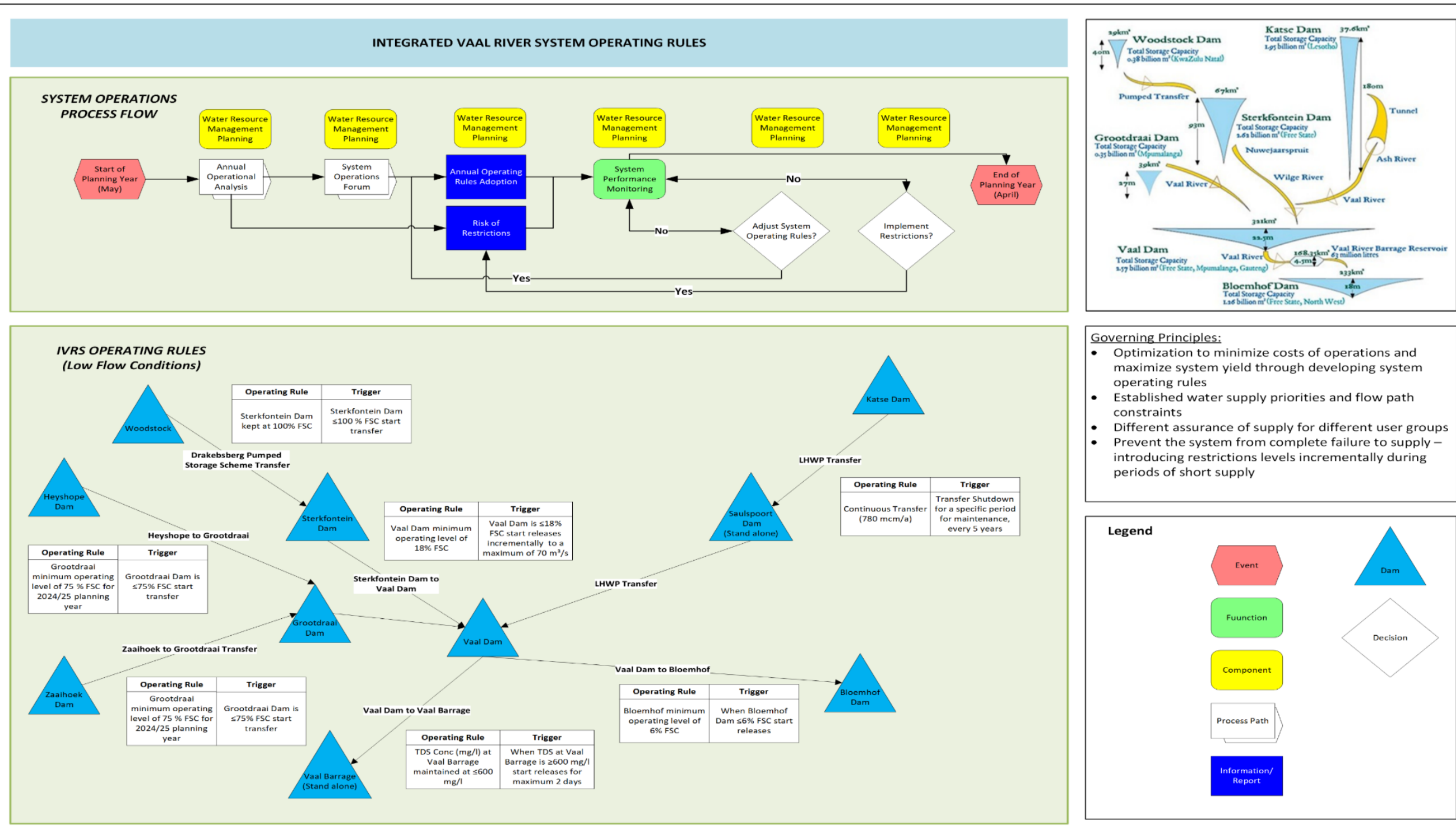


Figure 12: Summary of the Integrated Vaal River System Operating Rules for planning year May 2024 – April 2025

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**Accessible on the Website:**

National State of Water Reporting Web page:

<https://www.dws.gov.za/Projects/National%20State%20of%20Water%20Report/default.aspx>

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## Glossary

| Term                | Definition                                                                                                                                                                                                                                                                               |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DM                  | District Municipalities                                                                                                                                                                                                                                                                  |
| DWS                 | Department of Water and Sanitation                                                                                                                                                                                                                                                       |
| ENSO                | El Niño-Southern Oscillation                                                                                                                                                                                                                                                             |
| FSC                 | Full Storage Capacity                                                                                                                                                                                                                                                                    |
| HY                  | Hydrological Year                                                                                                                                                                                                                                                                        |
| LHDA                | Lesotho Highlands Development Agency                                                                                                                                                                                                                                                     |
| SAWS                | South African Weather Service                                                                                                                                                                                                                                                            |
| TCTA                | Trans-Caledon Tunnel Authority                                                                                                                                                                                                                                                           |
| SPI                 | Standardized Precipitation Index (SPI) is a widely used index to characterise meteorological drought on a range of timescales. On short timescales, the SPI is closely related to soil moisture, while at longer timescales, the SPI can be related to groundwater and reservoir storage |
| WSS                 | Water Supply System                                                                                                                                                                                                                                                                      |
| Water Supply System | A typical town/city water supply system consists of a gravity or pumping-based transmission and distribution system from a local or distant water source with a needed water treatment system                                                                                            |

## References

South African Weather Service (SAWS), 2024. Media Release Report: *Heavy rain and flooding are expected over parts of the Eastern Cape and KwaZulu-Natal from Sunday to Tuesday, due to a cut off low pressure system* – (19 October 2024). SAWS, South Africa.