

March 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.

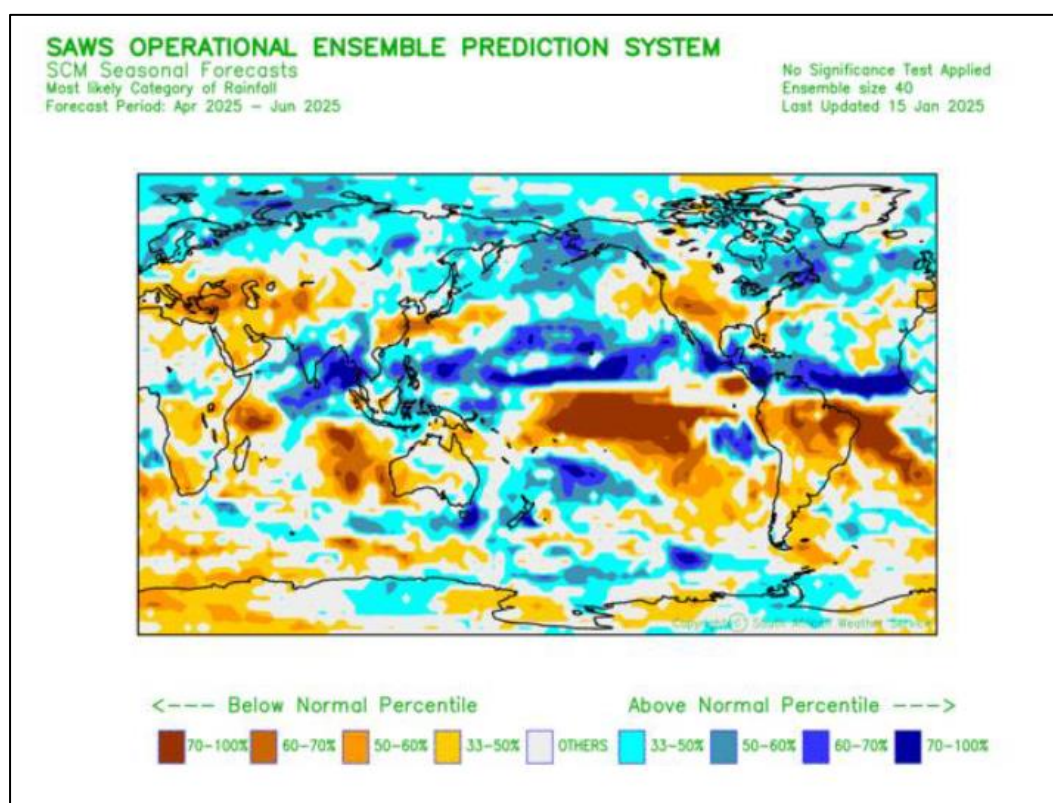
The El Niño-Southern Oscillation (ENSO) has recently crossed the La Niña threshold and is predicted to remain on the boundary of this threshold for the next few months. At the end of March 2025, the national dam levels were 91.9% of Full Supply Capacity (FSC). This level is 6.6% higher than last year same time, when the storage levels were at 85.3% of FSC. At least 49% of the national dams were above 100% of FSC (either full or spilling), while 41% were between 50 and 100% of FSC, 9% were between 10 and 50% of FSC, and 1% were below 10% of FSC (critically low). At the end of January 2025, the Vaal Dam, one of the country's largest dams, was reported to have reached 24.1%, which was nearing the set 18% critical levels, compelling water release from Sterkfontein Dam. Persistent heavy rains in January, February, and March 2025 drastically improved Vaal Dam storage levels to an impressive 107.3% of FSC. While year-on-year, the Vanderkloof Dam, located between Northern Cape and Free State, has declined significantly by -22.3%. Month-to-month, the Vanderkloof Dam levels have improved by 4.7% from 68.5% of FSC at the end of February 2025. Month-to-month, the Vanderkloof Dam has improved by 4.7% and reached 73.2% end of March 2025.

The most recent 24-month Standardised Precipitation Index (SPI) show extreme drought status is indicated in some parts of Thabo Mofutsanyana and ZF Mgcawu DMs. Severe drought status is indicated in several DMs in the last 24 months, including ZF Mgcawu in the Northern Cape, Bojanala and Ngaka Modiri Molema in the North West, Thabo Mafutsanyane in the Free State, Gert Sibande in Mpumalanga, and Sedibeng in Gauteng. 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.

## Weather Forecast and Early Warning

The El Niño-Southern Oscillation (ENSO) has recently returned to a neutral state and is predicted to be in a neutral state for the foreseeable future. However, ENSO has limited influence on South Africa during the winter seasons and is not expected to have a significant impact in the next few months. There is still significant uncertainty on the occurrence of La Niña at this stage. As the seasons transition into late autumn (Apr-May-Jun) and early to mid-winter (May-Jun-Jul and Jun-Jul-Aug), the focus of the forecasts shifts towards the south-western regions of the country, along with the southern and eastern coastal areas (Figure 1). The south-western part of the country is expected to experience below-normal rainfall in the forecasted seasons, while the southern and eastern coastal areas are projected to receive predominantly above-normal rainfall.

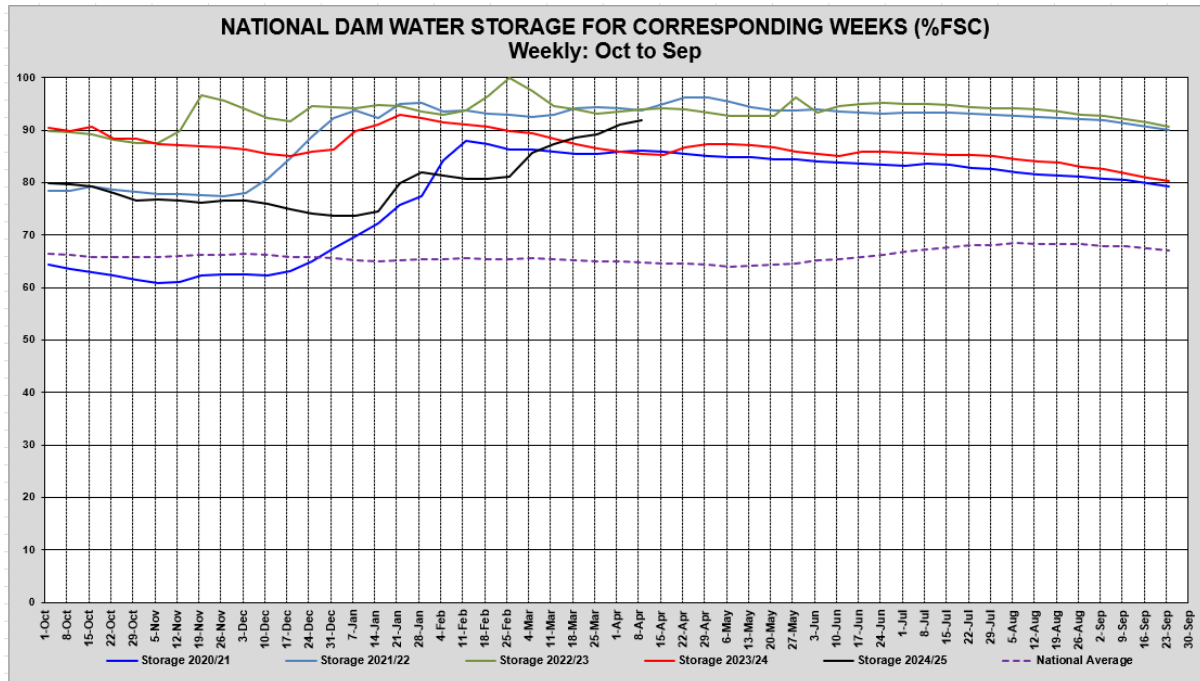
Minimum temperatures are anticipated to remain predominantly above normal throughout the majority of the forecast period. Maximum temperatures are expected to be above-normal as well with the notable exception of the southern and south-eastern coastal areas, that are expected to have below-normal.



*Figure 1 April-May-June, AMJ (2025) global prediction for total rainfall probabilities*

## National Dam Storage

The national water storage trends for the current hydrological year (2024/25) against the past four hydrological years are graphically presented in Figure 2. The graph shows that at the end of March 2025, the national dam levels were 91.9% of Full Supply Capacity (FSC). This level is 6.6% higher than last year same time, when the storage levels were at 85.3% of FSC.



*Figure 2: National Dam Storage at the end of March 2025*

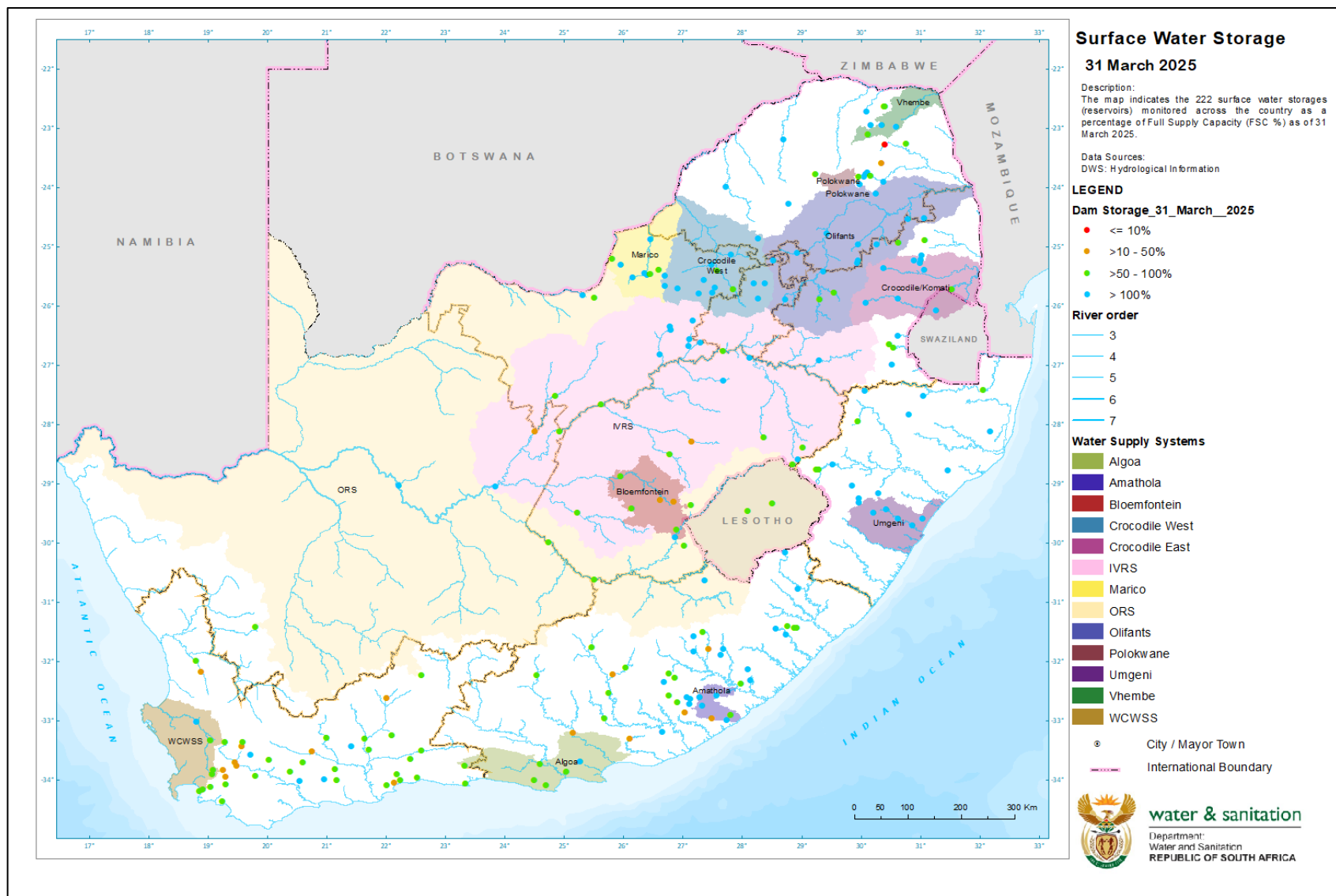
Table 1 summarises the status of **222** dams from South Africa, and the Kingdoms of Eswatini and Lesotho. Apart from the Western Cape, all provinces' and the two landlocked Kingdoms' dam levels were above 70% of FSC at the end of March 2025. At least **109 (49%)** of the dams were above 100% of FSC (either full or spilling), while **92 (41%)** were between 50 and 100% of FSC, **20 (9%)** were between 10 and 50% of FSC, and only **one** dam was below 10% of FSC (critically low). In Gauteng, all 5 (100%) dams were above 100% of FSC, followed by KwaZulu-Natal with 15 out of 19 (79%), North West with 21 out of 28 (75%). Year-on-year North West dam levels rose by 29.1%, followed by Gauteng rose by 13.6%.

The spatial distribution of the 222 dams, showing their respective storage levels as of 31 March 2025, is presented in Figure. Most of the 109 dams above 100% of FSC are located in the eastern half of South Africa, including one dam in the Kingdom of Eswatini. In the Western Cape, 9 out of 44 dams (22%) had levels below 50% of FSC. This is consistent with the summer rainfall patterns of the western parts of the country.

*Table 1: National Surface Water Storage – 31 March 2025*

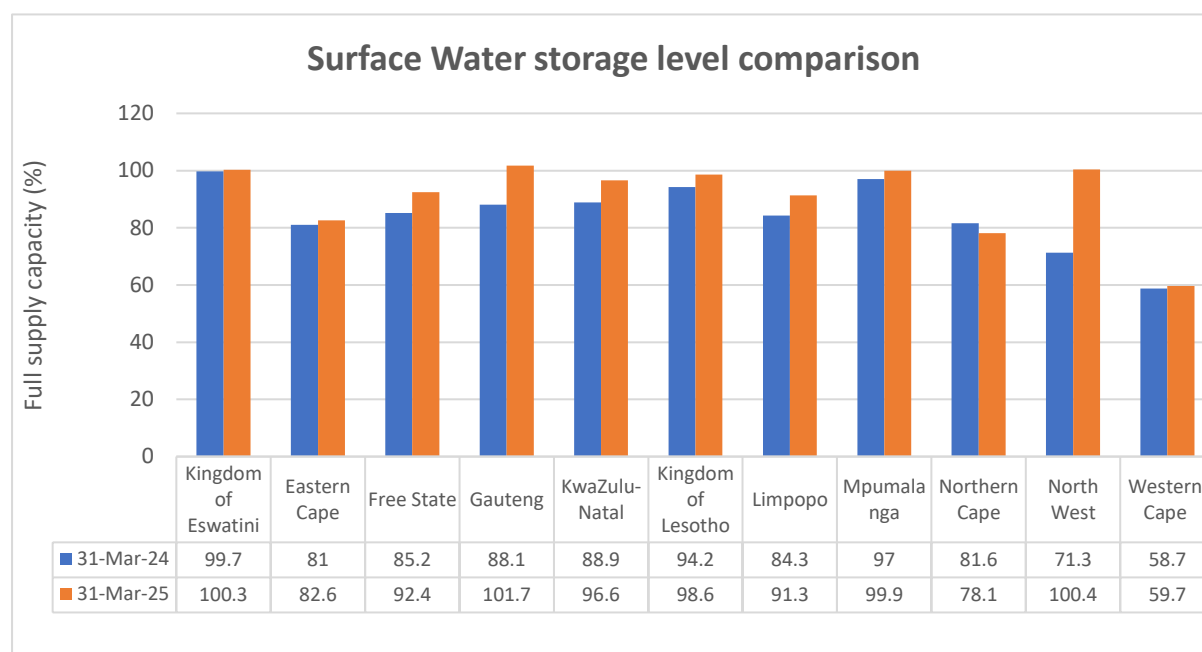
Provinces/ Countries sharing Water Resources with RSA	FSC million m <sup>3</sup>	Total Number of Dams	Number of Dams per Province/Country				% of Full capacity		
			<10% (% of FSC)	10 - <50 (% of FSC)	50 - <100 (% of FSC)	>=100 (% of FSC)	Last Year 31/03/2024	Last Week 24/03/2025	This Week 31/03/2025
Kingdom of Eswatini	333.75	1				1	99.7	99.8	100.3 ↑
Kingdom of Lesotho	2362.63	2			2		94.2	97.2	98.6 ↑
Eastern Cape	1727.7	46		6	19	21	81	83.3	82.6 ↓
Free State	15656.9	21		3	14	4	85.2	91	92.4 ↑
Gauteng	128.08	5				5	88.1	101.9	101.7 ↓
KwaZulu-Natal	4909.66	19			4	15	88.9	95.9	96.6 ↑
Limpopo	1484.64	29	1	1	7	20	84.3	90.6	91.3 ↑
Mpumalanga	2538.2	22			7	15	97	99.4	99.9 ↑
Northern Cape	146.33	5		1	2	2	81.6	76.8	78.1 ↑
North West	866.23	28			7	21	71.3	98.8	100.4 ↑
Western Cape Other Rainfall	269.55	22		3	16	3	62.5	72.6	72.6 =
Western Cape Winter Rainfall	1596.8	22		6	14	2	58	59.2	57.5 ↓
Western Cape - Total	1866.35	44	0	9	30	5	58.7	61.1	59.7 ↓
<b>Grand Total:</b>	<b>32020.47</b>	<b>222</b>	<b>1</b>	<b>20</b>	<b>92</b>	<b>109</b>	<b>85.3</b>	<b>91</b>	<b>91.9 ↑</b>





*Figure 3: Surface Water Storage Levels – March 2025*

The comparison of the storage levels per province (plus the Kingdoms of Eswatini and Lesotho) for March 2025 to March 2024 is graphically presented on Figure 4. Only Northern Cape showed a decline in dam storage at -3.5%. While, North West is showing the most drastic increase at +29% FSC, year-on-year. The general increase in the overall dam storage indicates higher-than-normal stream flows from above-normal rainfall received in March 2025. The most notable increase were observed in Gauteng (+13.6%), North West (+29.1%) and Kwazulu-Natal (+7.7%). The Kingdom of Lesotho has also shown a significant increase of 4.4% in dam storage compared to the previous year.



*Figure 4: Water Storage Levels March 2024 vs. March 2025*

The comparison between March 2024 and March 2025 of the country's five largest dam storage is presented in Table 2.

*Table 2: Storage Levels comparison for the Five Largest storage dams (by volume).*

Reservoir	River	Province	Full Supply Capacity (Mm <sup>3</sup> )	31 March 2024 (% FSC)	31 March 2025 (% FSC)	Difference (%)
Gariep Dam	Orange River	Free State	4903.45	84.2	98.5	+14.3
Vanderkloof Dam	Orange River	Free State & Northern Cape	3136.93	95.5	73.2	-22.3
Sterkfontein Dam	Nuwejaarspruit River	Free State	2616.90	99.8	99	-0.8
Vaal Dam	Vaal River	Free State	2560.97	62.5	107.3	+44.8
Pongolapoort Dam	Phongolo River	KwaZulu-Natal	2395.24	84.2	92.5	+8.3

At the end of January 2025, the Vaal Dam, one of the country's largest dams, was reported to have reached 24.1%, which was nearing the set 18% critical levels, compelling water release from Sterkfontein Dam. The Vaal Dam reached an impressive 107.3% of FSC, thanks to persistent heavy rains in January, February, and March 2025. While, year-on-year, the Vanderkloof Dam levels, located



between Northern Cape and Free State, have declined significantly by -22.3%. Month-to-month, the Vanderkloof Dam has improved by 4.7% and reached 73.2% end of March 2025.

Another significant year-on-year storage improvement was observed in the critical level space at the Middle-Letaba Dam in Limpopo, which rose 6.6% higher to reach 8.8% of FSC (Table 3).

*Table 3: Dam currently below 10% of FSC compared to last year*

Reservoir	River	Province	Full Supply Capacity (Mm <sup>3</sup> )	31 March 2024 % FSC)	31 March 2025 (% FSC)	Difference (%)
Middel-Letaba Dam	Middel-Letaba River	Limpopo	171.93	2.2	8.8	+6.6

Figure 5 presents the 24-month Standardised Precipitation Index (SPI) analysed end of February 2025. Extreme drought status is indicated in some parts of Thabo Mofutsanyana and ZF Mgcawu DMs. Severe drought status is indicated in several DMs in the last 24 months, including ZF Mgcawu in the Northern Cape, Bojanala and Ngaka Modiri Molema in the North West, Thabo Mafutsanyane in the Free State, Gert Sibande in Mpumalanga, and Sedibeng in Gauteng. 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.

## District Municipalities

The year-on-year comparison of water storage levels per district municipality is presented in Figure 6. Only the Ngaka Modiri Molema DM experienced a substantial increase (>60%) in dam storage levels compared to last year. Seven other district municipalities indicated a reasonable increase (>10%) in dam storage over the last year. Three district municipalities experienced significant declines (>-10%) in dam levels, namely, Chris Hani DM, Xhariep DM, Francis Baard DM, and Mangaung DM. Based on the 24-month SPI discussed in the previous section, some of these district municipalities have been experiencing drought.

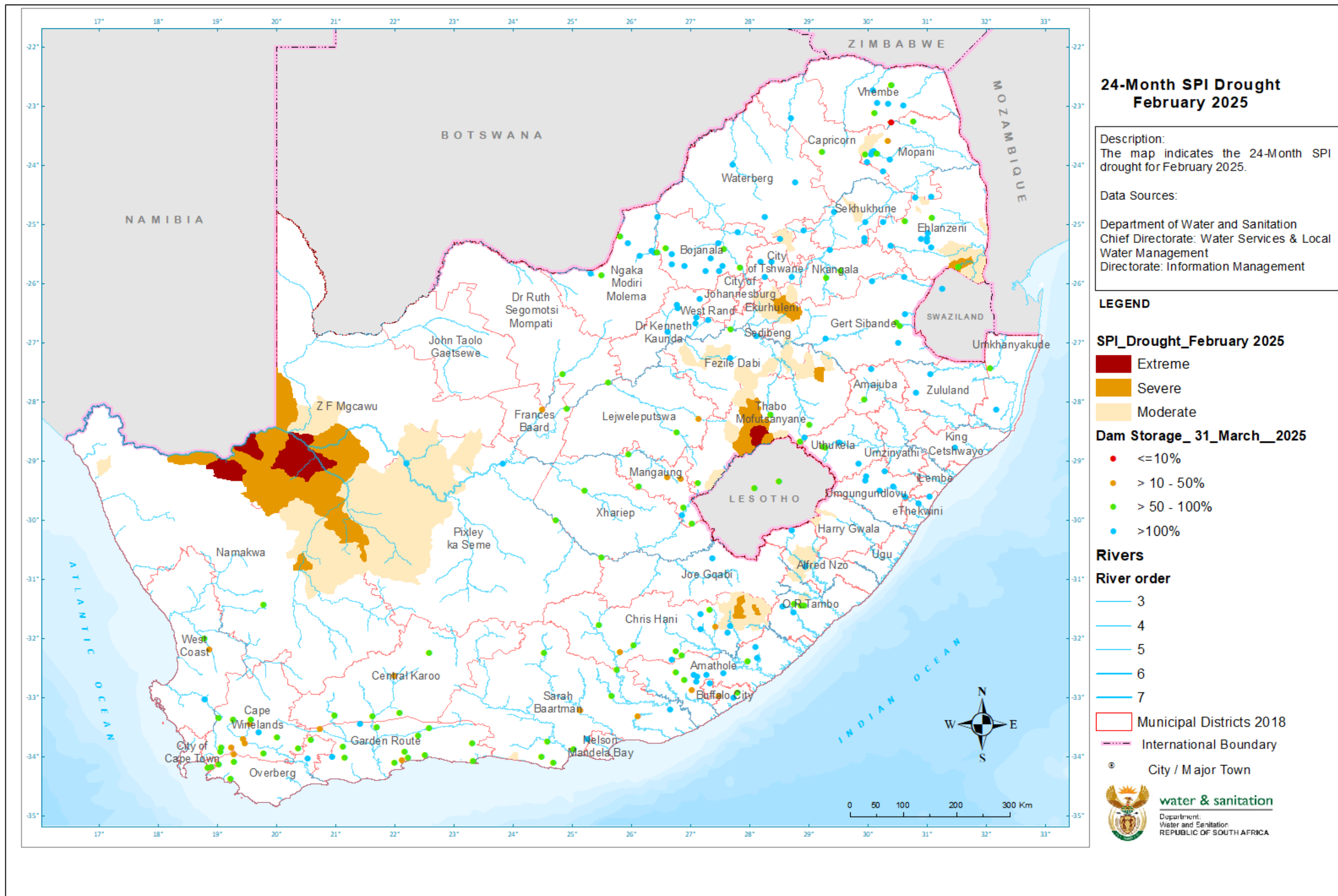
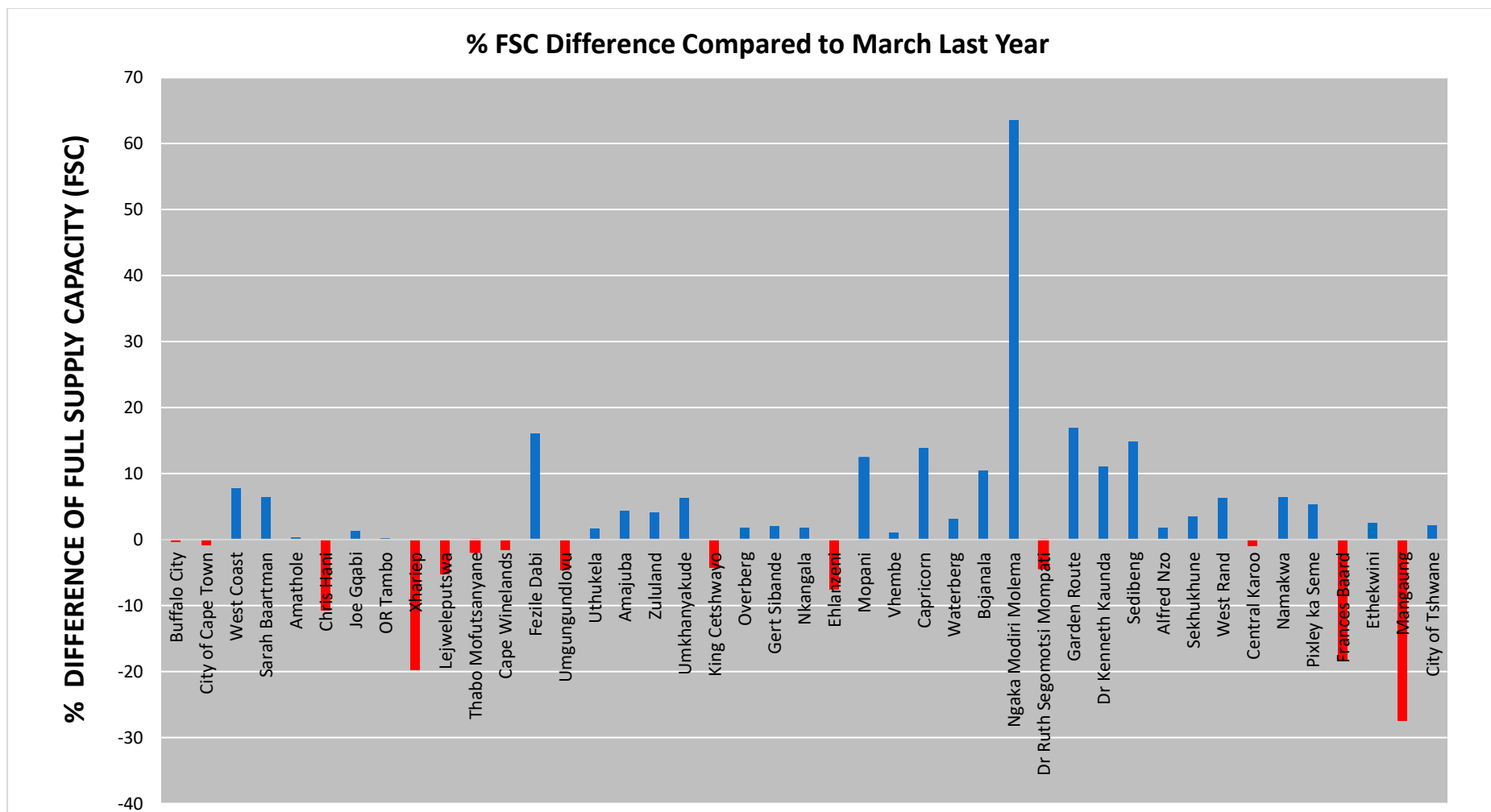


Figure 5: 24-Month Standardised Precipitation Index (SPI) – February 2025, and dam levels-March 2025



*Figure 6: Comparison of water storage levels per District Municipality March 2024 vs March 2025*

## Water Supply Restrictions

The water supply systems and their respective restrictions are given in Table 4. Due to infrastructure limitations, permanent restrictions are applicable for the Polokwane and Bloemfontein Water Supply Systems. The National Water Supply Systems' dam storage levels are presented in Table 5. The Integrated Vaal River System (IVRS) is the largest and most economically significant system, with over 14 dams totalling over 10 546 Mm<sup>3</sup>. The second biggest system is the Orange with only two big dams, totalling over 7 996 Mm<sup>3</sup>.

*Table 4: Water Supply Systems with Restrictions*

System Name	Areas	Water Users	% Restrictions	Gazette Information	Next Review
Algoa WSS	Kromme subsystem	NMBM & Kouga LM Irrigation	23% domestic & industrial 43% irrigation	Recommended but not gazetted	Nov' 2025
Mangaung WSS	Caledon-Modder	Mangaung Metro	25% domestic & industrial when below 95%	13 Sep' 2024 Gazette no.5200	May 2025
Liebensbergvlei River	Run-off River abstractions Free State towns and irrigation	Towns of Bethlehem, Reitz, Tweeling within Dihlabeng, Mafube and Nketoana Local Municipalities	Irrigation users to abstract water on an alternative day basis Municipalities to use water sparingly	20 Sep' 2024  Gazette no.5223	Once off until the end of the LHWP tunnel shutdown for the planned maintenance
Middle Letaba/ Nsami	Middle Letaba/ Nsami	Irrigation Mopani Municipality	100% irrigation 25% domestic	28 Jun' 2024	May 2025
Mutshedzi Dam	Mutshedzi Dam	Makhado Municipality	35% domestic		May 2025
Nzhelele	Nzhelele	Nzhelele Government Irrigation Scheme Nzhelele Regional Scheme	20% domestic 20% irrigation	28 Jun' 2024	May 2025
Nwanedi/ Luphephe	Nwanedi/ Luphephe	Mutale Local Municipality Irrigation	20% D&I 45% irrigation	28 Jun' 2024	May 2025
Polokwane Water Supply System Letaba System	Seshego, Mashashane, Houtrivier and Chuniespoort Dams Ebenezer and Groot Letaba System	Capricorn District, Polokwane Local Municipality Groot Letaba Water Users Association, Mopani Municipality	30% domestic & industrial water uses 27% agricultural use	28 Jun' 2024	May 2025

*Table 5: Water Supply Systems storage levels February comparisons*

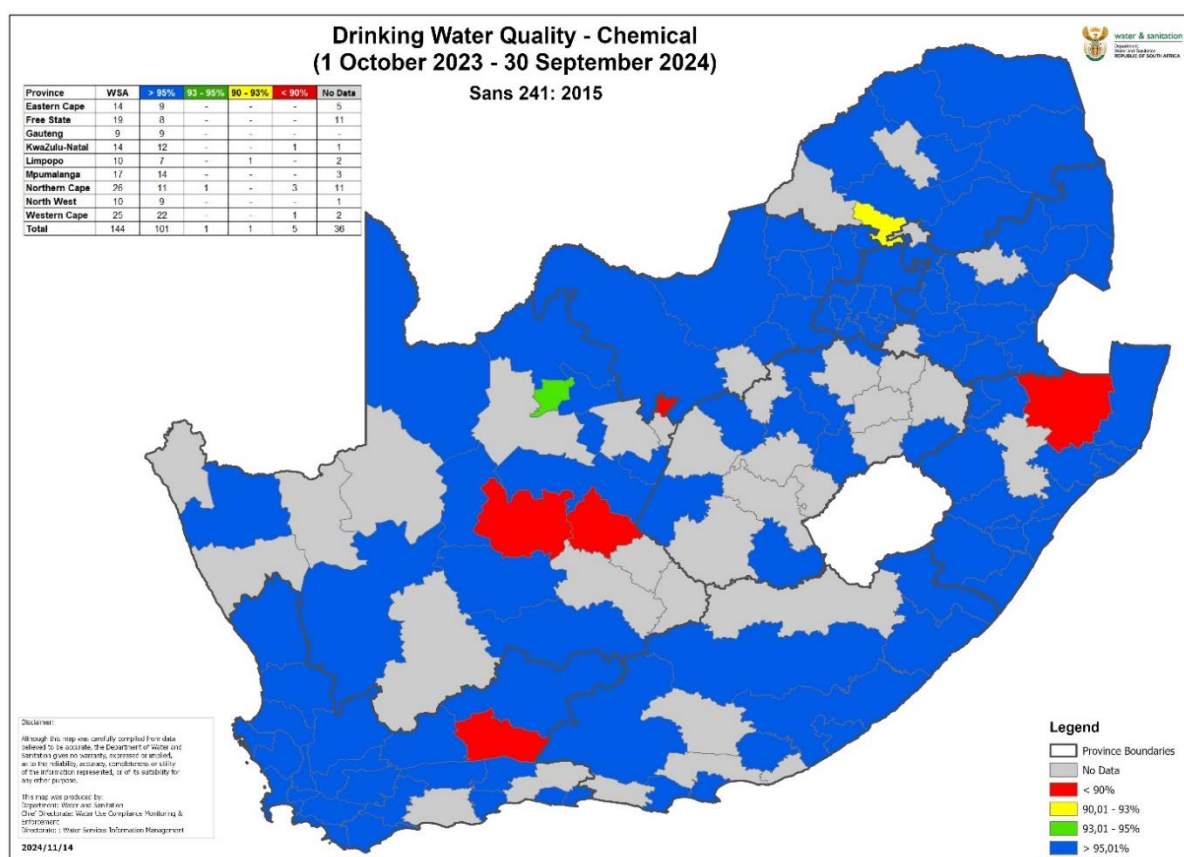
Water Supply Systems/ Clusters	Capacity in 10 <sup>6</sup> m <sup>3</sup>	31 Mar. 2024 (% FSC)	24 Mar. 2025 (% FSC)	31 Mar. 2025 (% FSC)	System Description
<b>Algoa System</b>	282	69.6	72.6	72.2	<u>5 dams serve the Nelson Mandela Bay Metro, Sarah Baartman (SB) DM, Kouga LM and Gamtoos Irrigation:</u> 1. Kromrivier Dam 2. Impofu Dam 3. Kouga Dam 4. Loerie Dam 5. Groendal Dam
<b>Amathole System</b>	241	96.3	103.1	96.9	<u>6 dams serve Bisho &amp; Buffalo City, East London:</u> 1. Laing Dam 2. Rooikrans Dam 3. Bridle Drift Dam 4. Nahoon Dam 5. Gubu Dam 6. Wriggleswade Dam
<b>Klipplaat System</b>	57	90	91.3	92.3	<u>3 dams serve Queenstown (Chris Hani DM, Enoch Ngijima LM):</u> 1. Boesmanskrantz Dam 2. Waterdown Dam 3. Ockraal Dam
<b>Butterworth System</b>	14	94.3	100.3	100.3	<u>Xilinxha Dam and Gcuwa weirs serve Butterworth</u>
<b>Integrated Vaal River System</b>	10 546	86.4	100.9	100.9	<u>14 dams serve Gauteng, Sasol, and ESKOM:</u> 1. Vaal Dam 2. Grootdraai Dam 3. Sterkfontein Dam 4. Bloemhof Dam 5. Katse Dam 6. Mohale Dam 7. Woodstock Dam 8. Zaaihoek Dam 9. Jericho Dam 10. Westoe Dam 11. Morgenstond Dam 12. Heyshope Dam 13. Nooitgedacht Dam 14. Vygeboom Dam
<b>Luvuvhu</b>	225	100.8	101.1	101	<u>3 dams serve Thohoyandou etc. :</u> 1. Albasini Dam 2. Vondo Dam 3. Nandoni Dam
<b>Bloemfontein</b>	219	92	72.2	73.2	<u>4 dams serve Bloemfontein, Botshabelo and Thaba Nchu:</u> 1. Rustfontein Dam 2. Groothoek Dam 3. Welbedacht Dam 4. Knellpoort Dam

Water Supply Systems/ Clusters	Capacity in 10 <sup>6</sup> m <sup>3</sup>	31 Mar. 2024 (% FSC)	24 Mar. 2025 (% FSC)	31 Mar. 2025 (% FSC)	System Description
<b>Polokwane</b>	254.27	98.4	104.6	109.1	<u>2 dams serve Polokwane</u> 1. Flag Boshielo Dam 2. Ebenezer Dam
<b>Crocodile West</b>	444	90.1	95.7	99	<u>7 dams serve Tshwane up to Rustenburg:</u> 1. Hartbeespoort Dam 2. Rietvlei Dam 3. Bospoort Dam 4. Roodeplaat Dam 5. Klipvoor Dam 6. Vaalkop Dam 7. Roodekopjes Dam
<b>uMgeni System</b>	923	93.4	102.3	103	<u>5 dams serve Ethekwini, iLembe &amp; Msunduzi:</u> 1. Midmar Dam 2. Nagle Dam 3. Albert Falls Dam 4. Inanda Dam 5. Spring Grove Dam
<b>Cape Town System</b>	889	65.3	65.9	64.5	<u>6 dams serve the City of Cape Town:</u> 1. Voelvlei Dam 2. Wemmershoek Dam 3. Berg River Dam 4. Steenbras-Lower Dam 5. Steenbras-Upper Dam 6. Theewaterskloof Dam
<b>Crocodile East</b>	159	100.4	100.9	100.9	<u>Kwena Dam supplies Nelspruit, Kanyamazane, Matsulu, Malelane and Komatipoort areas &amp; Surroundings</u>
<b>Orange</b>	7 996	88.6	85.7	88.6	<u>2 dams service parts of the Free State, Northern and Eastern Cape Provinces:</u> 1. Gariep Dam 2. Vanderkloof Dam
<b>uMhlathuze</b>	301	101.6	100	100.3	<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>



## Overview of Drinking Water Quality Compliance in South Africa

In South Africa, Water Services Authorities (WSAs) are required to monitor the microbiological and chemical quality of the water provided to the residents at specified intervals, including hourly, daily, weekly, fortnightly, and monthly tests of various types. The Minister is mandated by the Water Services Act (Act No. 108 of 1997) to monitor the performance of all water services institutions and establish and maintain a national information system. In order to oversee the quality of drinking water, the Department has implemented the Integrated Regulatory Information System (IRIS). From October 2023 to September 2024, a total of 144 water services authorities were monitored, and the results for the chemical water quality for drinking water are illustrated in Figure 7.

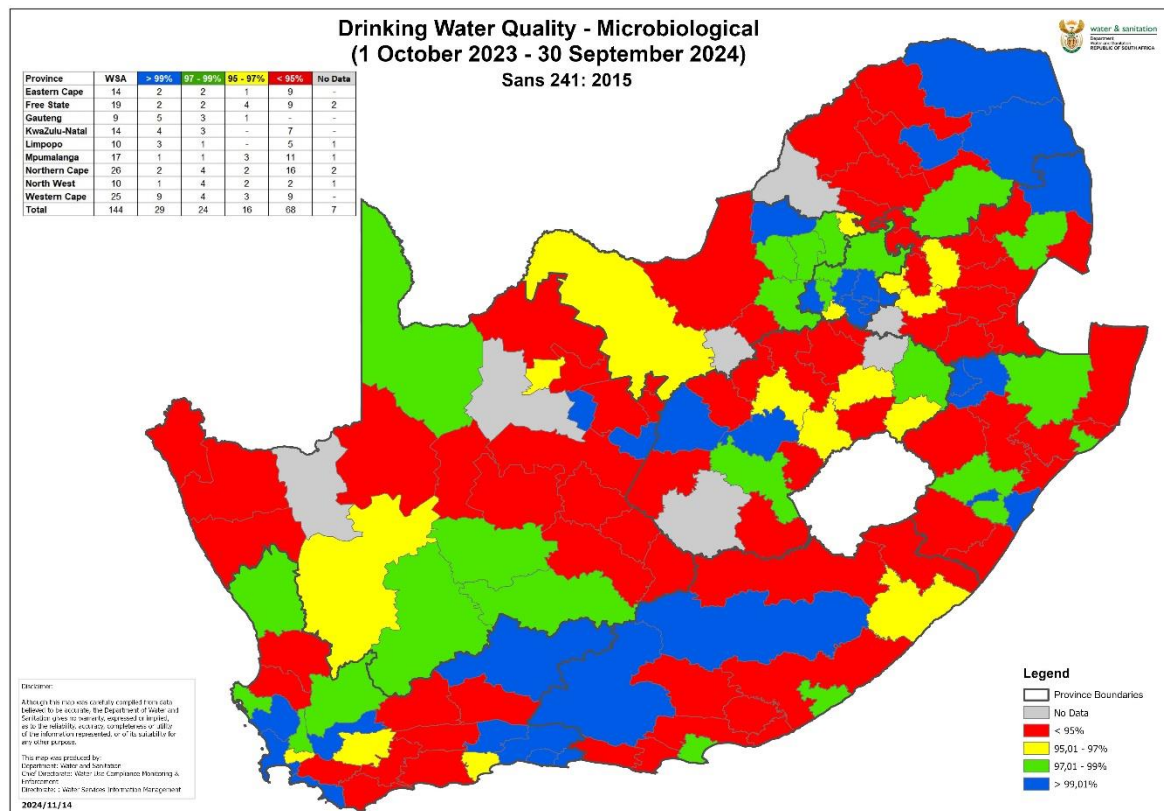


**Figure 7: Status of drinking water chemical quality compliance**

The annual results (October 2023 - September 2024) indicate that 70% of the water supply systems exhibited excellent compliance with chemical quality standards, while 4.2% displayed poor to critical compliance. In instances of non-compliance (<90%), the IRIS informs the municipality concerned, monthly. The Department continuously monitors and supports the non-reporting and non-compliant WSA through their respective regional offices.

## Microbiological Drinking Water Compliance

Microbiological compliance indicates the adherence of the final water and distribution systems over a 12-month period (October - September). The existence of microbiological determinants in water strongly indicates recent contamination from sewage or animal waste. The risk of contracting diseases from pathogens necessitates that Water Services Institutions achieve 99.9% compliance for all analysed microbial indicators. The microbiological compliance results for drinking water during the reporting period are illustrated in Figure 8.



**Figure 8: Status of drinking water microbiological quality compliance**

In terms of the microbiological compliance, 75% of the WSAs failed to meet the SANS:241 compliance standards for the reporting period (1 October 2023 - 30 September 2024), while only 20% of the water supply systems attained an excellent status (>99.9%). It was observed that seven WSAs failed to submit their drinking water quality data as mandated by regulations, thereby affecting the national assessment since these WSAs could not be evaluated without the requisite data submission to the Department.

The overall inadequate compliance results are a significant concern for the Department, as the majority of water supply systems pose a potential health risk to consumers. The Department, via its provincial offices, is consistently monitoring and interacting with the pertinent WSAs that attained microbiological compliance below 99.9%, including those that fail to submit water quality data to the Department.

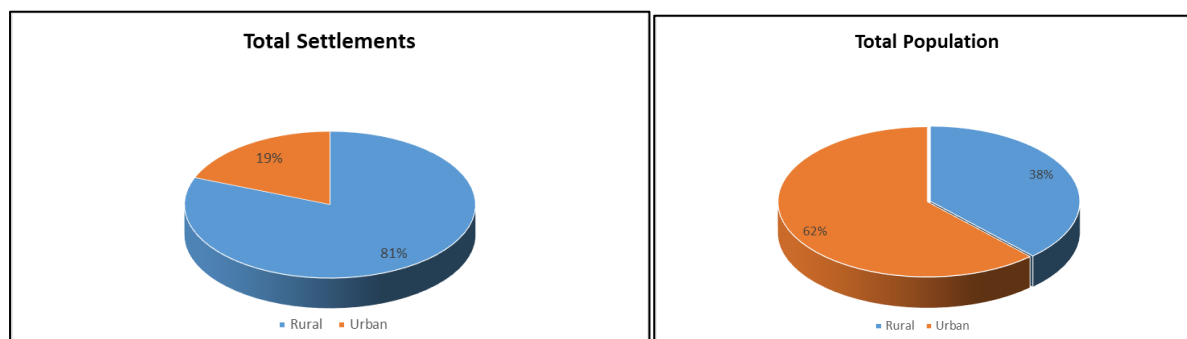
## State of Water Services Provision in South Africa

Examining the latest figures from the 2024 Departmental Water Services Database National Water Services Knowledge System (WSKS) offers a critical outline of the current state of water access across South Africa. This data stresses a significant distinction in service delivery depending on geographic location, specifically highlighting the contrasting realities faced by communities in urban versus rural settings.

The current state of water services provision in South Africa, as indicated by the 2024 Departmental Water Services Database WSKS, reveals a difference between urban and rural areas. In urban settlements, which include metropolitan areas and constitute 62% of the national population, access to basic water services stands at an impressive 94%. This high level of access is further emphasized within the 8 metropolitan municipalities, home to 40% of South Africa's total population, where basic water service coverage is reported as virtually 100%.

On the contrary, the situation in rural areas, where 38% of the population resides across 22,570 communities, shows a lower access rate of 75% for basic water services. This rural-urban divide highlights a significant challenge in ensuring equitable access to this essential resource country-wide.

While the majority of individual settlements are located in rural regions, the majority of the population is concentrated in urban centres as depicted in Figure 9. A demographic reality that influences the overall statistics and underlines the need for targeted interventions to improve water service delivery in rural communities. The pie chart depicts the difference in perspective when reporting on the urban vs rural scenario based on either settlement or people.



*Figure 9: Rural and Urban Vs Rural and Urban settlements*

There is a total population of 64 million in South Africa, 39 million (62%) people are urban residents, while 25 million (38%) of the people live in rural areas.

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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/MonthlyBulletin.aspx>

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## Glossary

Term	Definition
AOA	Annual Operating Analysis
DM	District Municipalities
DWS	Department of Water and Sanitation
ENSO	El Niño-Southern Oscillation
FSC	Full Storage Capacity
IRIS	Regulatory Information System
IVRS	Integrated Vaal River System
SANS:241	South African National Standard for drinking water quality
SAWS	South African Weather Services
SPI	Standardized Precipitation Index. 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
The department	The department of Water and Sanitation
WSA	Water Service Authorities
WSKS	National Water Services Knowledge System
WSS	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

Department of Water and Sanitation (2024). State of Water Services Provision in South Africa: Water services Planning Support based on DWS Water service knowledge aligned with Stats SA Census 2022. Department of Water and Sanitation, Pretoria, South Africa. Data Available from: <https://ws.dws.gov.za/wsks/default.aspx>