

February 2026



# MONTHLY STATE OF WATER BULLETIN

WATER IS LIFE - SANITATION IS DIGNITY



**water & sanitation**

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA



## Overview

The South African Weather Services (SAWS) Seasonal Climate Watch, March to July 2026 report indicates that the El Niño-Southern Oscillation (ENSO) is still in a weak La Niña state but expected to return to a neutral state. The predictions further indicate that the neutral state is likely to rapidly evolve into an El Niño state by the end of winter. Subsequently, this state is expected to impact the next summer rainfall areas in South Africa. However, it is too early to predict the extent of these anticipated impacts.

The SAWS 2026 report further indicates that the southern and eastern coastal regions are expected to receive above-normal rainfall, while the south-western areas are likely to receive below-normal rainfall. Minimum and maximum temperatures are largely expected to be above normal for most parts of South Africa during the autumn and early winter seasons.

Notably, during the last 10 days of February 2026, over 50% of the country received >200% rainfall. These areas include the Northern Cape, Western Cape, Eastern Cape, parts of the North West and Free State. However, there was no flooding reported for these showers. Furthermore, monthly rainfall data indicate that conditions in the eastern half of South Africa were markedly drier compared to January 2026, a month characterised by widespread flooding.

The national dam levels are at 94.8% of Full Supply Capacity (FSC) by the end of February 2026, marking an 9.7% increase from 85.1% at the same time in 2025. However, the Western Cape Province has experienced a decrease in surface water storage levels. The dam storage level of the Western Cape (total) decreased by 18.6% year-on-year, dropping from 68.2% to 49.8%. The Integrated Vaal River System (IVRS) reached 98.6% of FSC at the end of February 2026, indicating a recovery of +7.4% from the 91.2% recorded at the same time last year. The Orange System's storage level was 105.3% of FSC at the end of February 2026, a substantial increase of +29.2% from the previous year.

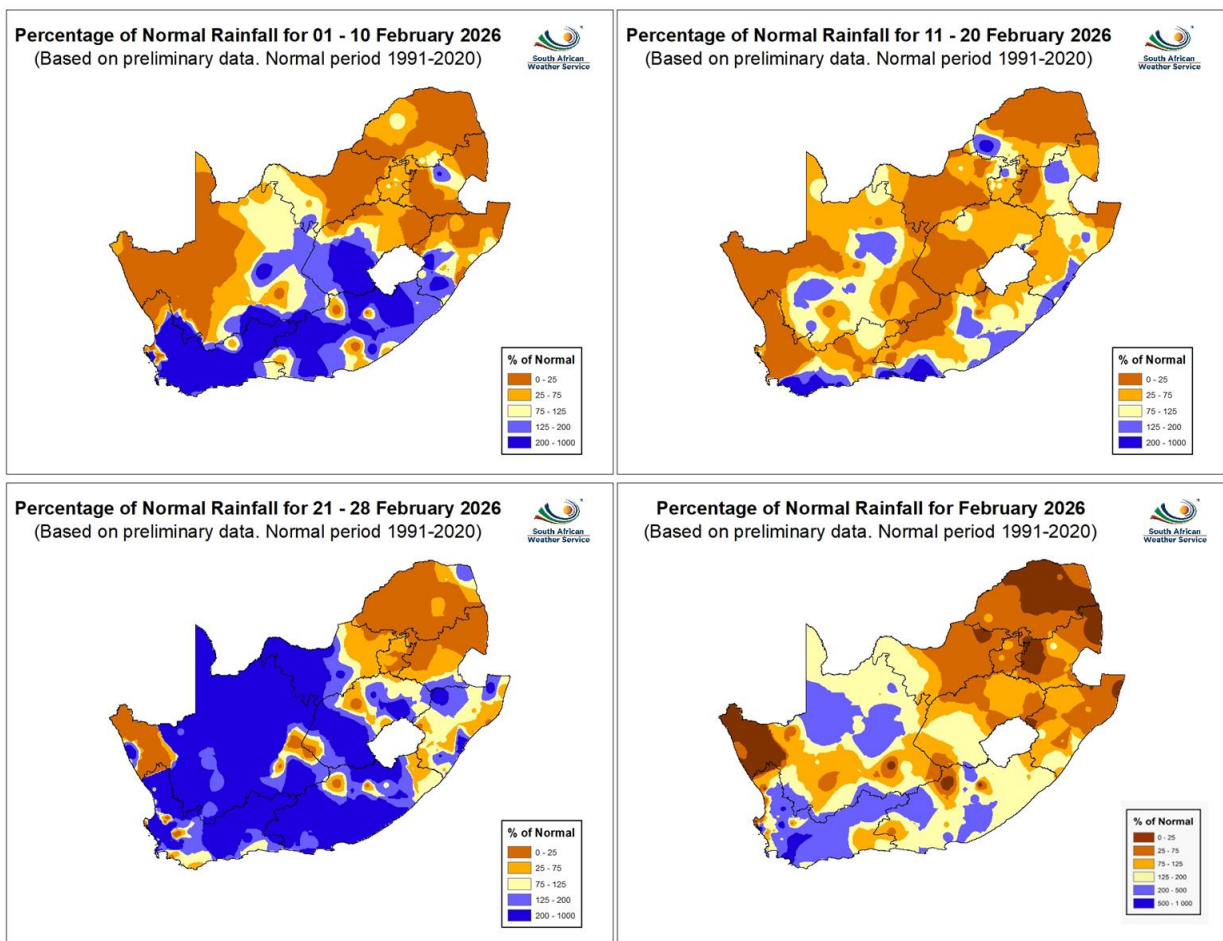
The 12-month Standardised Precipitation Index (SPI) map analysed at the end of January 2026 indicated that at least 68 settlements in the Western Cape and 8 settlements in the Eastern Cape experienced extreme drought in the last 12 months. In addition, 245 settlements in the Western Cape and 248 settlements in the Eastern Cape experienced severe drought over the past 12 months.

The Department of Water and Sanitation has recently completed the project on the Development and Implementation of the Integrated Water Quality Management plans (IWQMP) for the IVRS. This project assessed the water quality across the IVRS, identified water quality issues and developed action plans with the intention of solving these issues. The project provides a roadmap for restoring and safeguarding water quality in the Vaal system by combining scientific modelling, stakeholder input, and targeted interventions. A web-based SWAT+ decision support system was developed, enabling continuous water quality monitoring, scenario visualisation, evaluation of management action effectiveness, and adaptive evidence-based decision-making.

## Rainfall

Figure 1 shows four rainfall distribution maps for February 2026, produced by the South African Weather Services (SAWS). These maps show how much rainfall was received relative to the 1991–2020 climatological normal, expressed as a percentage of normal rainfall. The first three maps show the month of February split into three 10-day maps. The fourth map shows the February monthly rainfall distribution.

The second 10-day period was the driest of the three. Notably, during the last 10-days of February 2026, over 50% of the country received >200% rainfall. These areas include mainly the Northern Cape, Western Cape, Eastern Cape, parts of the North West and Free State. However, there was no flooding reported for these downpours. Furthermore, monthly rainfall data indicate that conditions in the eastern half of South Africa were markedly drier compared to January 2026, a month characterised by widespread flooding.



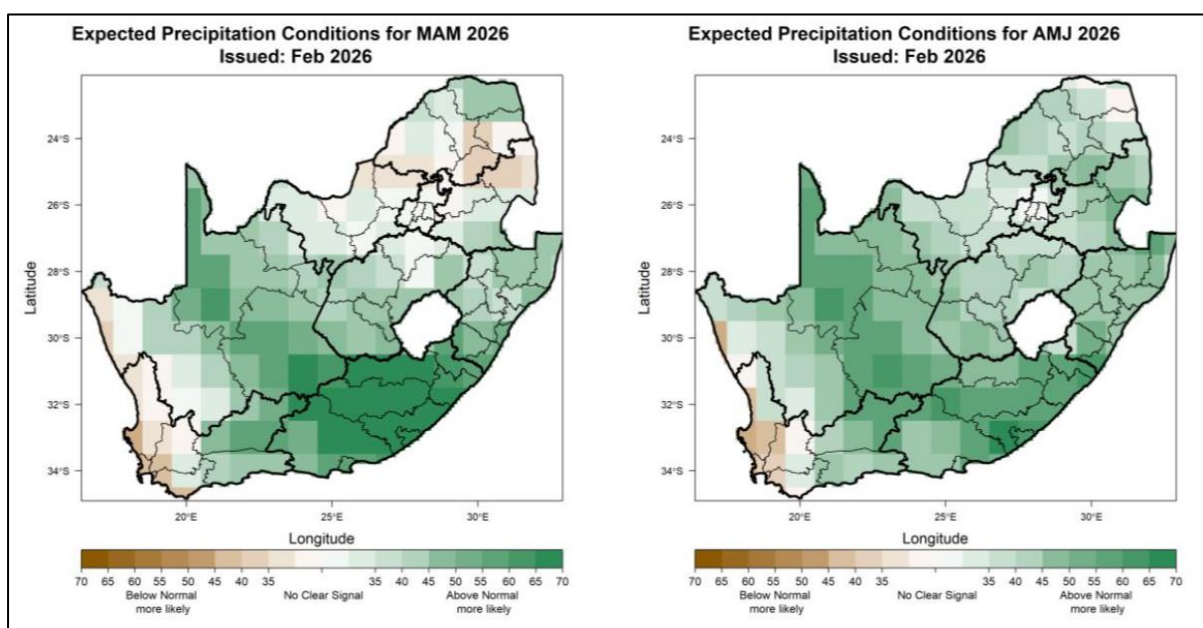
*Figure 1: Percentage of normal rainfall distribution for February 2026.*

## Weather Forecast and Early Warning

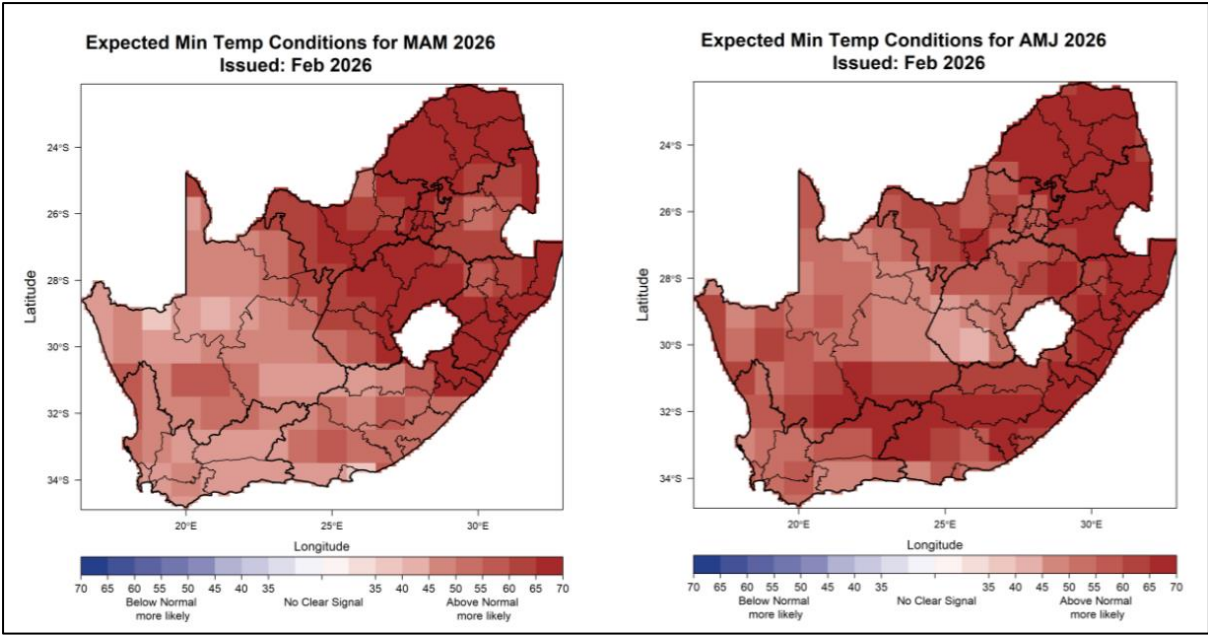
Weather plays a crucial role in shaping water resources by influencing their quantity, quality, and overall availability. Changes in temperature, precipitation patterns, and the frequency of extreme events all contribute to these impacts. Higher temperatures accelerate evaporation, reducing the amount of accessible water, while extreme events like droughts and floods intensify water scarcity and pollution, respectively.

The South African Weather Services Seasonal Climate Watch, March to July 2026 (SAWS, 2026a) report indicates that the El Niño-Southern Oscillation (ENSO) is still in a weak La Niña state but expected to return to a neutral state. The predictions further indicate that the neutral state is likely to rapidly evolve into an El Niño state by the end of winter. Subsequently, this state is expected to impact the next summer rainfall areas in South Africa. But it is too early to predict the extent of these anticipated impacts.

During autumn and early winter, significant rainfall typically occurs mainly along the southern and eastern coasts. The SAWS 2026 report further indicates that these regions are expected to receive above-normal rainfall, while the south-western areas are likely to receive below-normal rainfall (Figure 2). Minimum and maximum temperatures are largely expected to be above-normal for most parts of South Africa during the autumn and early winter seasons (Figure 3).



*Figure 2: Seasonal precipitation predictions for March-April-May 2026 (MAM; left), April-May-June 2026 (AMJ; right), (Source: SAWS, 2026a).*



*Figure 3: Seasonal maximum temperature predictions for March-April-May 2026 (FMA; left), April-May-June 2026 (AMJ; right) (Source: SAWS, 2026a).*

## National Dam Storage

The national surface water storage trends for the current hydrological year (2025/26) are compared to those of the past four hydrological years in Figure 4. The graph shows that at the end of February 2026, the national dam levels were 94.8% of Full Supply Capacity (FSC). This level is 9.7% higher than at the same time last year, when the overall storage level was at 81.3% of FSC. The dam levels have been above 90% FSC since April 2025.

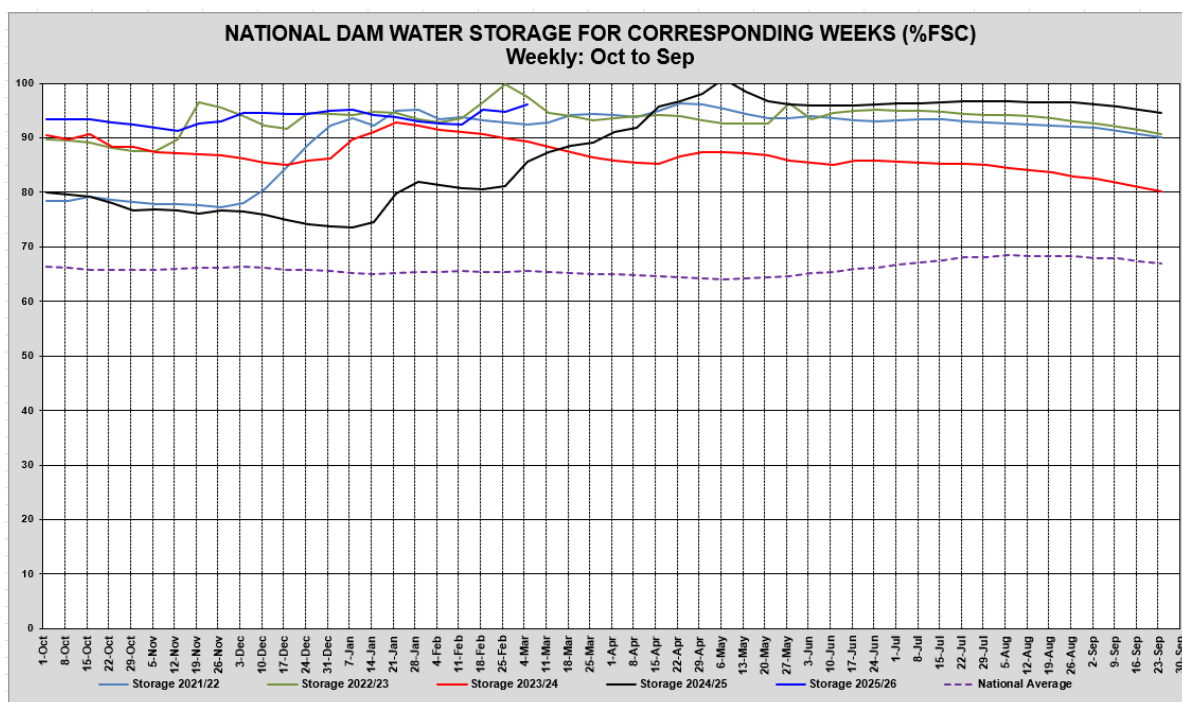


Figure 4: Weekly National Dam Storage at the end of February 2026, for five hydrological years.

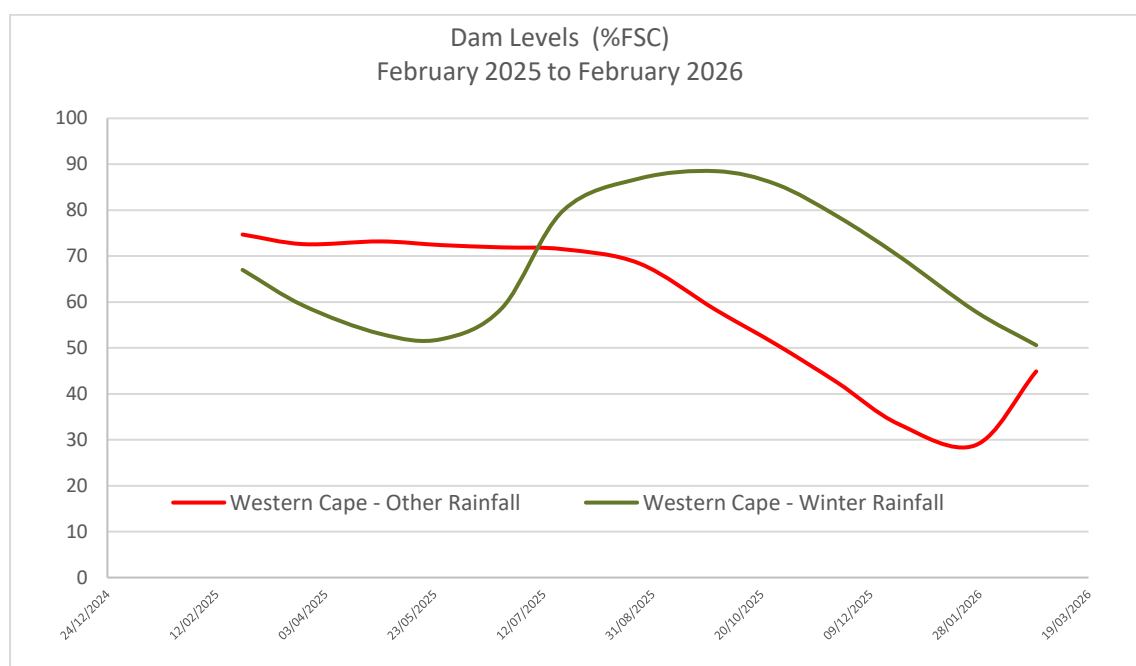
The national surface water storage is at 94.8%, which is a (9.7%) increase from the same period last year. Table 1 shows a summary of the status of 219 South African dams, together with three dams from the Kingdoms of Eswatini and Lesotho. South Africa monitors dam levels in Lesotho and Eswatini because we share critical river systems, dams, and water-transfer schemes that supply Gauteng, Mpumalanga, KwaZulu-Natal, and the Free State.

Based on dam level data as of 23 February 2026, at least 102 of the 222 national dams were above 100% of full supply capacity (FSC), while two dams, both located in the Western Cape, were below 10% of FSC. Most provinces reported surface water storage exceeding 90% of FSC, with the exception of the Eastern Cape and Western Cape. Gauteng's dam levels remain above 100% and have predominantly exceeded 100% FSC since March 2025.

*Table 1: National Surface Water Storage –23 February 2025 to February 2026.*

Provinces/ Countries sharing Water Resources with RSA	FSC <sup>3</sup> million m <sup>3</sup>	Total No. of Dams	Number of Dams per Province/ Country				% of Full capacity	
			<10 (% of FSC)	10% - <50 (% of FSC)	50 - <100 (% of FSC)	≥100%	Last Year	This Year
							23/02/2025	23/02/2026
Kingdom of Eswatini	333.75	1				1	100.3	100.0 ↓
Eastern Cape	1 727.66	46		8	22	16	81.2	79.1 ↓
Free State	15 656.90	21		2	12	7	80.6	101.3 ↑
Gauteng	128.08	5				5	94.4	101.2 ↑
KwaZulu-Natal	4 909.66	19			8	11	92.9	90.4 ↓
Kingdom of Lesotho	2 362.63	2			1	1	90.4	98.4 ↑
Limpopo	1 484.64	29			5	24	90.6	98.6 ↑
Mpumalanga	2 538.20	22			5	17	97.7	100.0 ↑
Northern Cape	146.33	5		1	1	3	69	94.5 ↑
North West	866.23	28		1	11	16	101.1	97.0 ↓
Western Cape - Other Rainfall	269.61	22	2	9	10	1	74.6	44.9 ↓
Western Cape - Winter Rainfall	1 596.80	22		7	15		67.1	50.6 ↓
Western Cape - Total	1 866.41	44	2	16	25	1	68.2	49.8 ↓
<b>Grand Total:</b>	<b>32 020.50</b>	<b>222</b>	<b>2</b>	<b>28</b>	<b>90</b>	<b>102</b>	<b>85.1</b>	<b>94.8 ↑</b>

The Western Cape shows two dams below 10% of FSC (critically low), down from four dams reported in the January 2026 edition. Notably, 16 out of the 28 dams with >10%-<50% FSC are from the Western Cape. The percentage FSC for the Western Cape (total) has fallen 18.4%, from 68.2% down to 49.8% year-on-year. Month-to-month, the dam levels from the winter rainfall region of the Western Cape continue to fall as expected (Figure 5). While at the same time, higher than average rainfall received in the second 10 days of February has significantly boosted Western Cape (other rainfall region) from 28.8% to 44.9%. Figure 6 shows the spatial distribution of the 222 national dams and their respective dam storage levels.



*Figure 5: Western Cape dam level trends from February 2025 to February 2026*

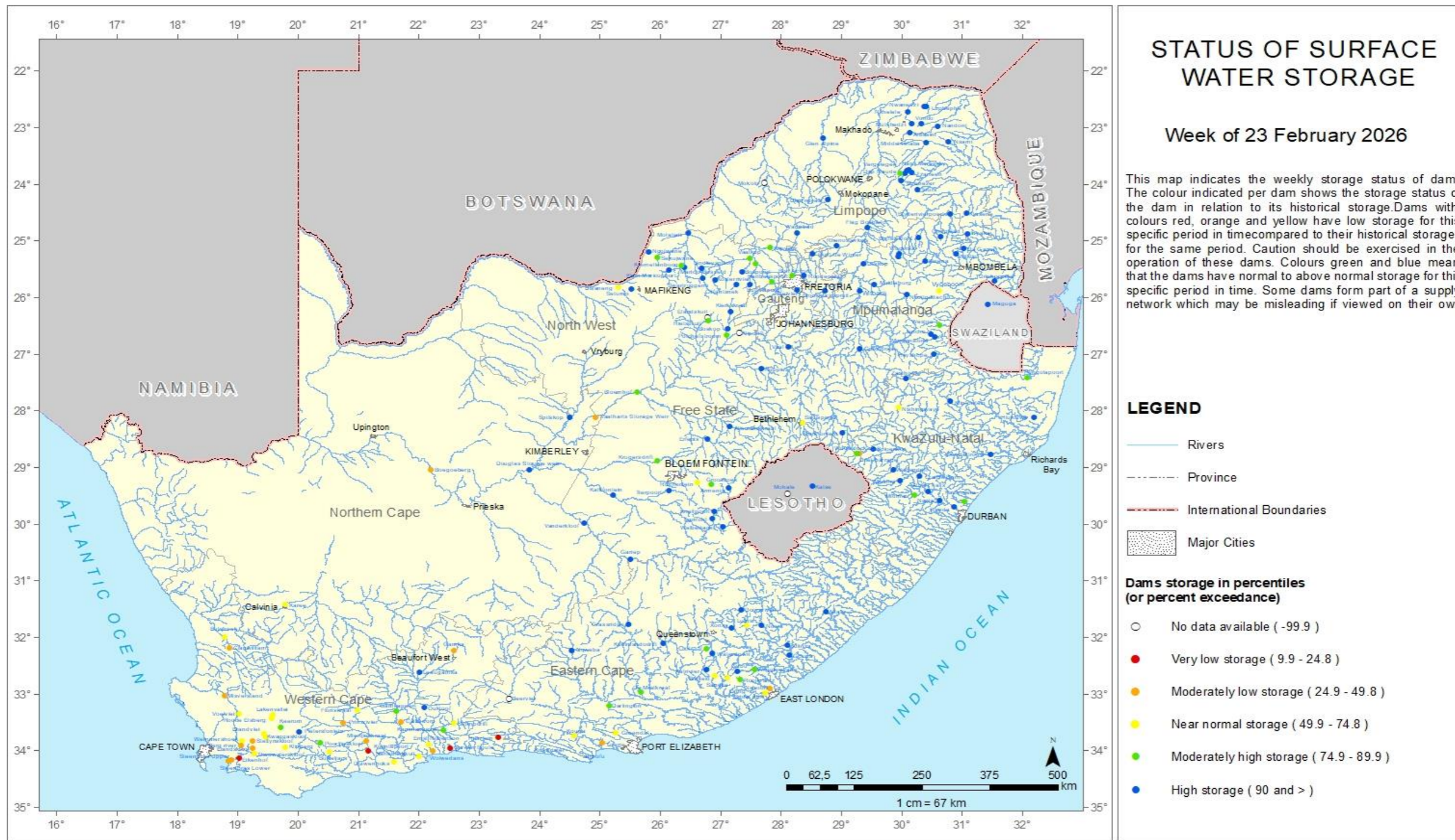


Figure 6: Surface Water Storage Levels – 23 February 2026.

Figure 7 graphically illustrates the comparison of storage levels across provinces, including the Kingdoms of Eswatini and Lesotho, for February 2025 and February 2026. The Northern Cape and Free State showed the most significant year-on-year increase of 25.5% and 20.7%, respectively. The increase in the overall dam storage indicates higher-than-normal stream flows, as a result of above-normal rainfall received early this year. The other notable increases were observed in the Limpopo (8%) and Gauteng (6.8%) of FSC. The Kingdom of Lesotho also experienced a significant increase of 8% during the same time. In contrast, the Western Cape levels have decreased by 18.6% year-on-year. This indicates the impacts of below-average rainfall received during the region’s winter rainfall season.

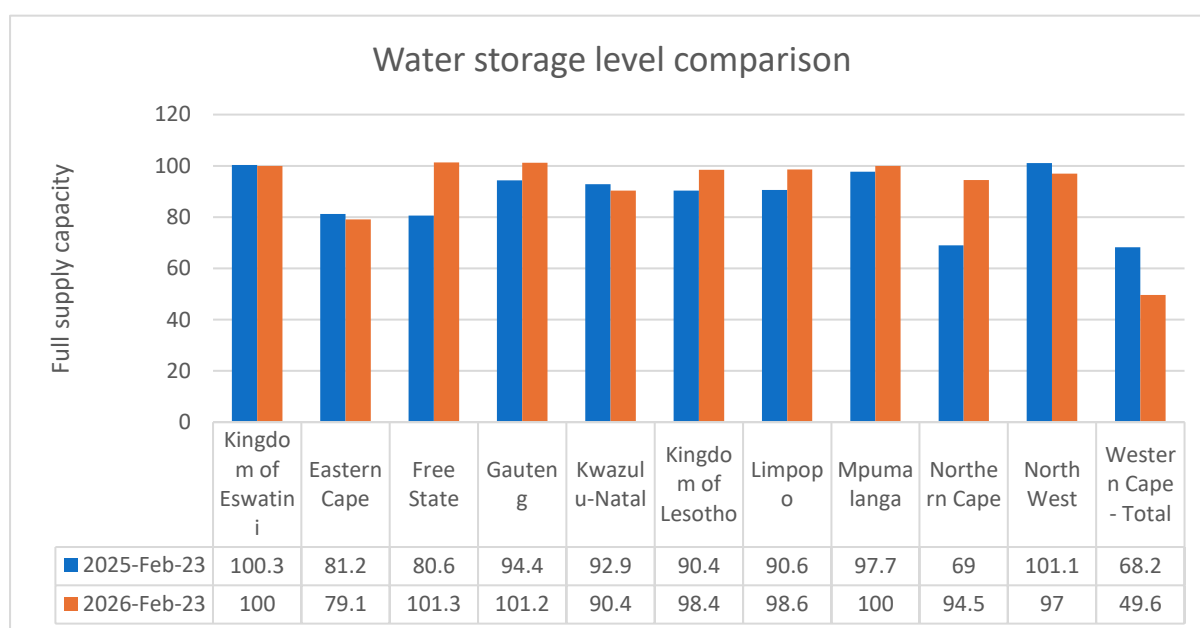


Figure 7: Water Storage Levels February 2025 vs. February 2026.

The comparison between February 2025 and February 2026 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 (Mm3)	23 February 2025 (% FSC)	23 February 2026 (% FSC)	Difference (%)
Gariep Dam	Orange River	Free State	4 903.45	80.8	105.1	+24.3
Vanderkloof Dam	Orange River	Free State & Northern Cape	3 136.93	68.6	105.5	+36.9
Sterkfontein Dam	Nuwejaarspruit River	Free State	2 616.90	98.4	99.7	+1.3
Vaal Dam	Vaal River	Free State	2 560.97	81	100.2	+19.2
Pongolapoort Dam	Phongolo River	KwaZulu-Natal	2 395.24	88.1	82.3	-5.8

The surface water storage levels at the five major dams in the country exceed 80%, with the Gariep, Vanderkloof and Vaal Dams showing substantial increases of +24.3%, +36.9% and +19.2%, respectively, compared to the same time last year.

The surface water storage levels in the majority of dams in the Western Cape province continue to decrease. Two dams in the Western Cape had extremely low storage levels at the end of February 2026 compared to the same time in 2025. Miertjieskraal Dam and Gamka Dam declined sharply by -64.9%, and 34.7%, respectively (Table 3).

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

Reservoir	River	Province	Full Supply Capacity (Mm <sup>3</sup> )	23 February 2025 (% FSC)	23 February 2026 (% FSC)	Difference (%)
<b>Miertjieskraal Dam</b>	Brand River	Western Cape	1.43	73.2	8.3	-64.9
<b>Gamka Dam</b>	Gamka River	Western Cape	1.73	41.9	7.2	-34.7

## District Municipalities

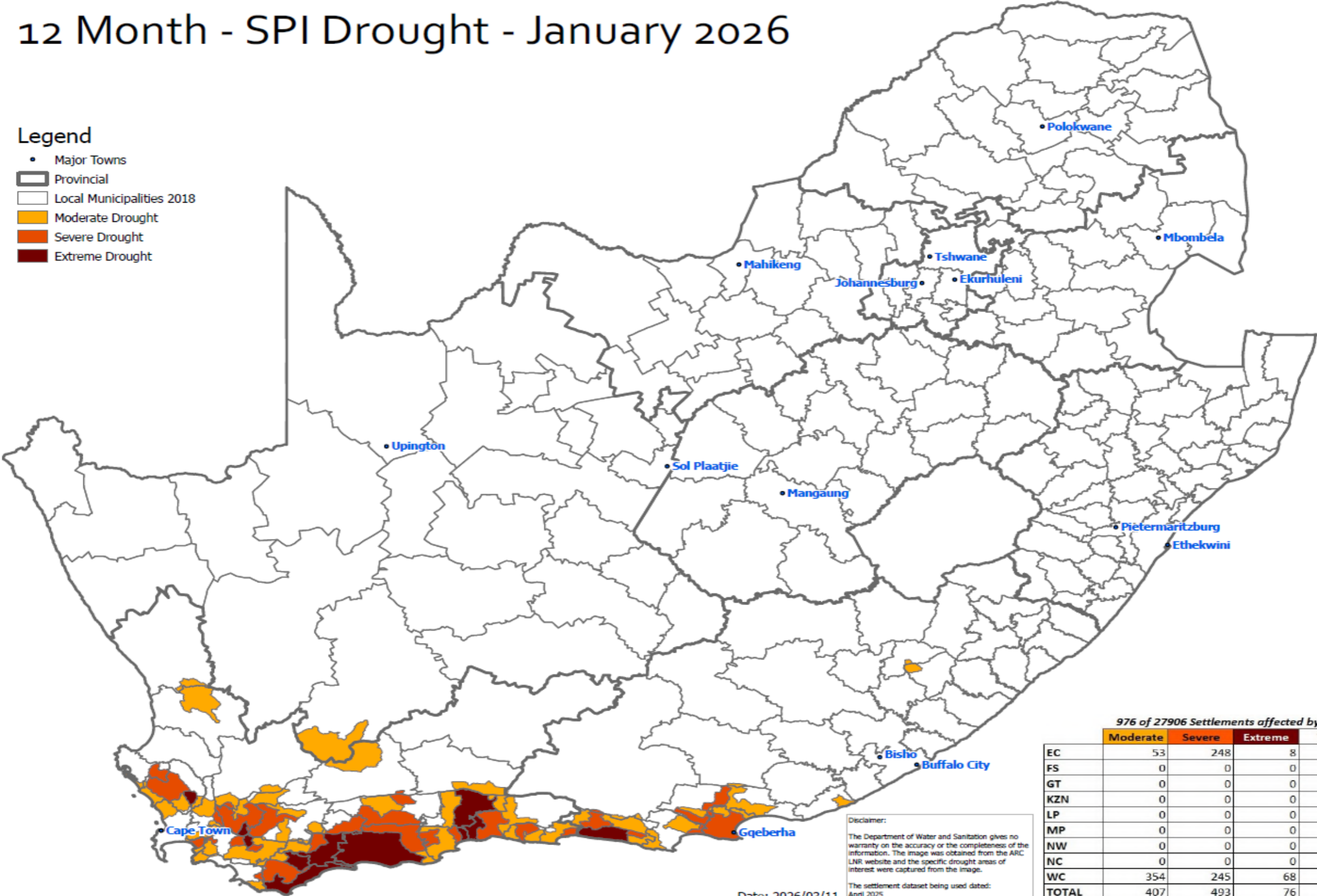
Figure 8: 12-Month Standardised Precipitation Index (SPI) – January 2026 presents the 12-month Standardised Precipitation Index (SPI) map analysed at the end of January 2026. The SPI drought map indicates prolonged drought conditions and below-normal rainfall in the Western Cape and parts of the Eastern Cape (SAWS, 2026b). A total of 68 settlements in the Western Cape and 8 settlements in the Eastern Cape experienced extreme drought. In addition, 245 settlements in the Western Cape and 248 settlements in the Eastern Cape experienced severe drought over the past 12 months. These findings confirm the reduced dam storage levels observed in the Western Cape.

The year-on-year comparison of surface water storage levels per district municipality is presented in Figure 9. Francis Baard DM and Mopani DM experienced the most significant increases (>30%) in dam storage levels in February 2026, followed by Xhariep DM (>20%). Also noteworthy, the Garden Route DM experienced a significant annual decline (>-40%) in dam levels.

# 12 Month - SPI Drought - January 2026

## Legend

- Major Towns
- ▭ Provincial
- ▭ Local Municipalities 2018
- ▭ Moderate Drought
- ▭ Severe Drought
- ▭ Extreme Drought



**976 of 27906 Settlements affected by drought**

	Moderate	Severe	Extreme	Total	Settlements
EC	53	248	8	309	9088
FS	0	0	0	0	319
GT	0	0	0	0	2515
KZN	0	0	0	0	9465
LP	0	0	0	0	2675
MP	0	0	0	0	735
NW	0	0	0	0	1042
NC	0	0	0	0	545
WC	354	245	68	667	1522
<b>TOTAL</b>	<b>407</b>	<b>493</b>	<b>76</b>	<b>976</b>	<b>27906</b>

**Disclaimer:**  
 The Department of Water and Sanitation gives no warranty on the accuracy or the completeness of the information. The image was obtained from the ARC LNR website and the specific drought areas of interest were captured from the image.  
 The settlement dataset being used dated: April 2025

Date: 2026/03/11

Figure 8: 12-Month Standardised Precipitation Index (SPI) – January 2026.

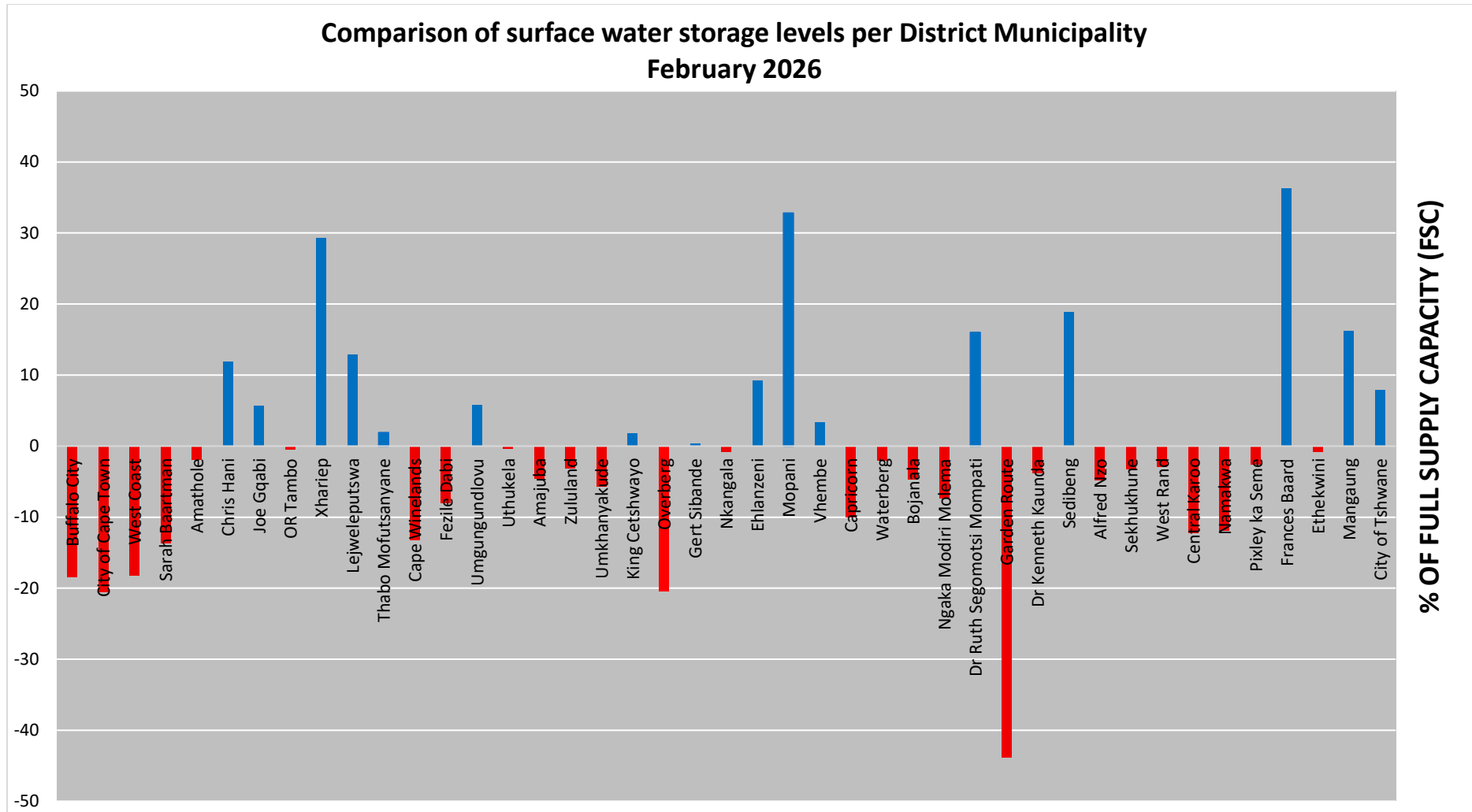


Figure 9: Comparison of water storage levels per District Municipality, February 2025 vs February 2026.

## 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.

*Table 4: Water Supply System with Restrictions.*

System Name	Areas	Water Users	% Restrictions	Gazette Information	Next Review
<b>Algoa WSS</b>	Kromme subsystem	NMBM & Kouga LM Irrigation	23% domestic & industrial 43% irrigation	4 July 2025 No. 6392	Nov' 2026
<b>Mangaung WSS</b>	Caledon-Modder	Mangaung Metro	25% domestic & industrial when below 95%	13 Sep' 2024 Gazette no.5200	May 2025
<b>Liebensbergvlei River</b>	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
<b>Middle Letaba/ Nsami</b>	Middle Letaba/ Nsami	Irrigation Mopani Municipality	100% irrigation 25% domestic	28 Jun' 2024	May 2025
<b>Mutshedzi Dam</b>	Mutshedzi Dam	Makhado Municipality	35% domestic		May 2025
<b>Nzhelele</b>	Nzhelele	Nzhelele Government Irrigation Scheme Nzhelele Regional Scheme	20% domestic 20% irrigation	28 Jun' 2024	May 2025
<b>Nwanedi/ Luphephe</b>	Nwanedi/ Luphephe	Mutale Local Municipality Irrigation	20% D&I 45% irrigation	28 Jun' 2024	May 2025
<b>Polokwane Water Supply System Letaba System</b>	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

The dam storage levels for South Africa's national water supply systems are presented in Table 5. The largest and most economically critical system in the country is the Integrated Vaal River System (IVRS), which comprises 14 dams with a combined capacity exceeding 10 492 Mm<sup>3</sup>. The IVRS was at 98.6% of FSC at the end of February 2026, indicating a recovery of +7.4% from the 91.2% recorded at the same time last year. The Orange Water Supply System, ranked as the second largest, comprises only two dams yet boasts a capacity of 8 040 Mm<sup>3</sup>. The Orange System's storage level was 105.3% of FSC at the end of February 2026, a substantial increase of +29.2% from the previous year. These significant year-on-year improvements in dam levels are largely attributed to the above-average rainfall received earlier this year.

Table 5: Water Supply Systems storage levels February comparisons.

Water Supply Systems/ Clusters	Full Supply Capacity in 10 <sup>6</sup> m <sup>3</sup>	23 February 2025 (% FSC)	16 February 2026 (% FSC)	23 February 2026 (% FSC)	System Description
<b>Algoa System</b>	281.57	75.2	43.6	42.8	Five dams serve the Nelson Mandela Bay Metro, Sarah Baartman (SB) DM, Kouga LM and Gamtoos Irrigation: <ol style="list-style-type: none"> <li>1. Kromrivier Dam</li> <li>2. Impofu Dam</li> <li>3. Kouga Dam</li> <li>4. Loerie Dam</li> <li>5. Groendal Dam</li> </ol>
<b>Amathole System</b>	240.88	99.3	88.4	88.2	Six dams serve Bisho & Buffalo City, East London: <ol style="list-style-type: none"> <li>1. Laing Dam</li> <li>2. Rooikrans Dam</li> <li>3. Bridle Drift Dam</li> <li>4. Nahoon Dam</li> <li>5. Gubu Dam</li> <li>6. Wriggleswade Dam</li> </ol>
<b>Klipplaat System</b>	57.09	86.5	93.4	94.5	Three dams serve Queenstown (Chris Hani DM, Enoch Ngijima LM): <ol style="list-style-type: none"> <li>1. Boesmanskrantz Dam</li> <li>2. Waterdown Dam</li> <li>3. Ockraal Dam</li> </ol>
<b>Butterworth System</b>	14.43	100.1	100.1	100	<u>Xilinx Dam and Gcuwa weirs serve Butterworth</u>
<b>Integrated Vaal River System</b>	10492.91	91.2	99.2	98.6	14 dams serve Gauteng, Sasol, and ESKOM: <ol style="list-style-type: none"> <li>1. Vaal Dam</li> <li>2. Grootdraai Dam</li> <li>3. Sterkfontein Dam</li> <li>4. Bloemhof Dam</li> <li>5. Katse Dam</li> <li>6. Mohale Dam</li> <li>7. Woodstock Dam</li> <li>8. Zaaiohoek Dam</li> <li>9. Jericho Dam</li> <li>10. Westoe Dam</li> <li>11. Morgenstond Dam</li> <li>12. Heyshope Dam</li> <li>13. Nooitgedacht Dam</li> <li>14. Vygeboom Dam</li> </ol>
<b>Luvuvhu</b>	224.75	103	101.1	101.3	Three dams serve Thohoyandou: <ol style="list-style-type: none"> <li>1. Albasini Dam</li> <li>2. Vondo Dam</li> <li>3. Nandoni Dam</li> </ol>
<b>Bloemfontein</b>	219.6	70.3	79.5	78.1	Four dams serve Bloemfontein, Botshabelo and Thaba Nchu: <ol style="list-style-type: none"> <li>1. Rustfontein Dam</li> <li>2. Groothoek Dam</li> <li>3. Welbedacht Dam</li> <li>4. Knellpoort Dam</li> </ol>

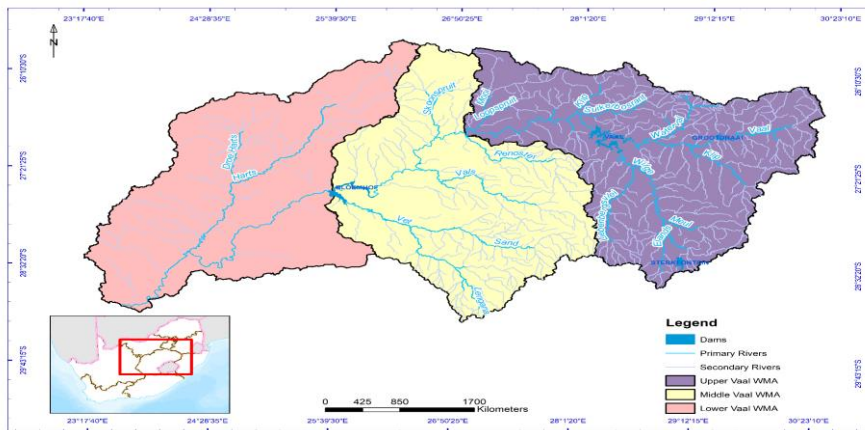
Water Supply Systems/ Clusters	Full Supply Capacity in 10 <sup>6</sup> m <sup>3</sup>	23 February 2025 (% FSC)	16 February 2026 (% FSC)	23 February 2026 (% FSC)	System Description
<b>Polokwane</b>	254.27	106.9	101.4	101.1	<u>Two dams serve Polokwane</u> 1. <u>Flag Boshielo Dam</u> 2. <u>Ebenezer Dam</u>
<b>Crocodile West</b>	443.39	100.4	95.9	96	<u>Seven dams serve Tshwane up to Rustenburg:</u> 1. <u>Hartbeespoort Dam</u> 2. <u>Rietvlei Dam</u> 3. <u>Bospoort Dam</u> 4. <u>Roodeplaat Dam</u> 5. <u>Klipvoor Dam</u> 6. <u>Vaalkop Dam</u> 7. <u>Roodekopjes Dam</u>
<b>uMgeni System</b>	920.9	96.5	100.1	100.8	<u>Five dams serve Ethekwini, iLembe &amp; Msunduzi:</u> 1. <u>Midmar Dam</u> 2. <u>Nagle Dam</u> 3. <u>Albert Falls Dam</u> 4. <u>Inanda Dam</u> 5. <u>Spring Grove Dam</u>
<b>Cape Town System</b>	889.3	73.5	56.5	54.8	<u>Six dams serve the City of Cape Town:</u> 1. <u>Voelvlei Dam</u> 2. <u>Wemmershoek Dam</u> 3. <u>Berg River Dam</u> 4. <u>Steenbras-Lower Dam</u> 5. <u>Steenbras-Upper Dam</u> 6. <u>Theewaterskloof Dam</u>
<b>Crocodile East</b>	158.65	95	100.9	100.7	<u>Kwena Dam supplies Nelspruit, Kanyamazane, Matsulu, Malelane and Komatipoort areas &amp; Surroundings</u>
<b>Orange</b>	8 040.38	76.1	105.5	105.3	<u>Two dams service parts of the Free State, Northern and Eastern Cape Provinces:</u> 1. <u>Gariep Dam</u> 2. <u>Vanderkloof Dam</u>
<b>uMhlathuze</b>	301.25	97.3	99.1	99.1	<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>

# DEVELOPMENT AND IMPLEMENTATION OF INTEGRATED WATER QUALITY MANAGEMENT ACTION PLANS FOR THE INTEGRATED VAAL RIVER SYSTEM

## Background

The Integrated Vaal River System (IVRS) is the backbone of South Africa's water supply, supporting approximately 60% of the country's population and contributing nearly half of the national GDP. However, due to rapid urbanisation, industrialisation, mining, and agricultural expansion, the system faces severe water quality challenges. These include increasing salinity, nutrient enrichment (eutrophication), microbial pollution, and acid mine drainage (AMD).

The need for an integrated, scientifically grounded management approach led to the development of comprehensive Water Quality Management Action Plans for the IVRS.



## Project Objectives

This project aimed to assess current water quality across the IVRS, identify key challenges per catchment, and develop Integrated Water Quality Management Plans (IWQMP).

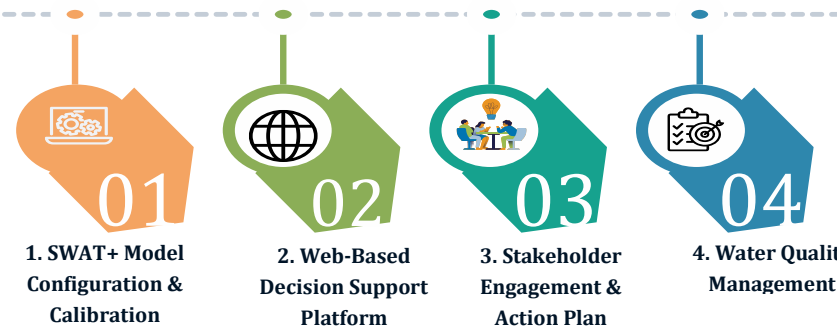
It also set out to improve stakeholder engagement and governance, promote robust water quality monitoring, and strengthen compliance and enforcement mechanisms. The project provides a roadmap for restoring and safeguarding water quality in the IVRS by combining scientific modelling, stakeholder input, and targeted interventions.

## Major Milestones

The project progressed through several pivotal phases. Firstly, an extensive assessment of baseline water quality and pollutant sources was conducted using both observational data and advanced hydrological modelling (SWAT+).

Scenario analyses evaluated future water quality risks driven by population growth, land use change, and climate change. Stakeholders participated in scenario planning and action plan workshops, ensuring the solutions were locally relevant and technically sound.

The final IWQMP were aligned with national policy frameworks and international best practices, and implementation responsibilities were clearly defined.



## Summary of Water Quality Management Action Plans

### 1. Upper Vaal Catchments

#### Key Water Quality Issues:

- ✦ Eutrophication from nutrient loading (WWTWs, agriculture)
- ✦ Acid Mine Drainage (AMD)
- ✦ Microbial contamination
- ✦ Increasing salinity

#### Key Action Plans Developed

##### Upgrade and Rehabilitation of Wastewater Treatment Works (WWTWs)

Refurbish and improve compliance at local WWTWs, focusing on hotspots such as Grootdraai Dam and Klip River.

##### Management and Treatment of AMD

Expand the operation of AMD treatment plants to reduce salinity and metal loads, and ensure neutralisation of mine water before discharge.

##### Nutrient Load Reduction from Agriculture

Promote precision fertilisation, buffer zones, and improved runoff management in agricultural areas.

##### Enhanced Monitoring and Stakeholder Forums

Strengthen water quality and flow monitoring, and maintain active engagement via catchment management forums

### 2. Middle Vaal Catchments

#### Key Water Quality Issues:

- ✦ High salinity and sulphate concentrations
- ✦ Eutrophication from cumulative upstream discharges
- ✦ Failing WWTWs and inadequate stormwater management

#### Key Action Plans Developed

##### Salinity Management via Dam Operations and Return Flow Control

Implement controlled dilution releases from Vaal Dam and restrict saline return flows, especially near Vaal Barrage.

##### Upgrading and Enforcing Effluent Compliance at WWTWs

Target underperforming WWTWs (e.g., in Ngwathe, Moqhaka, Emfuleni) for upgrades/ enforcement and improved process control.

##### Control of Urban and Stormwater Pollution

Implement urban runoff controls, solid waste management, and enforce by-laws to reduce non-point source pollution.

##### Sector Collaboration and Stakeholder Action Plans

Facilitate workshops and action plans for industry, agriculture, and municipal partners to address site-specific pollution sources.

### 3. Lower Vaal Catchments

#### Identified Water Quality Issues:

- ✦ Cumulative salinity impacts from upstream
- ✦ Agricultural return flows (nutrients, pesticides)
- ✦ Limited and outdated monitoring data

## Key Action Plans Developed

### Improved Monitoring and Data Management

Expand monitoring coverage, modernise data management, and address gaps in nutrient and salinity data.

### Agricultural Pollution Control

Promote sustainable irrigation, nutrient management, and soil conservation practices to reduce diffuse pollution.

### Infrastructure and Catchment Management Plan Implementation

Ensure maintenance of canals, embankments, and water infrastructure to minimise pollutant transport and enhance resilience.

## System-Wide and Cross-Cutting Actions

### Ongoing Stakeholder Engagement and Capacity Building

Regular training, forums, and outreach to ensure all agencies and communities understand their roles in water quality management.

**Responsible Organisations:** VOCMA, DWS, WRC, NGOs, and Universities.

## Benefits of the Project

**For the IVRS Catchments:** The calibrated SWAT+ model serves as a powerful analytical tool to identify pollution hotspots and predict the impacts of various pressures in the IVRS, enabling targeted interventions that promote healthier aquatic ecosystems and greater biodiversity. The ability to simulate future climate and development scenarios enhances catchment resilience.

**For Stakeholders:** Access to reliable data, clear action plans, and collaborative platforms empowers municipalities, industries, farmers, and

communities to actively participate in water quality management. This shared responsibility enhances accountability, reduces treatment costs, improves productivity, and safeguards public health.

**For DWS:** The project has built internal capacity in advanced water resource modelling and governance, strengthening DWS's ability to proactively manage water quality challenges. The establishment of governance structures and the monitoring platform ensures sustainable oversight and compliance with national and international water quality commitments.

## Conclusion

This project delivers a clear framework for water quality improvement in the IVRS through a structured and collaborative approach. Accountability and efficiency have been prioritised by assigning responsibilities for each action plan. The continued engagement of all stakeholders, supported by robust scientific and governance frameworks, will be essential to achieving sustained water quality improvements and securing the future of the Vaal River System.

### For further information:

Email: [WQMAActionPlansIVRS@dws.gov.za](mailto:WQMAActionPlansIVRS@dws.gov.za)

Web-based platform accessible at:

<https://www.wwt-platform.com/bgis/cb7f2465-1d1d-4f02-8ad5-34b7a4b885cc>



**Compiled by:**

Hulisani Mafenya, Mamothe Ramothello, Mirrander Ndhlovu, Thandekile Mbili, Judy Reddy, and Joshua Rasifudi

**For technical inputs and inquiries:**

Sub-Directorate: Integrated Water Resource Studies

Tel: 012 336 6621

Email: [IntegratedWaterStudies@dws.gov.za](mailto:IntegratedWaterStudies@dws.gov.za)

**Accessible on the National State of Water Reporting Web page:**

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

Department of Water and Sanitation  
Private Bag X313  
Pretoria  
0001

# Glossary

<b>Term</b>	<b>Definition</b>
AMD	Acid mine drainage
DM	District Municipality
DWS	Department of Water and Sanitation
ENSO	El Niño-Southern Oscillation
FSC	Full Storage Capacity
GDP	Gross Domestic Product
IVRS	Integrated Vaal River System
IWQMP	Integrated Water Quality Management Plans
NGOs	Non-Governmental Organisations
SAWS	South African Weather Services
SPI	Standardised 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
SWAT+	Soil and Water Assessment Tool Plus
VOCMA	Vaal-Orange Catchment Management Agency
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 water treatment system
WRC	Water Research Commission
WWTWs	Waste Water Treatment Works

## References

Department of Water and Sanitation (DWS), 2025: *The Development and Implementation of Water Quality Management Action Plans for the Integrated Vaal River System*. Project No: DWS/IVRSWQMAP/2025.

SAWS, 2026a. Seasonal Climate Watch: March 2026 to July 2026 (Issued: 02 March 2026). SAWS, Centurion, South Africa.

SAWS,2026b. Monthly Drought Bulletin (Issued January 2026). SAWS, Centurion, South Africa.  
[https://www.weathersa.co.za/Documents/Climate/nr\\_drought.pdf](https://www.weathersa.co.za/Documents/Climate/nr_drought.pdf)