

South African Weather Service

Climate Change and Health

El Niño preparedness webinar

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Dr Nosipho Zwane

Lead Scientist: Climate Change and Variability
South African Weather Service

Tel: +27 012 367 6246

Email: nosipho.zwane@weathersa.co.za

Outline

- Understanding ENSO and El Niño global perspective
- Regional (Africa – SADC) Seasonal Outlook
- Historical El Niño events, sea-surface temperature patterns and South African rainfall outcomes
- Local Perspective and the Status of the current El Niño
- Concluding remarks



Understanding El Niño Southern Oscillation (ENSO) and El Niño Global Perspective

ENSO Basics: Coupled Changes across the Tropical Pacific

EL NIÑO

WARMER

Warmer central and eastern equatorial Pacific. Atmospheric circulation shifts and influences weather far beyond the Pacific.

NEUTRAL

NEAR AVERAGE

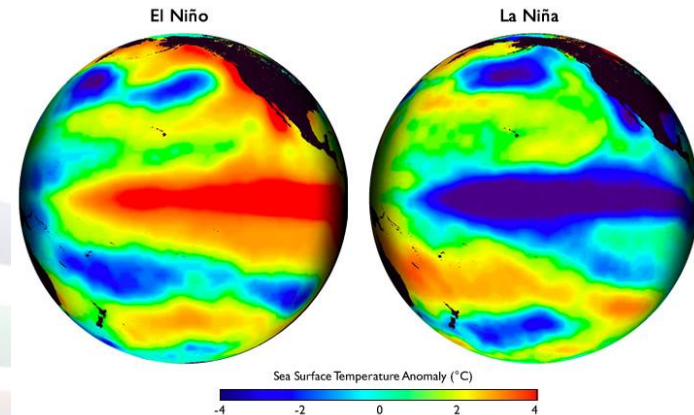
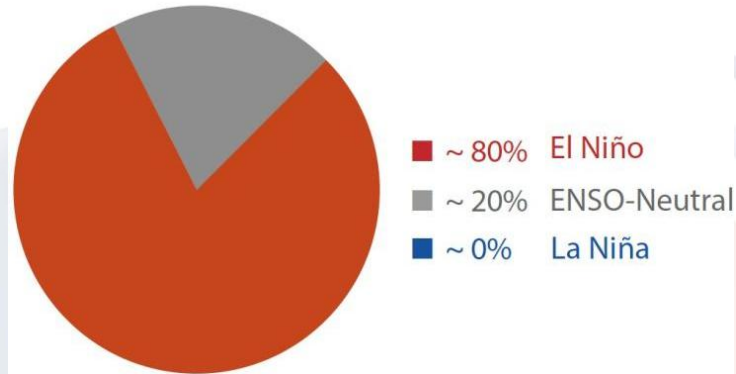
Pacific ocean and atmosphere remain near neutral thresholds, although other climate drivers still matter.

LA NIÑA

COOLER

Cooler central and eastern equatorial Pacific. Its typical effects often oppose El Niño, but vary by event.

ESTIMATED ENSO PROBABILITIES
FOR JUNE-JULY-AUGUST 2026

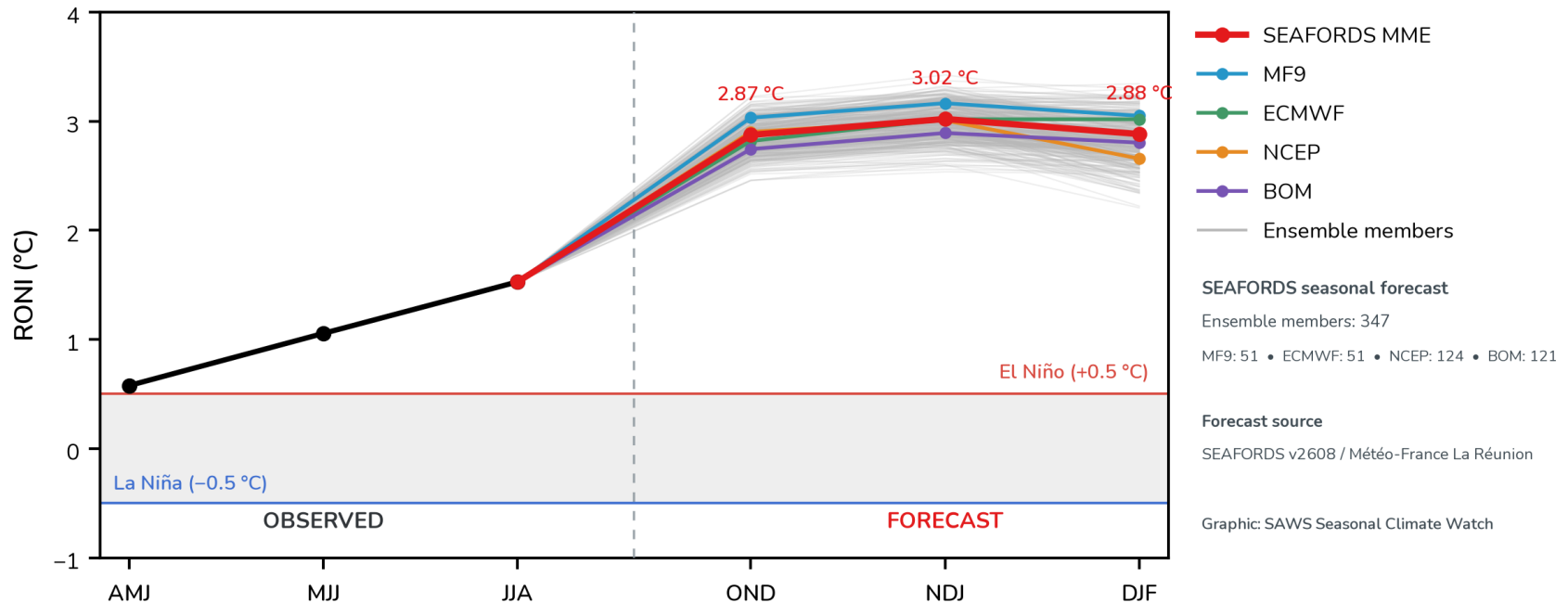


El Niño Southern Oscillation (ENSO) is one driver. The Indian Ocean Dipole, Atlantic conditions and regional circulation can strengthen, weaken or reshape the outcome.

Strong El Niño Expected to Intensify

RONI: observed evolution and ENSO forecast

Relative Oceanic Niño Index • Issued: September 2026





2026/27 El Niño-Regional Perspective

SADC Outlook: Drier signal across much of the Central and Southern Region

SARCOF-33 consensus outlook for October 2026 to March 2027

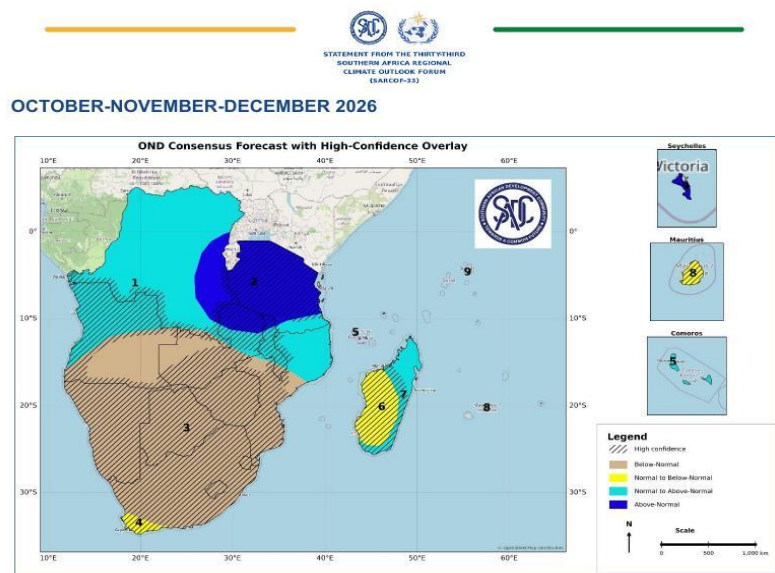


Figure 1: Rainfall forecast for October-November-December 2026

- Zone 1:** Most of the Democratic Republic of Congo (DRC), northwestern Angola, northern Zambia, central Malawi and northern Mozambique, as well as the southern fringes of Tanzania.
Increased chances of normal to above-normal rainfall.
- Zone 2:** Eastern DRC, most of Tanzania, the extreme northern part of Malawi, extreme northern part of Zambia.
Increased chances of above-normal rainfall (High confidence).
- Zone 3:** Much of Angola, southern Zambia, Zimbabwe, Mozambique, Namibia, Botswana, most of South Africa, Eswatini and Lesotho.
Increased chances of below-normal rainfall (High confidence).
- Zone 4:** Southwestern coastal South Africa.
Increased chances of normal to below-normal rainfall (High confidence).
- Zone 5:** Comoros.
Increased chances of normal to above-normal rainfall.
- Zone 6:** Western and southwestern Madagascar.
Increased chances of normal to below-normal rainfall (High confidence).
- OND 2026**

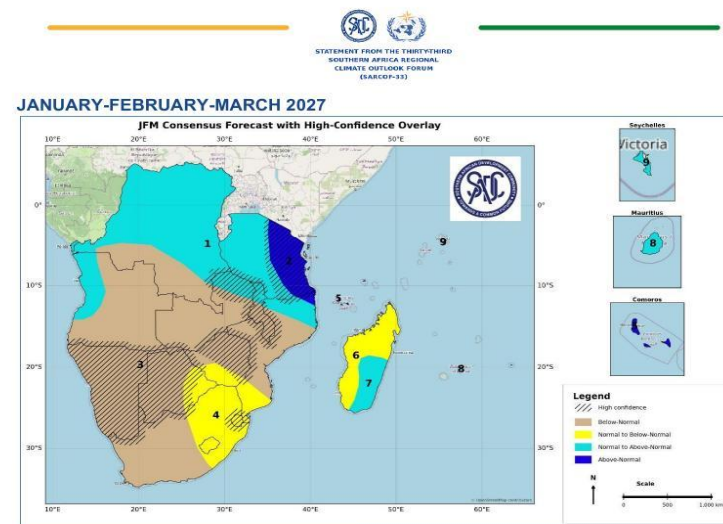


Figure 4: Rainfall forecast for January-February-March 2027

- Zone 1:** Most of the Democratic Republic of Congo (DRC), extreme northwestern Angola, extreme northern Zambia, northern Malawi, northern parts Mozambique, western most parts of Tanzania.
Increased chances of normal to above normal rainfall
- Zone 2:** Eastern Tanzania, extreme northern tip of Mozambique.
Increased chances of above normal rainfall (High confidence).
- Zone 3:** Southern DRC, bulk of Angola, bulk of Zambia, central and southern Malawi, central Mozambique, Namibia and bulk of Botswana, the western half of South Africa, and bulk of Zimbabwe
Increased chances of below normal rainfall
- Zone 4:** Eastern half of South Africa, Lesotho, Eswatini, southern Zimbabwe, extreme southern Mozambique
Increased chances of normal to below-normal rainfall
- Zone 5:** Comoros.
Increased chances of above rainfall
- Zone 6:** North, and western Madagascar.
Increased chances of normal to below-normal rainfall
- Zone 7:** Southeastern Madagascar.
Increased chances of normal to above-normal rainfall
- Zone 8:** Mauritius.
Increased chances of normal above-normal rainfall
- Zone 9:** Seychelles.
Increased chances of normal above-normal rainfall
- JFM 2027**

Below-normal rainfall is favoured over much of central and southern SADC. Northern areas generally have better prospects for normal to above-normal rainfall 7

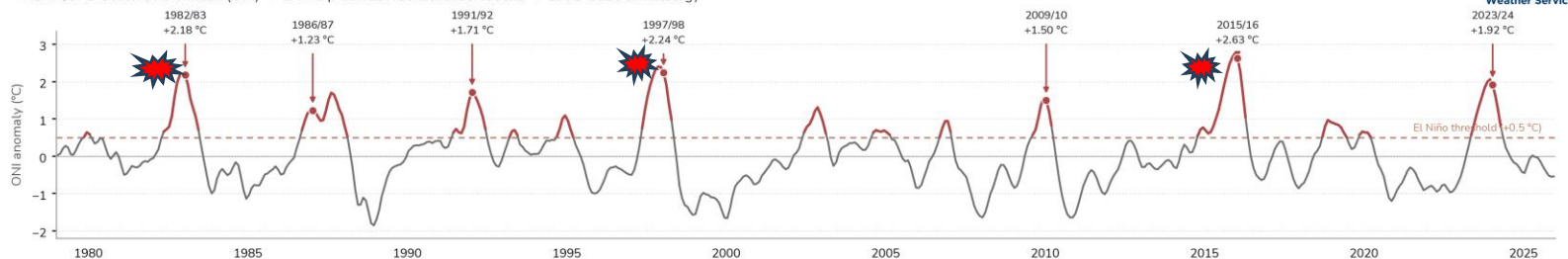


Historical El Niño events

Historical El Niño Events

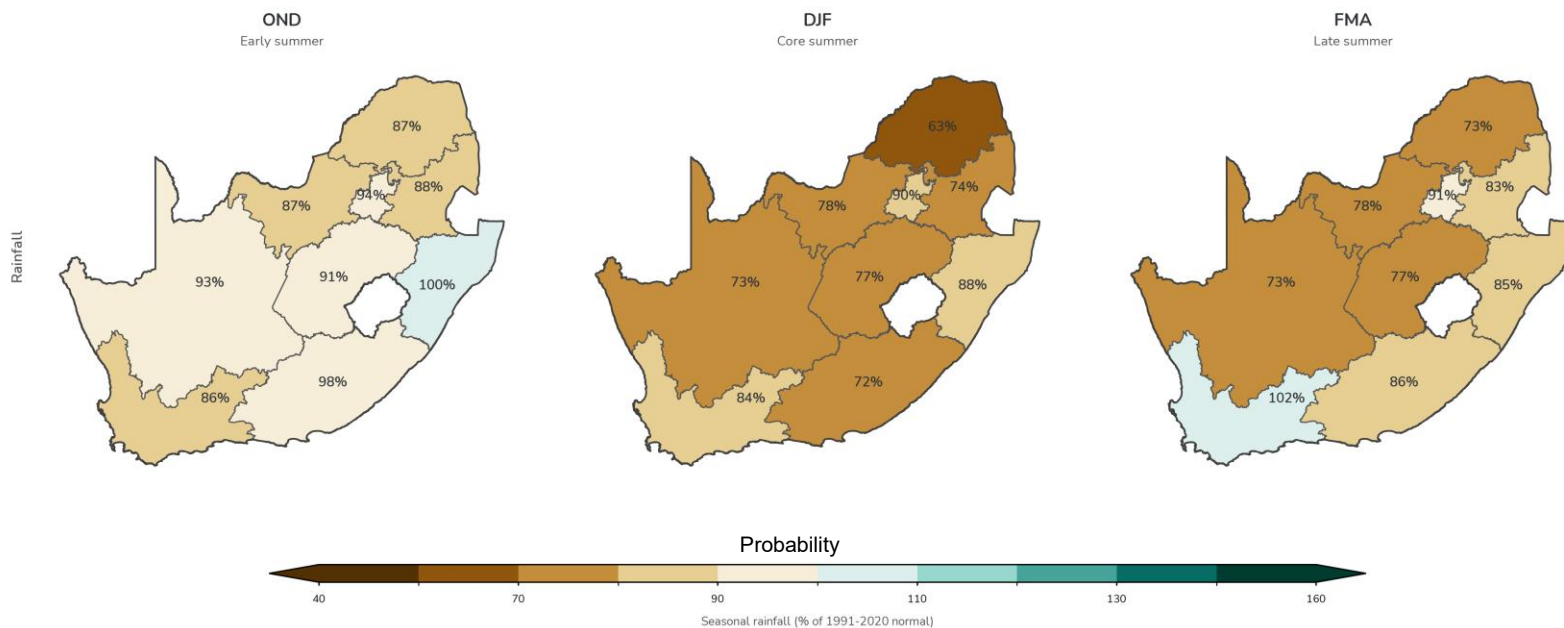
Historical El Niño rainfall response through the South African summer

NOAA/CPC Oceanic Niño Index (ONI) • SAWS provincial rainfall observations • 1991–2020 climatology



Historical composite response

Composite of 7 strong and very strong El Niño representative summers



Representative summers: 1982/83 • 1986/87 • 1991/92 • 1997/98 • 2009/10 • 2015/16 • 2023/24

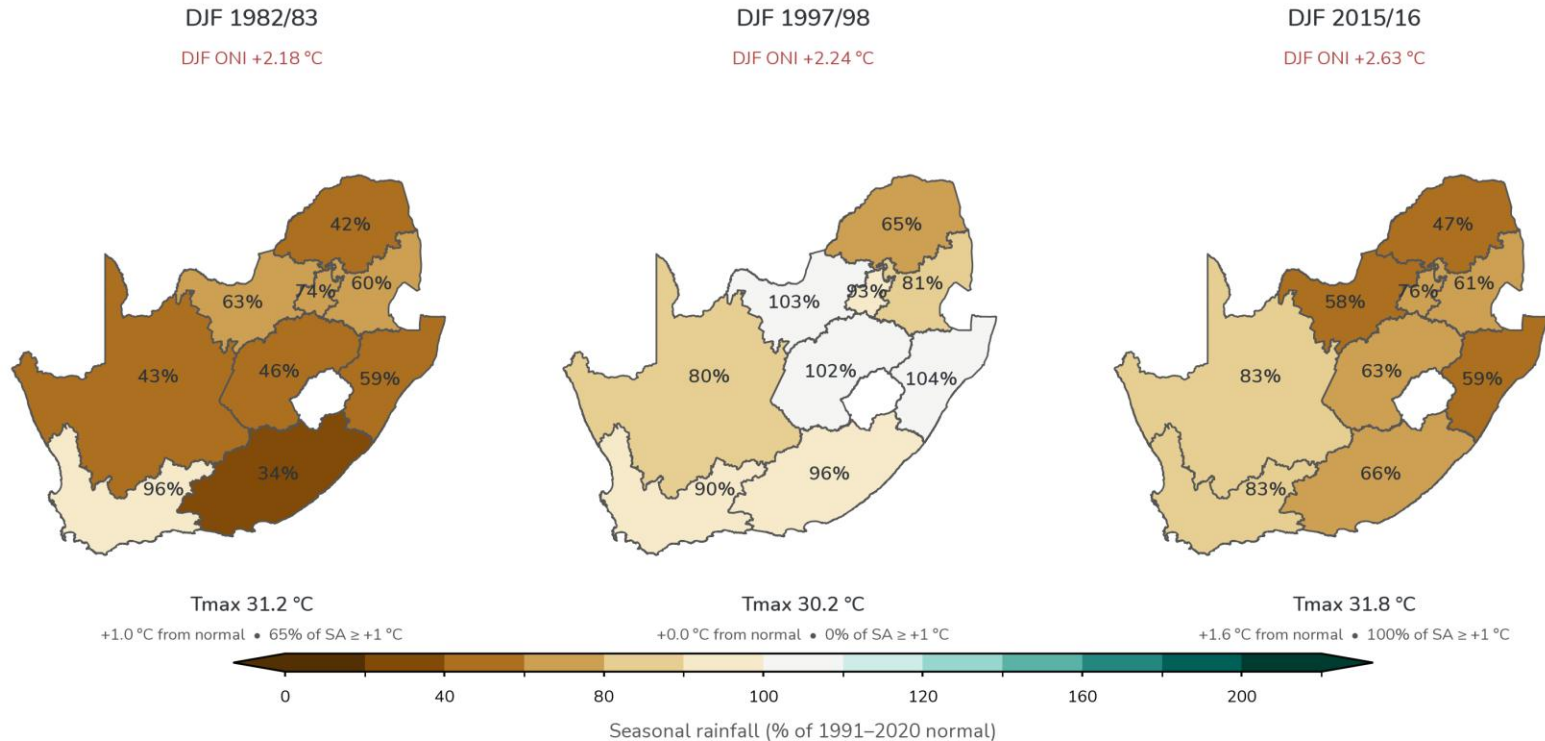
Historical composite; not a forecast for 2026/27. ENSO source: NOAA/CPC ONI • Rainfall data: SAWS provincial rainfall observations

Source: Kelebogile Mathole, SAWS

Historical El Niño Events: Focus on mid-summer DJF

Strong El Niño events, different South African rainfall outcomes

DJF rainfall response with maximum-temperature context • Rainfall: SAWS provincial observations • Temperature: CRU TS4.10 • 1991–2020 climatology



Historical examples; not a forecast for 2026/27.

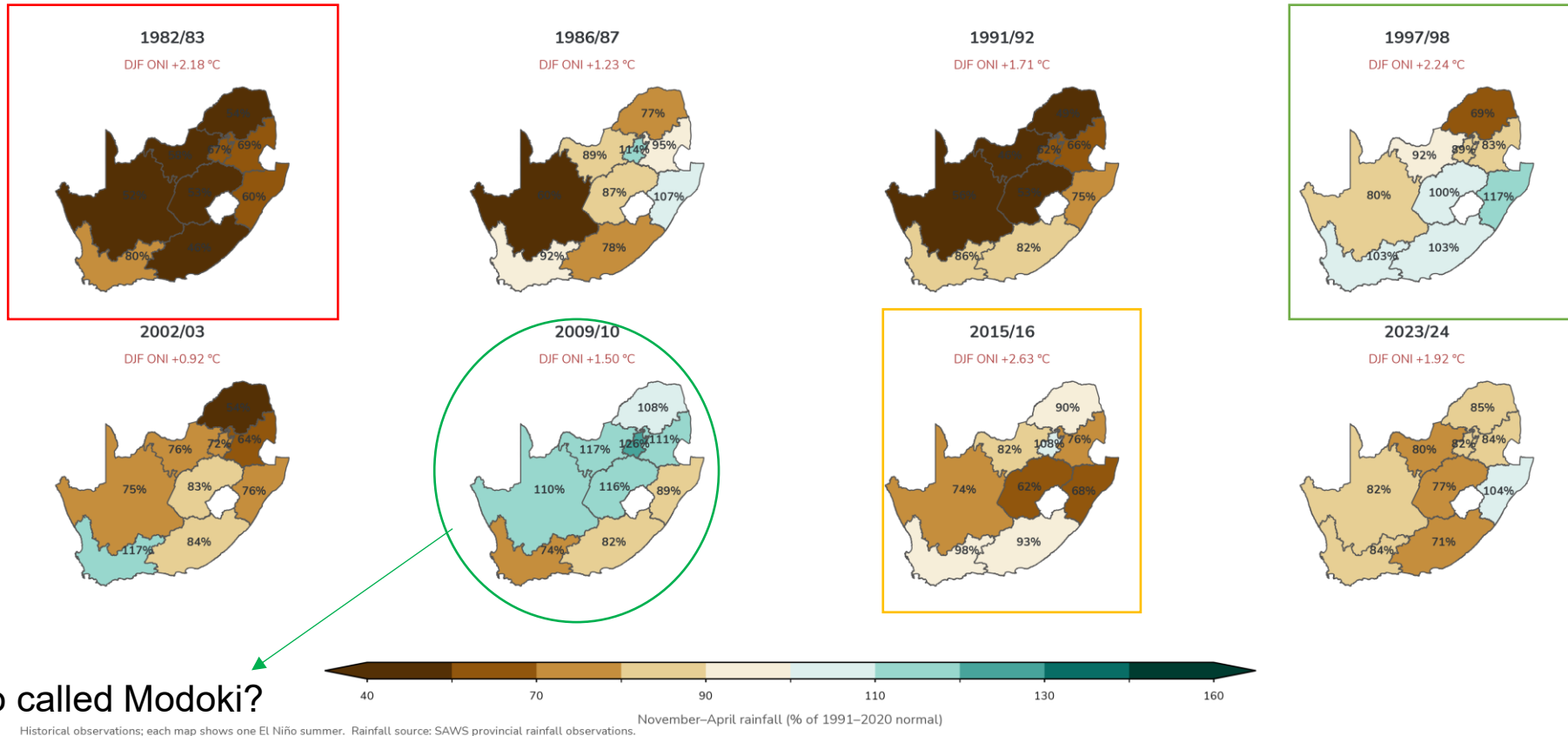
ENSO source: NOAA/CPC ONI • Rainfall: SAWS provincial observations • Temperature: CRU TS4.10

Source: Kelebogile Mathole, SAWS

Historical El Niño Events: Whole summer period (Nov – Apr)

Rainfall during recent El Niño summer periods

November–April rainfall • SAWS provincial observations • 1991–2020 climatology



Source: Kelebogile Mathole, SAWS

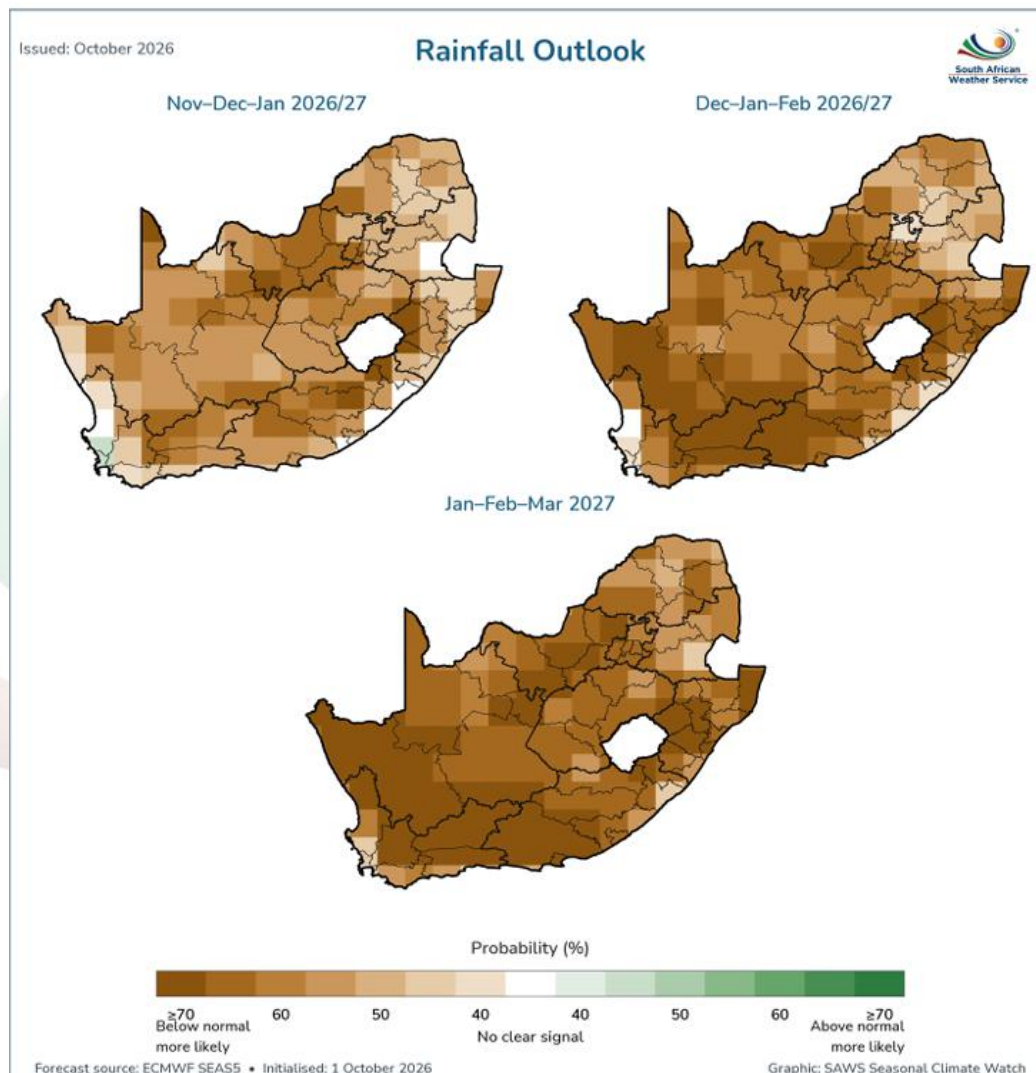


2026/27 El Niño- Local Perspective

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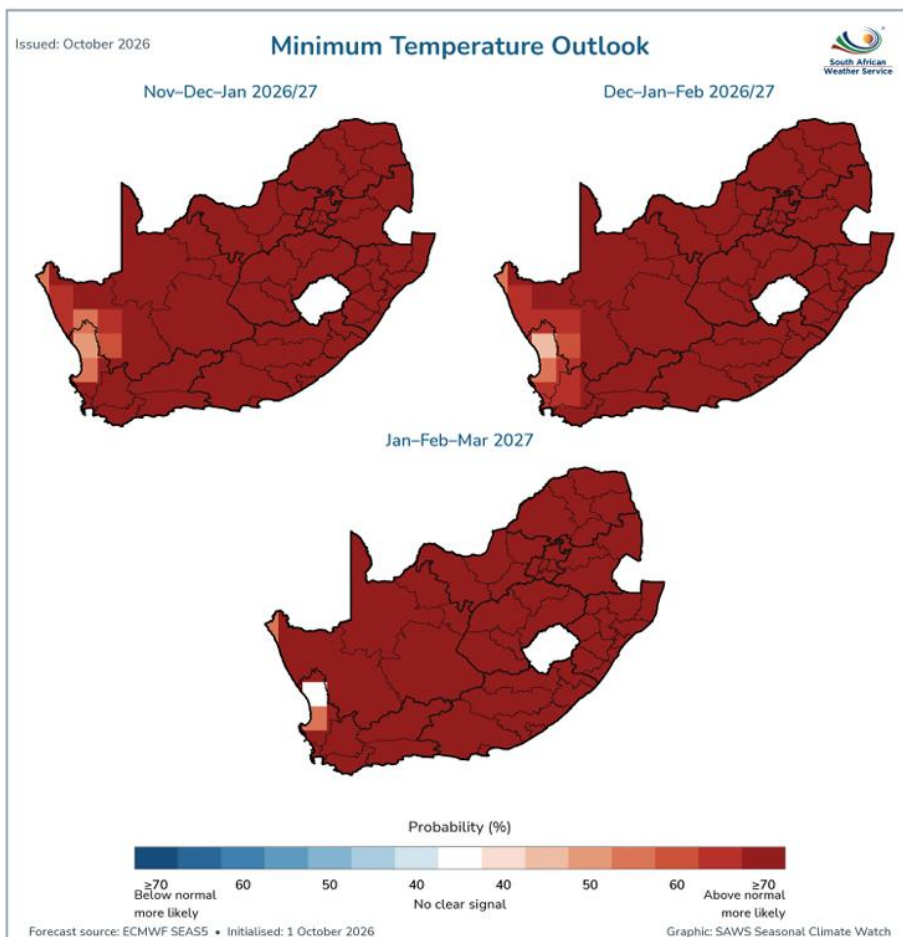
SAWS Seasonal Forecast Issued in October 2026

Maps indicate the highest probability of the above-normal and below-normal categories.

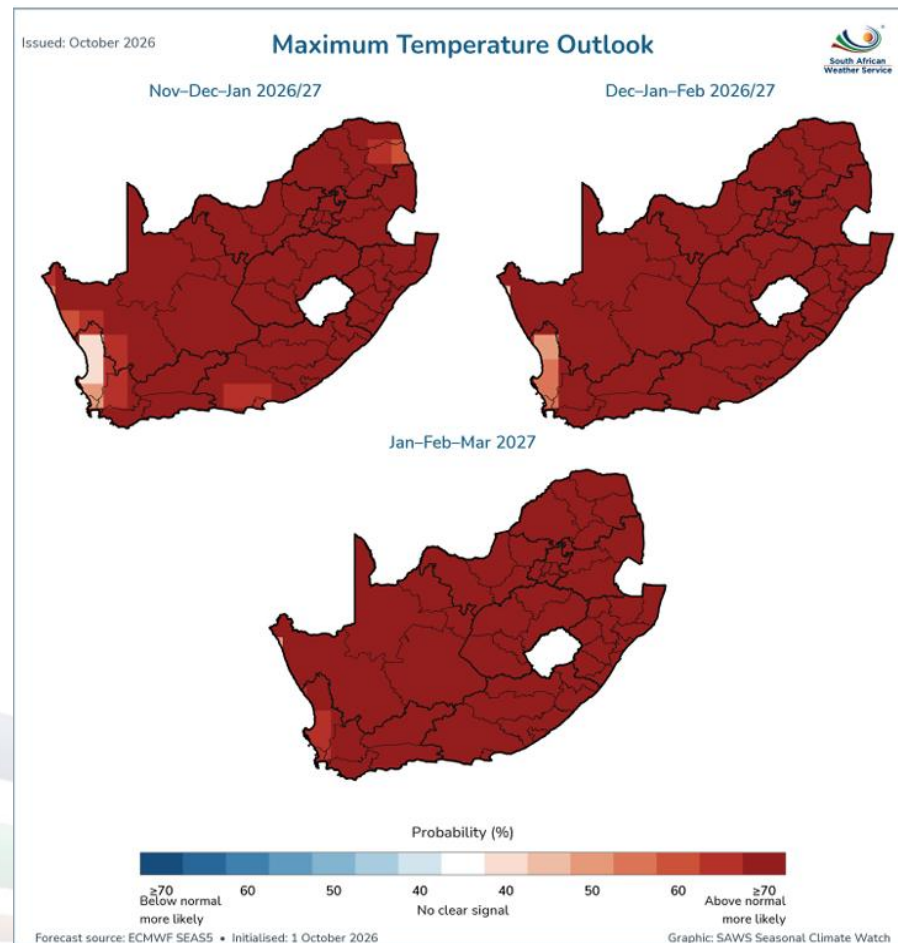


SAWS Seasonal Forecast Issued in October 2026

Minimum Temperature



Maximum Temperature



Conclusion: From forecast information to preparedness and action

We now have an indication of the conditions that may develop during the 2026/27 summer. The priority is to translate this information into early, practical and coordinated preparedness.

- El Niño does not necessarily result in uniformly drier or hotter conditions across every location or throughout the entire season. Outcomes vary according to the characteristics of the event and the influence of other oceanic and atmospheric drivers.
- The current seasonal outlook nevertheless indicates an increased likelihood of warmer and drier conditions across much of South Africa during the 2026/27 summer.
- Potential impacts include heightened heat-related health risks, increased water demand, pressure on agriculture and greater risks for vulnerable communities.
- Significant rainfall and severe weather events may still occur. Current impact-based warnings therefore require continued attention and timely action.
- Government departments, municipalities and affected sectors should use seasonal information to guide early planning for water resources, health, agriculture and disaster management.
- Clear warnings and practical guidance must reach exposed and vulnerable communities in time to support appropriate action.
- Continued coordination among government, affected sectors and community structures will be essential as conditions develop.

Ke a leboga

Ke a leboga

Ngiyabonga

Ndo livhuwa

Ke a leboha

Enkosi

Ndza nkhenisa

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