

Seasonal Climate Watch

May to Sep 2025

Date issued: 02 May 2025

1. Overview

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. ENSO, however, has limited influence on the South Africa during the winter seasons and is not expected to have a significant impact.

As early winter is starting in May-June-July, the focus shifts to the south-western parts of the country and the southern and eastern coastal areas. Both the south-western parts and the southern and eastern coastal areas are expected to receive mostly below-normal rainfall early-, mid- and late-winter.

Minimum and maximum temperatures are largely expected to be above-normal for the most parts during the winter season, with the notable exception of the southern coastal areas that are expected to see parts of it be below-normal.

The SAWS will continue to monitor the weather and climate conditions and provide updates on any future assessments that may provide more clarity on the current expectations for the coming season.

2. South African Weather Service Prediction System

2.1. Ocean-Atmosphere Global Climate Model

The South African Weather Service (SAWS) is recognised by the World Meteorological Organization (WMO) as a Global Producing Centre (GPC) for Long-Range Forecasts (LRF). This is owing to its local numerical modelling efforts, which involve the coupling of both the atmosphere and ocean components to form a fully interactive coupled modelling system, named the SAWS Coupled Model (SCM). The SCM is a first of its kind in both South Africa and the region. Please note that the SCM is not included in the SAWS multi-model prediction for this month due to its non-operational status following the cyber security attack that SAWS experienced at the end of January 2025. Below are the third season (AMJ) predictions for rainfall (Figure 1) and average temperature (Figure 2), as issued in January 2025.

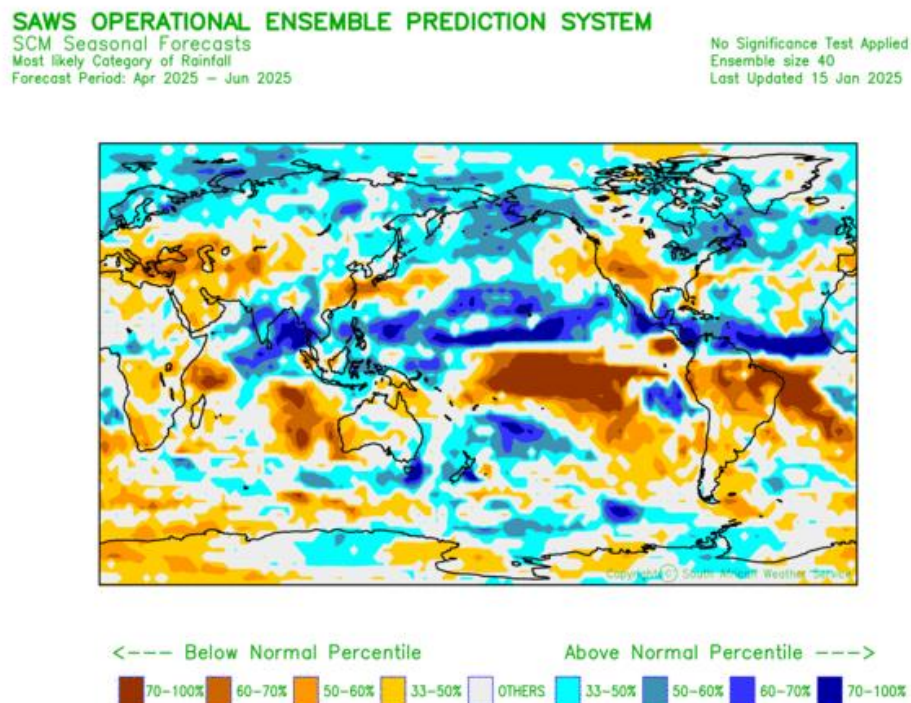


Figure 1: April-May-June, AMJ (2025) global prediction for total rainfall probabilities

SAWS OPERATIONAL ENSEMBLE PREDICTION SYSTEM

SCM Seasonal Forecasts
Most likely Category of 2m Temperature
Forecast Period: Apr 2025 – Jun 2025

No Significance Test Applied
Ensemble size 40
Last Updated 15 Jan 2025

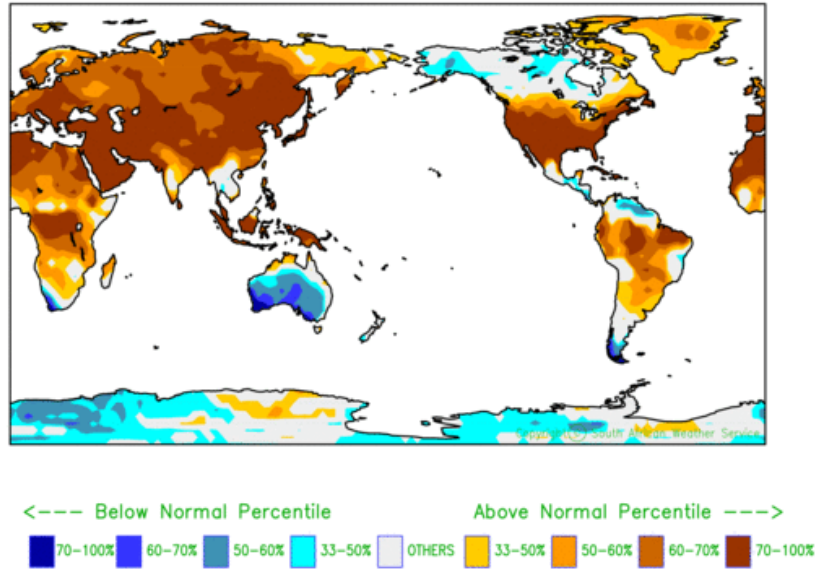


Figure 2: April-May-June, AMJ (2025) global prediction for average temperature probabilities

2.2. Seasonal Forecasts for South Africa from the SAWS seasonal prediction system

The GFDL-SPEAR and COLA-RSMAS-CCSM4 systems (part of the North American Multi-Model Ensemble System) for South Africa, as issued with the April 2025 initial conditions, and are presented below (District names can be seen in the appendix indicated in Figure A4):

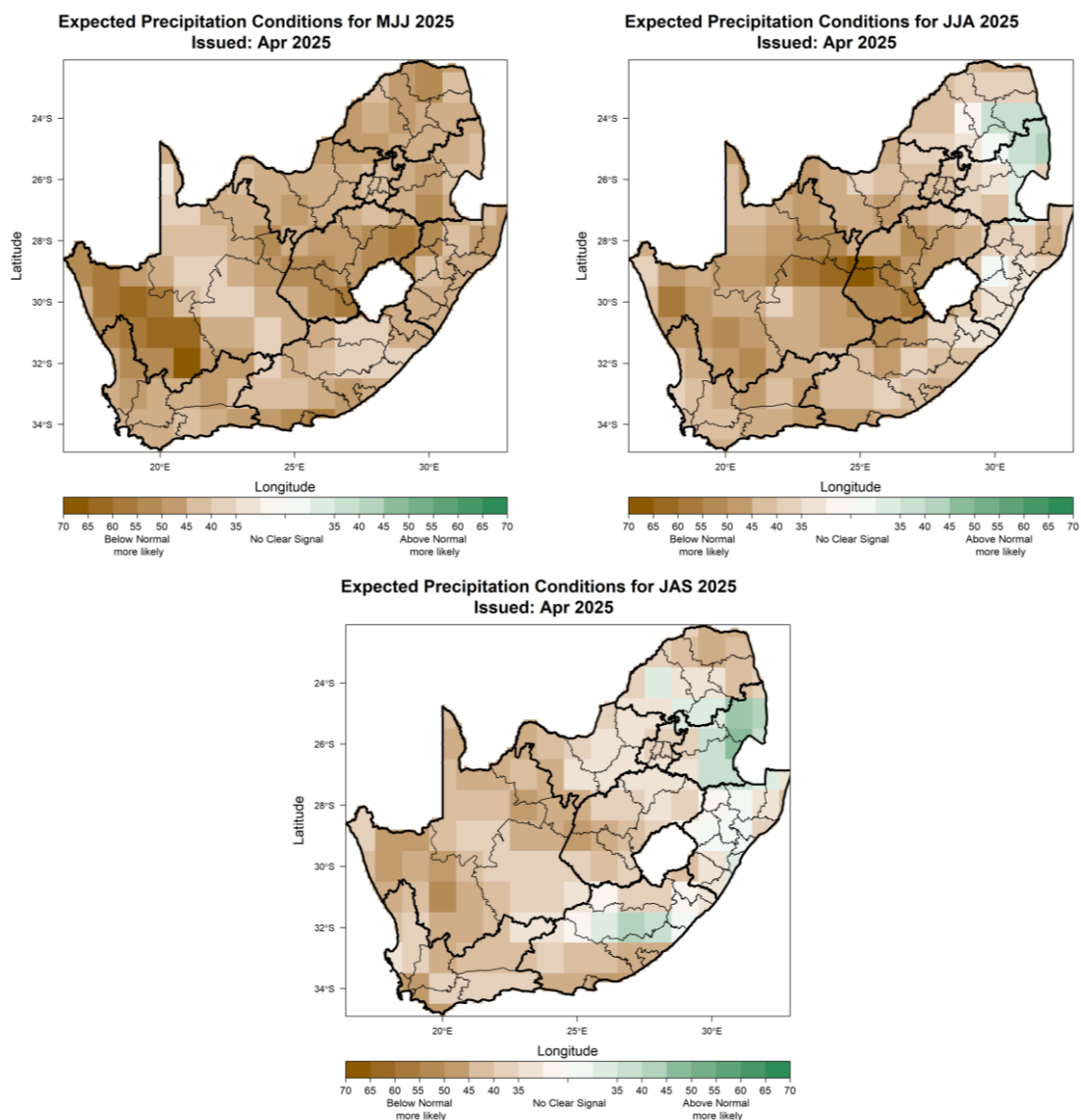


Figure 3: May-June-July 2025 (MJJ; left), June-July-August 2025 (JJA; right), July-August-September 2025 (JAS; bottom) seasonal precipitation prediction. Maps indicate the highest probability of the above-normal and below-normal categories. Please refer to appendix Figure A1 for forecast skill levels.

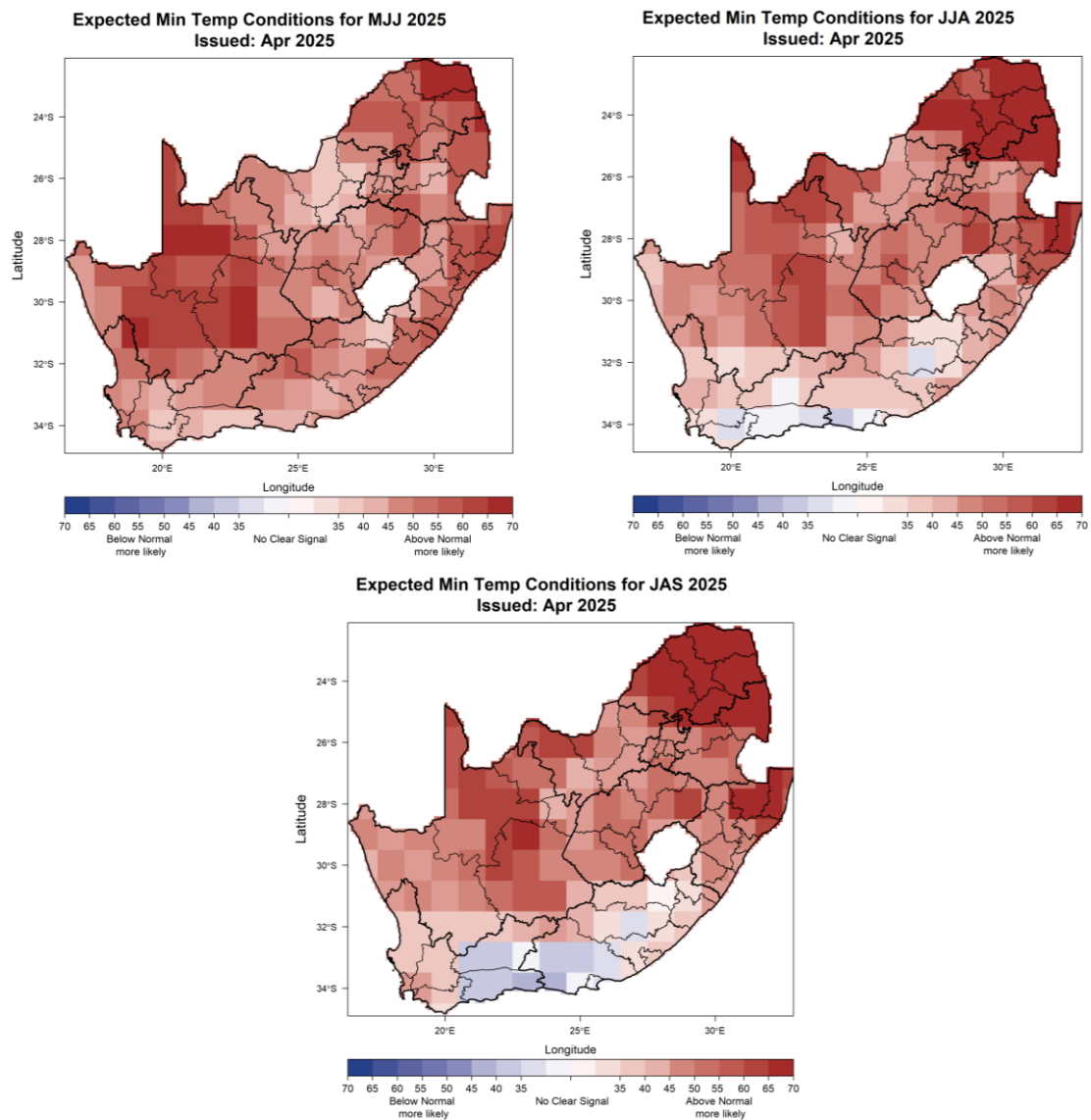


Figure 4: May-June-July 2025 (MJJ; left), June-July-August 2025 (JJA; right), July-August-September 2025 (JAS; bottom) seasonal minimum temperature prediction. Maps indicate the highest probability of the above-normal and below-normal categories. Please refer to appendix Figure A2 for forecast skill levels.

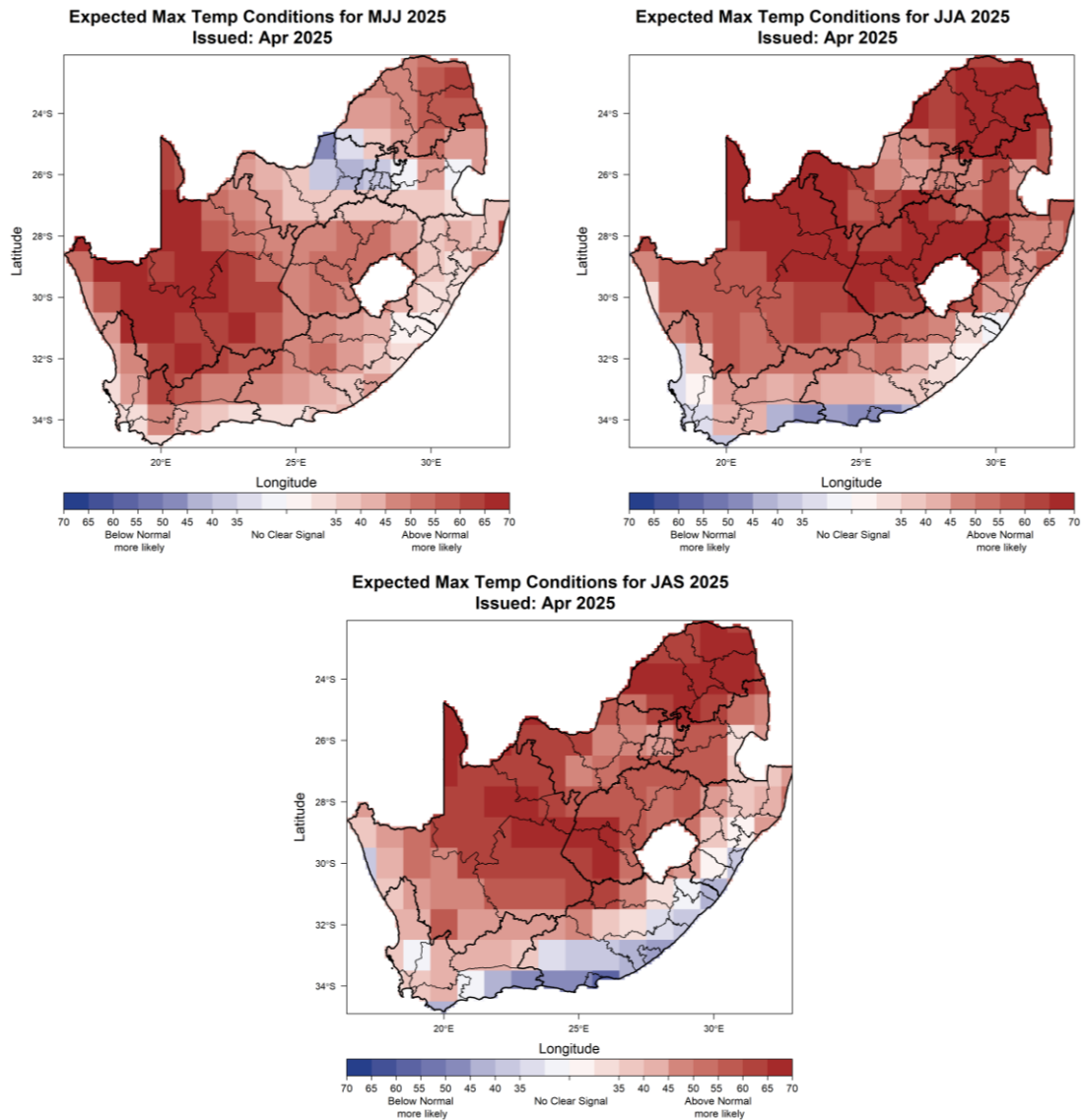


Figure 5: May-June-July 2025 (MJJ; left), June-July-August 2025 (JJA; right), July-August-September 2025 (JAS; bottom) seasonal maximum temperature prediction. Maps indicate the highest probability of the above-normal and below-normal categories. Please refer to appendix Figure A3 for forecast skill levels.

2.3. Climatological Seasonal Totals and Averages

The following maps indicate the rainfall and temperature (minimum and maximum temperature) climatology for the May-June-July, June-July-August and July-August-September seasons. The rainfall and temperature climates are representative of the average rainfall and temperature conditions over a long period of time for the relevant 3-month seasons presented here.

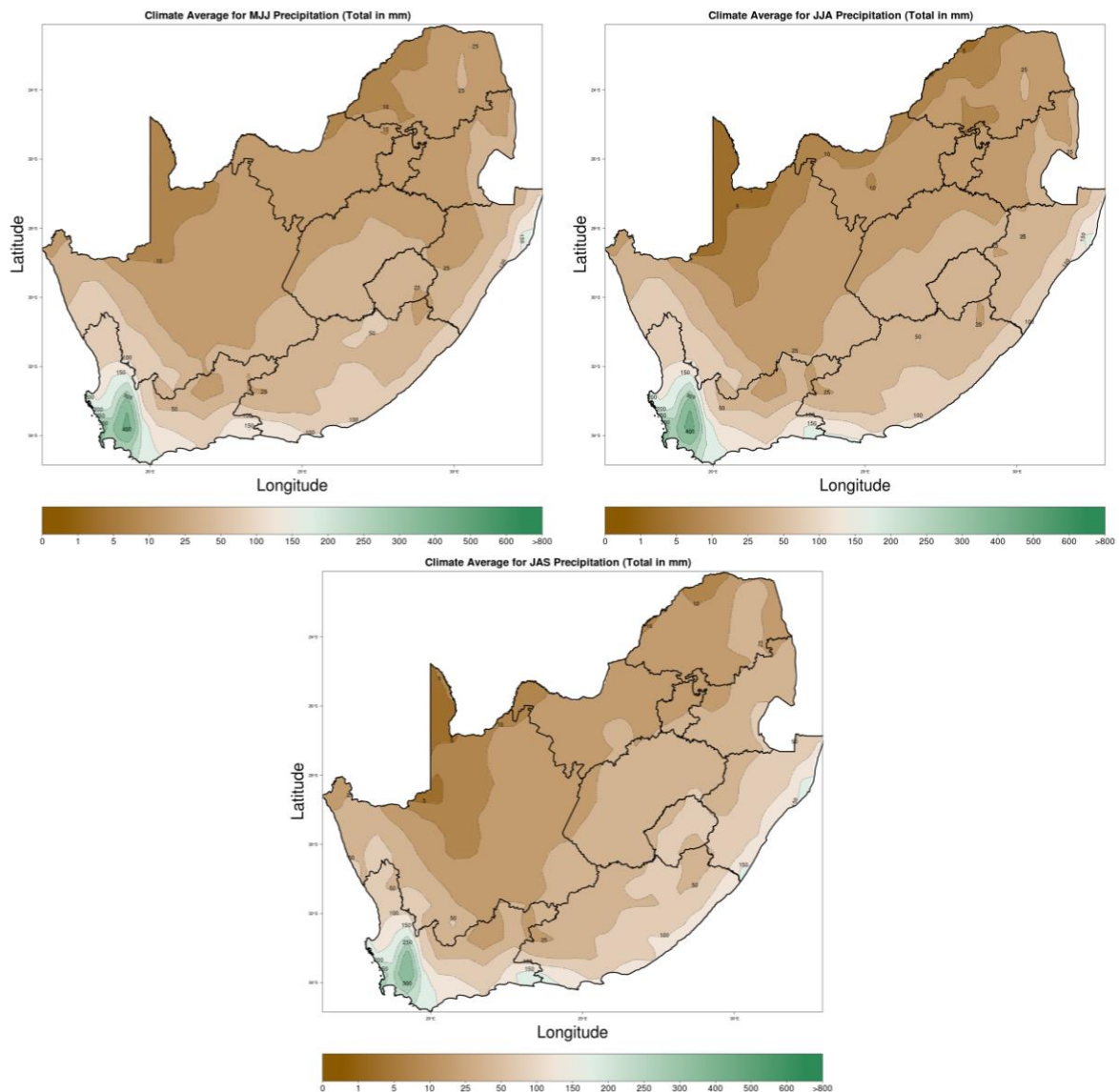


Figure 6: Climatological seasonal totals for precipitation during May-June-July (MJJ; left), June-July-August (JJA; right) and July-August-September (JAS; bottom).

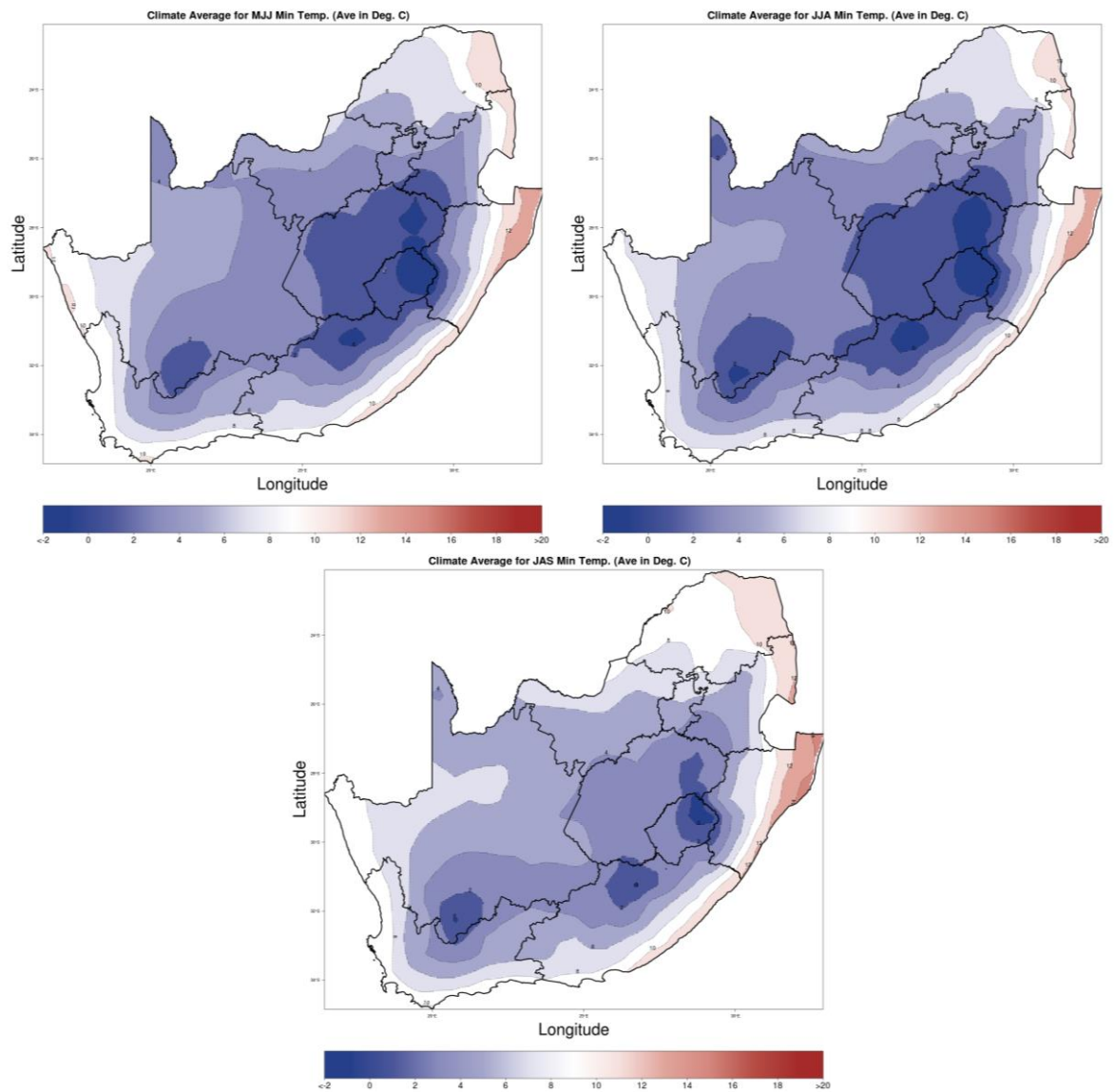


Figure 7: Climatological seasonal averages for minimum temperature during May-June-July (MJJ; left), June-July-August (JJA; right) and July-August-September (JAS; bottom).

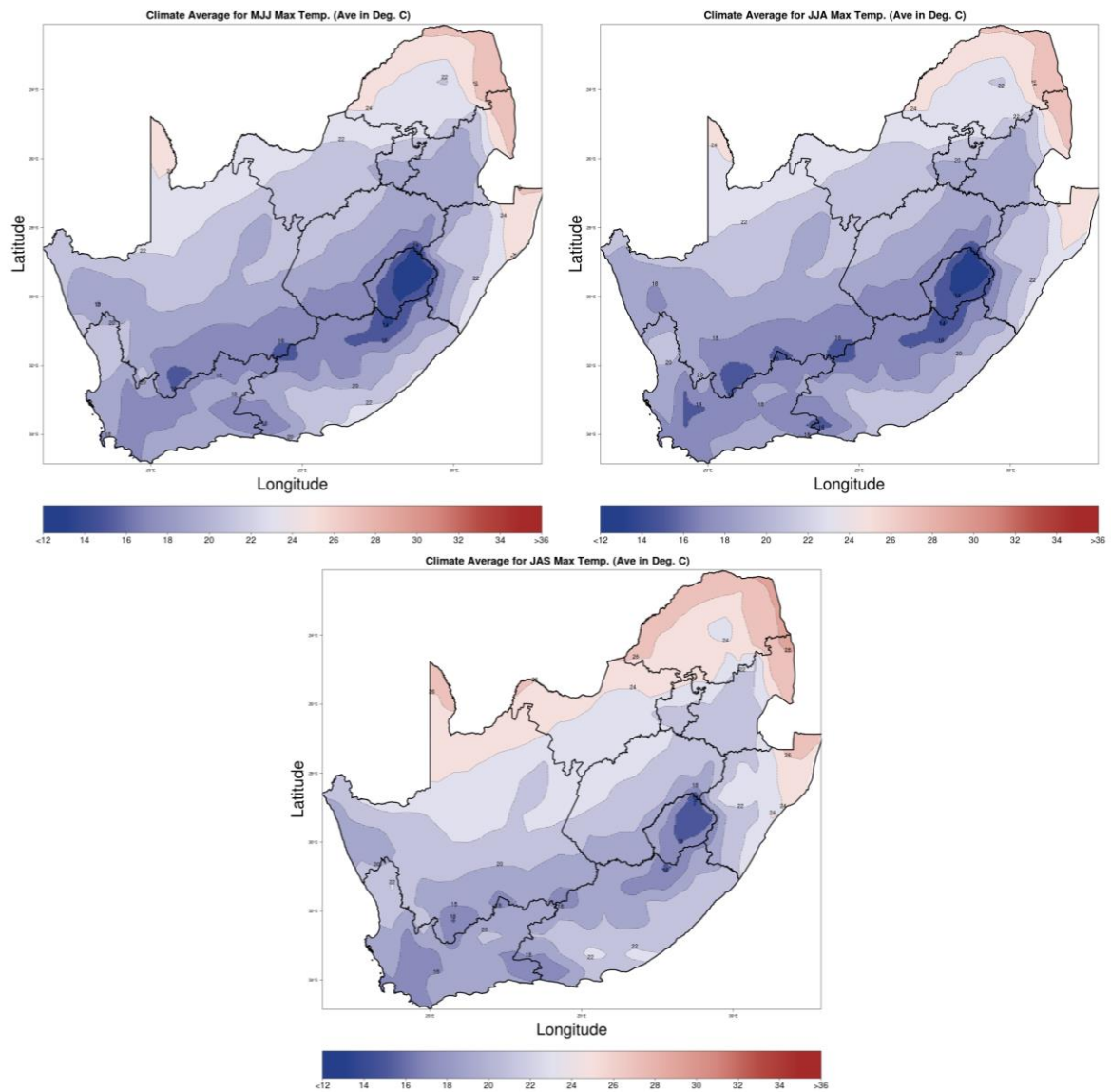


Figure 8: Climatological seasonal averages for maximum temperature during May-June-July (MJJ; left), June-July-August (JJA; right) and July-August-September (JAS; bottom).

3. Summary implications to various economic sector decision makers

Water and Energy

Below-normal rainfall conditions are anticipated during the early-, mid- and late-winter seasons over most parts of the country, including the south-western parts for which these seasons are the rainfall season. Such conditions, coupled with the expected above-normal temperatures are likely to lower water levels through evapotranspiration processes in areas that are experiencing prolonged dry conditions, including the south-western parts. Furthermore, the forecast predicts that minimum and maximum temperatures will be mostly above normal in most regions, except for the southern coastal areas, where below-normal temperatures are expected. These below-normal temperatures will likely increase the demand for space heating during the forecast period. Relevant decision-makers are encouraged to take note of these possible outcomes and communicate with affected businesses and communities accordingly.

Health

The predicted above-normal minimum and maximum temperatures expected across most parts of the country during the winter season, except in the southern coastal areas, may lead to multiple health impacts. Elevated temperatures may increase the risk of prolonged exposure to ultraviolet (UV) radiation, which could potentially raise levels above 3 on the World Meteorological Organization's UV Index, increasing the likelihood of sunburn, skin damage, and other UV-related health impacts. Additionally, elevated temperatures and dry conditions will significantly heighten wildfire risks, threatening biodiversity, ecosystems, and infrastructure. Prolonged dry conditions may also elevate respiratory health risks by increasing airborne dust and pollutants, disproportionately affecting individuals with chronic respiratory conditions. The predicted below-normal rainfall is likely to affect water availability in areas with existing water challenges, which might increase dependency on unsafe or poorly treated water sources. As a result, the risk of waterborne diseases may rise, and hygiene practices could suffer, particularly in communities with strict water rationing. Local authorities are closely monitoring these risks and developing comprehensive mitigation strategies. The public is advised to adhere to the guidelines issued by these authorities to safeguard their health during this period.

Agriculture

Below-normal rainfall is predicted for most parts of the country during the early, mid, and late winter seasons, except for some parts of Mpumalanga where above-normal rainfall is expected during the mid and late winter seasons. The south-western part, which normally receives significant rainfall during the winter season, is expected to receive mostly below-normal rainfall during this period. Below-normal rainfall conditions in these areas are expected to have a significant impact on crop and livestock production. Therefore, the relevant decision-makers are encouraged to advise farmers in these regions to practice soil and water conservation, proper water harvesting and storage, and other appropriate farming practices.

This forecast is updated monthly, and users are advised to monitor the updated forecasts, as there is a possibility for them to change, especially the longer lead-time forecasts. Moreover, farmers are advised to keep monitoring the weekly and monthly forecasts issued by the SAWS. Farmers are also advised to keep on monitoring advisories from the Department of Agriculture and make changes as required.

4. Contributing institutions and useful links

All the forecasts presented here are a result of the probabilistic prediction based on the ensemble members from the coupled climate model from the SAWS and two models from the NMME. Other useful links for seasonal forecasts are:

- <http://www.weathersa.co.za/home/seasonal> (Latest predictions from the SAWS for the whole of SADC)
- <https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/> (ENSO predictions from various centres)
- <https://iri.columbia.edu/our-expertise/climate/forecasts/seasonal-climate-forecasts/> (Copernicus Global forecasts)



Appendix – Verification

The following three figures show the Relative Operating Characteristic (ROC) scores for the relevant multi-model forecasts in the main document. The ROC scores are commonly used in seasonal forecasts to determine the areas where the forecasts perform well, so that the user can make more informed decisions on using the given forecast. As a general guideline, a score over 0,5 is technically better than chance, however, scores around and higher than 0,6 are considered to have significant skill to add confidence to the forecast.

From the figures there will be two ROC scores per season per variable, which indicate the score when a certain rainfall or temperature category is favoured. For example, if an area is favoured to receive above-normal rainfall, then the ROC score to look at would be the one calculated for the above-normal category (right side of the figures below). Also, make sure to look at the correct corresponding seasons indicated in the title of each map.

The aim of these maps is to add (or remove) confidence of a particular forecast over certain areas for specific seasons. Seasonal model skill over South Africa can be highly variable, highlighting the importance of knowing exactly where the forecasting system generally performs well or where it may struggle. It is important to note that the maps do not indicate where the current forecast will be correct or incorrect but rather highlights confidence levels in the forecasting system.

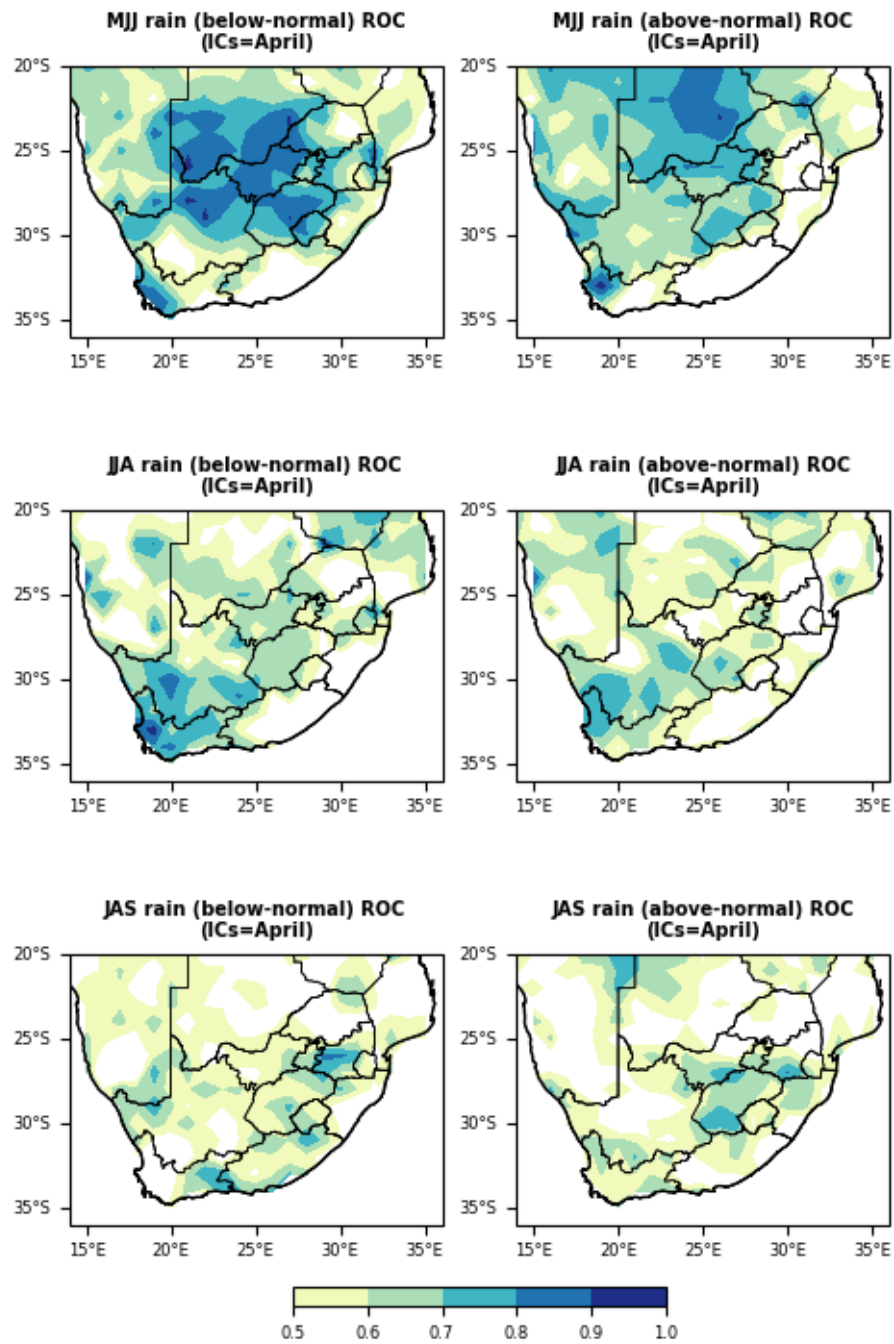


Figure A1: ROC scores for rainfall relevant to the current forecasts in Figure 3.

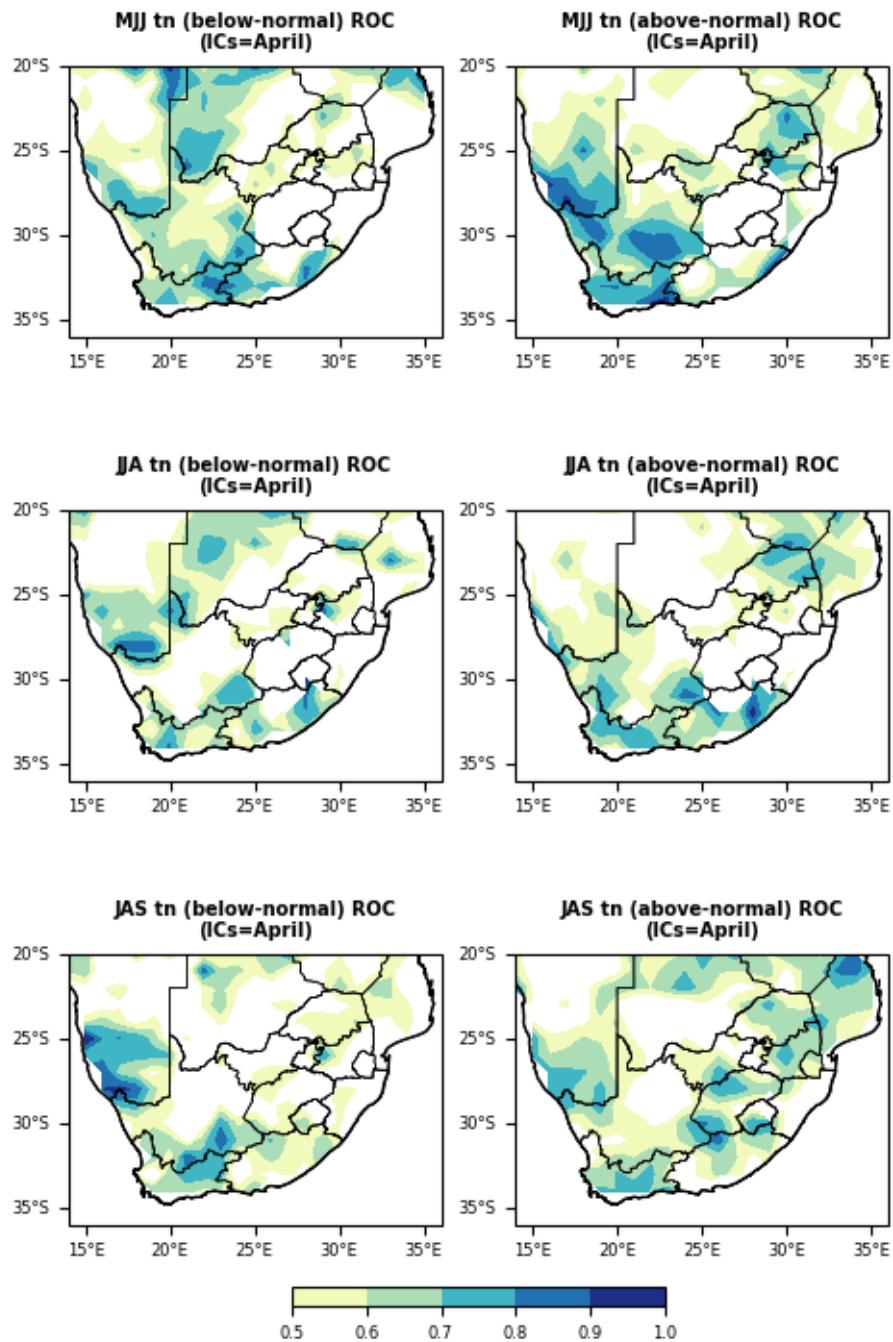


Figure A2: ROC scores for minimum temperatures relevant to the current forecasts in Figure 4.

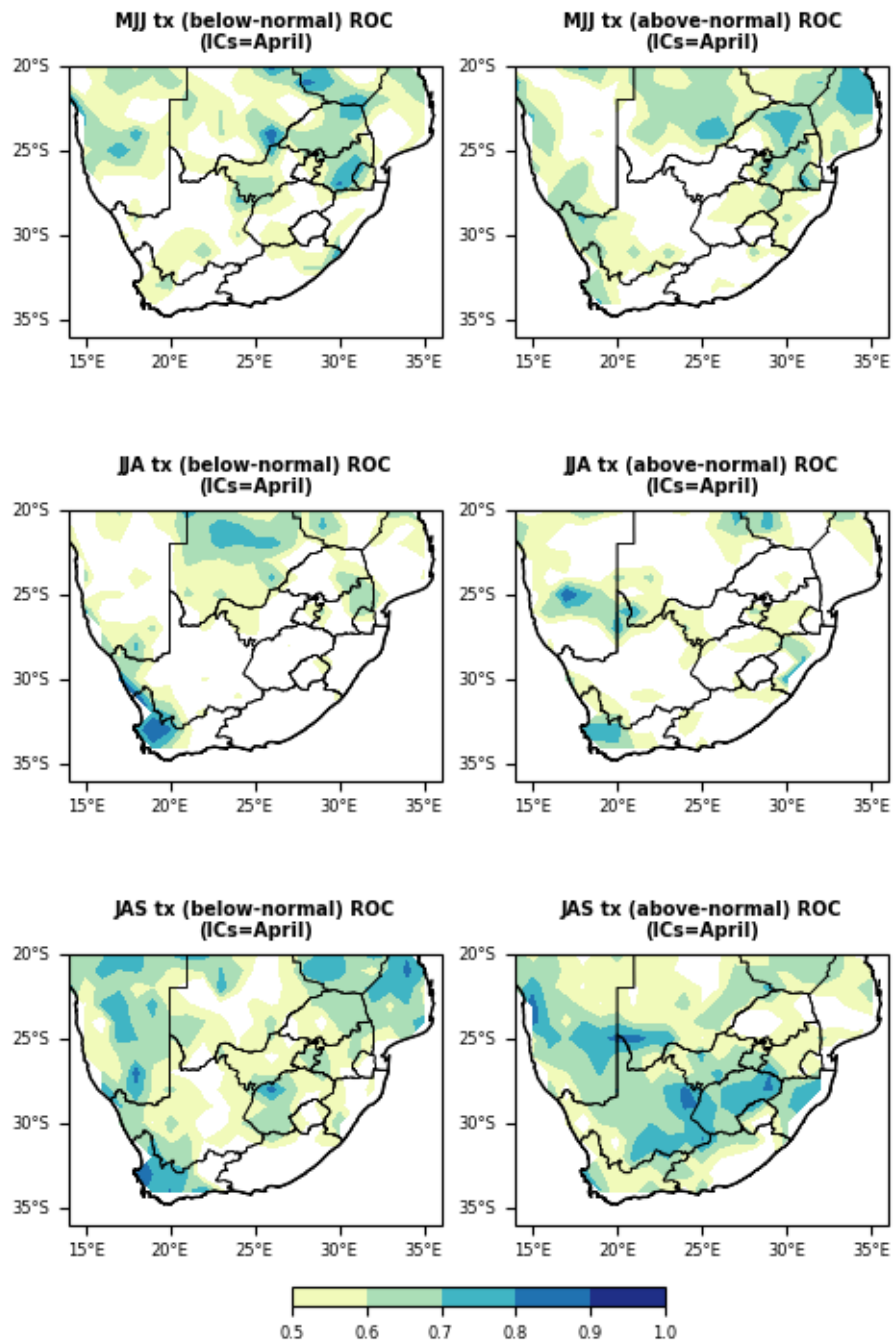


Figure A3: ROC scores for maximum temperatures relevant to the current forecasts in Figure 5.

Appendix – District Information

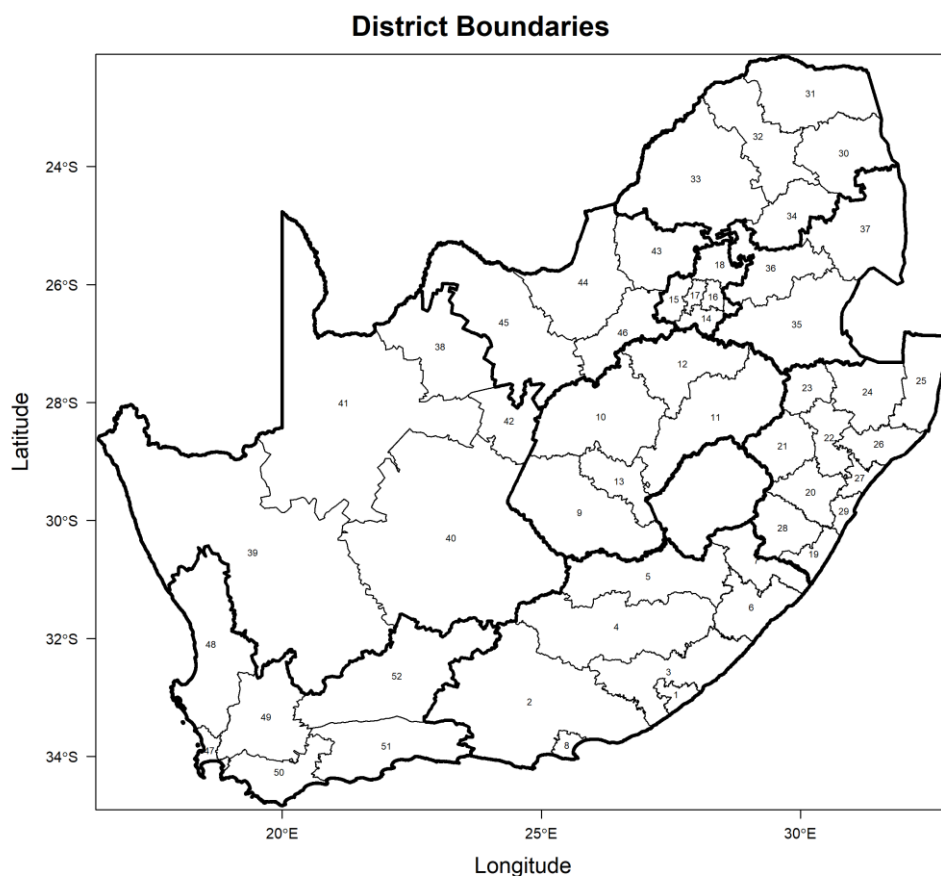


Figure A4: Local District Map with numbers corresponding to the table below with names.

Table with District Names and Numbers

Nr.	District Name	Nr.	District Name	Nr.	District Name	Nr.	District Name
1	Buffalo City	16	Ekurhuleni	31	Vhembe	46	Dr Kenneth Kaunda
2	Sarah Baartman	17	City of Johannesburg	32	Capricorn	47	City of Cape Town
3	Amathole	18	City of Tshwane	33	Waterberg	48	West Coast
4	Chris Hani	19	Ugu	34	Sekhukhune	49	Cape Winelands
5	Joe Gqabi	20	Umgungundlovu	35	Gert Sibande	50	Overberg
6	O.R.Tambo	21	Uthukela	36	Nkangala	51	Garden Route
7	Alfred Nzo	22	Umzinyathi	37	Ehlanzeni	52	Central Karoo
8	Nelson Mandela Bay	23	Amajuba	38	John Taolo Gaetsewe		
9	Xhariep	24	Zululand	39	Namakwa		
10	Lejweleputswa	25	Umkhanyakude	40	Pixley ka Seme		
11	Thabo Mofutsanyane	26	King Cetshwayo	41	Z F Mgcawu		
12	Fezile Dabi	27	iLembe	42	Frances Baard		
13	Mangaung	28	Harry Gwala	43	Bojanala		
14	Sedibeng	29	eThekweni	44	Ngaka Modiri Molema		
15	West Rand	30	Mopani	45	Dr Ruth Segomotsi Mompati		