South African Weather Service

Seasonal Climate Watch

April to Aug 2025

Date issued: 31 March 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.

Due to the change of seasons into late autumn (Apr-May-Jun) and early- to mid- winter (May-Jun-Jul and Jun-Jul-Aug), the focus shifts to the south-western parts of the country and the southern and eastern coastal areas. The south-western parts of the country are expected to receive below-normal rainfall during the forecasted seasons and the southern and eastern coastal areas are expected to receive mostly above-normal rainfall.

Minimum temperatures are largely expected to be above-normal for the most part of the forecaster period. Maximum temperatures are expected to be above-normal as well with the notable exception of the southern and south-eastern coastal areas that is expected to have below-normal maximum temperatures.

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.

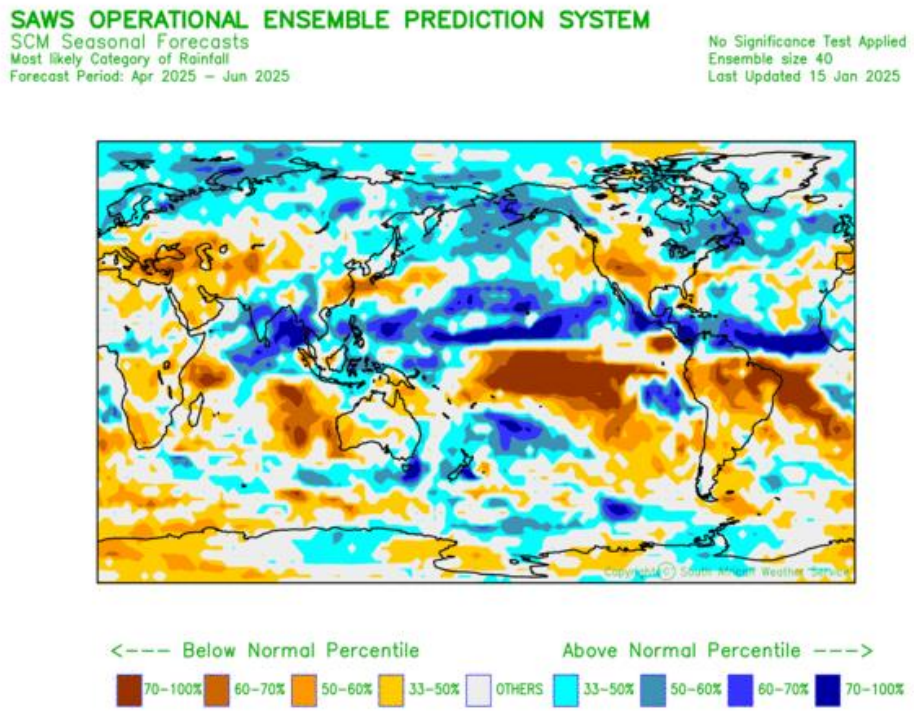

Figure 1: April-May-June, AMJ (2025) global prediction for total rainfall probabilities

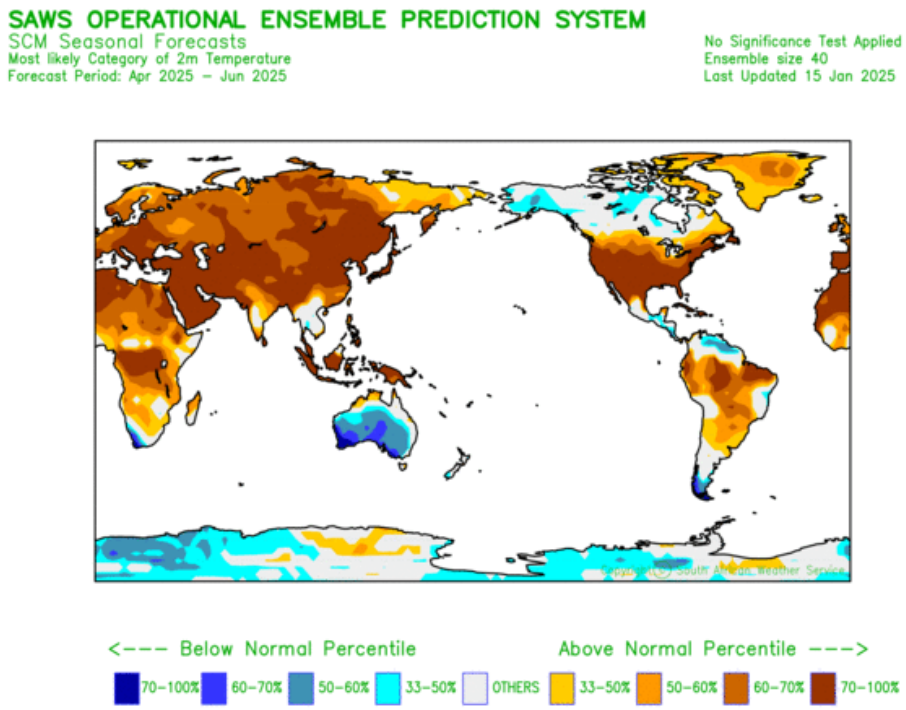

Figure 2: April-May-June, AMJ (2025) global prediction for average temperature probabilities

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 March 2025 initial conditions, and are presented below (District names can be seen in the appendix indicated in Figure A4):

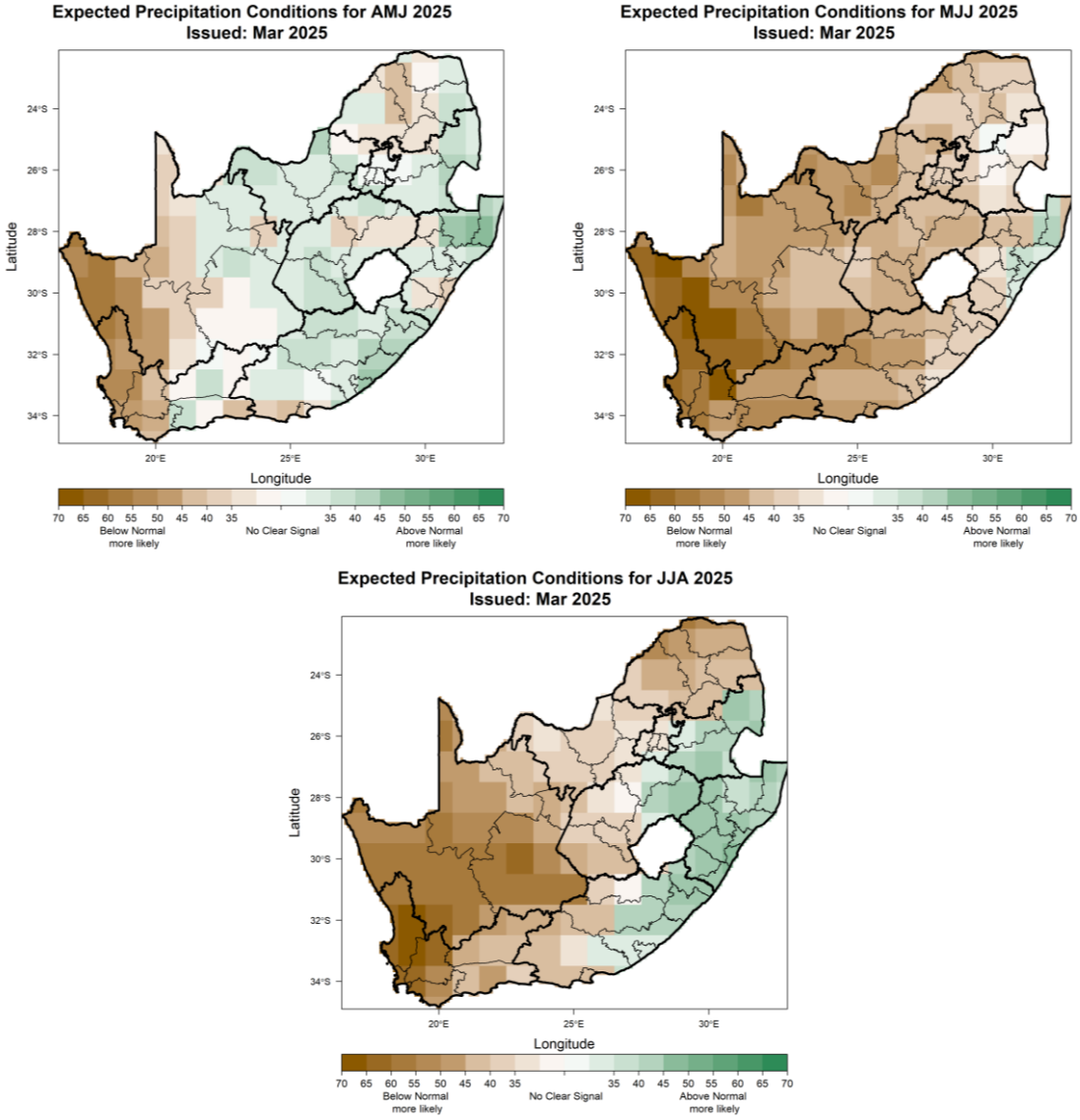

Figure 3: April-May-June 2025 (AMJ; left), May-June-July 2025 (MJJ; right), June-July-August 2025 (JJA; bottom) seasonal precipitation prediction. Maps indicate the highest probability of the above-normal and below-normal categories. Please refer to appendix Figure A1 for forecast skill levels.

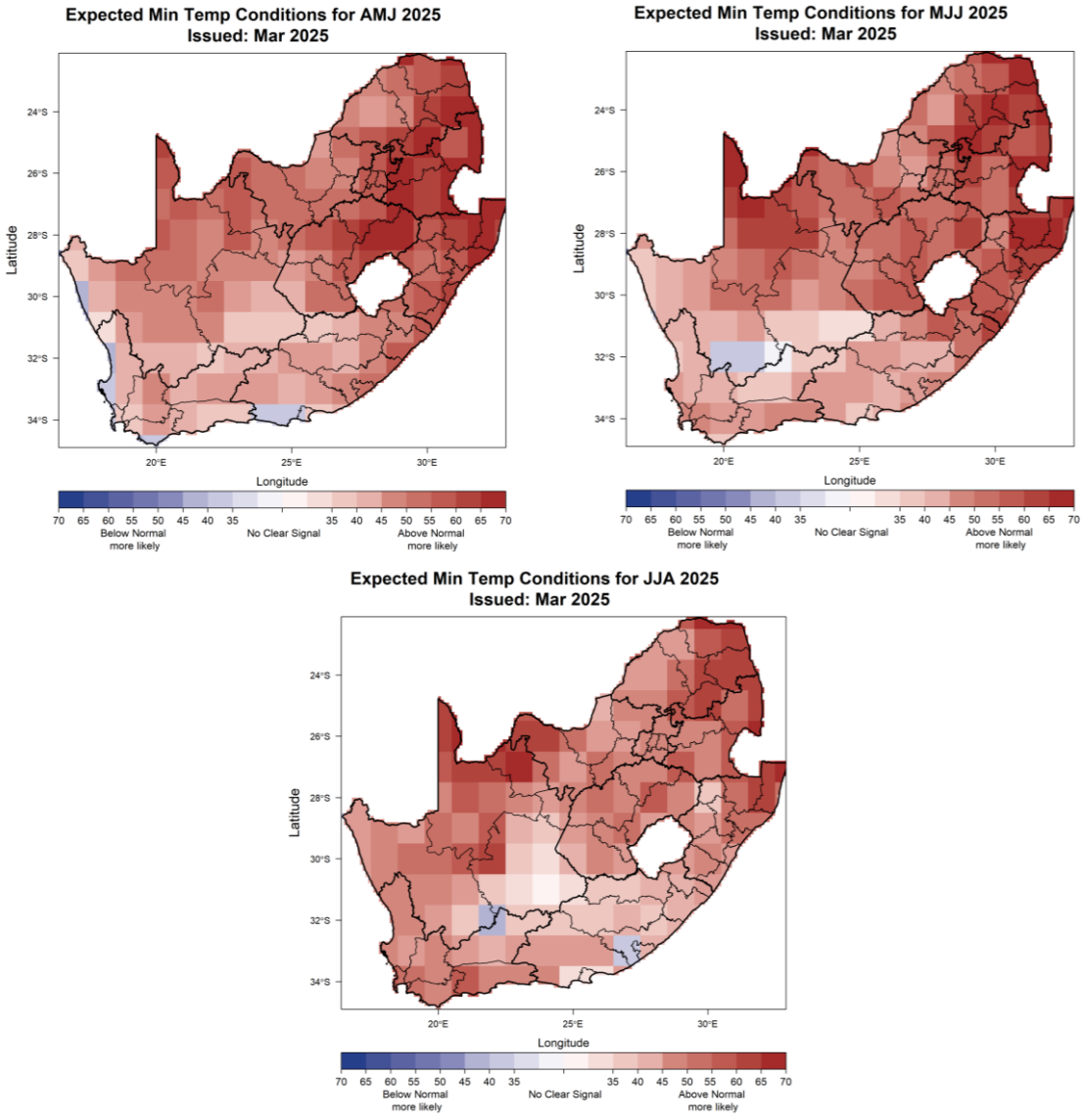

Figure 4: April-May-June 2025 (AMJ; left), May-June-July 2025 (MJJ; right), June-July-August 2025 (JJA; bottom) seasonal minimum temperature prediction. Maps indicate the highest probability of the above-normal and below-normal categories. Please refer to appendix Figure A2 for forecast skill levels.

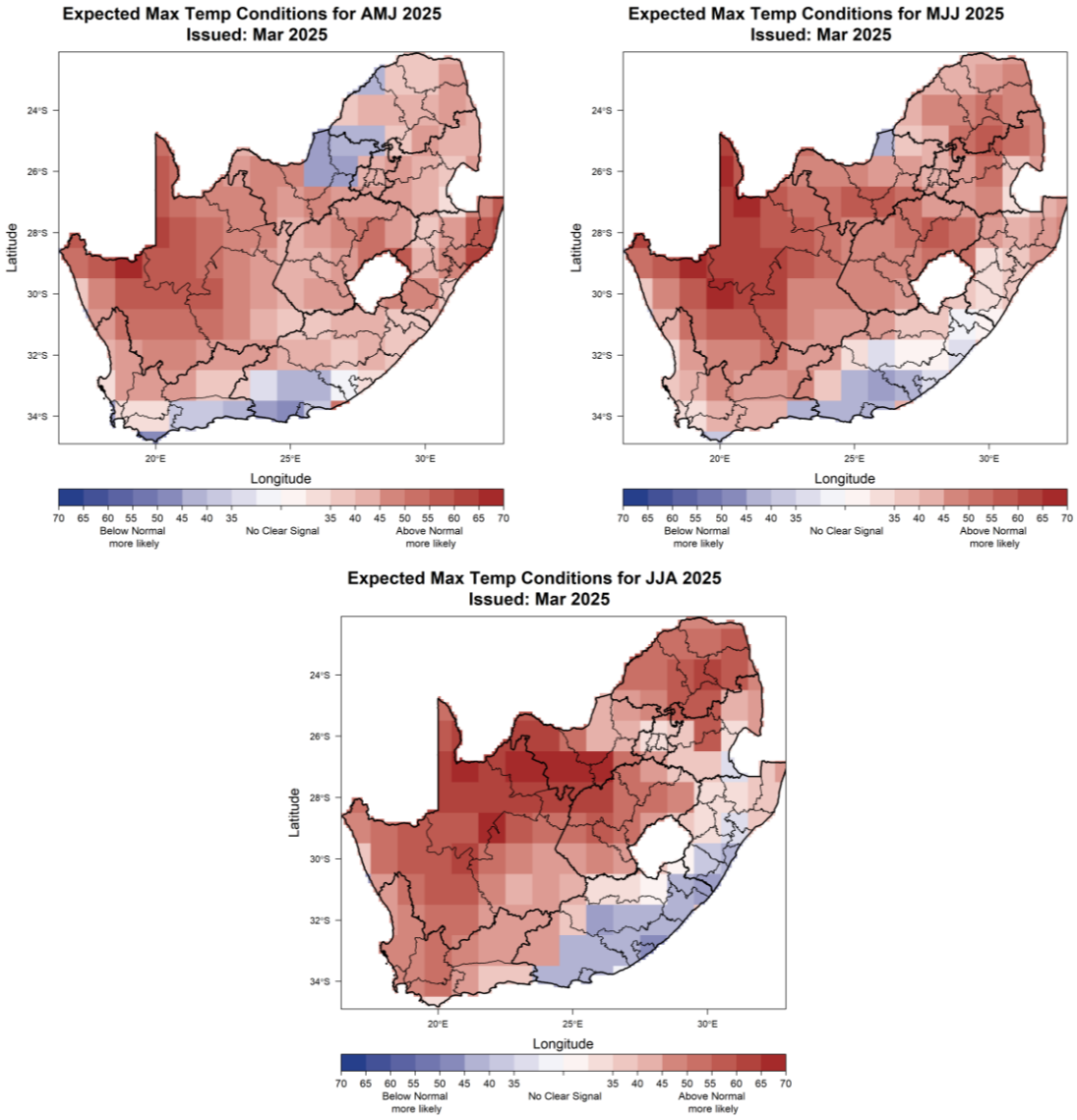

Figure 5: April-May-June 2025 (AMJ; left), May-June-July 2025 (MJJ; right), June-July-August 2025 (JJA; bottom) seasonal maximum temperature prediction. Maps indicate the highest probability of the above-normal and below-normal categories. Please refer to appendix Figure A3 for forecast skill levels.

2.3. Climatological Seasonal Totals and Averages

The following maps indicate the rainfall and temperature (minimum and maximum temperature) climatology for the April-May-June, May-June-July and June-July-August 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.

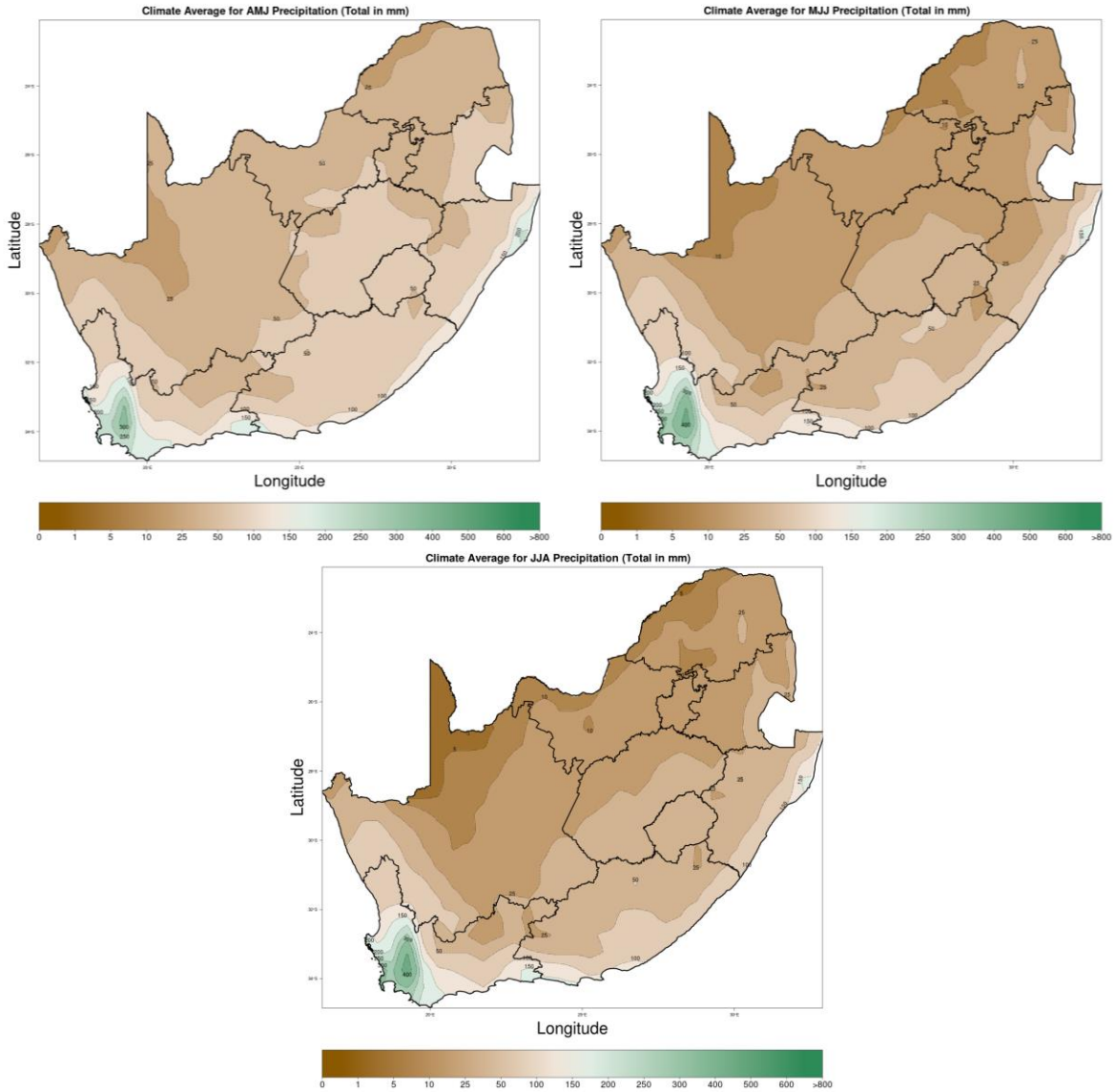

Figure 6: Climatological seasonal totals for precipitation during April-May-June (AMJ; left), May-June-July (MJJ; right) and June-July-August (JJA; bottom).

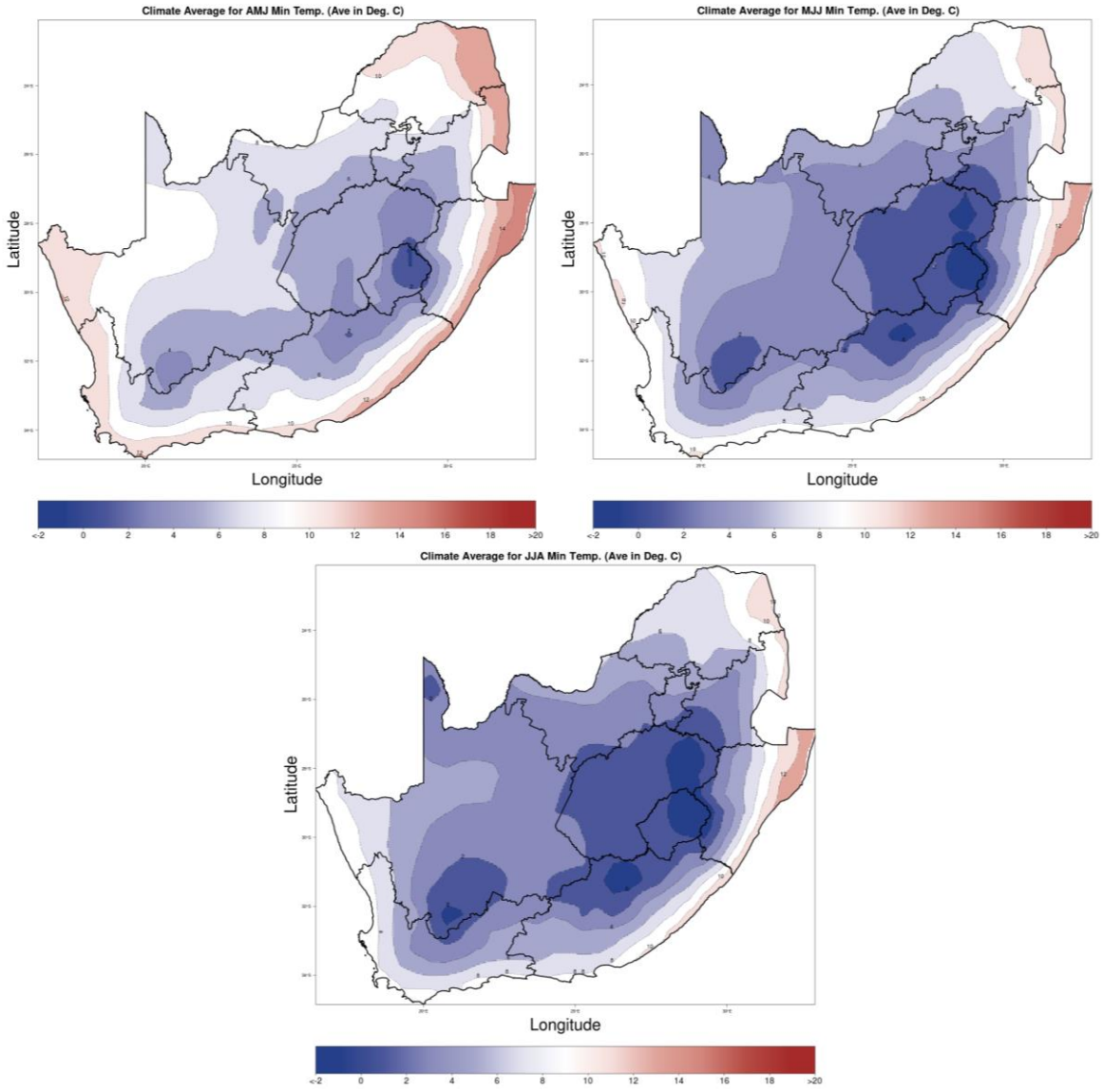

Figure 7: Climatological seasonal averages for minimum temperature during April-May-June (AMJ; left), May-June-July (MJJ; right) and June-July-August (JJA; bottom).

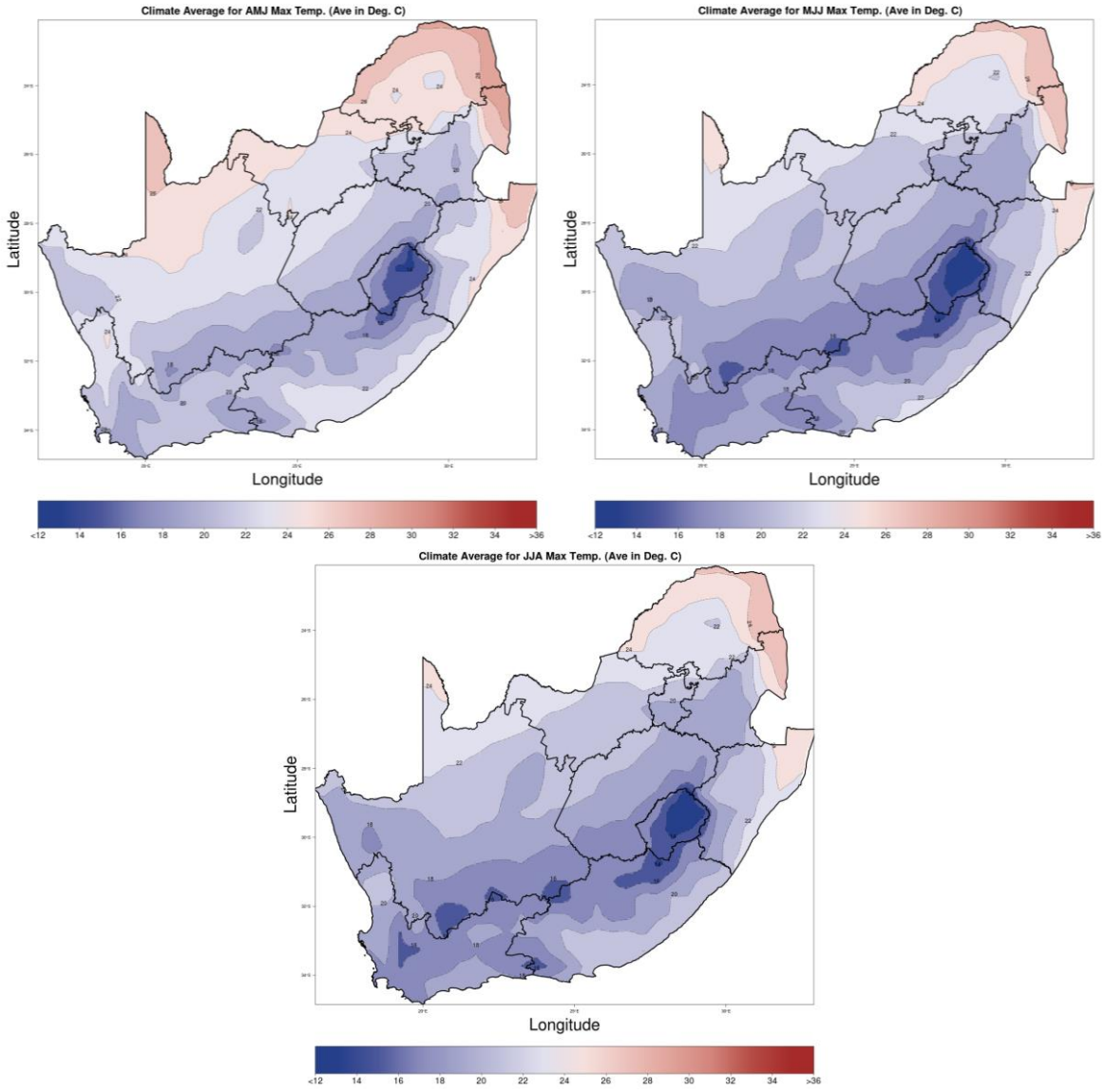

Figure 8: Climatological seasonal averages for maximum temperature during April-May-June (AMJ; left), May-June-July (MJJ; right) and June-July-August (JJA; bottom).

3. Summary implications to various economic sector decision makers

Water and Energy

The anticipated above-normal rainfall across the forecasted seasons over the eastern coastal areas are likely to benefit water reservoirs through increased water levels. These conditions may lead to flash floods in flood-prone regions. Below-normal rainfall conditions, coupled with above-normal minimum and maximum temperatures, are likely to reduce water levels through evapotranspiration processes in the southwestern part of the country, particularly in dry areas. The forecast indicates that minimum temperatures are largely expected to be above normal across most regions, with maximum temperatures also expected to be above normal, except for the southern and south-eastern coastal areas, which are forecasted to have below-normal maximum temperatures. Overall, the country is likely to experience predominantly above-normal temperatures, leading to increased demand for cooling, except in the southern coastal areas where below-normal maximum temperatures are anticipated. 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 rainfall for southern and eastern coastal areas could lead to flash floods, particularly in regions prone to flooding and those with inadequate drainage systems. These may heighten the risk of waterborne infections, water-related injuries, and drowning accidents. The public is advised to take precautions and follow the guidance of local authorities. Local authorities are encouraged to monitor these risks, implement mitigation strategies, and enhance public health surveillance. The predicted minimum and maximum temperatures for most parts of the country, except for the southern coastal areas, are expected to greatly increase the risk of heat exposure, potentially leading to heat stress and other heat-related health problems. Furthermore, this rise in temperatures may increase the risk of prolonged UV exposure, which may exceed level 3 on the World Meteorological Organization's UV Index. Such heightened UV exposure could result in a higher incidence of sunburn and other UV-related health issues. Additionally, elevated temperatures may accelerate the growth of food-borne pathogens, raising the risk of foodborne illnesses. The public is advised to maintain good food hygiene, adhere to local health guidelines under these conditions, and take necessary precautions to manage heat exposure.

Agriculture

Above-normal rainfall is forecasted for the southern and eastern coastal regions of the country during the late autumn and early winter seasons. This could lead to water logging in areas receiving excessive rainfall, potentially causing damage to crops. However, the southwestern part of the country, which normally receives significant rainfall during the early winter season, is expected to receive below-normal rainfall during this period. 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.

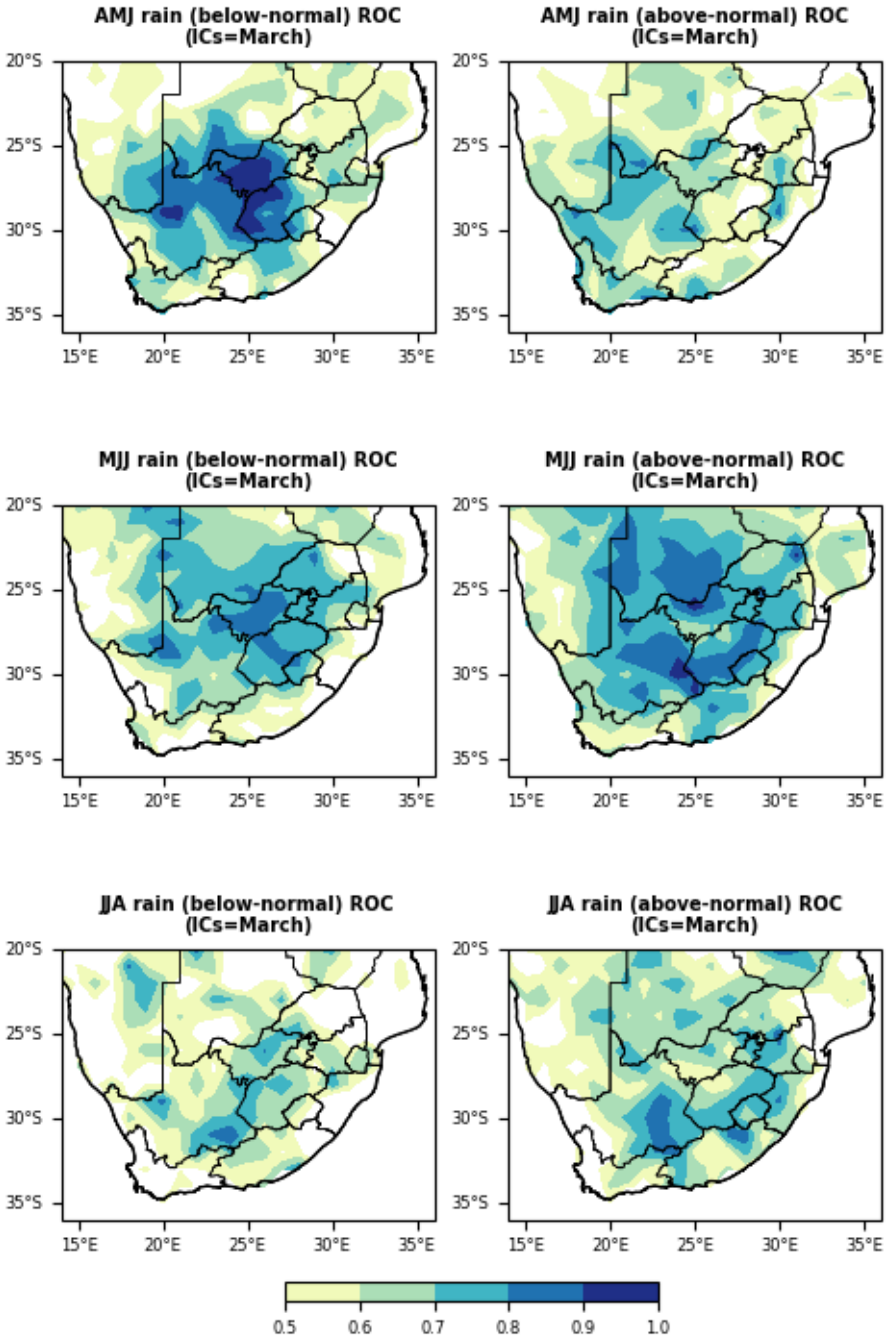

Figure A1: ROC scores for rainfall relevant to the current forecasts in Figure 3.

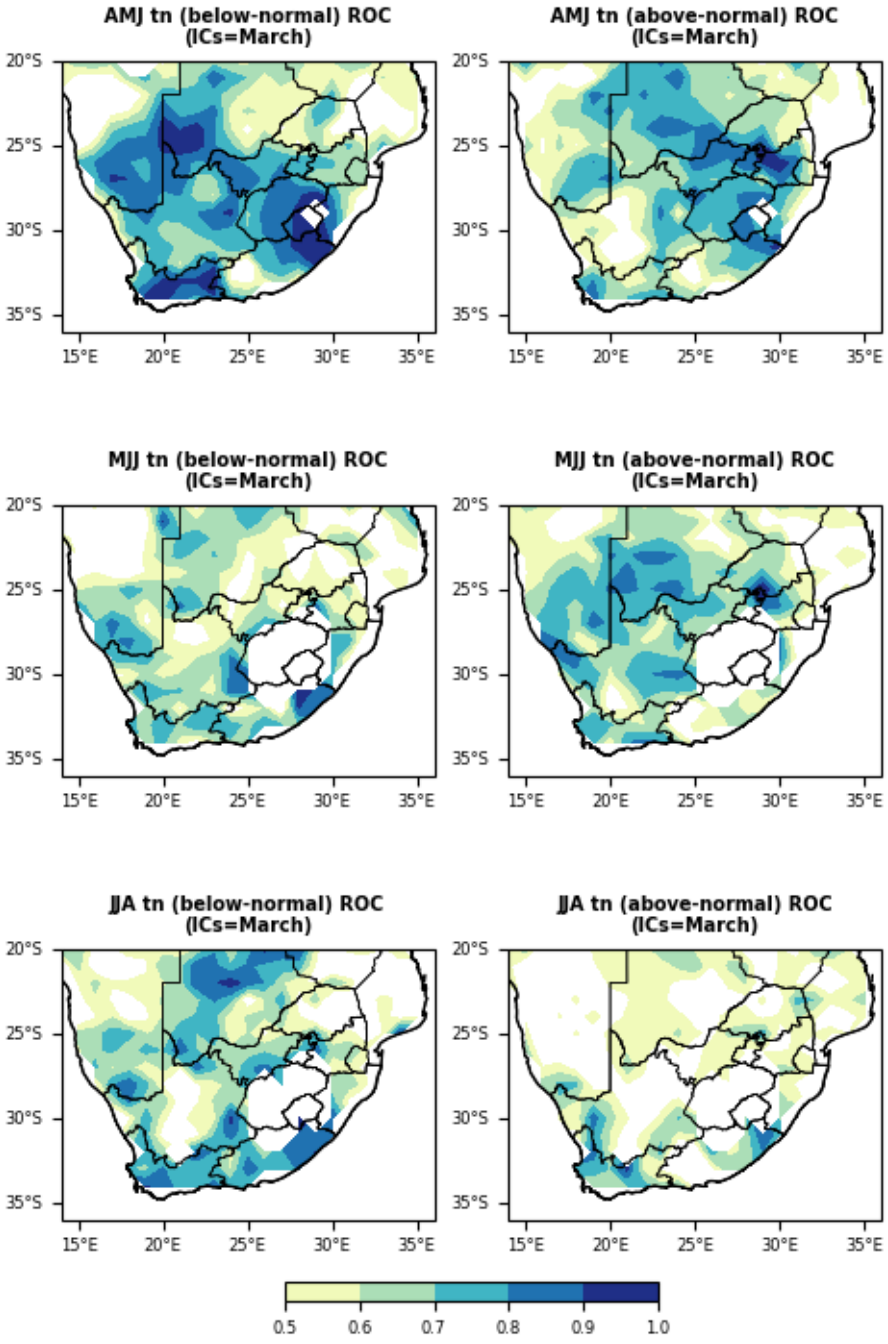

Figure A2: ROC scores for minimum temperatures relevant to the current forecasts in Figure 4.

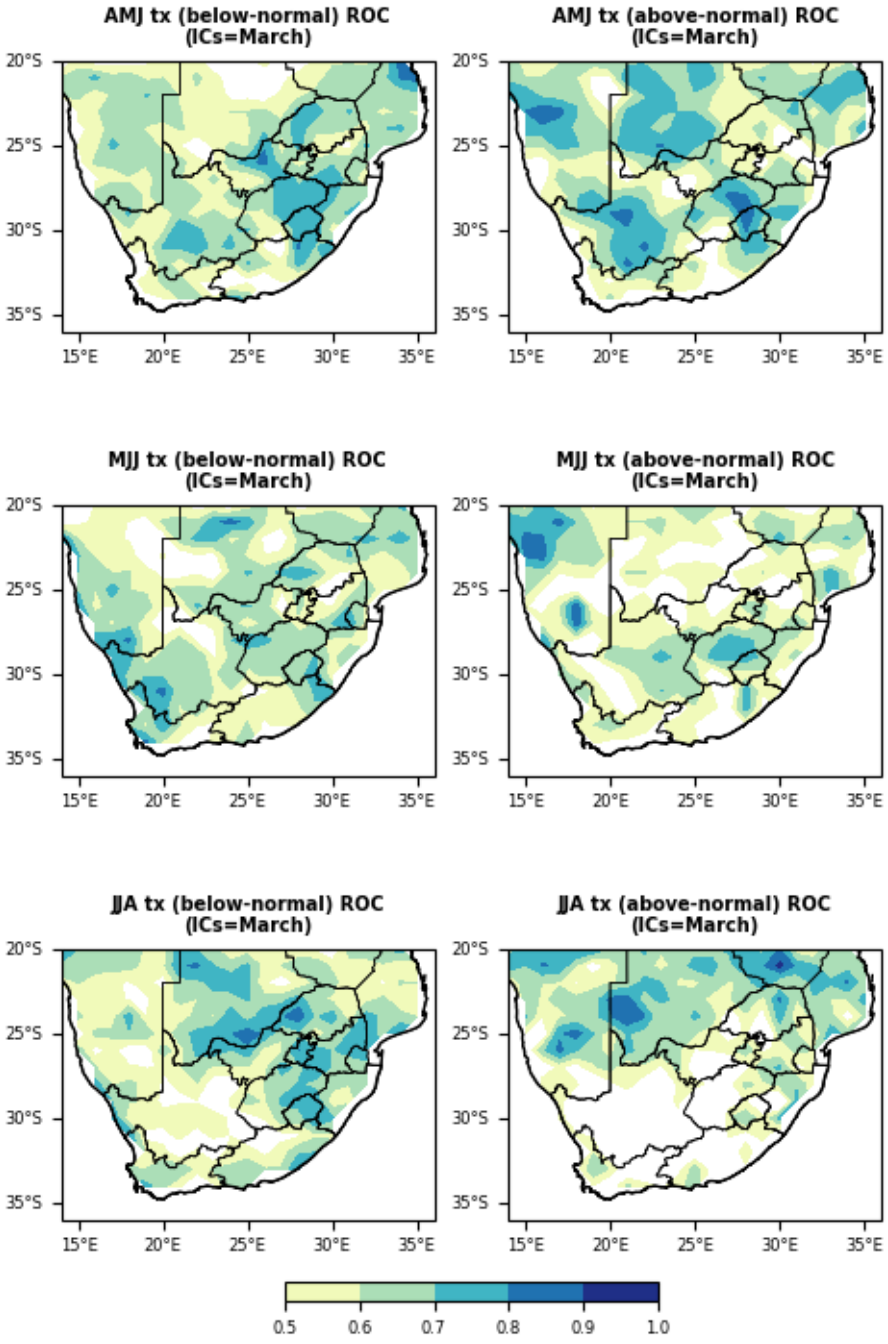

Figure A3: ROC scores for maximum temperatures relevant to the current forecasts in Figure 5.

Appendix – District Information

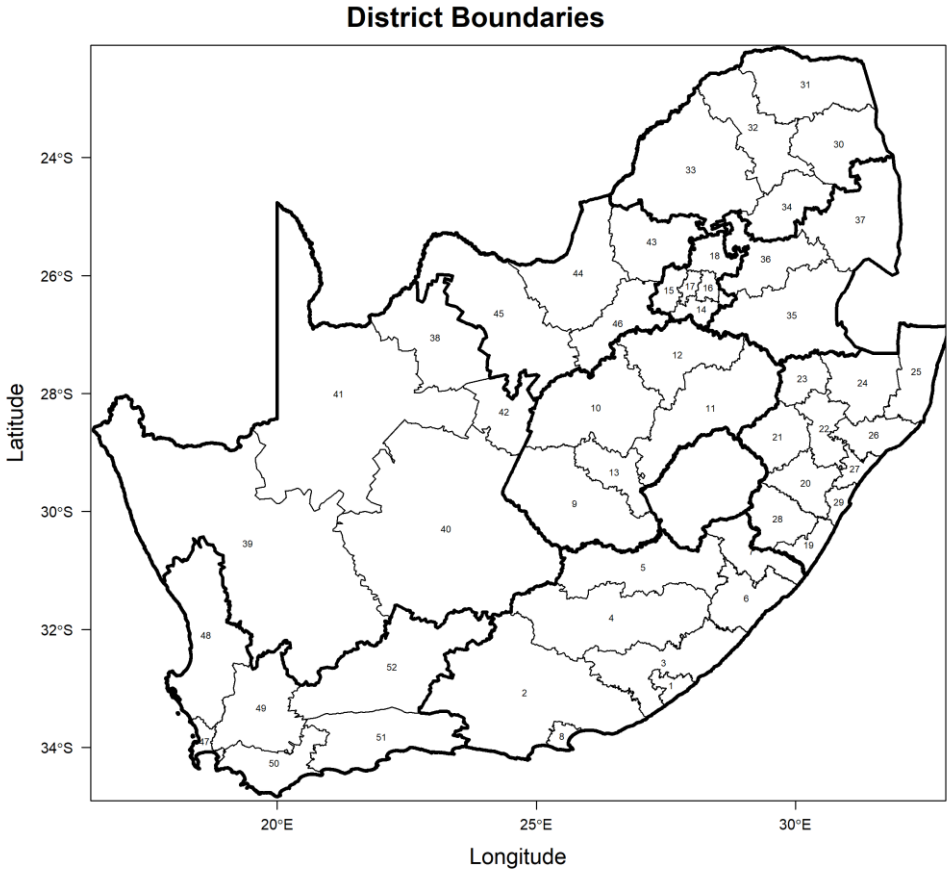

Figure A4: Local District Map with numbers corresponding to the table below with names.

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	eThekwini	44	Ngaka Modiri Molema		
15	West Rand	30	Mopani	45	Dr Ruth Segomotsi Mompati		