



CUMULUS

13 FEBRUARY 2025

by J Malherbe, R Kuschke

1 FUTURE 2 FOCUS 3 AGRICULTURE

Ask your insurance broker or find us online at agriseker.co.za

AgriSeker Onderskrywingsbestuurder (Pty) Ltd. Reg no. 2014/235270/07 is an Authorised Financial Service Provider FSP no. 45767. Underwritten by Land Bank Insurance (SOC) Ltd. Reg no. 2012/115426/30.

Summary

Wetter conditions continue

While it will initially be hot over the central to western interior, the general outlook during the next few days is one of relatively wet conditions, abundant cloud cover and above-normal rainfall over much of the central to eastern interior, including most of the summer-grain production region. The large-scale pattern has shifted to a much more favorable mode, reflected by the presence of a tropical low-pressure system oscillating between northern Namibia, southern Angola and northern Botswana. The large amount of tropical moisture over our region will enhance rainfall potential and will also diminish the tendency for severe storm development.

Widespread showers and thundershowers are expected from Monday/Tuesday over the central to northern parts of the country, including the western to central parts of the summer-grain production region according to current forecasts. The rainfall will be associated with the tropical low to the north and an expected cloud band from the system, extending through North West into the Free State and surrounding areas. Current forecasts indicate significant daily rainfall by Tuesday/Wednesday over these areas, but the specific region of significant precipitation may eventually be different given the relatively long (4 – 5 day) lead time. The north-eastern parts of the summer-grain production region (mostly Mpumalanga) may receive very little rainfall according to some current forecasts, with the main rain belt mostly focused on the central to western grain-production region.

The large-scale pattern during the next week or two will be conducive to above-normal rainfall over large areas, even though the exact extent and location of above-normal rainfall are still uncertain given the long lead time until the expected rainfall next week. Some areas have already received significant rainfall during the last few days, but the spatial distribution of rainfall has been uneven with certain areas still relatively dry and parts of the summer-grain production region having received less than 25 mm so far for February. Going forward, conditions are expected to remain favorable for near-normal to above-normal rainfall over large parts of the summer-rainfall region during the remainder of the month.

The following is a summary of weather conditions during the next few days (until early next week):

- Temperatures will on average be near normal to below normal, but above normal over the western to south-western parts.
- It will be hot most of the time over the western to south-western interior.
- It will be hot over the central interior until the weekend.
- Abundant cloud cover will keep daytime temperatures lower over the northern parts of the country throughout the period.
- The central to eastern parts are expected to experience abundant cloud cover and lower daytime temperatures by next week.
- Rainfall will be above normal over the central to south-eastern parts, but near normal over the north-eastern and southern to western interior.
- Isolated to scattered thundershowers are expected over the central to northeastern parts initially. Thundershowers will shift into the northern parts during the weekend, but it is expected to move back into the central interior from Sunday onwards.

- Widespread showers and thundershowers are expected over the central to northern parts, including large parts of the summer-grain production region, next week.
- Thundershowers may occur over the far western parts by the middle of next week, including possibly the interior of the winter rainfall region.
- The summer-grain production region will be warm to mild, but hot in the west initially. Isolated to scattered thundershowers are possible on most days, but widespread showers and thundershowers may occur over the central to western parts next week when it will be cooler. Current forecasts indicate isolated thundershowers next week over the north-eastern parts of the region during the widespread rainfall event further west.
- **The winter rainfall region** will be warm to hot at times with little to no rain expected. It will be cooler over the southern parts, along the Garden Route. Isolated thundershowers may develop over the interior of the region by the middle of next week. Fresh to strong south-easterly winds are expected over the south-western parts, becoming gale force next week.

Overview of expected conditions over the main agricultural production areas

Large-scale atmospheric circulation patterns remain favourable for rainfall over the interior. The tropical low to the north will contribute moisture and instability according to current forecasts, with widespread rain expected by next week over large parts of the summer-grain production region. Significant totals are possible if the forecasts realize.

Maize production region:

It will be hot initially over some of the western parts of the region, but from the weekend onwards it will remain cooler than earlier this summer over the summer-grain production region. Cloud cover and lower temperatures on average will reduce atmospheric water demand and support current stages of maize production where sufficient rain occurred earlier, and additional rain falls during the next few days.

- Maximum temperatures over the eastern maize-production areas will range between 18°C and 30°C, with cooler conditions by next week. Minimum temperatures will be in the order of 13°C to 16°C.
- Maximum temperatures over the western maize-production areas will range between 20°C and 34°C, with the lower temperatures expected from the weekend going forward. Minimum temperatures will be in the order of 16°C to 21°C.
- **Thursday (13th):** Partly cloudy and warm with scattered thundershowers, but only isolated in the west where it will be hot.
- **Friday (14th):** Sunny and hot over the central to southern parts, but partly cloudy and warm in the north and east with isolated thundershowers.
- **Saturday (15th):** Partly cloudy and warm with isolated thundershowers except in the far west where it will be hot.
- **Sunday (16th):** Partly cloudy and warm. Scattered thundershowers are expected over the western to central parts.
- **Monday to Wednesday (17th – 19th):** Current forecasts indicate widespread rain over especially the western to central parts of the region. This will be associated with the tropical low to the north and the exact position and intensity of the system will determine the intensity and location of rainfall. Current forecasts indicate significant daily totals by Tuesday

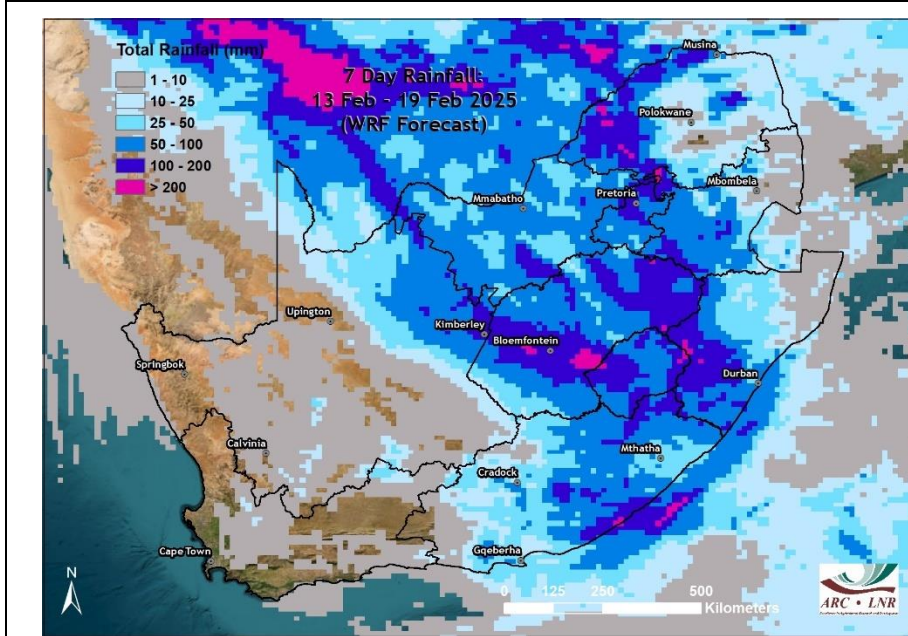
and Wednesday over some of the areas over the western production region. This outlook may change closer to the time given the long lead time.

Cape Wine Lands and Ruens:

The region will be sunny to partly cloudy and warm, but it will be hot over the interior from Saturday onwards. With winds having a southerly component most of the time, it will be somewhat cooler over the Garden Route in the south. Isolated to scattered showers may develop over the region by Tuesday and Wednesday as an upper-air trough may influence the region. An onshore flow may cause light showers along the Garden Route at the same time. South-easterly winds will dominate in the south-west, becoming gale-force next week.

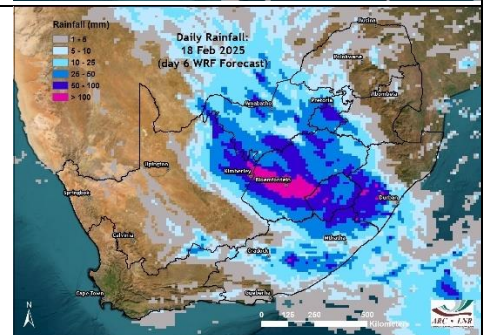
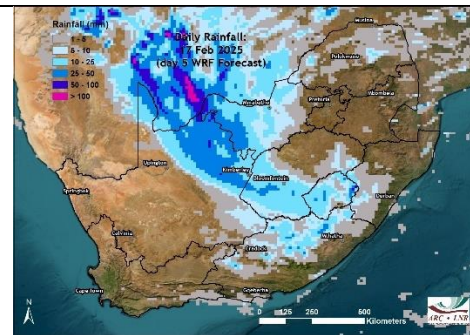
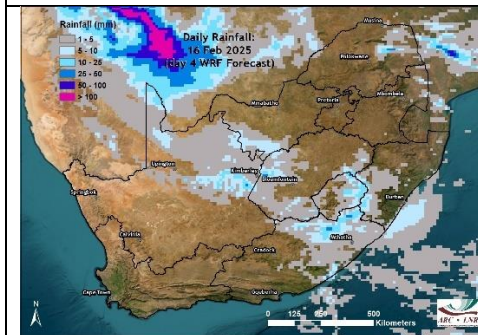
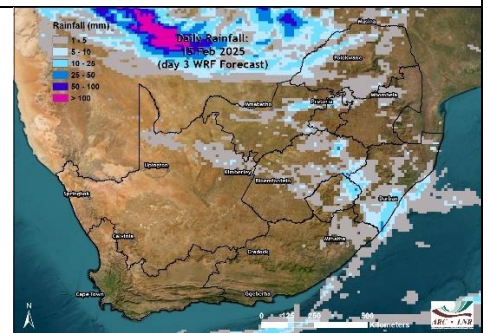
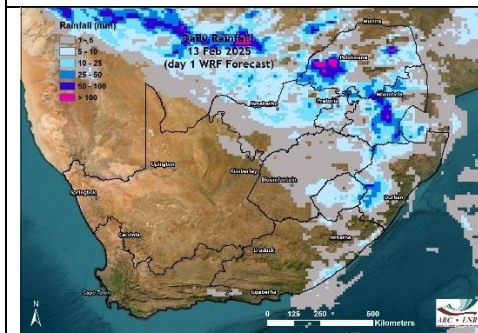
Daily summary of expected conditions (13 – 19 Feb)

(GFS forecast downscaled using WRF)

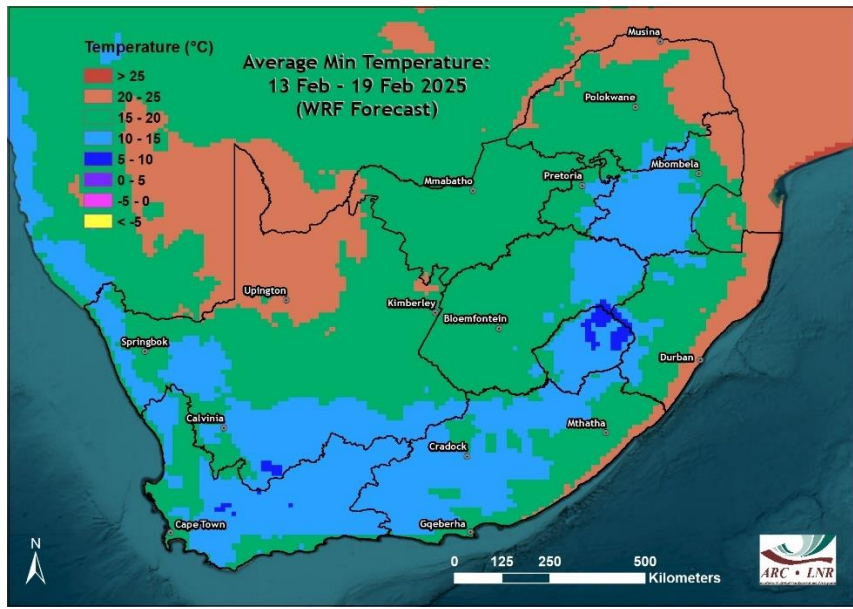


Rainfall

- Widespread rain is expected over the eastern half of the country, with totals over large areas expected to exceed 50 mm over a 7-day period.
- Rainfall totals over the western interior and winter rainfall region will be low.

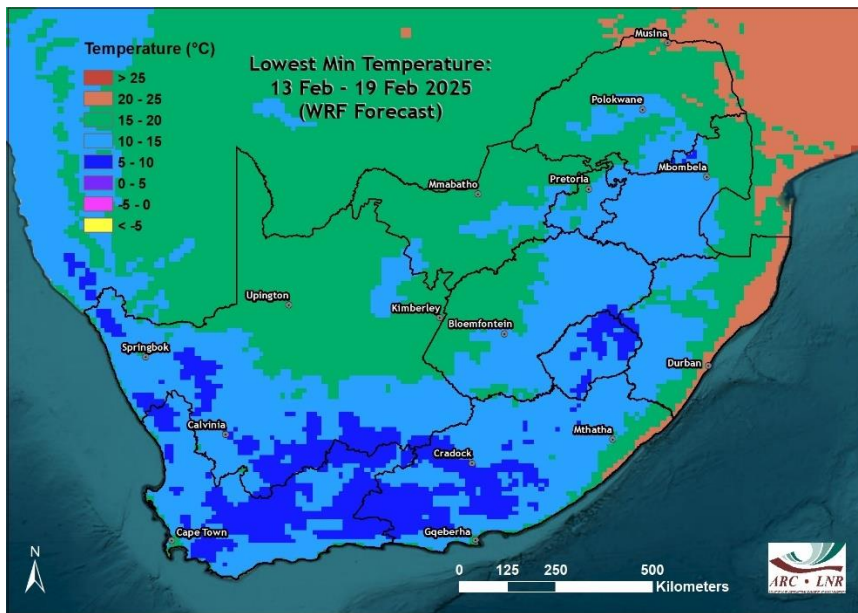


- Isolated thundershowers are expected over the central to eastern parts at first and during the weekend. .
- Thundershowers will gradually shift westwards and become scattered to widespread over the central to southern and south-eastern parts next week.



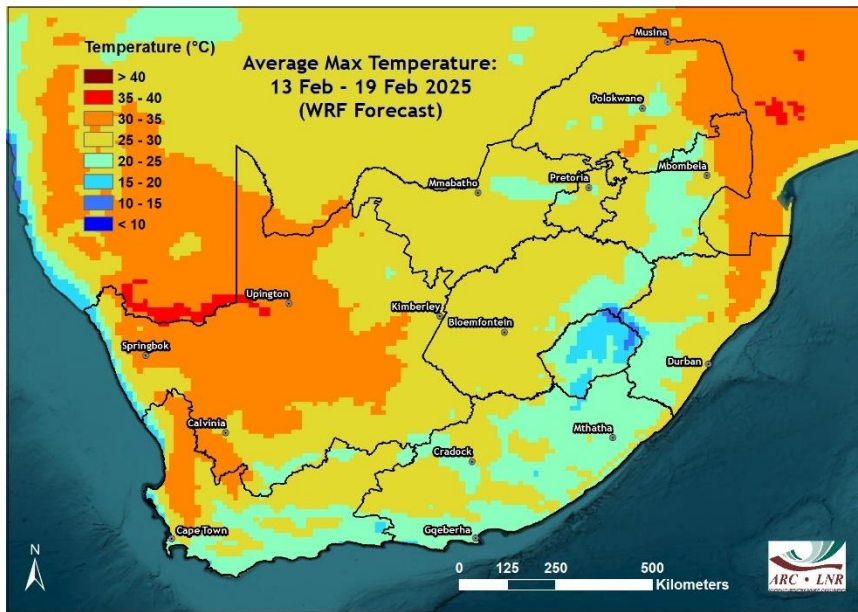
Average minimum temperatures

- Average minimum temperatures will range between 10 and 20°C over most of the country, with higher averages over the northern parts and lower-lying eastern to northeastern parts.



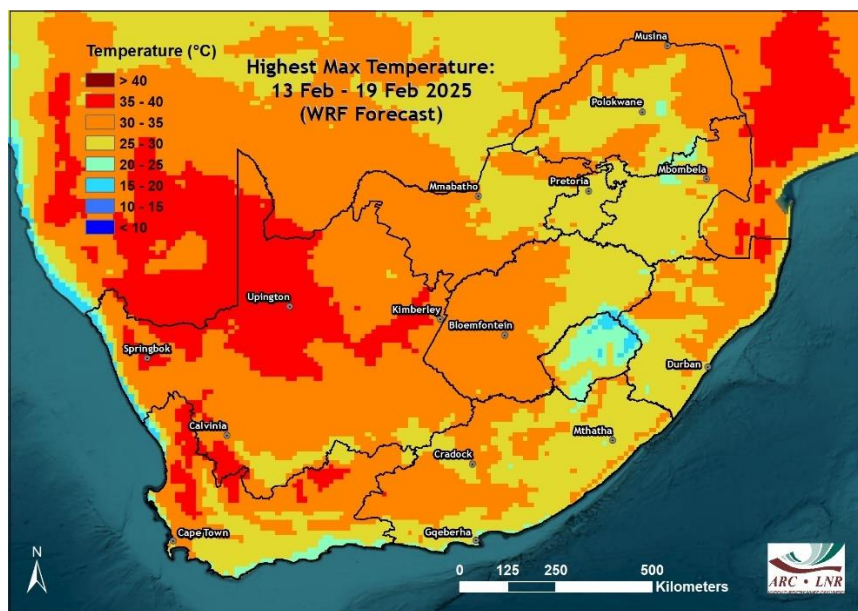
Lowest minimum temperatures

- Lowest minimum temperatures will remain above 5°C over the summer-grain production region, ranging on average between 10 and 20°C.



Average maximum temperatures

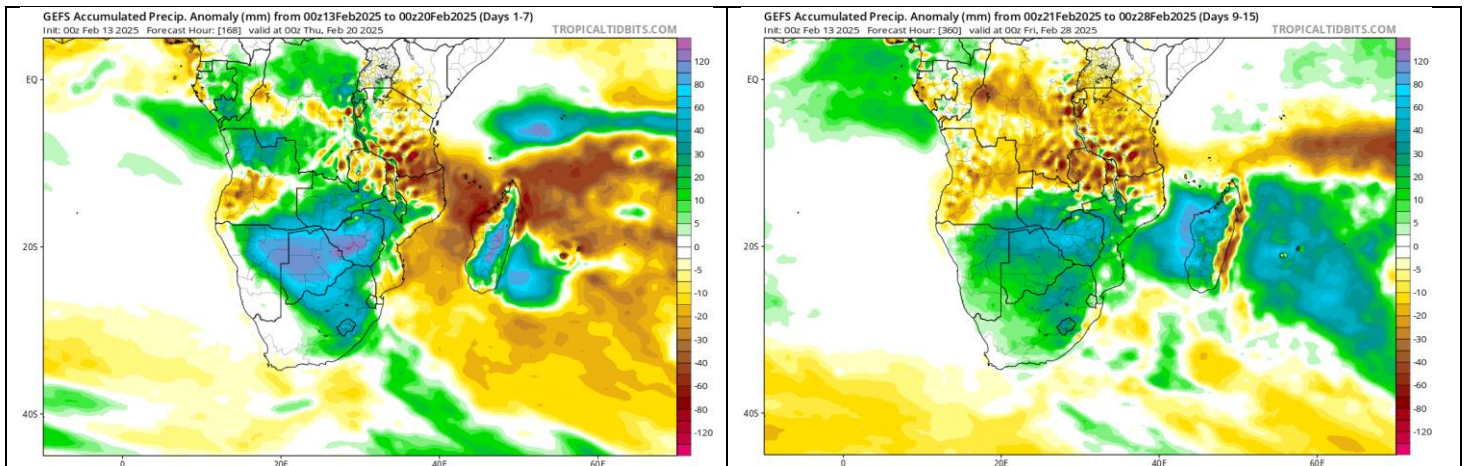
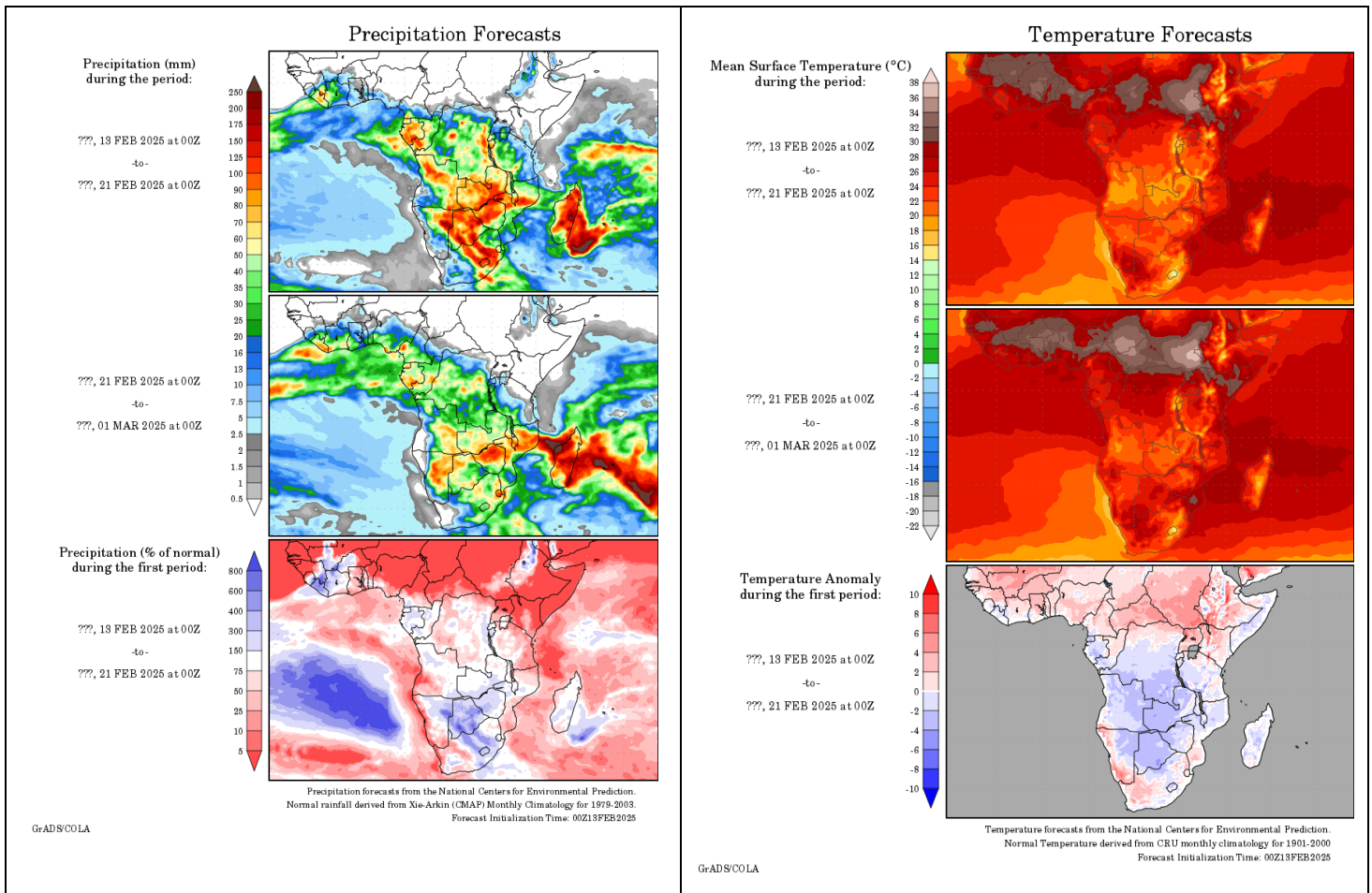
- Average maximum temperatures will range between 25 and 30°C over most of the interior
- Average maximum temperatures will range between 30 and 35°C over most of the Northern Cape interior and the north-western parts of the Western Cape together with the Lowveld and north-eastern KZN.



Highest maximum temperatures

- Highest temperatures during the next few days are expected to exceed 35°C over large parts of the Northern and Western Cape province interiors and parts of the Lowveld into north-eastern KZN.

Medium term rainfall summary



The GFS ensemble forecast (consisting of several forecasts with small initialization differences) favors above-average rainfall over the central to northeastern parts (including the summer-grain production region) during the next few days. Conditions are expected to remain favorable for rain towards the end of the month (right).

Possible extreme conditions - relevant to agriculture

The South African Weather Service issues warnings for any severe weather that may develop, based on much more information (and in near-real time) than the output of only 2 weather model (GFS and the ECMWF model) considered here in the beginning of a week-long (starting 13 February) period. It is therefore advised to keep track of warnings that may be issued by the SAWS (www.weathersa.co.za) as the week progresses.

According to current model projections (GFS / ECMWF models) of weather conditions during the coming week, the following may negatively affect agricultural activities and production:

- **Hot, dry conditions can be conducive to stalk rot where maize is in the flowering and grain-filling stages:**
 - Maize production region, especially the central to western parts.
- **Cooler, wetter conditions following a hot, dry period can be conducive to various fungal diseases such as root rot:**
 - Maize production region, especially the central to western parts: **Monday to Wednesday (17th – 19th).**
- **Significant daily rainfall totals (>50 mm / day) may occur:**
 - Northern to western Free State, North West, southern Gauteng and south-western Mpumalanga: **Tuesday and Wednesday (18th – 19th).**
- **Some thundershowers will tend to become severe and produce strong wind gusts and hail:**
 - Eastern Cape interior: **Tuesday and Wednesday (18th – 19th).**
- **It will be hot, with maximum temperatures exceeding 35°C:**
 - Central to eastern interior of the Northern Cape: **Thursday to Monday (13th – 17th).**
 - Western interior of the Northern Cape and western interior of the Western Cape: **Saturday to Wednesday (15th – 19th).**
 - Interior of the winter rainfall region, including the Swartland and Boland: **Saturday to Wednesday (15th – 19th).**
 - Northern to eastern KZN: **Thursday to Friday (13th – 14th).**
 - Lowveld: **Thursday and Tuesday (13th & 18th).**
 - Western to central and northern Free State and western North West: **Friday to Saturday (14th – 15th).**
- **Dry, warm to hot and windy conditions at times will increase the fire hazard where vegetation is dry:**
 - Western to south-western parts of the winter rainfall region: **Thursday to Wednesday (13th – 19th).**

Seasonal forecast

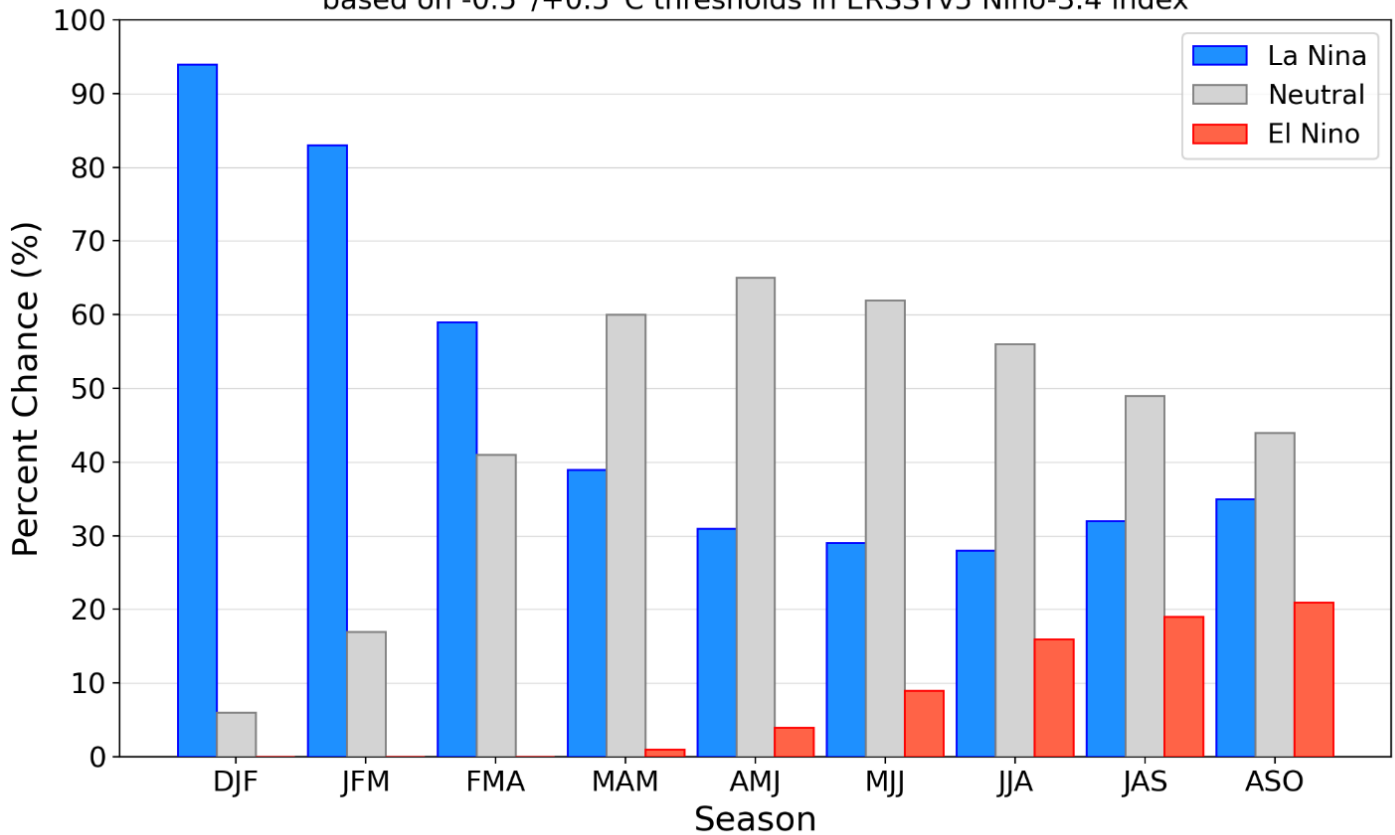
Current ENSO conditions:

The ENSO state is still a weak La Niña according to some institutions such as the NOAA Climate Prediction Centre and the IRI. This is based on evidence from the Sea Surface Temperatures which remained below the La Niña thresholds recently and some atmospheric indicators such as the Southern Oscillation Index (SOI) and the strength of the easterly winds over the equatorial central to eastern Pacific Ocean remaining more consistently in La Niña territory. La Niña conditions are expected to persist through February-April 2025. Certain institutions, such as the Australian Bureau of Meteorology still classify this summer as ENSO Neutral (Neither El Niño nor La Niña) based on the reasoning that several indicators are not consistently within the La Niña threshold.

The graph below shows the International Research Institute for Climate and Society (IRI) ENSO forecast which maintains the expectation of borderline La Niña or neutral conditions by late summer:

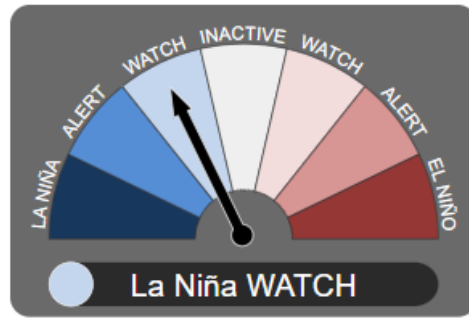
Official NOAA CPC ENSO Probabilities (issued January 2025)

based on $-0.5^{\circ}/+0.5^{\circ}\text{C}$ thresholds in ERSSTv5 Niño-3.4 index



International Research Institute for Climate and Society- <http://iri.columbia.edu/>

Likewise, the Australian Bureau of Meteorology keeps their outlook to “La Niña Watch”



Australian Bureau of Meteorology - <http://www.bom.gov.au>

In their most recent update (issued 21 January), the IRI notes that “As of mid-January 2025, La Niña conditions continue to prevail in the equatorial Pacific. Sea surface temperatures in the Niño 3.4 region remain below the -0.5°C threshold, a key indicator of La Niña. This follows the initial crossing of the La Niña threshold in December 2024. The IRI ENSO prediction plume forecasts slightly higher chances (66%) for La Niña conditions for Jan-Mar, 2025, with equal chances for La Niña and ENSO-neutral conditions for Feb-Apr, 2025. For Mar-May, 2025, onwards to the Jul-Sep, ENSO-neutral conditions are favored”.

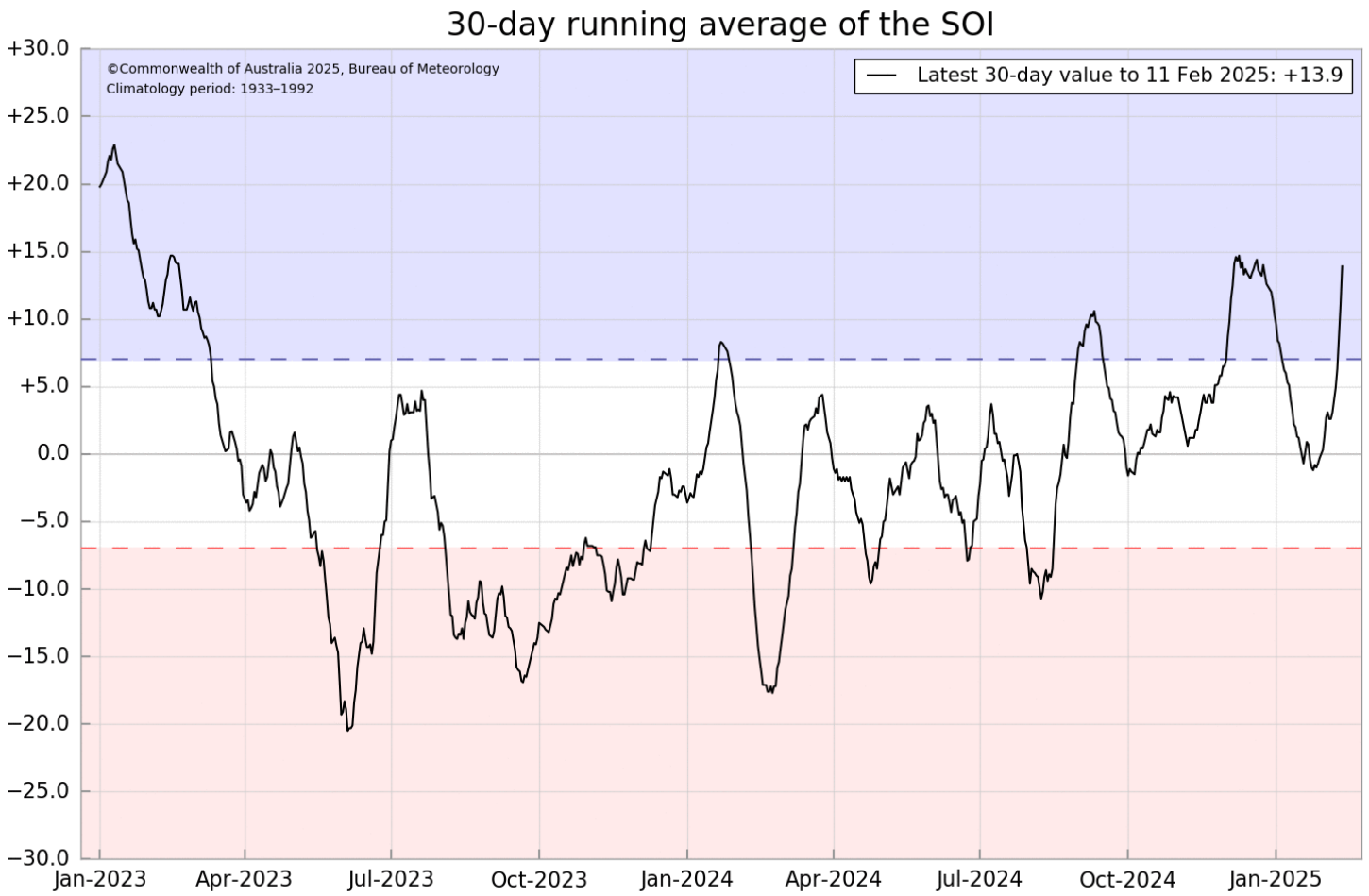
In their most recent update (5 February), the **Australian Bureau of Meteorology** states that “The El Niño Southern Oscillation (ENSO) in the tropical Pacific remains neutral. While many of the indicators have recently met the threshold for La Niña they have not been sustained for levels or duration sufficient to warrant La Niña status:

- The El Niño–Southern Oscillation (ENSO) has remained neutral for the past 6 months, despite changes in sea surface temperature patterns consistent with a developing La Niña.
- The El Niño–Southern Oscillation (ENSO) remains neutral. Since late December 2024, the tropical Pacific has been more La Niña-like, with signs of interaction between oceanic and atmospheric indices. However, this response has not consistently met the Bureau's La Niña thresholds.
- The weekly Niño34 index has fluctuated around the La Niña threshold of -0.8°C since late 2024, with the most recent value of -0.86°C (for the week ending 26 January) dropping just below the La Niña threshold.
- All international models surveyed forecast neutral ENSO (neither El Niño nor La Niña) from March until at least June.
- Historically, it is very late in the typical ENSO cycle for a La Niña event to develop,.....”

<http://www.bom.gov.au>

The Southern Annular Mode (SAM) is currently negative but trending positive to neutral values. A neutral SAM during mid-to late summer is neither associated with dry nor wet conditions generally across South Africa.

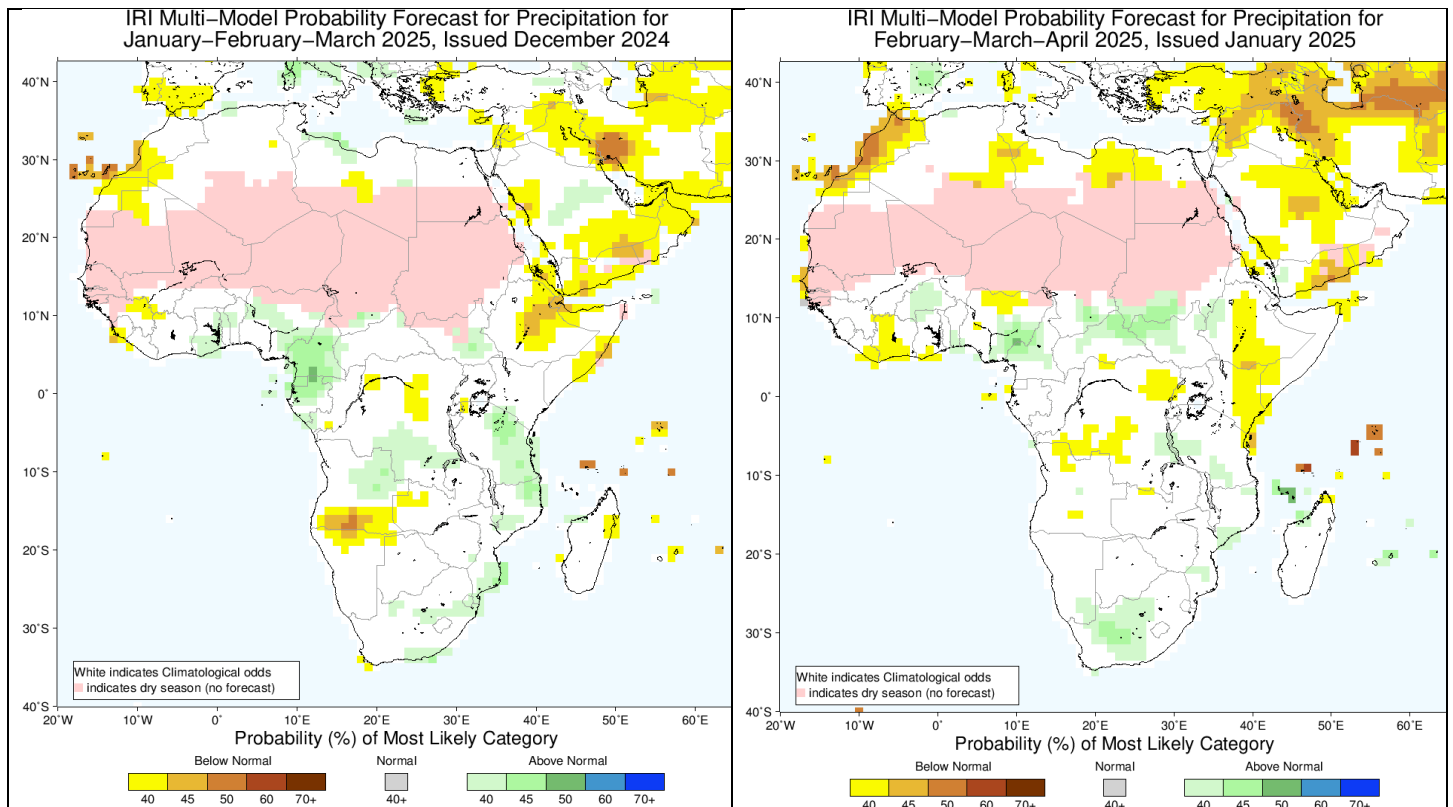
The 30-day Southern Oscillation Index (SOI) is currently +13.9 and therefore representing atmospheric pressure patterns in the Australia – Pacific region indicative of La Niña conditions. The SOI is still slowly trending positive.



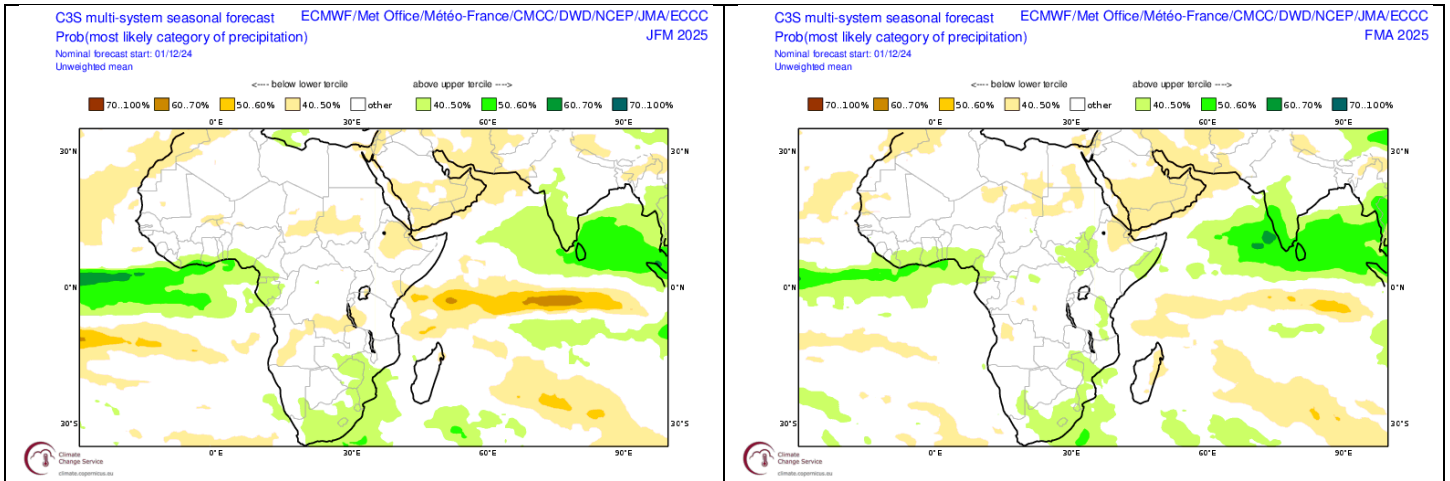
Australian Bureau of Meteorology - <http://www.bom.gov.au>

Seasonal forecasts issued by various international institutions

Seasonal forecasts (updated in December 2024 and January 2025) remain relatively neutral for summer given the weak signal from the Pacific Ocean but have trended slightly positive for rainfall over the summer rainfall region. The IRI seasonal forecast for the period January to April (first pair of maps) indicates an enhanced probability for relatively wet conditions over the central interior. The drier signal to the north, shown in earlier forecasts, has now disappeared due to the cooling trend in the equatorial Pacific. This is still very much an uncertain forecast due to the weak state of ENSO. The COPERNICUS multi-model assimilated forecast (second pair of maps) also shows the expectation of relatively wet conditions over large parts of the interior, but this is also a very conservative outlook, associated with the very late development of a weak La Niña.



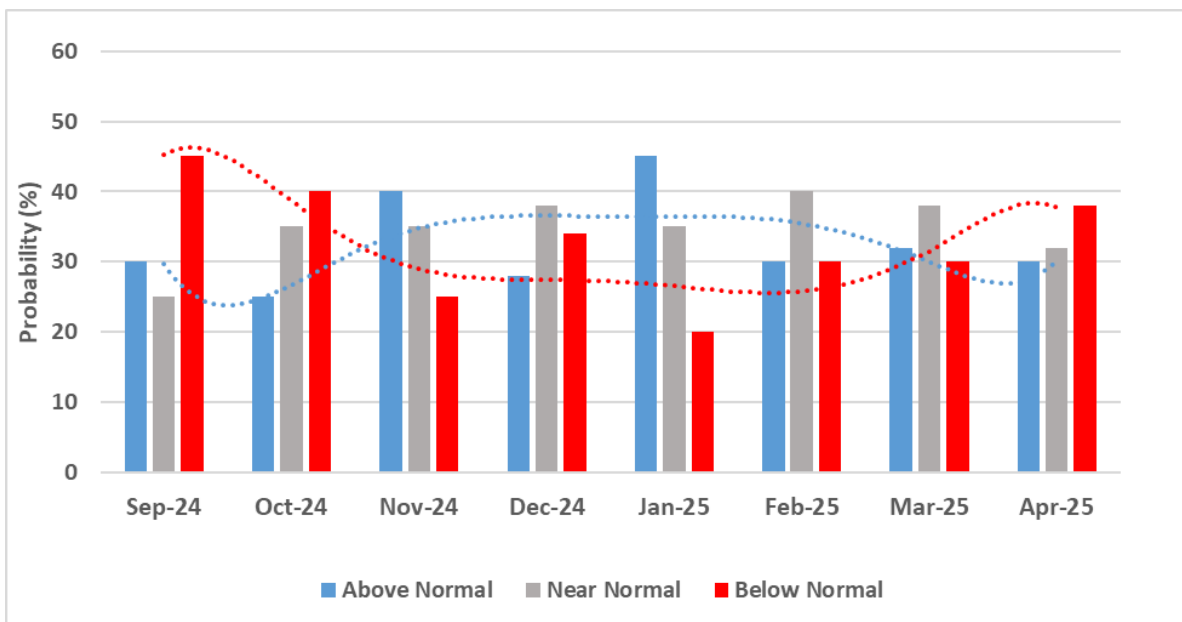
Probabilistic forecasts by the International Research Institute for Climate and Society (IRI) for rainfall for summer (January to March 2025; left - Forecast issued in 2024-12) and late summer/autumn (February to April 2025, right – Forecast issued in 2025-01).



Probabilistic multi-model forecasts by the ECMWF COPERNICUS Programme for rainfall for mid-to-late summer (January to March 2025; left - Forecast issued in 2024-12) and late summer (February to April 2025, right – Forecast issued in 2024-12).

CUMULUS seasonal outlook

This outlook is based on the typical observed rainfall patterns over the **north-eastern half** of the country (including most of the summer grain production region), associated with the cyclic variability of the global climate system. Summers that are similar to 2024/25 usually experience near normal rainfall in total, with a delayed start and a wetter signal during November and again by January/February.



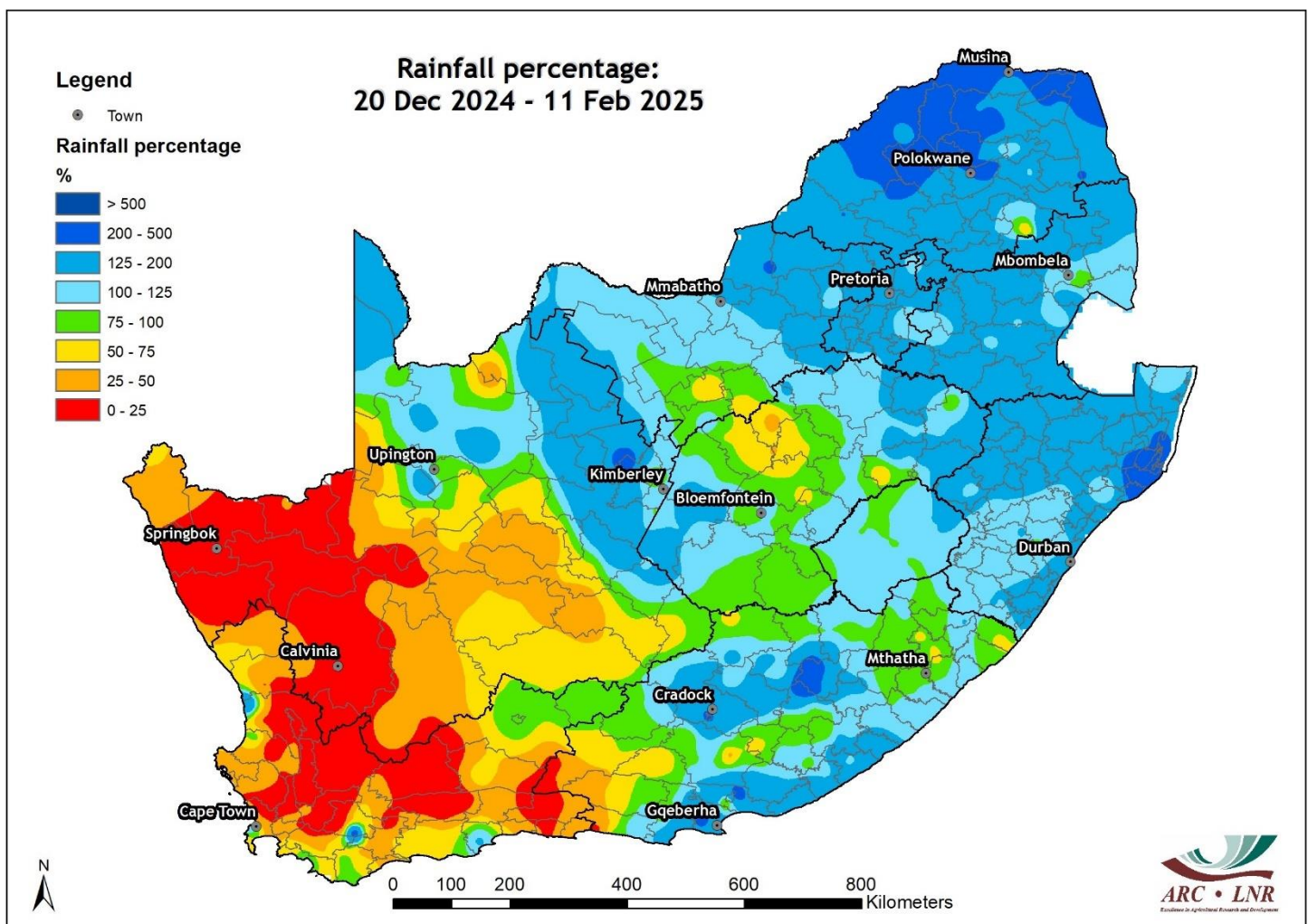
Probabilistic forecast for rainfall over the summer rainfall region, based on the natural cyclic nature of the climate system as seen in decadal variability, per month for the period September 2024 – April 2025 (Forecast issued in 2024-10).

Typical patterns during similar summers, over the north-eastern half of the summer rainfall region, are:

- September – October: Relatively dry conditions over the north-eastern half of the summer rainfall region
- November: Near-normal to above-normal rainfall over the north-eastern half of the summer rainfall region
- December: Near normal to below-normal rainfall over the north-eastern half of the summer rainfall region
- January: Above-normal rainfall over the north-eastern half of the summer rainfall region
- February-March: Near-normal rainfall over the north-eastern half of the summer rainfall region
- April: Below-normal rainfall over the north-eastern half of the summer rainfall region

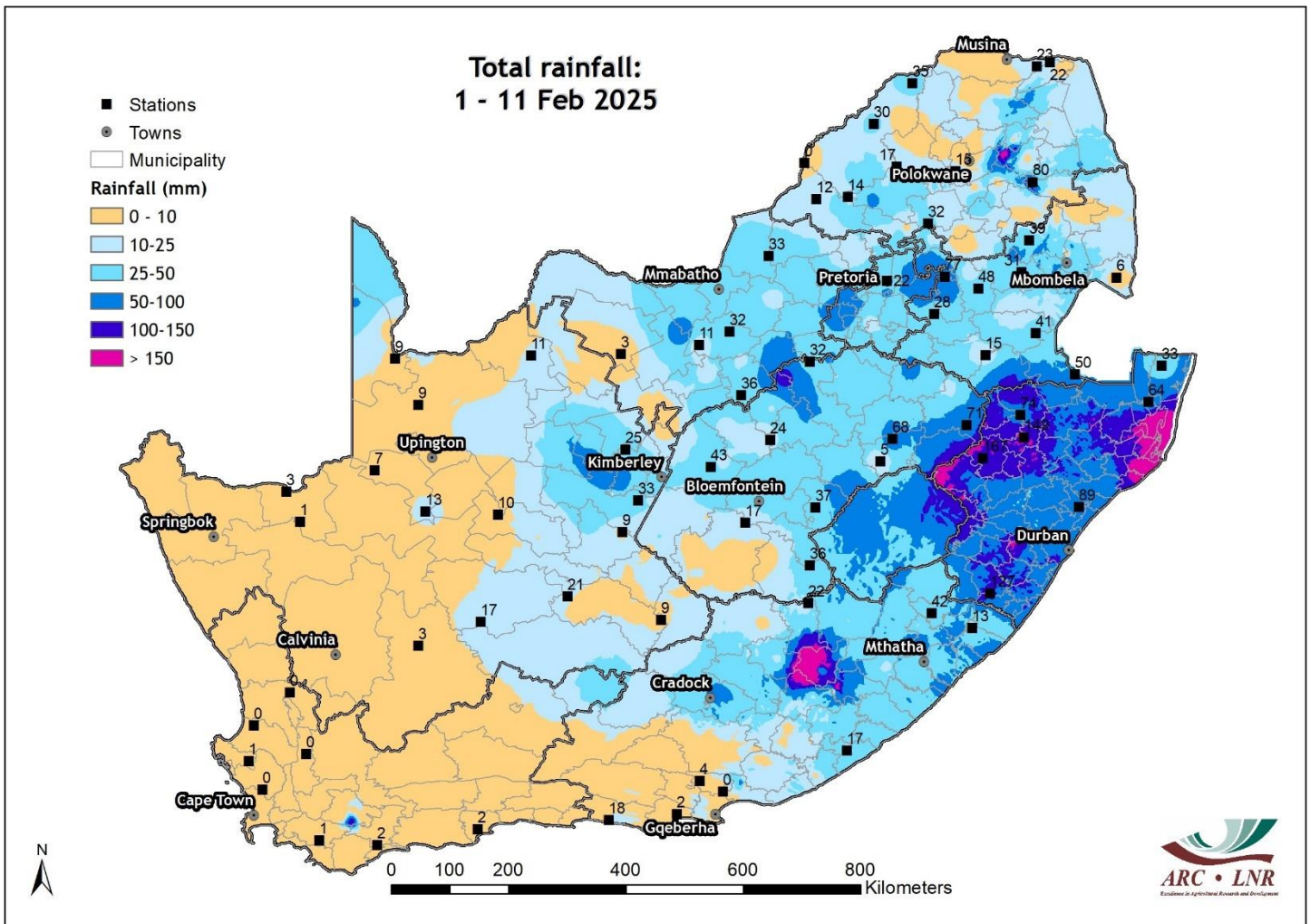
Observed conditions

Rainfall (mm): 20 December 2024 - 11 February 2025



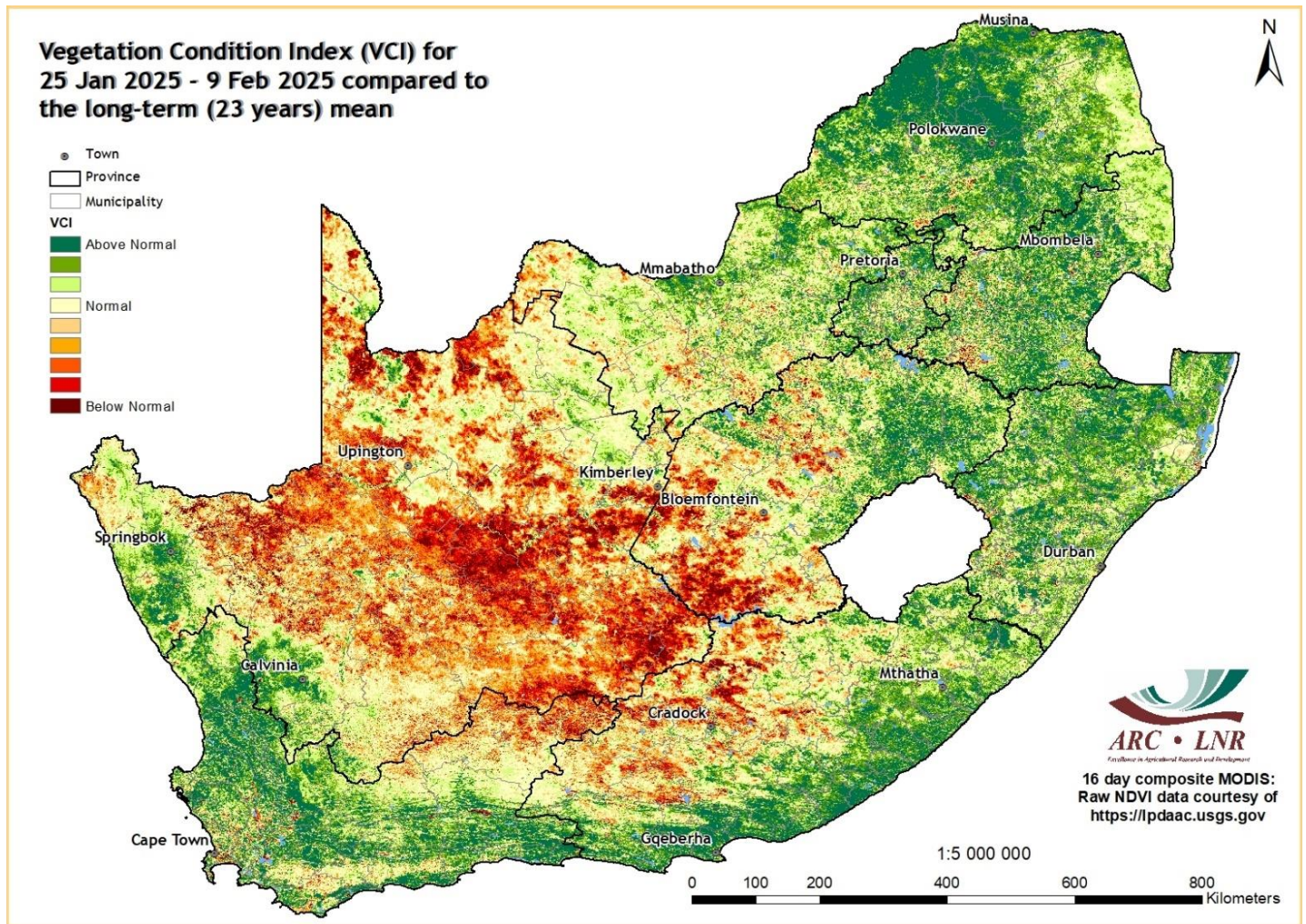
Most of the summer-rainfall region received near-average to above average rainfall for the period 20 December to 11 February. The central to north-western parts of the Free State, including a large part of the western summer-grain production region, received below-average rainfall. Little to no rain occurred over the western interior, a region that is traditionally only a late-summer to autumn rainfall region.

Rainfall (% of long-term mean): 1 - 11 February 2025



Large parts of the central to eastern and northern interior, including the summer-grain production region, received between 25 and 50 mm of rain during the first 11 days of February. Totals over KZN ranged between 50 and 180 mm.

Vegetation Condition Index: Early February 2025



By February, vegetation activity remained above normal over the northern to eastern and south-eastern parts due to widespread rain from mid-December onwards. Vegetation is stressed over the central to eastern parts of the Northern Cape and into the southern to western Free State (including some of the western grain-production areas) as well as the eastern Karoo due to low rainfall and high temperatures continuing until recently over these areas. Vegetation activity remained above normal over the winter rainfall region following above-normal rainfall during winter.

Sources of information

Seasonal forecasts: Published by the COPERNICUS Programme (<https://climate.copernicus.eu/seasonal-forecasts>)

Rainfall, temperature and wind maps over South Africa for the past week:

Agricultural Research Council - Institute for Soil, Climate and Water (ISCW) – Climate Data Bank. Data recorded by the automatic weather station network of the ARC-ISCW.

Vegetation condition maps: Copernicus Global Land service, distributed by VITO.

Information related to: ENSO, IOD and SOI:

Australian Bureau of Meteorology - <http://www.bom.gov.au>

Climate Prediction Center - <http://www.cpc.ncep.noaa.gov>

International Research Institute for Climate and Society- <http://iri.columbia.edu/>

Information related to the SAM:

The Annular Mode Website - <http://www.atmos.colostate.edu/ao/index.html>

SST map:

NOAA Climate Prediction Center - <http://www.cpc.ncep.noaa.gov>

Daily conditions over South Africa:

WRF model downscaling of GFS forecasts.

Fires:

MODIS data, distributed by the Land Processes Distributed Active Data Center (LP DAAC), located at the US Geological Survey's EROS Data Center

Soil moisture:

<https://nasagrace.unl.edu/>

Precipitation and temperature outlooks for the coming week:

Center for Ocean-Land-Atmosphere Studies (COLA) and Institute of Global Environment and Society (IGES) – <http://Wxmaps.org>

AgriSeker
fa ()
'n Seker Toekoms

THIS IS OUR CERTAIN
FUTURE

Together we can make a contribution to the Future of our Country with a dedicated Focus on Agriculture

1 FUTURE **2 FOCUS** **3 AGRICULTURE**

LAND BANK

AgriSeker Onderskrywingbestuurder (Pty) Ltd. Reg no. 2014/236270/07 is an Authorised Financial Service Provider FSP no. 45767, underwritten by Land Bank Insurance (SOC) Ltd. Reg no. 2012/115428/30.