
NDMC

SEASONAL HAZARD PROFILE

Autumn 2026

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1. SUMMARY STATEMENT

The NDMC Seasonal Hazard Profile is designed to guide and inform disaster management stakeholders across all spheres of government by providing a medium-term outlook (three months) on potential hazards across South Africa.

Each profile aims to highlight, at a national scale, the spatial patterns associated with key hazards expected during the specified period. Profiles have been developed for South Africa's most prevalent hazards, including fires, floods, droughts, windstorms, and snow. Partnerships with strategic institutions possessing specialised hazard and risk expertise have enabled the NDMC to produce a more scientifically informed and relevant national product.

As many hazards in South Africa are weather-related, the hazard profiles should be interpreted alongside the accompanying three-month seasonal weather forecasts provided by the South African Weather Service (SAWS). Weather conditions may significantly influence the occurrence and intensity of hazards. It should also be noted that the seasonal hazard profile is a static product and does not account for short-term weather variability.

The intended audience for the seasonal hazard profile includes disaster management practitioners and stakeholders at national, provincial, district, and municipal levels who are involved in medium-term planning and disaster operations.

The release of this product will be aligned with the South African seasonal calendar, with the following timeframes:

- a) Early December for Summer (December, January and February)
- b) Early March for Autumn (March, April, May)
- c) Early June for Winter (June, July, August)
- d) Early September for Spring (September, October, November)

Cautionary Note: *It is important to note that the product primarily illustrates a national view and should not be used to obtain what may be perceived to be "exact" parameter values at very specific localities. Often when spatial detail is presented on a map, values are derived by means of simulation models and often smoothing of local effects and dampening of outlier values occur. Values at a specific point should thus be viewed in relative rather than absolute terms.*



2. SEASONAL HAZARD PROFILE – AUTUMN 2026

The specific goals of the seasonal profiles are to:

- (a) Provide insights into the spatial and temporal nature of hazards throughout South Africa
- (b) Create awareness around potential and current conditions (situational awareness) to augment short –term early warning systems.
- (c) Guide medium term operational and tactical planning to mitigate identified risk.
- (d) Assist in identifying possible areas where disaster risk reduction (DRR) initiatives, to minimize risk, may be targeted.



2.1 Hazard Profiles

2.1.1 Fire

Fires are among the most destructive hazards in South Africa, resulting in loss of life and causing billions of rands in damage to agriculture, infrastructure, and natural resources. The occurrence of fires in the country follows a distinct seasonal pattern, with the summer fire season typically concentrated in the western parts of the country and gradually shifting toward the eastern provinces during winter and spring.

The indicative fire hazard profile for South Africa draws on the historical spatial distribution of fire observations, burn scars, fire danger ratings, veldfire ecology, and recorded fire-related fatalities. These datasets help to characterise the hazard by considering key components such as likelihood, frequency, predictability, and magnitude.

The autumn fire hazard profile (Figure 1) indicates a continued increase in fire risk (orange and brown) across the south-western regions of South Africa following the summer season.

Areas with high fire hazard include parts of the **Western Cape**, such as the City of Cape Town Metropolitan, West Coast, Cape Winelands, and Overberg district municipalities. Fire risk in these areas is expected to remain elevated and may intensify until the onset of the first significant autumn or winter rainfall.

Similarly, elevated fire hazard levels are observed across the Highveld, particularly in **Gauteng**. Above-average biomass accumulation in the summer rainfall region, resulting from favourable rainfall conditions during the 2024/25 summer season, may increase susceptibility to fires.

The presence of excessive dry biomass (Figure 6), high maximum temperatures (Figure 10), and elevated wind hazard ratings (Figure 3) may further contribute to an increased fire risk during the upcoming season.

Stakeholders are encouraged to note the issuing of daily Fire Danger Indexes (FDI) by the South African Weather Services to maintain situational awareness of contributing fire related factors.

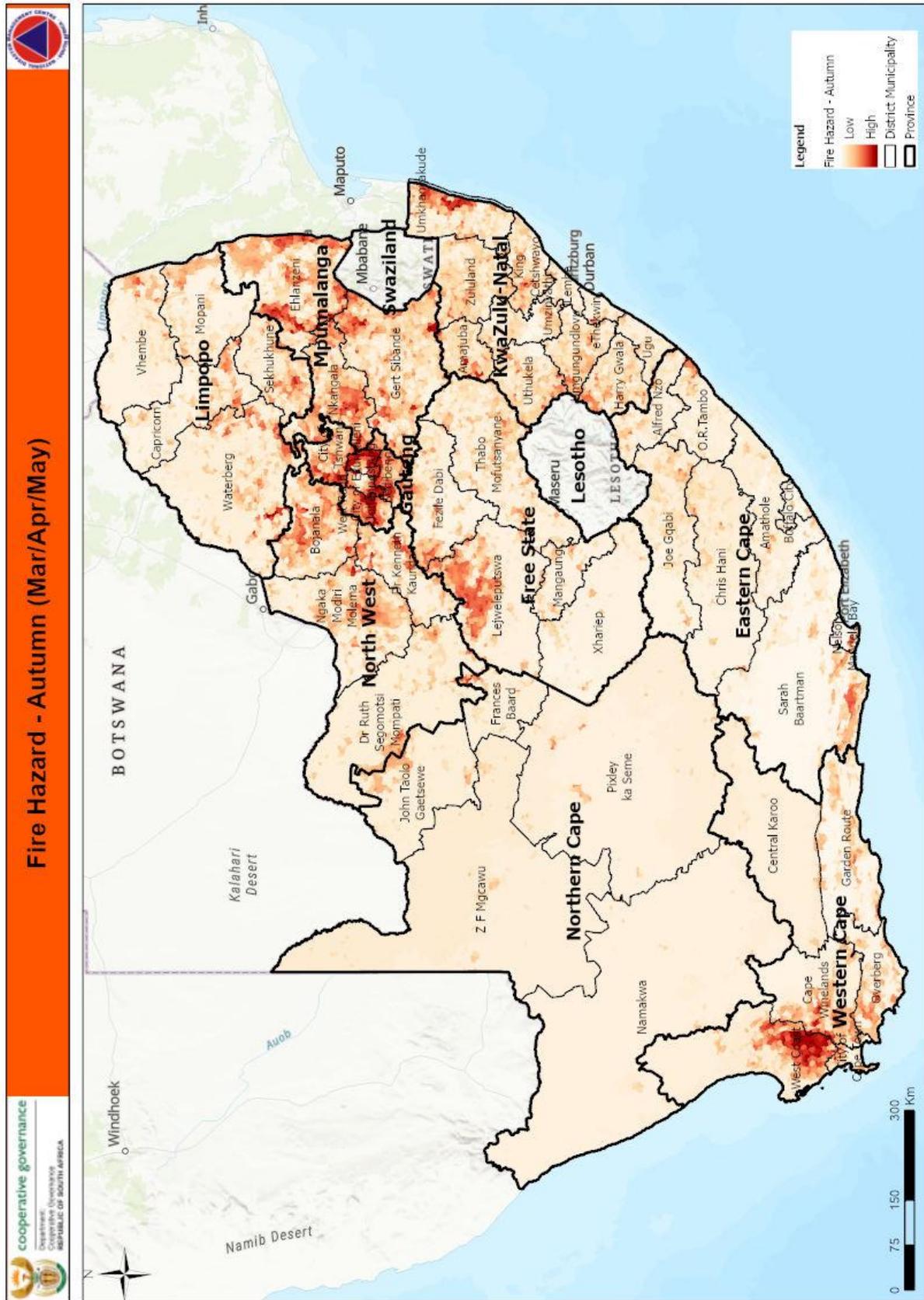


Figure 1: Fire hazard map – autumn



2.1.2 Flood

The historical hazard profile for South Africa, derived from the EM-DAT, the CAELUM maintained by the South African Weather Service, and situation reports submitted to the National Disaster Management Centre (NDMC), identifies flooding as the most frequent hazard in the country.

The indicative risk profile, developed through desktop analysis, assesses several hazard parameters, including likelihood, frequency, magnitude, and predictability. This assessment draws on multiple studies—such as *Land Capability* by the Agricultural Research Council (2002) and the South African Atlas of Agrohydrology and Climatology produced by the University of KwaZulu-Natal—as well as historical event data. These inputs are integrated using a weighted scoring model to generate the indicative hazard profile.

The outputs of the Indicative Flood Risk Profile are illustrated in Figure 2. The eastern regions of South Africa imply an increased flood hazard (darker blue shading) during the autumn period.

Areas with elevated flood hazard include the northern regions of **KwaZulu-Natal**—specifically the uMkhanyakude, King Cetshwayo, and uThukela district municipalities—as well as coastal areas such as iLembe and eThekweni. Similarly, heightened flood risk is observed in parts of the **Eastern Cape**, including Buffalo City Metropolitan Municipality and the Alfred Nzo, Amathole, O.R. Tambo, and Chris Hani district municipalities. In addition, areas within the **Western Cape**, particularly the Cape Winelands and Overberg district municipalities, also display elevated flood hazard levels.

Seasonal guidance from the South African Weather Service (SAWS) indicates a higher likelihood of above-normal precipitation (green shading) across the central and eastern parts of the country (Figure 8).

It should be noted that short-duration, high-intensity rainfall events may still result in localized flooding. Stakeholders are therefore advised to regularly monitor short-term weather forecasts and official early warning information.



2.1.2.1 Cut-Off Low

Cut-Off Low (COL) pressure systems are among the primary weather systems responsible for significant precipitation and hazardous weather conditions in South Africa.

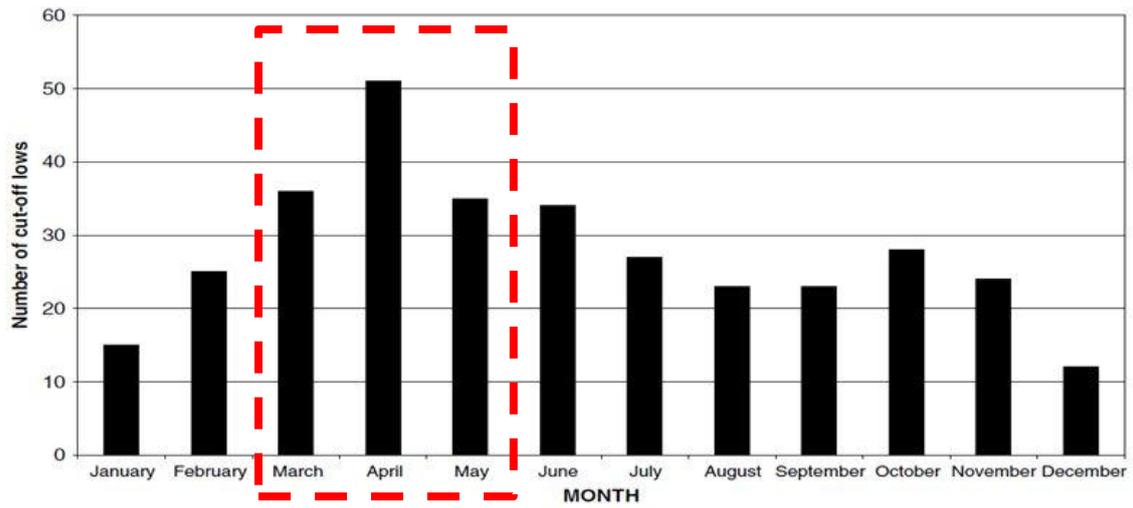
A Cut-Off Low is a low-pressure system that typically develops south of South Africa after separating from the main westerly trough of cold air. These systems are unstable, baroclinic in nature, and generally tilt westward with height. They are associated with strong atmospheric convergence and upward motion, particularly during periods of intensification.

Cut-Off Low systems often persist over a specific area for more than a day and may last up to six days. Because they tend to move slowly over relatively confined regions, they can produce prolonged and heavy rainfall.

Parameter	Description
Precipitation	<ul style="list-style-type: none">• Heavy rainfall; exceeding 50mm at a given station over a 24 hour period.• Snowfall
Temperature	<ul style="list-style-type: none">• Very cold conditions, maximum temperatures of 10° C or below
Wind (incl. gusts)	<ul style="list-style-type: none">• Gale force winds exceeding 17m/s
Other relevant information	<ul style="list-style-type: none">• Very rough seas, total sea in excess of 4-6m.

Table 1: Cut Off Low Parameters and Descriptions

The graph below shows the Cut-Off Low's are most frequent during the autumn season in South Africa (March, April and May), with the highest frequency during April. One out of ten Cut-Off Low's produces severe conditions and leads to flash flooding." (https://resources.eumetrain.org/satmanu/CM4SH/S_Africa/COL/index.htm)



Graph 1: Cut-Off Low Temporal Distribution



2.1.3 Windstorm

Wind-related hazards rank third in frequency among weather-related events in the historical data analysed by the National Disaster Management Centre (NDMC). Wind hazards may be defined either by wind speed thresholds or by the meteorological systems that generate strong winds, such as tornadoes, tropical cyclones, and severe thunderstorms. The specific definition or threshold for a wind hazard can vary depending on the socio-economic sector affected, as different sectors have varying levels of sensitivity to wind intensity (South African Weather Service, 2013).

The windstorm hazard profile considers key parameters including likelihood, frequency, magnitude, and predictability. These are assessed using a methodology consistent with previous hazard analyses for fire, flood, and snow, which applies a weighted scoring approach within a GIS-based modelling framework.

Most of the western **Free State** displays medium to high windstorm hazard values, with particularly high values identified in the Lejweleputswa District Municipality.

In the **Eastern Cape**, elevated values are observed in the Nelson Mandela Bay Metropolitan Municipality, large parts of O.R. Tambo District Municipality, the southern areas of Sarah Baartman District Municipality, and the western portions of Chris Hani District Municipality.

Smaller areas in western **KwaZulu-Natal**, including parts of the uThukela District Municipality, also show increased hazard values.

Similarly, elevated windstorm hazard values are evident in parts of the **Northern Cape**, particularly within the Pixley ka Seme and southern Francis Baard district municipalities.

In the **Western Cape**, higher values are observed in the City of Cape Town Metropolitan Municipality, as well as in the Central Karoo, Overberg, and Cape Winelands district municipalities.

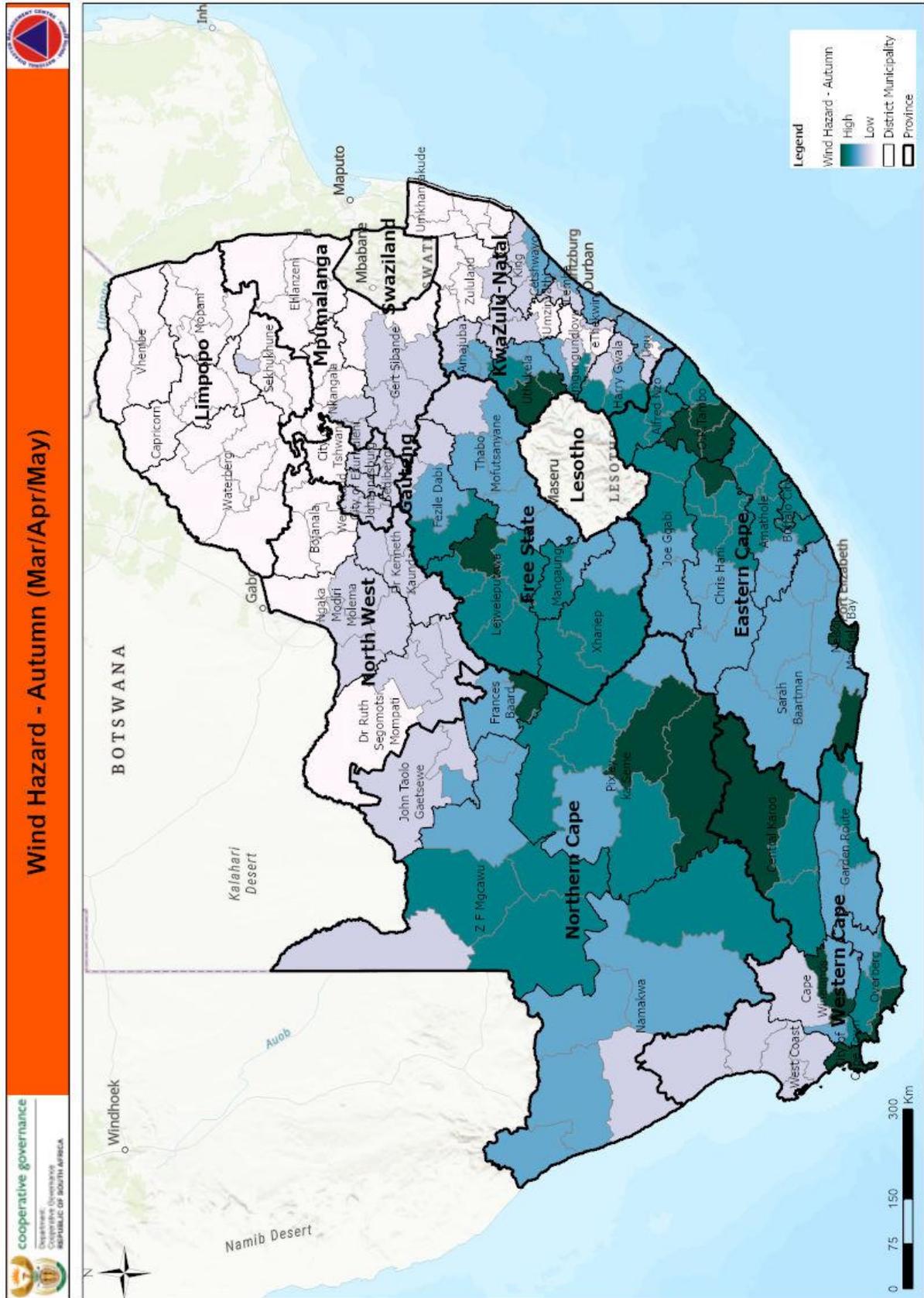


Figure 3: Windstorm hazard map – autumn



2.1.4 Snow

In 2015/16, snow hazard assessments were conducted through a collaborative partnership between the National Disaster Management Centre (NDMC) and the Council for Scientific and Industrial Research (CSIR). The assessment quantified key hazard parameters, including likelihood, frequency, magnitude, and predictability, using a weighted scoring GIS model with a seasonal component. Historical datasets obtained from the South African Weather Service (SAWS), together with optical remote sensing techniques, were incorporated into the analysis.

Figure 4 illustrates that low (green) and low-to-medium (lime green) snow hazard values are prevalent across most of South Africa. An exception is the Joe Gqabi District Municipality in the **Eastern Cape**, which shows medium (yellow) snow hazard ratings during the autumn period.

Seasonal guidance from the South African Weather Service indicates an increased likelihood of above-normal minimum temperatures across much of the country (Figure 9). These conditions may reduce the probability of snow occurrence in the coming months.

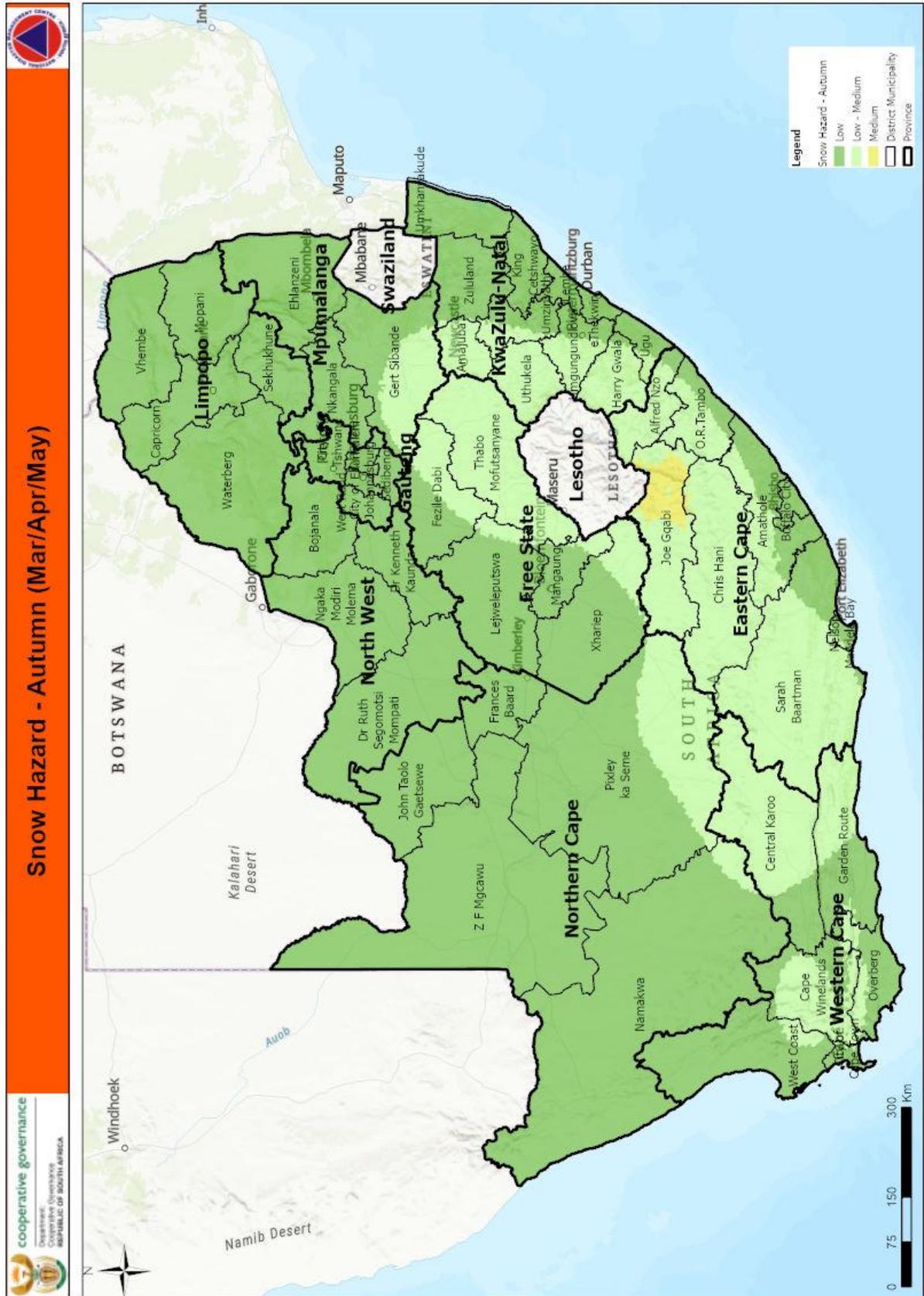


Figure 4: Snow hazard map – autumn



2.1.5 Current Drought Status

A drought is usually identified when a shortage of water (surface/underground) over a long period (more than 24 months) results in a negative impact. Drought can be detected and characterized using the Standard Precipitation Index (SPI – McKee et al., 1993). The SPI was developed to monitor the occurrence of drought from rainfall data. The index quantifies precipitation deficits on different time scales and therefore also drought severity. The ARC-ISCW calculates the SPI at various time scales per quaternary catchment. (Malherbe et al. 2016).

Drought occurrence across South Africa (Figure 5) remains limited, particularly over longer timescales. In the summer rainfall region, significantly above-normal rainfall has contributed to generally favourable conditions at extended timescales. The Lowveld region has also shown notable improvement in drought conditions for both short- and long-term periods following recent above-average rainfall.

Conversely, certain areas in the **Western Cape** (Garden Route) and **Eastern Cape** (Sarah Baartman, Joe Gqabi, Amathole, and O.R. Tambo) exhibit localized pockets of severe (red) and extreme (maroon) drought conditions due to below-normal rainfall.

Seasonal precipitation forecasts (Figure 8) indicate a higher likelihood of above-normal rainfall (green shading) across central and eastern regions of the country, which could provide some relief from drought conditions in the coming months.

Stakeholders are advised to regularly consult the NDMC's monthly drought observations to stay updated on drought developments.

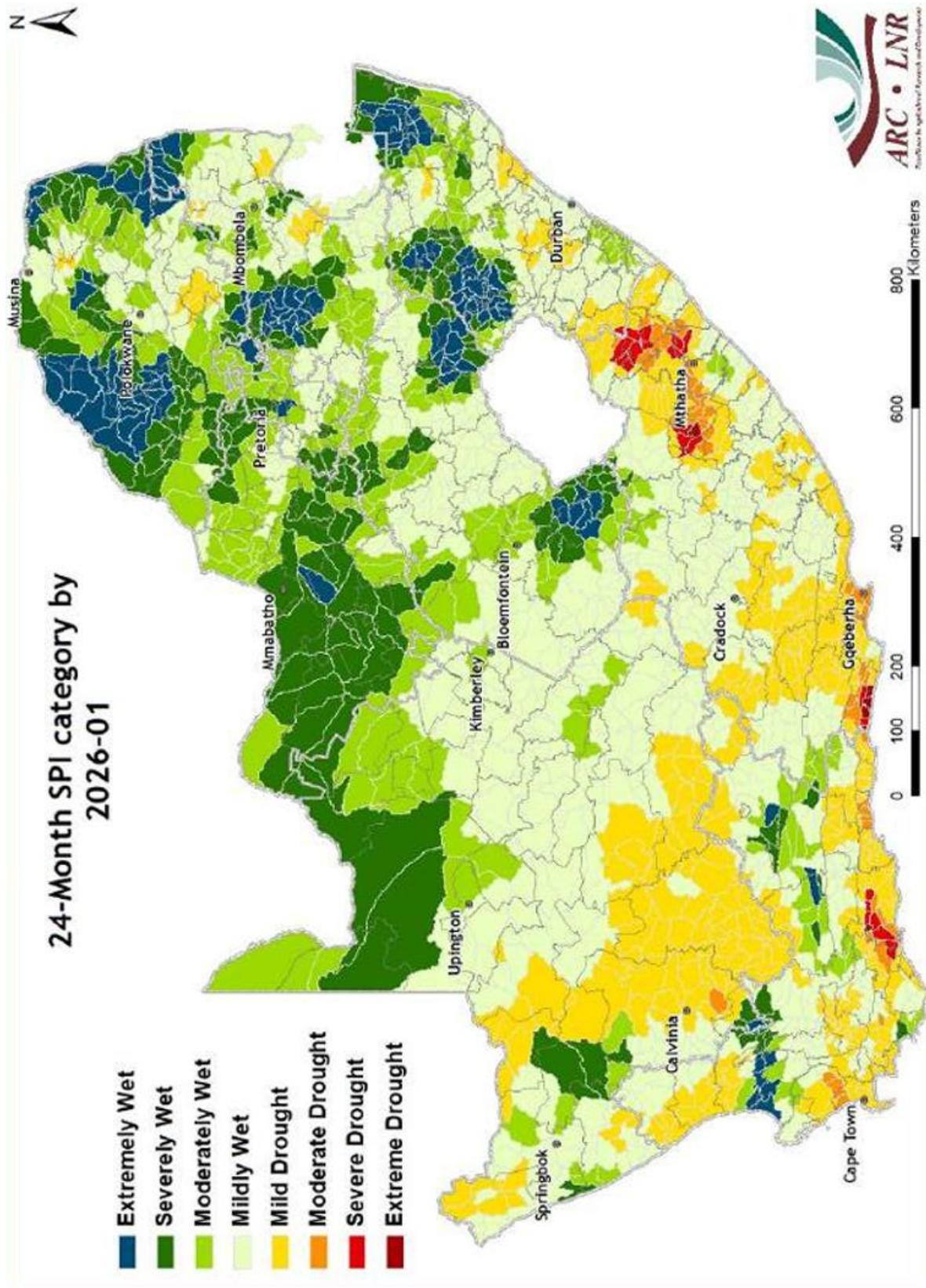


Figure 5: Drought Status Map – January 2026



The Percentage of Average Seasonal Greenness (PASG) (Figure 6) demonstrates deviations from the long-term average vegetation activity over a given timeframe. From the legend provided vegetation activity is categorized from presenting well above average (in green) to areas showing potential drought (orange) and drought conditions (red).

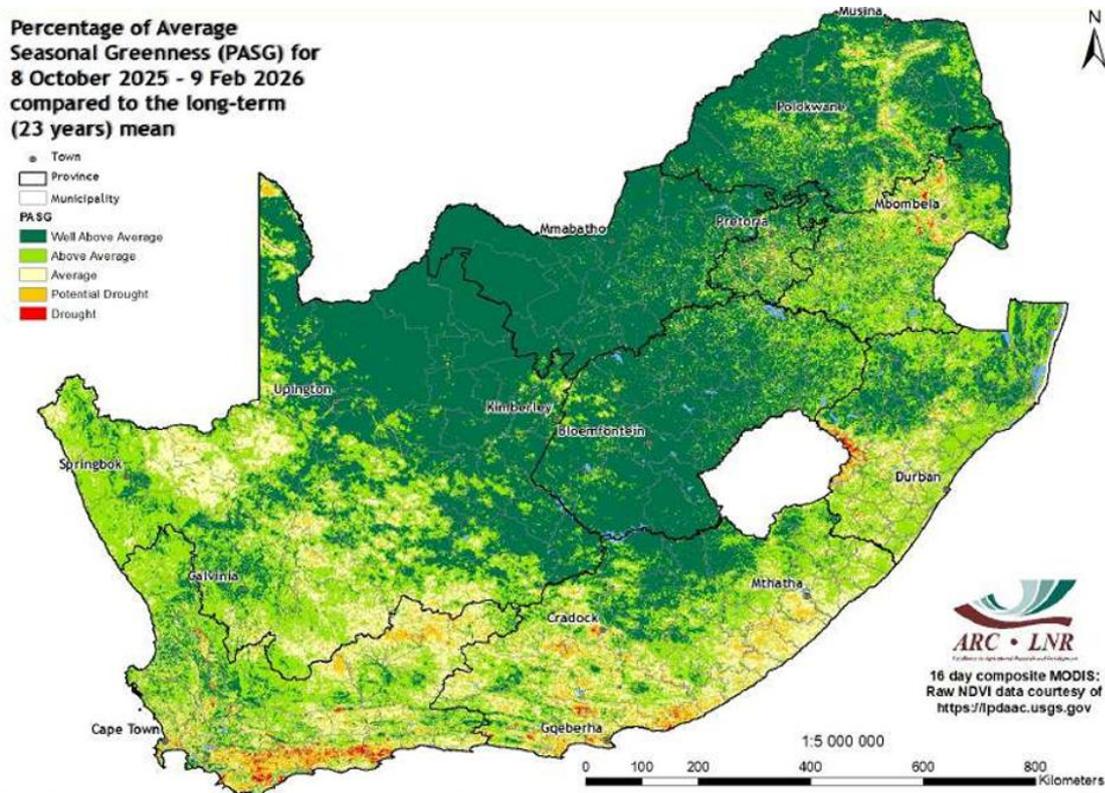


Figure 6: Percentage of Average Greenness (PASG) October 2025 – February 2026

The PASG map from the last 5 months indicate above-average vegetation (Dark Green) over the interior, northern and north eastern parts of the country with some isolated areas of potential drought (Orange) and Drought (Red) in Mpumalanga and KwaZulu-Natal bordering Lesotho.

Larger areas indicating potential drought and drought conditions are observed in southern coastal parts of the Western Cape and Eastern Cape. (Umlindi: February 2026)



2.1.6 Tropical Cyclones

Forecasters predict that the 2025/26 tropical cyclone season in the Southwest Indian Ocean basin will have activity levels that are close to or higher than average.

Experts predict that there will be 10 to 14 storms in total this season. Of these, 5 to 8 are expected to become named tropical cyclones. To date, there has been 7 named Tropical Cyclones this season (Gezani being the last around February 10, 2026)

In this season, tropical cyclone development remains concentrated in the eastern basin. Most storms are expected to follow a parabolic path, moving west before curving south. This trajectory reduces the risk for the northern Mozambique Channel, while the rest of the basin can expect activity levels at or above historical averages. (MeteoFrance: October 2025)

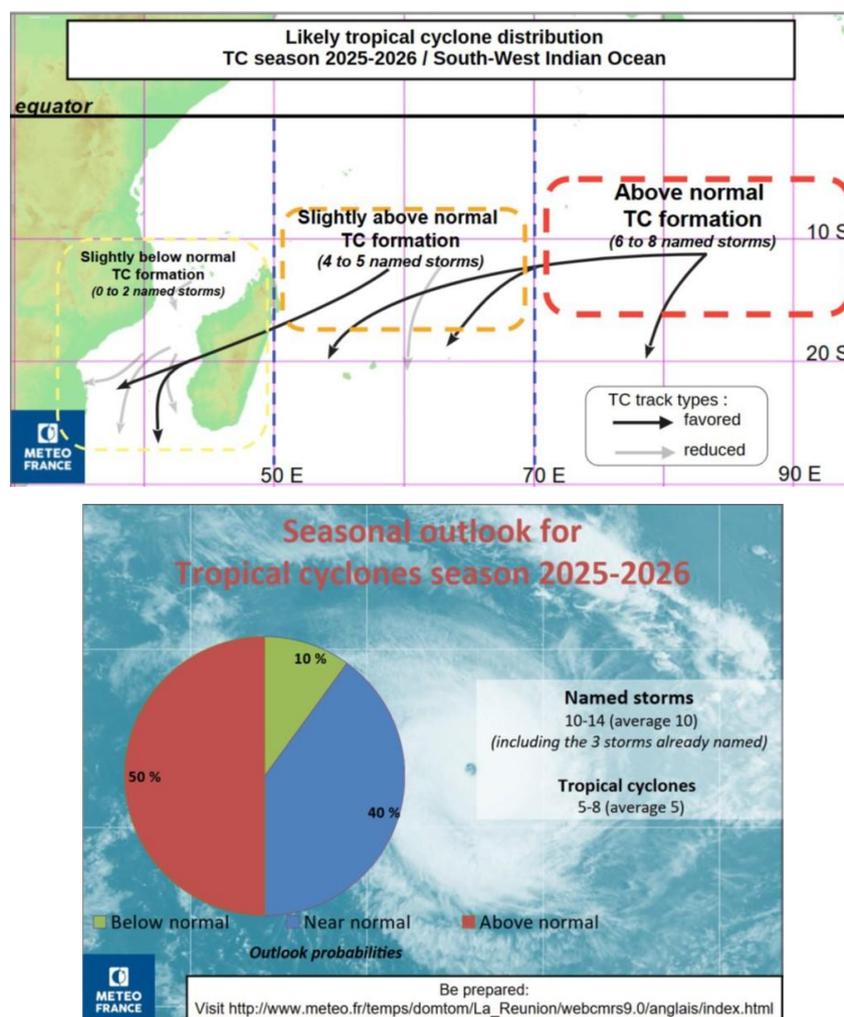


Figure 7: Seasonal Outlook for Tropical Cyclones 2025/26 (MeteoFrance: Oct'25)



2.2 Seasonal Weather Forecasts

To provide further context to the hazard profiles, the following seasonal forecasts are sourced from the South African Weather Service (SAWS). For more details regarding the Seasonal Climate Watch products and services, please contact:

(Mr) Cobus Olivier

Scientist: Prediction Research

Tel: 012 367 6008

E-mail: cobus.olivier@weathersa.co.za

Website: www.weathersa.co.za

2.2.1 Overview

“The El Niño-Southern Oscillation (ENSO) is currently still in a weak La Niña state; however, it is expected to return to a neutral state and potentially rapidly evolve into an El Niño state by end of the southern hemisphere winter, which may impact the next summer rainfall areas in South Africa. It is still too early to indicate confident impacts of this potential El Niño event; however, it is advised that potentially impacted users keep up to date with the ENSO predictions in the coming months.”

“During the autumn and early winter, it is only the southern and eastern coastal areas that receive significant rainfall. For these areas the south-eastern and eastern coastal areas are expected to receive above-normal rainfall, and the south-western parts 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.” (Seasonal Climate Watch, SAWS: March 2026)



2.2.2 Rainfall

Expected Precipitation Conditions for MAM 2026
Issued: Feb 2026

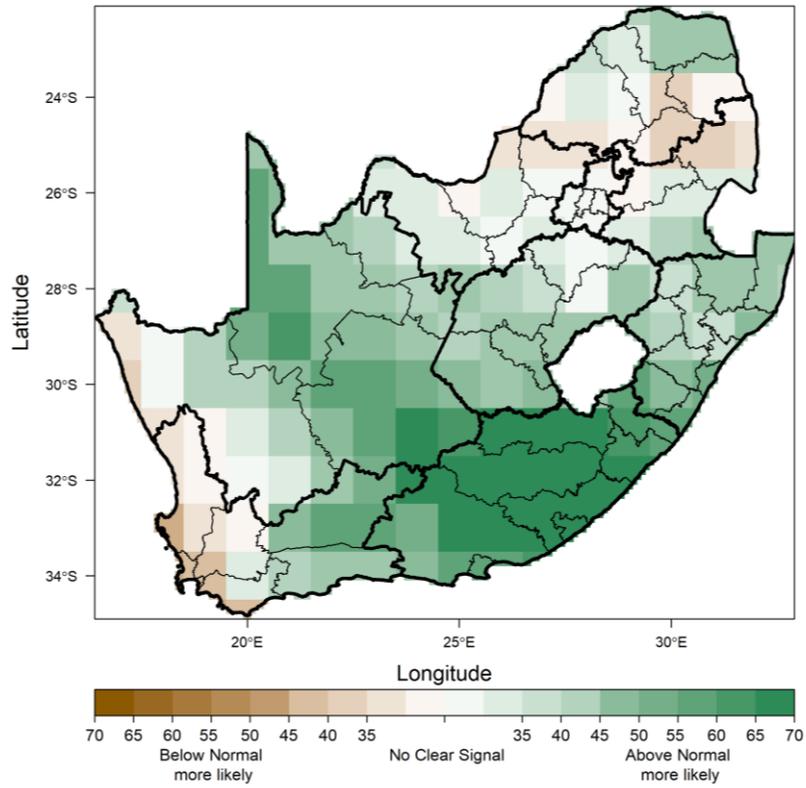


Figure 8: Rainfall - autumn 2026 (March / April / May (MAM)).



2.2.3 Minimum and Maximum Temperatures

2.2.3.1 Minimum Temperatures

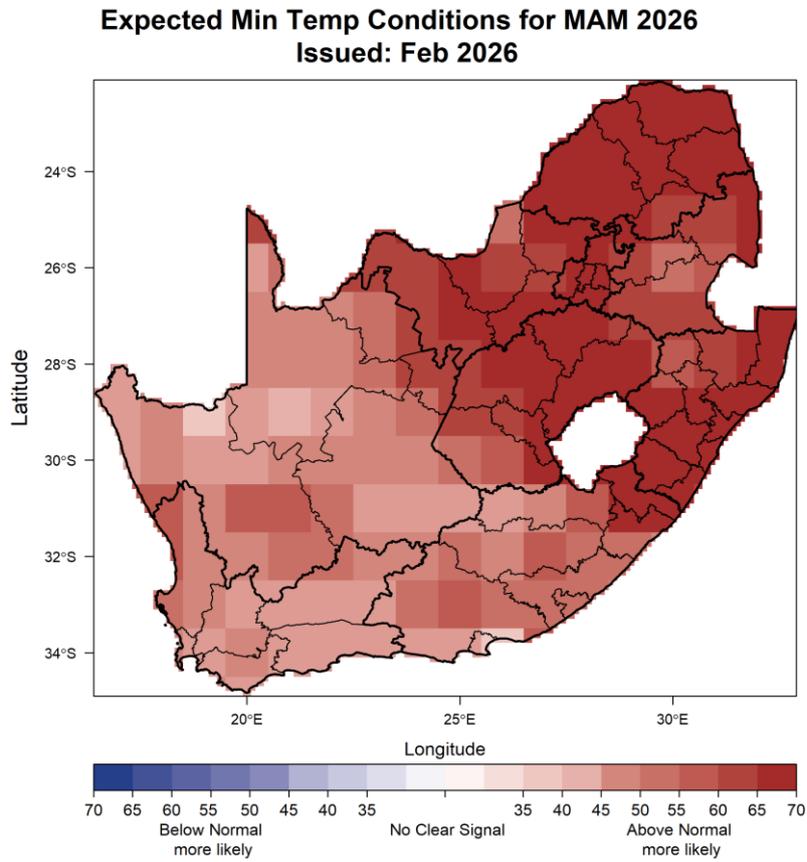


Figure 9: Minimum Temperatures - autumn 2026 (March / April / May (MAM)).



2.2.3.2 Maximum Temperatures

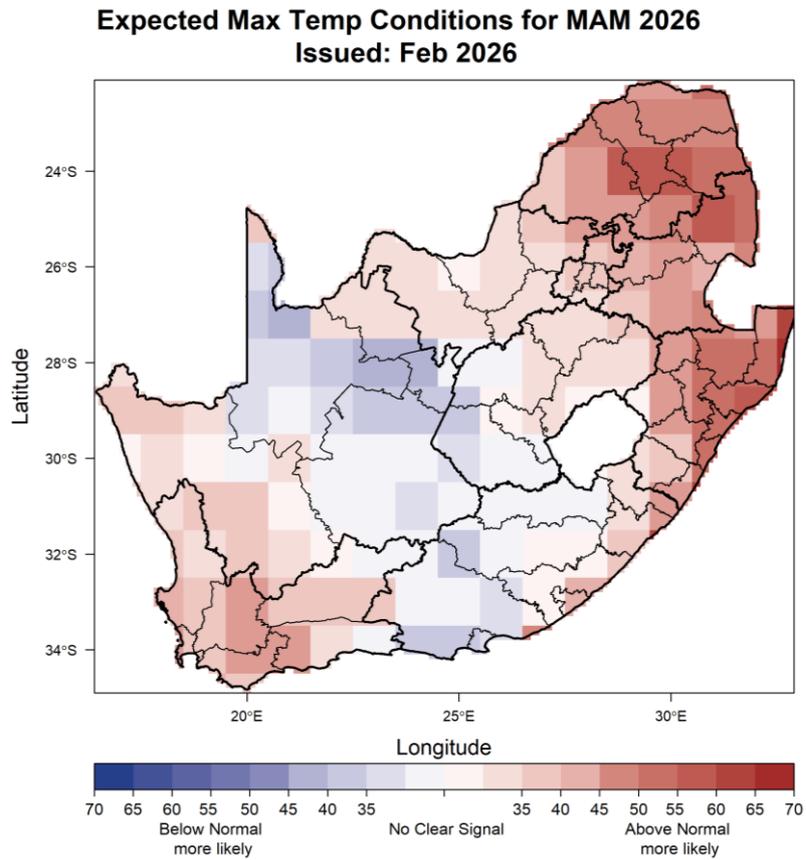


Figure 10: Maximum Temperatures - autumn 2026 (March / April / May (MAM)).



3. RECOMMENDATIONS

It is recommended that Disaster Management entities and stakeholders note the content of the seasonal hazard profile for autumn 2026 and note the commentary made by the SA Weather Services and contributing stakeholders.

4. APPENDICES

None



5. References

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