South African Weather Service
ISO 9001 Certified Organisation

Seasonal Climate Watch

November 2017 to March 2018

Date issued: Oct 26, 2017

1. Overview

The El Niño Southern Oscillation (ENSO) continues to develop towards a La Niña state, and is expected to be in at least a weak La Niña state throughout the summer period. The early and mid-summer forecasts indicate a typical La Niña state effect, with above-normal rainfall expected during the Nov-Dec-Jan and Dec-Jan-Feb seasons over the summer rainfall areas.

Even though forecasting of floods at a seasonal time-scale is not deterministically possible (i.e. no indication of intensity and timing during the season can be given), above-normal rainfall seasons are usually accompanied by a higher frequency of flood events during an areas main rainfall season. It is advised that early warning systems from the South African Weather Service be followed throughout the summer season.

Lower temperatures on average are also expected during the coming summer over the summer rainfall areas. This is due to the higher than normal number of rainfall days expected over the summer rainfall areas. The south western parts of the country is expected to have higher temperatures on average. Similar with the above mentioned flood events, hot and cold episodes can unfortunately not be forecasted deterministically.

The South African Weather Service will continue (to monitor and provide updates) its dissemination of any future assessments that may provide more clarity on the current expectations for the coming seasons.

For further inquiries contact cobus.olivier@weathersa.co.za
Tele: +27 12 367 6008

2. Discussion: State of Climate Drivers

2.1 El Niño Southern Oscillation

Observations show that ENSO (El Niño Southern Oscillation) is continuing towards a La Niña phase and is currently starting a potential La Niña cycle. Forecasts suggest that ENSO will remain in this phase, with at least a weak La Niña expected to develop during early and mid-summer. A La Niña event typically enhances rainfall activities over the summer rainfall areas of South Africa.

2.2 Indian Ocean Dipole

The Indian Ocean Dipole (IOD) forecasts indicate neutral conditions during summer and is not expected to have any influence in this period. The IOD, both tropical and subtropical, can enhance moisture transport towards the continent during positive phases and degrade the transport during negative phases.

2.3 Southern Annular Mode

The Southern Annular Mode (SAM) has recently been in a negative phase in the last few weeks, and the forecast indicate a further weakening in the coming weeks. It has been noted that this current state of SAM is as a result of stratospheric influence which has become dominant and therefore acted to dynamically couple with the troposphere. However, the effect of SAM is expected to be minimal during the summer periods as it mostly impacts winter rainfall systems which will move pole-wards in summer and are unlikely to impact the country.

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3. Climate Forecast Details

3.1 Rainfall

The forecasting systems indicate early summer (Nov-Dec-Jan) to receive above-normal rainfall accompanied by higher frequency of rainfall events exceeding 10mm for the summer rainfall areas. This threshold may is suggestive of more significant rainfall events than usual for the early-summer season. During mid- (Dec-Jan-Feb) and late-summer (Jan-Feb-Mar) similar conditions are expected as for early summer, however with higher frequency of rainfall events being less significant. Please take note of the newly-added rainfall threshold maps from which this information is retrieved from.

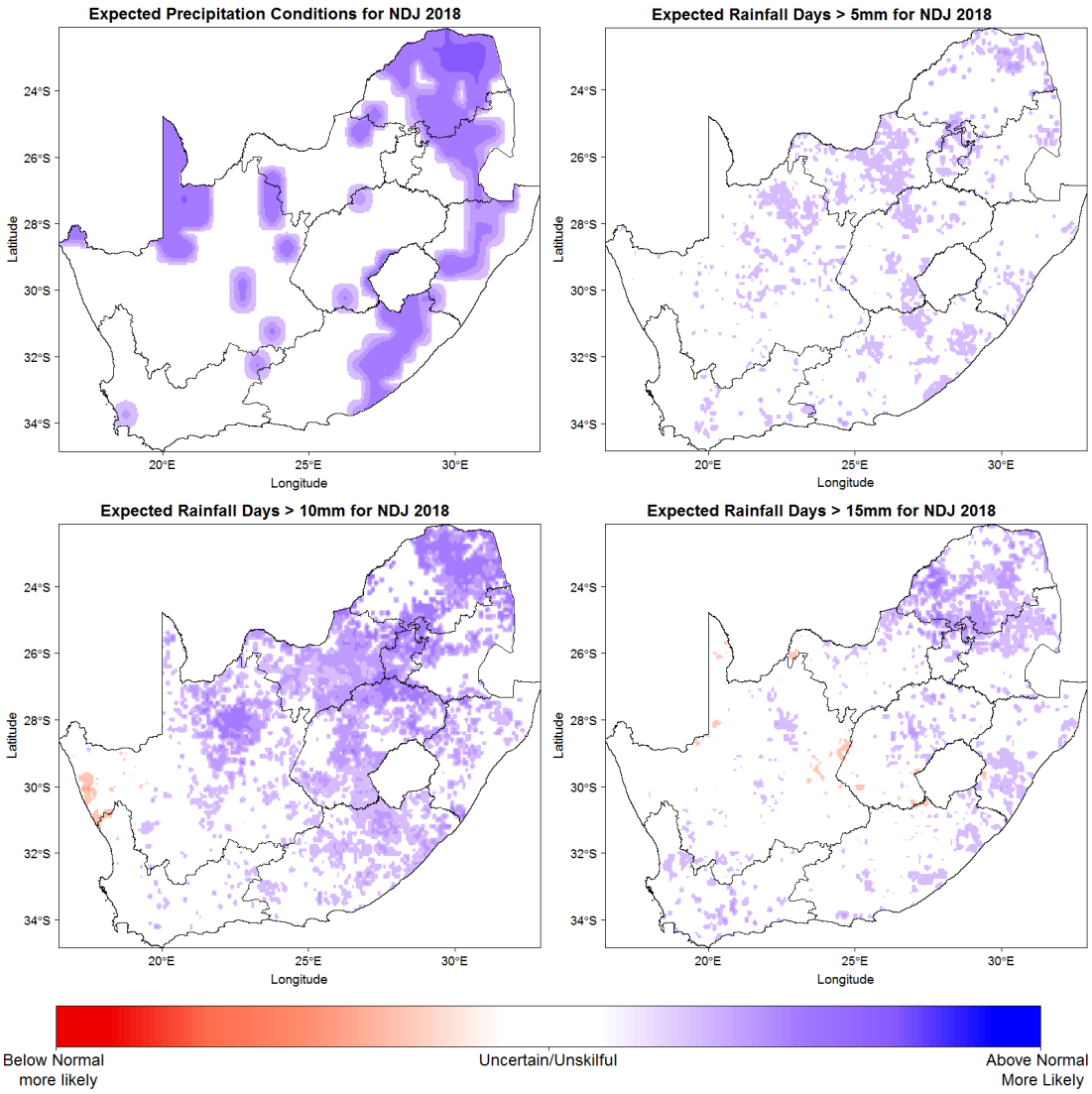

Figure 1: Rainfall forecasts for Nov-Dec-Jan 2018, showing chances for total precipitation (top left), frequency of rainfall days above 5mm (top right), frequency of rainfall days above 10mm (bottom left) and frequency of rainfall days above 15mm (bottom right)

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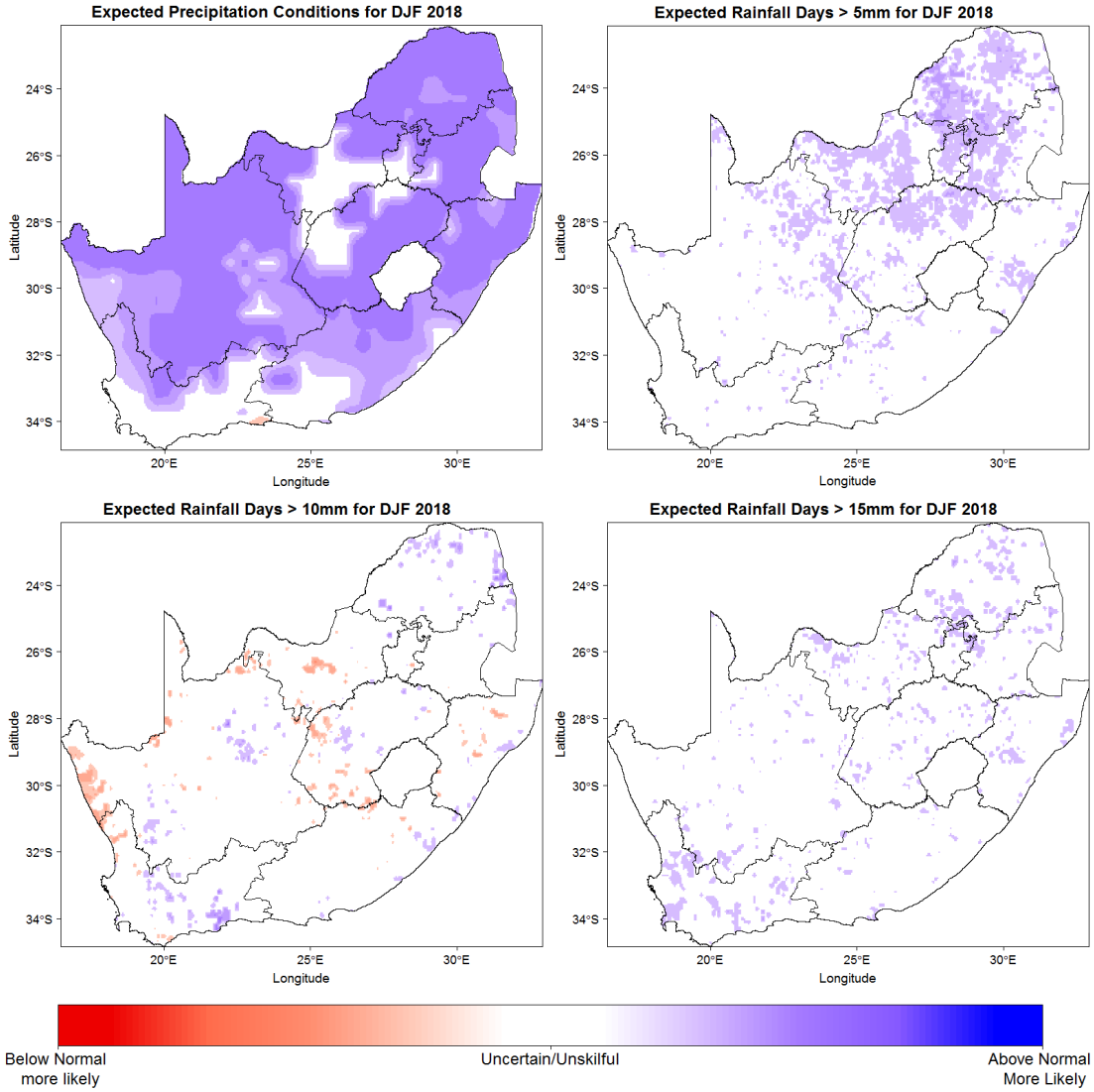

Figure 2: Rainfall forecasts for Dec-Jan-Feb 2018, showing chances for total precipitation (top left), frequency of rainfall days above 5mm (top right), frequency of rainfall days above 10mm (bottom left) and frequency of rainfall days above 15mm (bottom right)

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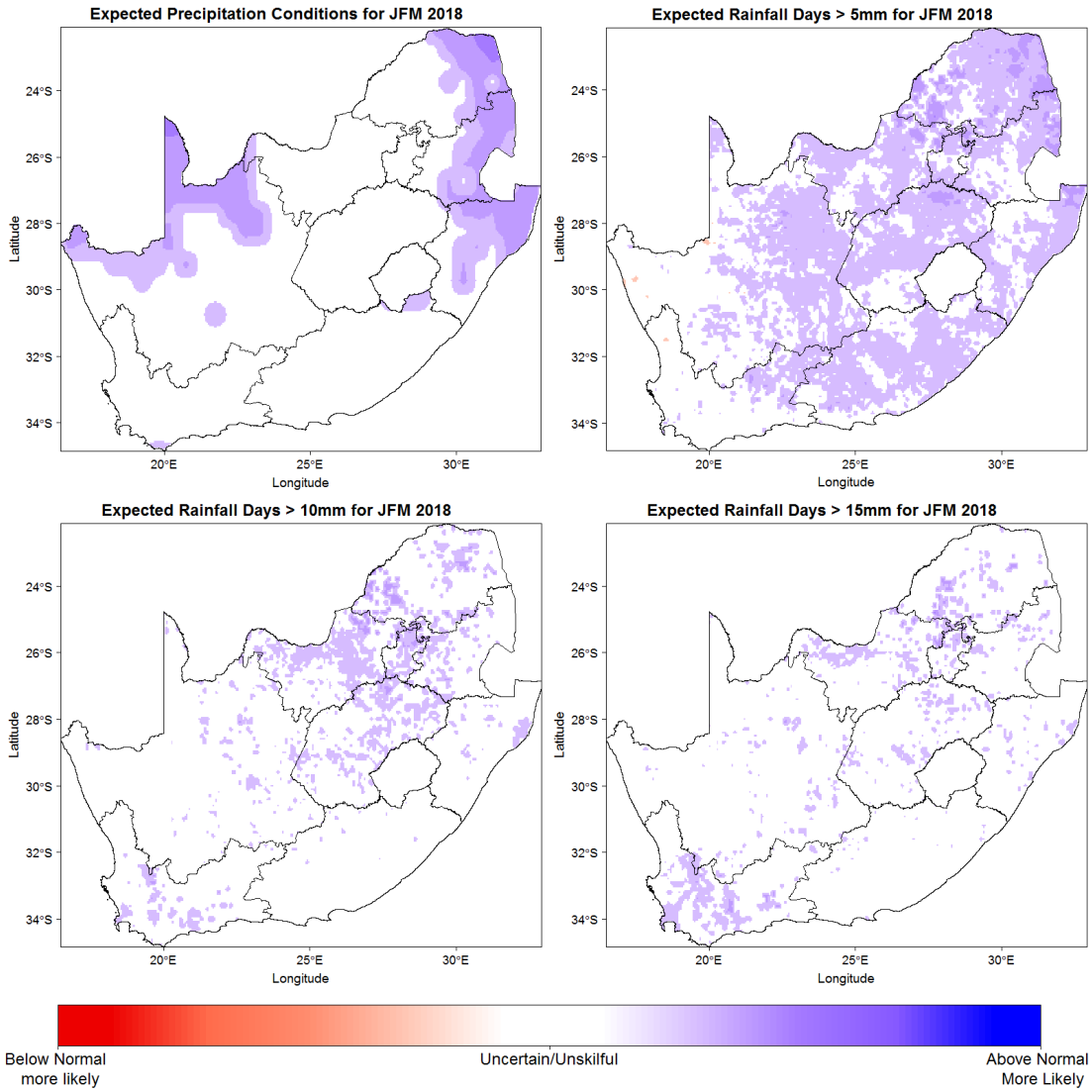

Figure 3: Rainfall forecasts for Jan-Feb-Mar 2018, showing chances for total precipitation (top left), frequency of rainfall days above 5mm (top right), frequency of rainfall days above 10mm (bottom left) and frequency of rainfall days above 15mm (bottom right)

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3.2 Minimum and Maximum Temperatures

Early summer (Nov-Dec-Jan) indicate generally warmer conditions over most parts of the country. Towards mid- (Dec-Jan-Feb) and late-summer (Jan-Feb-Mar), however, the mid-day temperatures are expected to be overall cooler due to the increased frequency of rainfall activities expected during these periods.

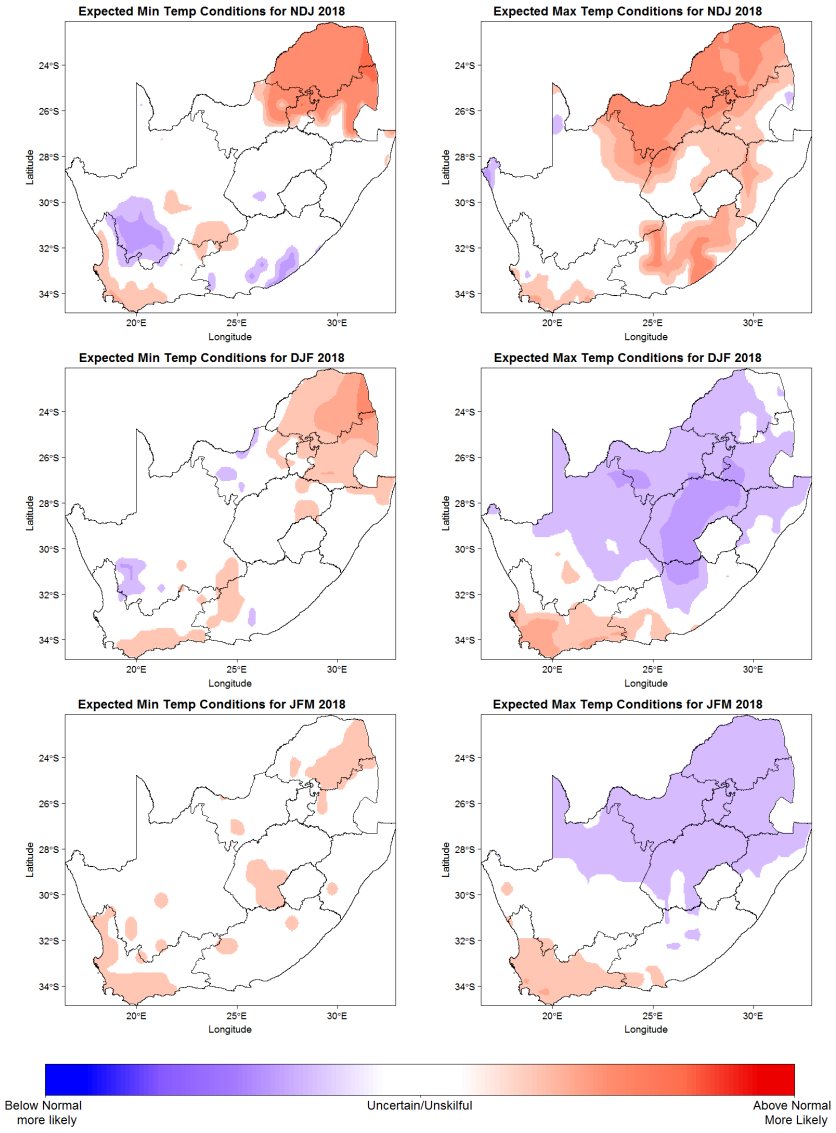

Figure 2: Chances for Minimum (left side) and Maximum (right side) temperatures for the three overlapping seasons valid for the period of November 2017 to March 2018.

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4. Contributing Institutions

All the forecasts are a result of an objective multi-model prediction system developed at the South African Weather Service. This system consists of long-range forecasts produced by the following institutions:

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