

Seasonal Climate Watch

September 2017 to January 2018

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I. Overview

There is no indication that increased rainfall activities will occur during the spring (Sep-Oct-Nov) season for the south western parts of the country. The Southern Annular Mode (SAM), which is in a strong positive phase and predicted to remain positive in the coming weeks, adds to this assessment, because a positive phase usually indicates that frontal systems are less likely to reach South Africa.

Given the current strain on water resources in the south-western parts of the country and seemingly no significant rainfall activities during spring, it is recommended that the current drought measures (which are already in place) continue for the foreseeable future.

Forecasts however do indicate that there is an increased chance for above-normal rainfall between spring and late spring (Oct-Nov-Dec) over the north-eastern parts of the country. Conditions over the Indian Ocean promotes this forecast; however, there are indications that these conditions may start to moderate during late spring.

Furthermore, the El Niño Southern Oscillation (ENSO) phenomenon is now likely to have no specific influence over the coming summer months over South Africa. In addition, as the current and predicted state of ENSO is for neutral conditions, there is currently no confident forecast that can be made for the forthcoming summer rainfall.

Temperatures are expected to be largely above normal for most parts of the country during the spring and early summer periods.

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

2. Discussion: State of Climate Drivers

2.1 El Niño Southern Oscillation

Observations show that [ENSO](#) (El Niño Southern Oscillation) is gradually cooling towards the neutral phase and forecasts suggest that it will remain in a neutral phase in the coming months. The likelihood for an El Niño event has decreased further from previous assessments.

2.2 Indian Ocean Dipole

The Indian Ocean Dipole ([IOD](#)) forecasts indicate a slow evolution towards a positive phase of the tropical IOD for spring 2017, however it is not predicted to be significant through the spring period. This could still indicate favourable rainfall for the Equatorial East African region for that period. This is as a result of increased moisture transport to the continent given the positive dipole structure. For South Africa, however, the conditions over the south-west Indian Ocean are more important. Indications are that there is indeed a positive dipole structure towards the south-west of the Indian Ocean, and hence it is expected to positively influence rainfall for spring.

2.3 Southern Annular Mode

The Southern Annular Mode ([SAM](#)) has moved into a strong positive phase over the last few weeks, and the forecast indicates a weakening of the system for the coming weeks. However, this weakening of SAM does not necessarily suggest any change from the current state and is likely to remain in a positive phase. This current state and forecast indicates that frontal activities are less likely to reach South Africa and produce rainfall activities. A negative (positive) phase of the SAM and the weakening (strengthening) of the polar vortex are often associated with colder (warmer) and wetter (drier) conditions over the winter-rainfall region of South Africa, through frontal activities. It is worth noting that this system is not predictable on a seasonal timescale, which then complicates the assessment for the winter-rainfall region for the entire early spring period.

3. Climate Forecast Details

3.1 Rainfall

The forecasting system is currently very uncertain on a specific direction of rainfall during mid spring; however, there are strong indications that wetter conditions can be expected from late spring and early summer. This is however only expected to be significant for the summer-rainfall areas of South Africa.

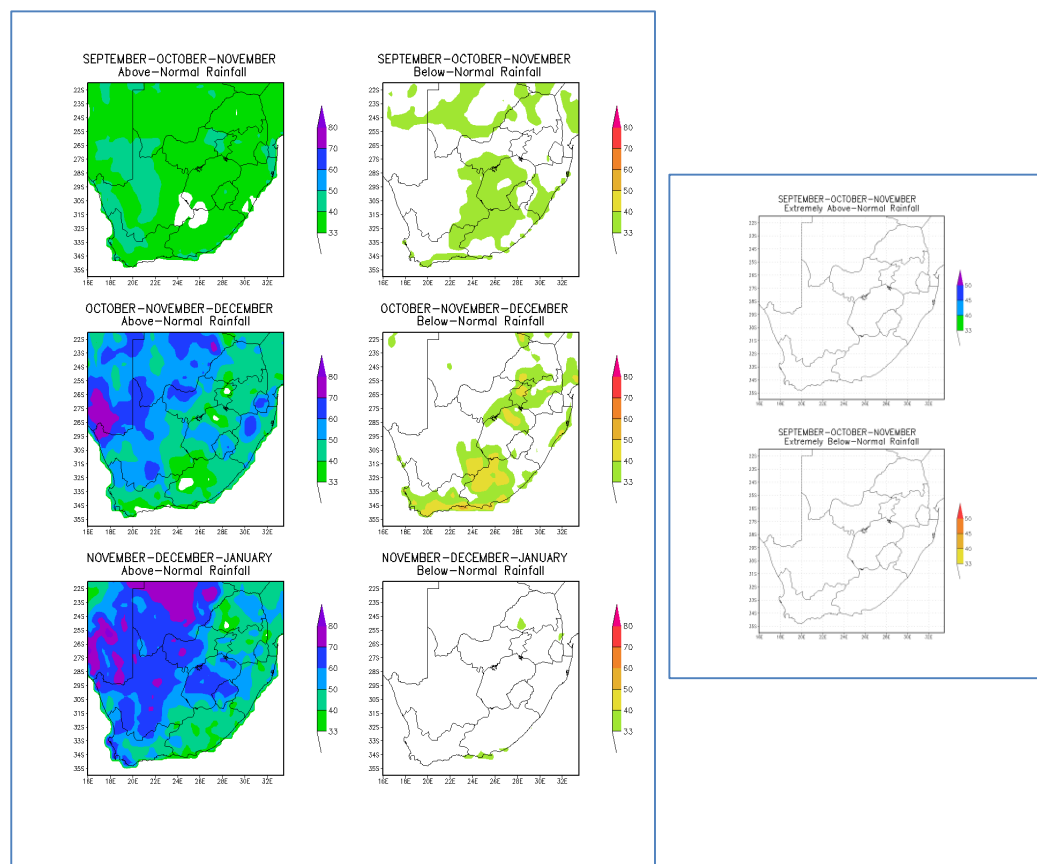


Figure 1: Rainfall forecasts for the three overlapping seasons valid for the period of September 2017 to January 2018 and extreme forecasts for September to November 2017 season (right panel). Forecast quality for total seasonal rainfall is indicated in the Appendix (Figure A1).

3.2 Minimum and Maximum Temperatures

Temperatures for the most parts are expected to be higher throughout the country with only the minimum temperatures showing signs of uncertainty during early summer.

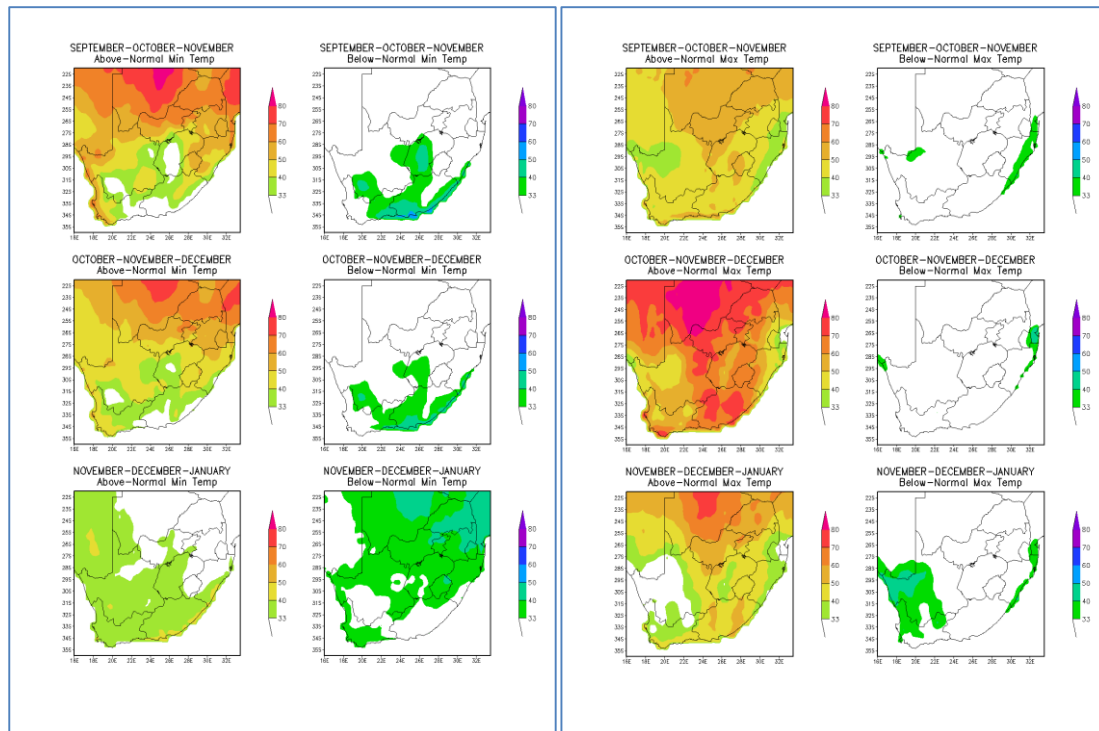


Figure 2: Probabilistic minimum (left panel) and maximum (right panel) temperature forecasts for the three overlapping seasons valid for the period of September 2017 to January 2018. Forecast quality for average seasonal temperature is indicated in the Appendix (Figure A2).

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:



5. Appendix

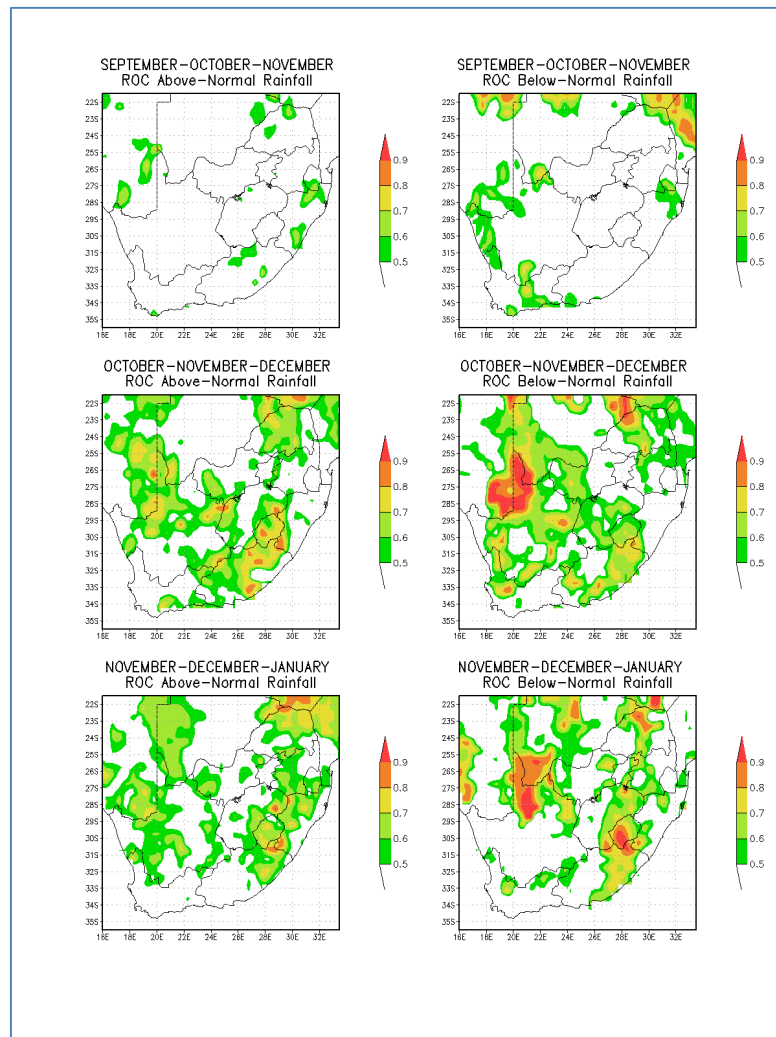


Figure AI: The skill of the forecasting system in discriminating wet or dry events during the forecasting period as shown in the caption of each plot. Those regions with no shades imply that the forecasts are not better than chance.

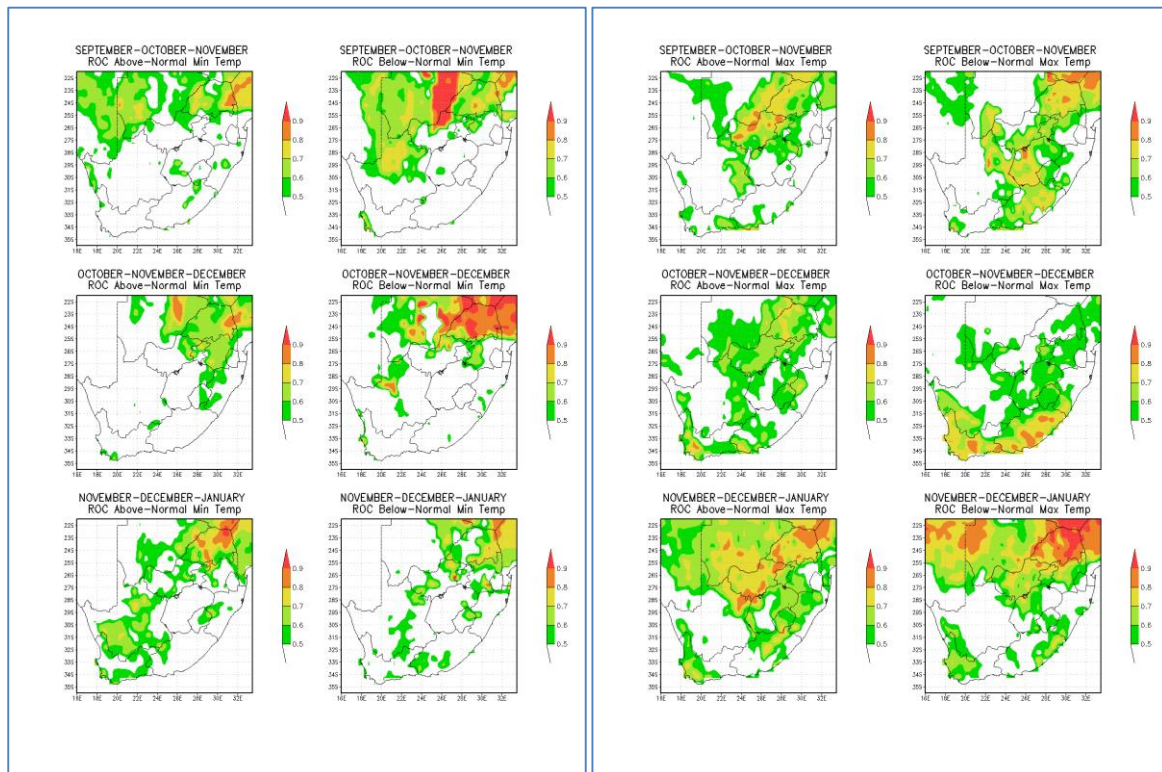


Figure A2: The skill of the forecasting system in discriminating hot or cold events during the forecasting period as shown in the caption of each plot. Those regions with no shades imply that the forecasts are not better than chance.