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South African Weather Service

ISO 9001 Certified Organisation

Seasonal Climate Watch

March to July 2017

Date: February 23, 2017

1. Advisory

From the most recent information, it is expected that isolated areas within the summer rainfall regions could still receive above normal rainfall well into autumn (March-April-May). This assessment is mostly due to the expected moisture availability over the south-west Indian Ocean, and the expected transport towards Southern Africa for the coming few months. Temperatures, however, are largely expected to be warmer than normal for the country, also suggesting isolated rainfall rather than widespread rainfall. As is usual for this time period, uncertainty in the forecast is significant as most forecasting systems struggle to capture climate conditions outside of summer.

2. Recommendation

As we are approaching winter there is a growing interest for forecasts over the winter rainfall regions of South Africa. Unfortunately there is no indication of whether this region may receive more or less rainfall in the months leading up to mid-winter at this stage. Hopefully better assessments will be possible in the coming months. There is currently a forecast from most leading forecasting systems that an El Nino phase (which is usually associated with drier conditions over South Africa in summer) may develop during spring this year. It is very important to note however that these forecasts tend to be very unreliable this far ahead of time in this specific time period. The situation and the forecasts will be monitored in subsequent releases of this document as to keep the public informed. As usual, it is also very important to keep monitoring any developments that may provide more clarity on the current expectations for the coming seasons.

3. State of Climate Drivers

Observations show that ENSO (El Niño Southern Oscillation) is gradually making its way from a cool to a warm phase. It is, however, still expected to remain within the neutral phase for the first half of 2017. Forecasting systems currently indicate an increased likelihood of an El Nino phase to be in effect towards the spring season. However there is a lot of uncertainty whether and when it will occur. The months leading up to spring should provide more reliable forecasts for this system.

The Indian Ocean Dipole (IOD) forecasts indicate a slow evolution towards a positive phase of the tropical IOD for spring 2017. This may indicate favourable rainfall for the Equatorial East Africa region for that period. For South Africa however the conditions over the south west Indian Ocean is more important, and the current warmer conditions suggest

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more moisture availability and indicates that wetter conditions may occur over the summer rainfall regions of South Africa.

The Southern Annular Mode (SAM) has been showing a tendency towards a negative phase since November. However, the system is hovering around the neutral mark at this stage. A negative phase of the SAM and the weakening of the polar vortex are often associated with colder and wetter conditions over the winter-rainfall regions of South Africa, through frontal activities. This system however is not predictable on a seasonal timescale, which complicates the winter assessment for the winter rainfall regions at this stage.

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4. Climate Forecast Details

4.1 Rainfall

The forecasting system indicates a significant amount of mixed forecasts across the country. As it is expected that there should be favourable rainfall conditions for the summer rainfall regions, isolated rather than widespread rainfall is likely for the early parts of autumn.

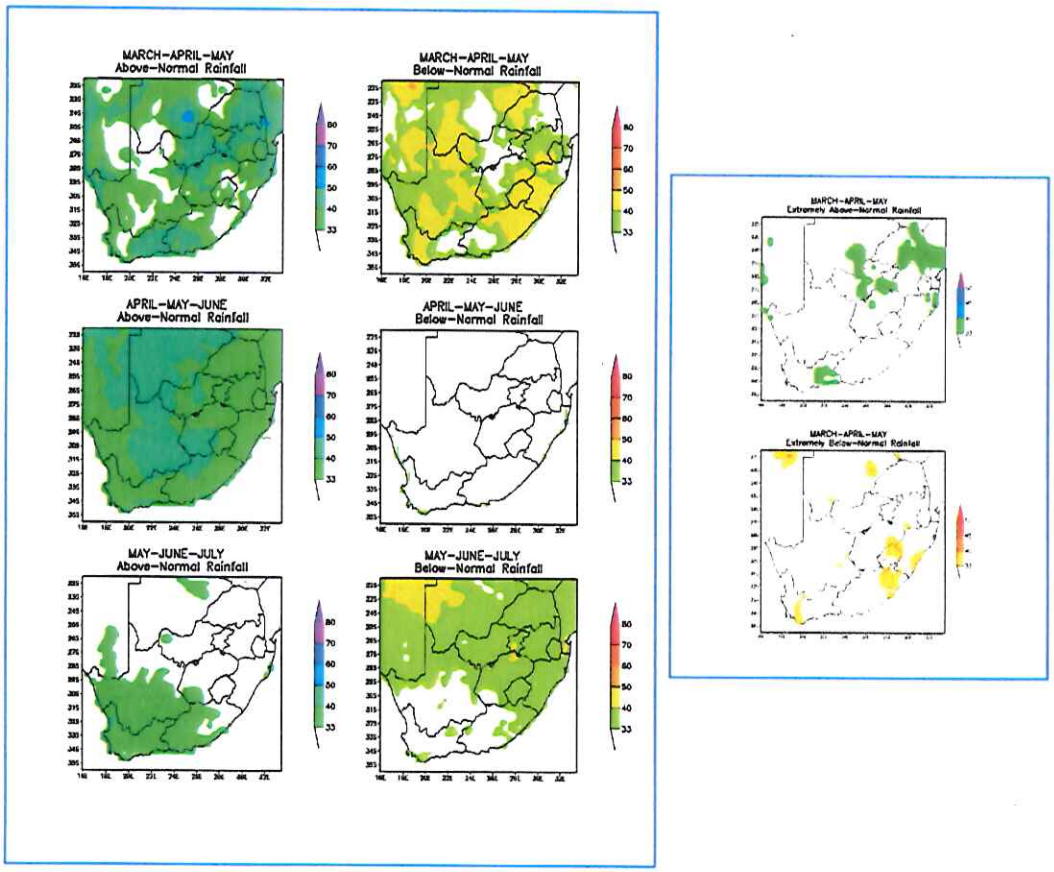

Figure 1: Rainfall forecasts for the three overlapping seasons valid for the period of March to July 2017 and extreme forecasts for March to May 2017 season (right panel). Forecast quality for total seasonal rainfall is indicated in the Appendix (Figure A1).

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4.2 Minimum and Maximum Temperatures

Forecasts show a tendency of above-normal temperatures with an increasing uncertainty (see Figure 2). Temperatures, however drop towards winter across the country and the expected conditions should be used accordingly.

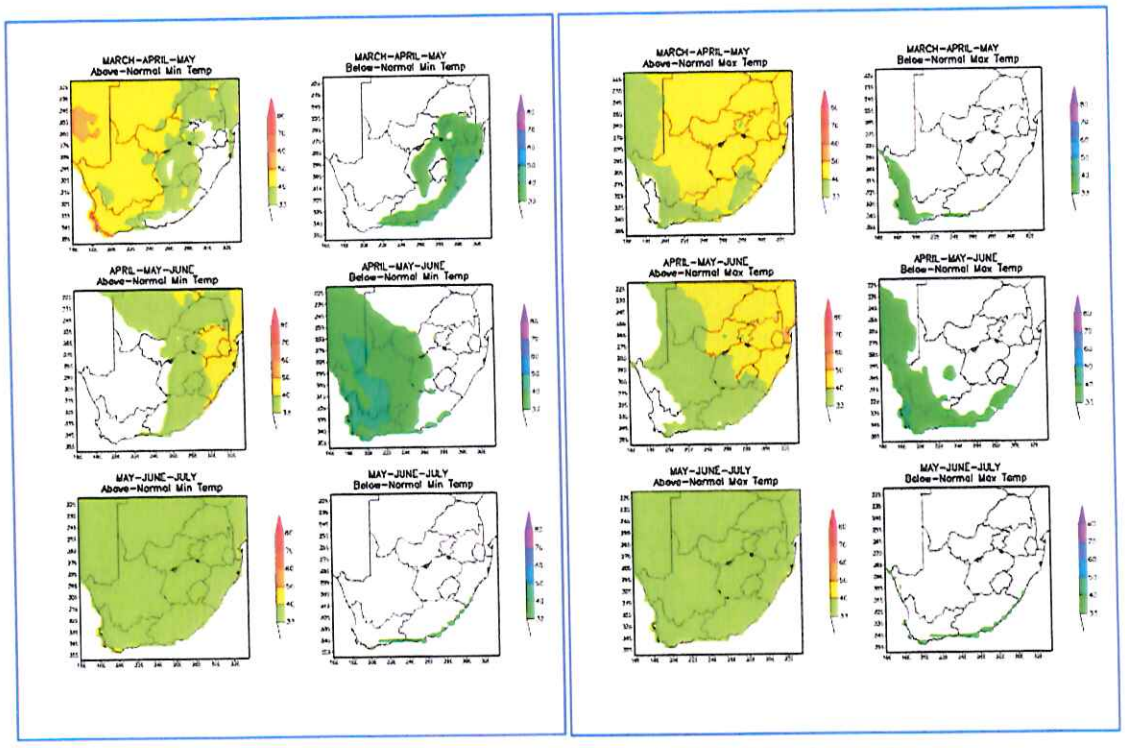

Figure 2: Probabilistic minimum (left panel) and maximum (right panel) temperature forecasts for the three overlapping seasons valid for the period of March to July 2017. Forecast quality for average seasonal temperature is indicated in the Appendix (Figure A2).

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Contributing Institutions

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

South African Weather Service
ISO 9001 Certified Organisation
CSIR our future through science
The International Research Institute for Climate and Society

Appendix

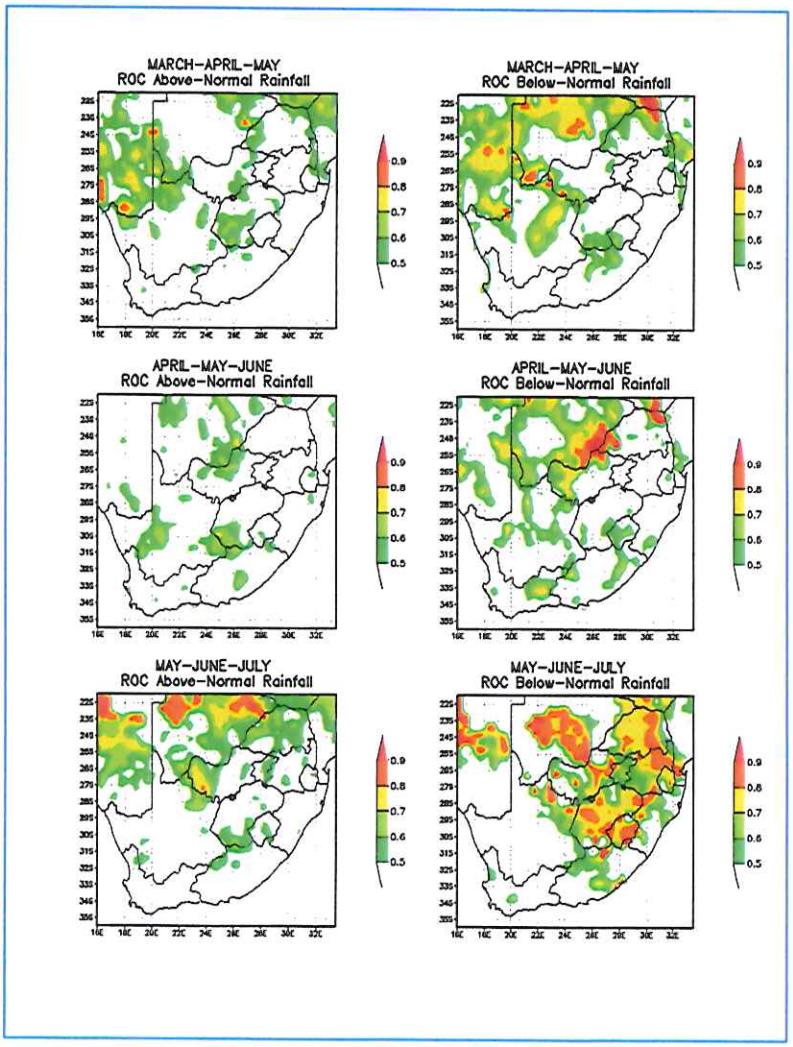

Figure A1: The skill of the forecasting system in discriminating wet or dry events during the forecasting period as shown in the caption of each plot. Those regions with no shades imply that the forecasts are not better than chance.

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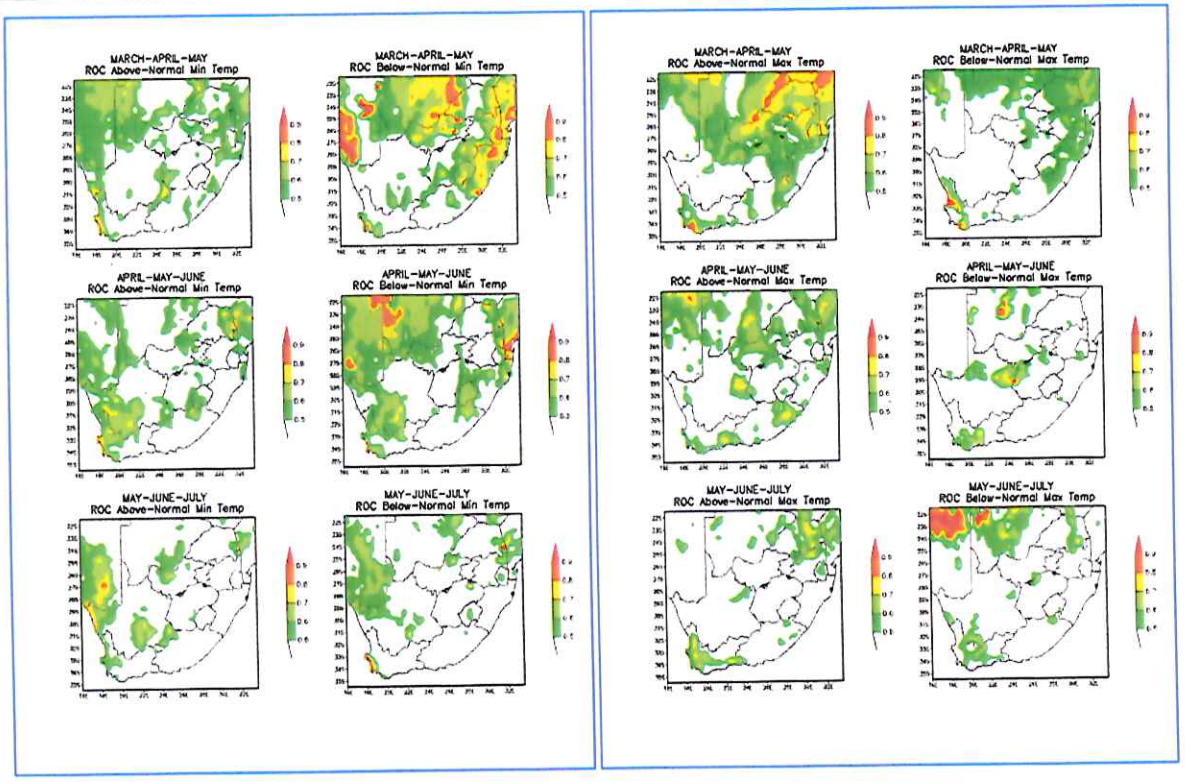

Figure A2: The skill of the forecasting system in discriminating hot or cold events during the forecasting period as shown in the caption of each plot. Those regions with no shades imply that the forecasts are not better than chance.

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