

# Seasonal Climate Watch

## December 2014 to April 2015

### 1. Advisory

Most of the forecast models show that ENSO will remain in a weak El Niño condition. The forecasting system indicates below-normal total rainfall for the summer season particularly as we go toward end of the season with enhanced confidence. The temperature forecasts also show enhanced probabilities for warmer conditions for most of the country toward the summer season, especially maximum temperatures with associated high skill levels. Other international forecasting systems consistently indicate a similar tendency for temperatures and rainfall for the summer season.

### 2. Recommendation

The likelihood for a drier and warmer summer season is high. It is recommended that shorter timescale forecasts be monitored for the development of conditions that may change the state of the current forecast.

### 3. State of Climate Drivers

Observations show that ENSO is currently near the border of weak El Niño. Most of the set of dynamical and statistical model predictions indicate the persistence of a weak [El Niño](#) condition through the austral autumn season. The impact of ENSO on the climate of our region at the vicinity of summer season is extensive. The Indian Ocean Dipole ([IOD](#)) is currently in a neutral phase and predicted to remain in this phase toward the autumn season. The IOD is found to influence rainfall activity in our region particularly during spring despite that its predictability is limited compared to ENSO. The Southern Annual Mode ([SAM](#)) is predicted to be negative for the coming few weeks. The SAM is found to affect South African rainfall by regulating the south/north ward positioning of the mid-latitude Jet stream and transport of associated air masses from the southern Atlantic Ocean and its impact is more pronounced in austral winter.

## 4. Climate forecast Details

### 4.1 Rainfall

The forecasting system indicates weak probabilities for below normal total rainfall for mid-summer and strong probabilities for below normal total rainfall for the rest of summer in most parts of the country (Figure1).

For improved confidence in a probabilistic prediction use is made of skill scores most notably the Relative Operating Characteristic (ROC) which indicates the relative performance of the prediction system. Areas of ROC scores above 0.5 may be considered as areas of added confidence for the prediction (Figure A1).

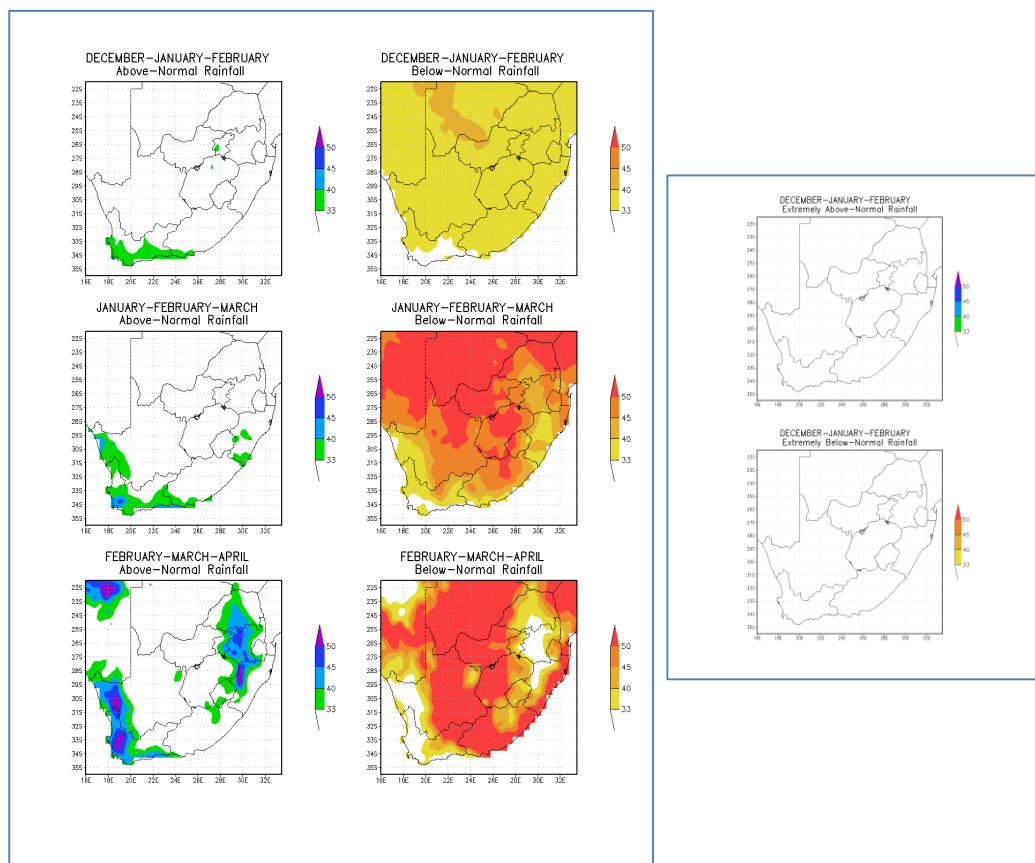


Figure 1: Rainfall forecasts for the three overlapping seasons valid for the period of December 2014 to April 2015 and extreme forecasts for December 2014 to February 2015 season (right panel).

## 4.2 Minimum and Maximum Temperatures

The forecasting system indicates above-normal minimum and maximum temperatures for the remainder of the summer season for most parts of the country, with the exception of the southern to south eastern coastal areas where below-normal minimum temperatures are forecasted. (Figure 2).

The quality of the minimum temperature forecasts, as measured by the Relative Operating Characteristic (ROC), is low for the larger part of South Africa. There is however some improvement for maximum temperatures with the eastern half of South Africa indicating good performance, especially for mid-winter. (Figure A2).

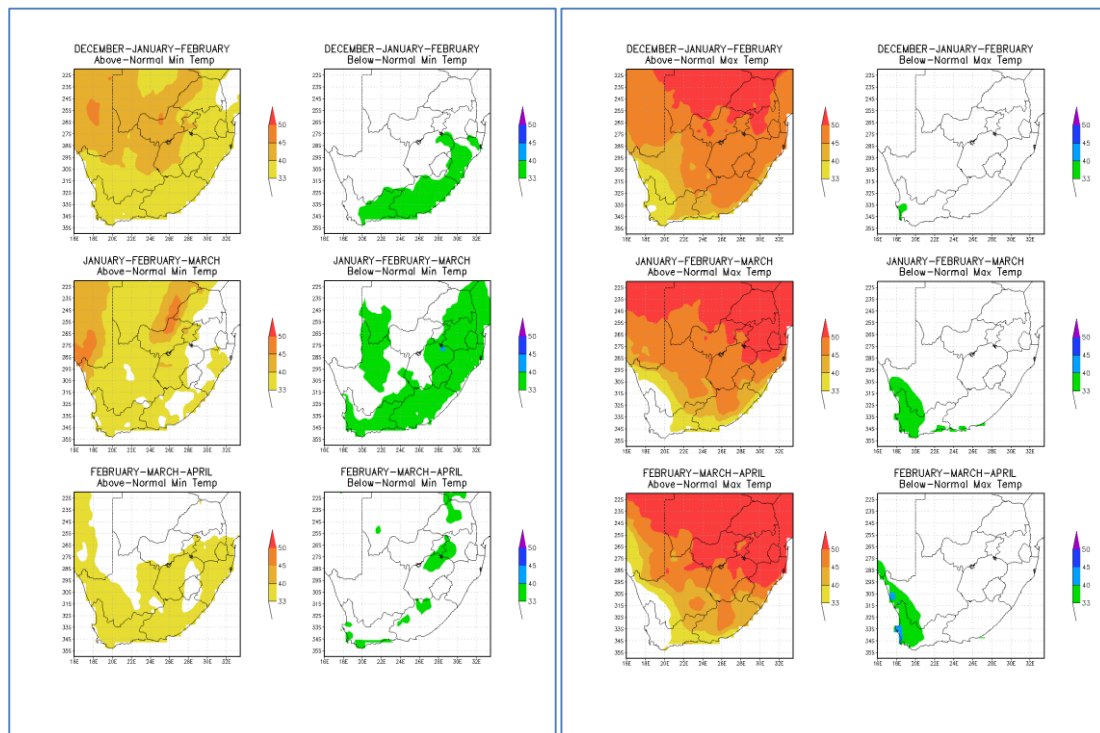


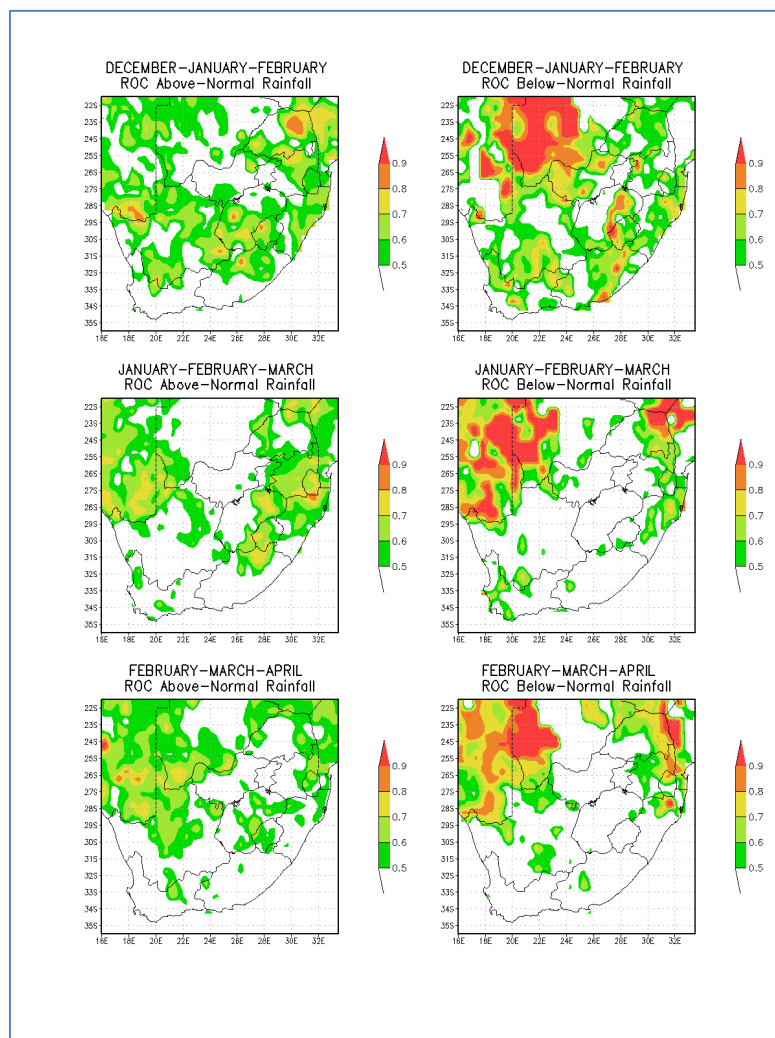
Figure 2: Probabilistic minimum (left panel) and maximum (right panel) temperature forecasts for the three overlapping seasons valid for the period of December 2014 to April 2015.

## Contributing institutions

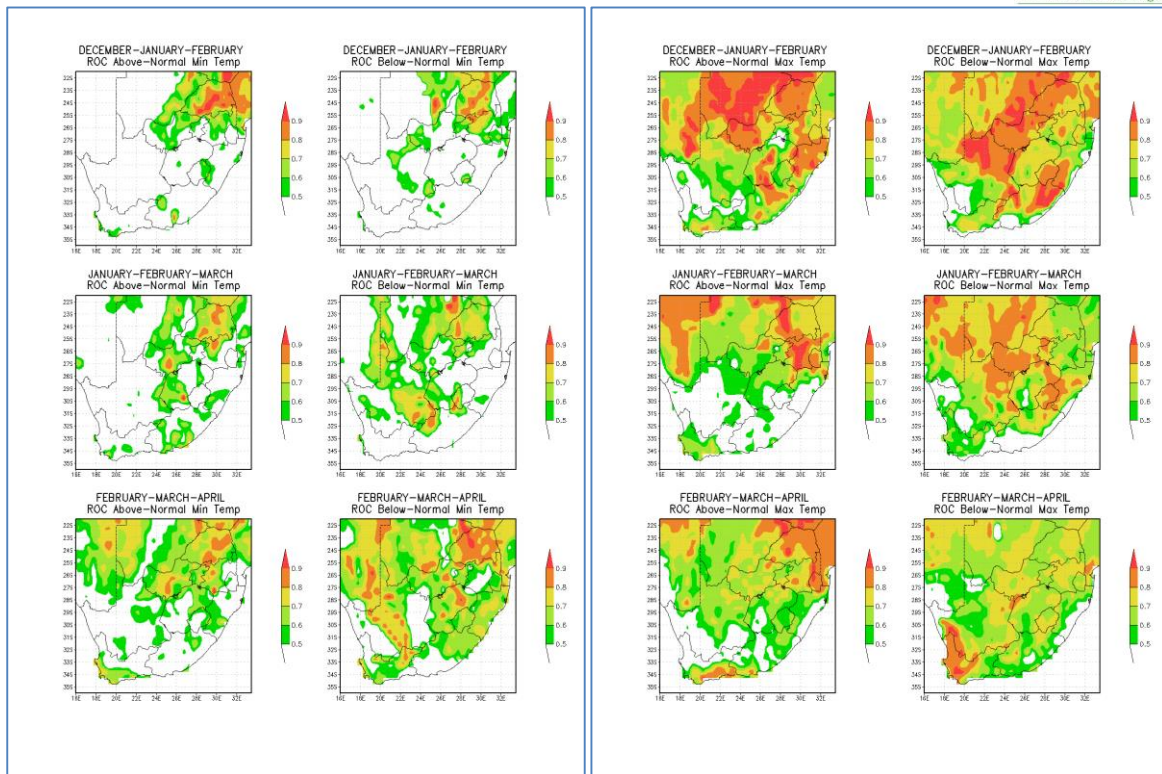
All the forecasts are a result of an objective multi-model prediction system developed at the South African Weather Service. This system comprises of long-range forecasts produced by the following institutions:



## 5. 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.



**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.