

Seasonal Climate Watch November 2013 to March 2014

1. Advisory

The skill of most models during a neutral ENSO period (neither El-Niño nor La-Niña) as experienced currently is limited and therefore the forecasts remain uncertain for rainfall and temperature conditions for the large part of South Africa. The forecasting system is indicating a tendency of wet conditions over the country for early summer. This enhanced probability for wetter conditions is explained more likely due to regional influence rather remote influence such as ENSO. The minimum and maximum temperature forecasts show enhanced probabilities for warmer conditions for early summer for most of the country except for the southern part of South Africa which is expected to be below-normal. However, other international forecasting systems indicate a tendency of above-normal average temperatures over South Africa.

2. Recommendation

It is advisable to use the forecast with the necessary caution as one of the main climate drivers (like ENSO) which largely govern the climate system of our region are not currently displaying any strong positive or negative signals. The likelihood of the dry spell over the North West Province and surrounding region remains unclear despite that our forecasting system is optimistic for wetter conditions. It is therefore recommended that shorter timescale forecasts be monitored.

3. State of Climate Drivers

Most of the set of dynamical and statistical model predictions issued during late September and early October 2013 predict neutral El-Niño Southern Oscillation (ENSO) conditions through the rest of 2013 and into early 2014, with a warming tendency during northern spring and summer 2014. The Indian Ocean Dipole (IOD) prediction indicates the likelihood of a positive phase with a tendency of neutral conditions toward the start of austral summer. The IOD is found to influence rainfall activity in our region more specifically during the austral spring. Nonetheless, its predictability is limited compared to ENSO. During neutral ENSO, the predictability of most climate elements, notably rainfall, is limited and more uncertain. The Southern Annual Mode (SAM) in the last few weeks showed a negative phase. The SAM is found to affect rainfall in our region and further associated with a south/north ward positioning of the mid-latitude Jet stream. For further inquiries contact cobus.olivier@weathersa.co.za Tele: +27 12 367 6008

4. Climate forecast Details

4.1 Rainfall

The forecasting system indicated elevated probabilities for above-normal rainfall conditions for most parts of the summer rainfall region for early summer. The mid-summer and late summer periods is mostly uncertain (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 July to November and extreme forecasts for July to September season (right panel).

4.2 Minimum and Maximum Temperatures

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

Medium Term Weather Forecast

Early summer predictions indicate higher temperatures (minimum and maximum) for the north eastern half of the country. Mid-summer and late-summer forecasts are mostly uncertain although there is an indication of below-normal minimum temperatures for the north-eastern half of the country for late-summer. (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 May to September. For further inquiries contact cobus.olivier@weathersa.co.za Tele: +27 12 367 6008

Medium Term Weather Forecast

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

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.