Seasonal Climate Watch
March to July 2020

Date issued: March 02, 2020

1.   Overview

The El Niño-Southern Oscillation (ENSO) is currently in a borderline weak El Niño state and the forecast indicates that it will most likely remain at the border between the weak El Niño and neutral states during autumn and early-winter. The influence of ENSO during the autumn and winter months on South African rainfall and temperature is limited during the coming seasons, thus there is no additional information to interpret with the seasonal forecasts.

The multi-model rainfall forecast for mid-autumn (Mar-Apr-May) indicate increased chances of above-normal rainfall over the eastern, central and south-western parts of the country, while above-normal rainfall is only expected over the south-western parts during late-autumn (Apr-May-Jun) and early-winter (May-Jun-Jul). The rest of the country is expected to experience below-normal rainfall for the entire forecast period. In general, most of the country is expected to experience above-normal temperatures, with the exception of the central parts of the country, which is expected to experience below-normal minimum temperatures.

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

2. South African Weather Service Prediction System
2.1. Ocean-Atmosphere Global Climate Model

The South African Weather Service (SAWS) is currently recognised by the World Meteorological Organization (WMO) as the Global Producing Centre (GPC) for Long-Range Forecasts (LRF). This is owing to its local numerical modelling efforts which involve coupling of both the atmosphere and ocean components to form a fully-interactive coupled modelling system, named the SAWS Coupled Model (SCM), the first of its kind in both South Africa and the region. Below are the first season (March-April-May) predictions for rainfall (Figure 1) and average temperature (Figure 2).
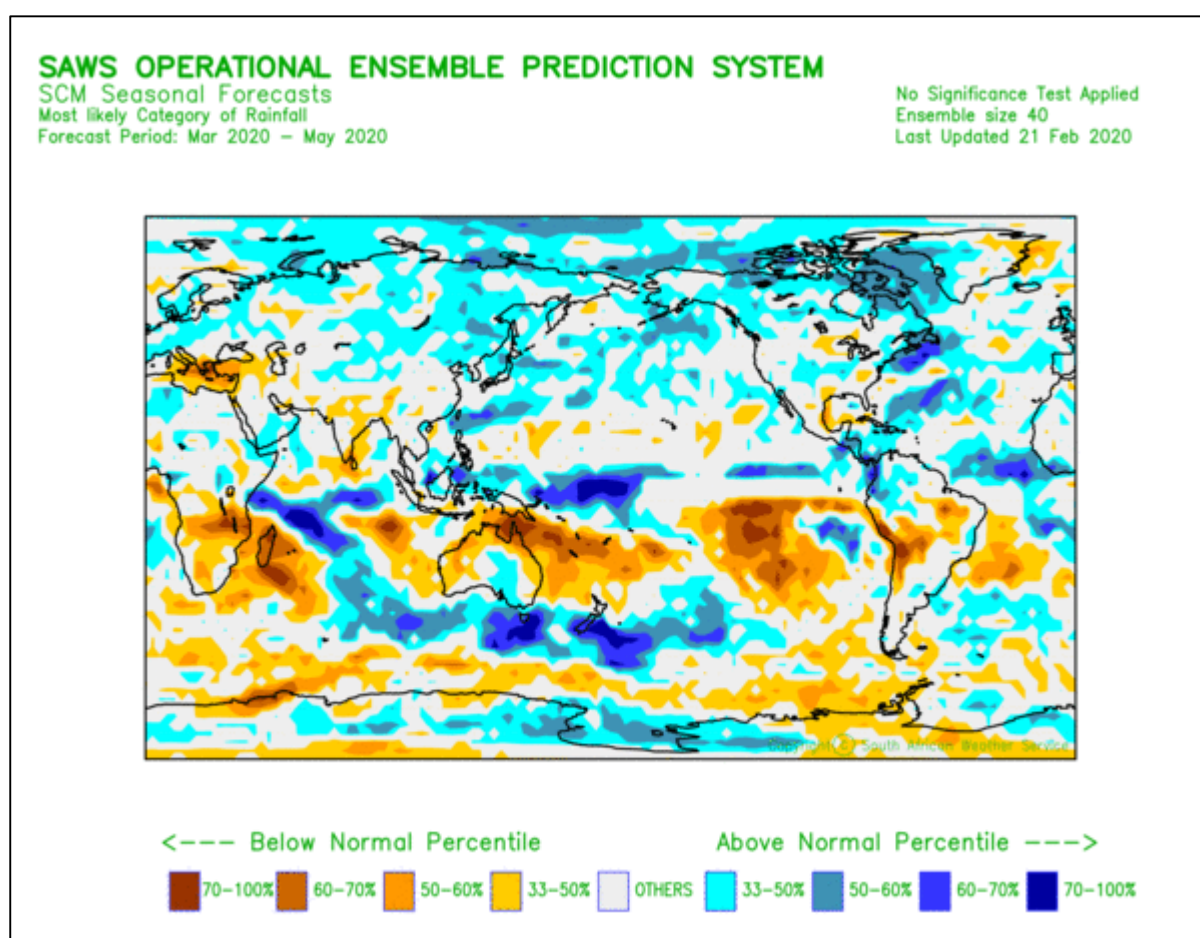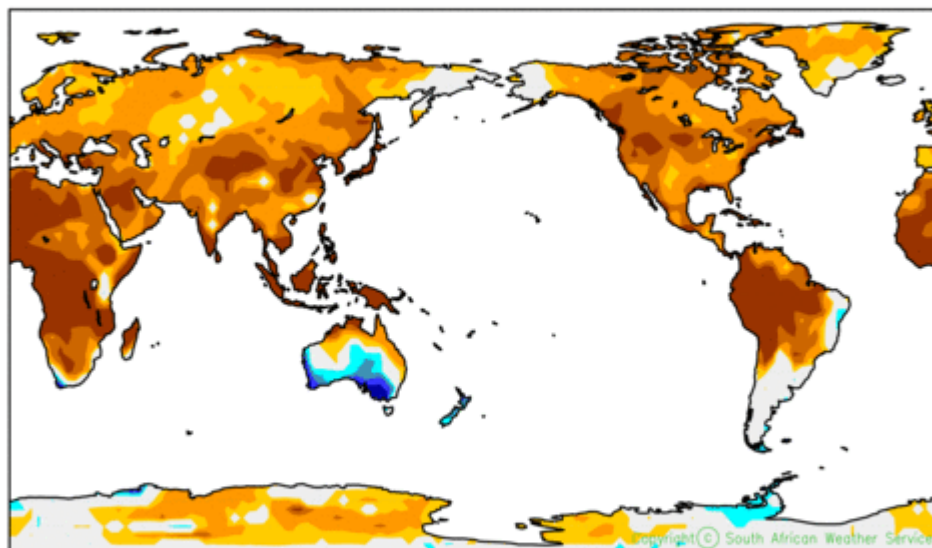

Figure 1: March-April-May global prediction for total rainfall probabilities.

Figure 2: March-April-May global prediction for average temperature probabilities.

2.2.   Seasonal Forecasts for South Africa from the SAWS OAGCM

The above mentioned global forecasting system's forecasts are combined with the NOAA-GFDL and NOAA-GFDL A06 systems (part of the North American Multi-Model Ensemble System) for South Africa, as issued with the February 2020 initial conditions, and are presented below for South Africa.
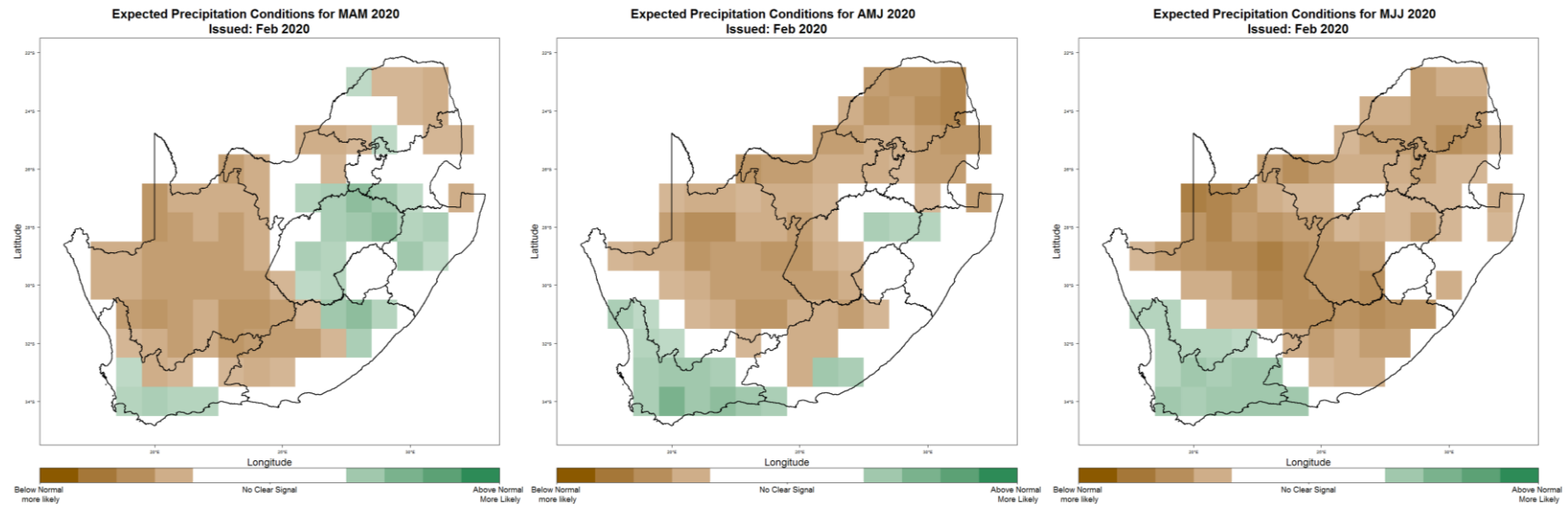
Figure 3: *March-April-May 2020 (MAM; left), April-May-June 2020 (AMJ; middle), -May-June-July 2020 (MJJ; right) seasonal precipitation prediction. Maps indicate the highest probability from three probabilistic categories namely Above-Normal, Near-Normal and Below-Normal.*
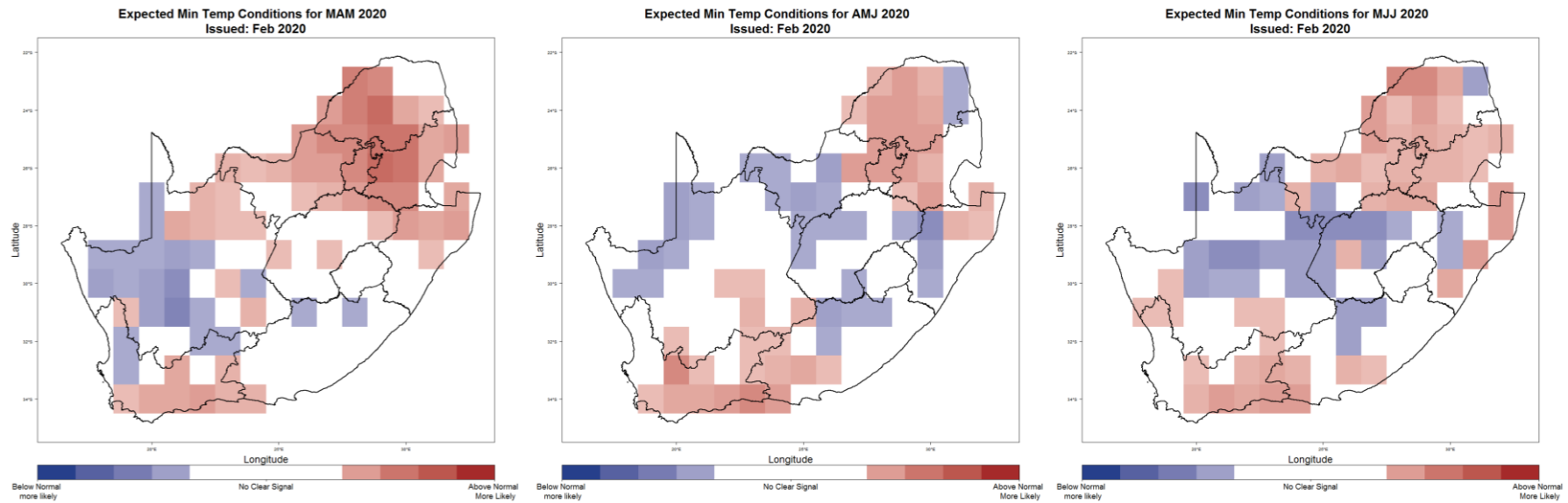
Figure 4: *March-April-May 2020 (MAM; left), April-May-June 2020 (AMJ; middle), May-June-July 2020 (MJJ; right) seasonal minimum temperature prediction. Maps indicate the highest probability from three probabilistic categories namely Above-Normal, Near-Normal and Below-Normal.*

Figure 5: *March-April-May 2020 (MAM; left), April-May-June 2020 (AMJ; middle), May-June-July 2020 (MJJ; right) seasonal maximum temperature prediction. Maps indicate the highest probability from three probabilistic categories namely Above-Normal, Near-Normal and Below-Normal.*
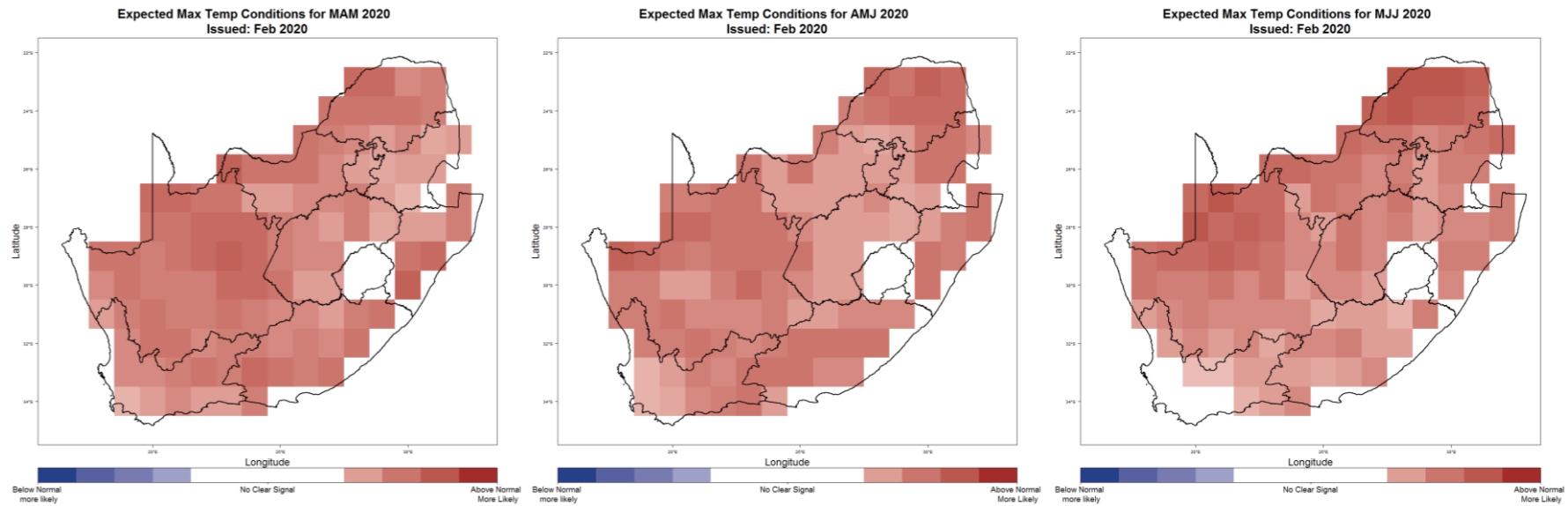
2.3.   Climatological Seasonal Totals and Averages

The following maps indicate the rainfall and temperature (minimum and maximum) climatology for the autumn (Mar-Apr-May), late-autumn (Apr-May-Jun) and the early-winter (May-Jun-Jul). The rainfall and temperature climate is representative of the average rainfall and temperature conditions over a long period of time for the relevant 3-month seasons presented here.
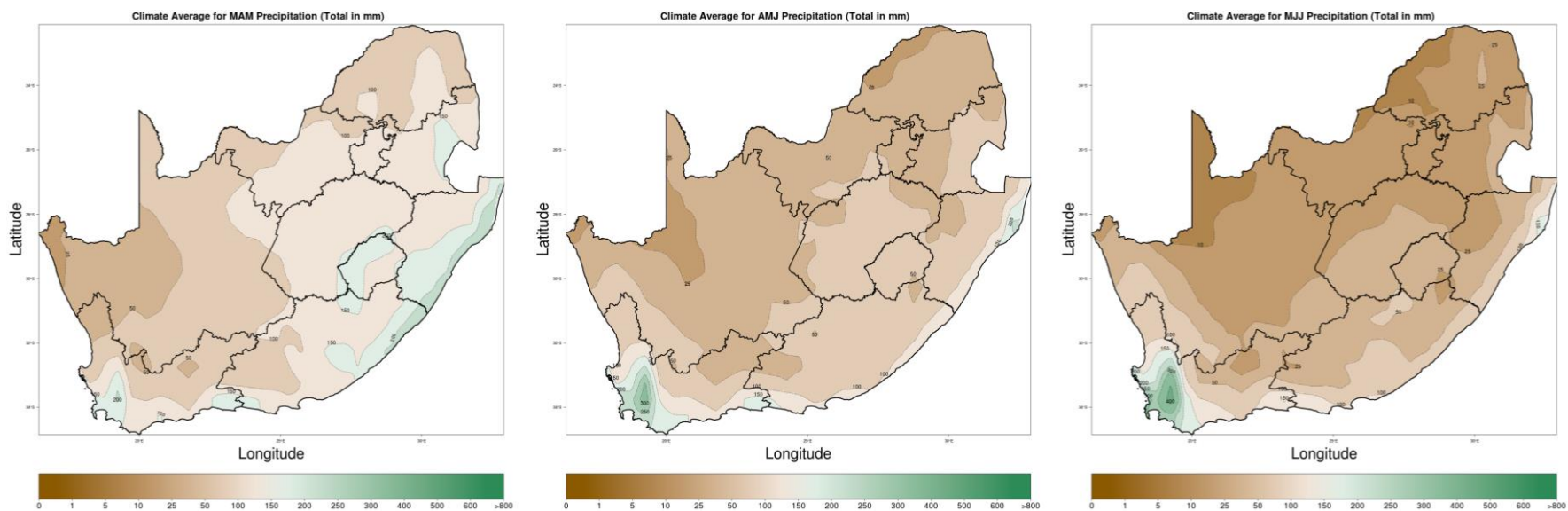
Figure 6:   Climatological seasonal totals for precipitation during Mar-Apr-May (MAM; left), Apr-May-Jun (AMJ; middle) and May-Jun-Jul (MJJ; right).
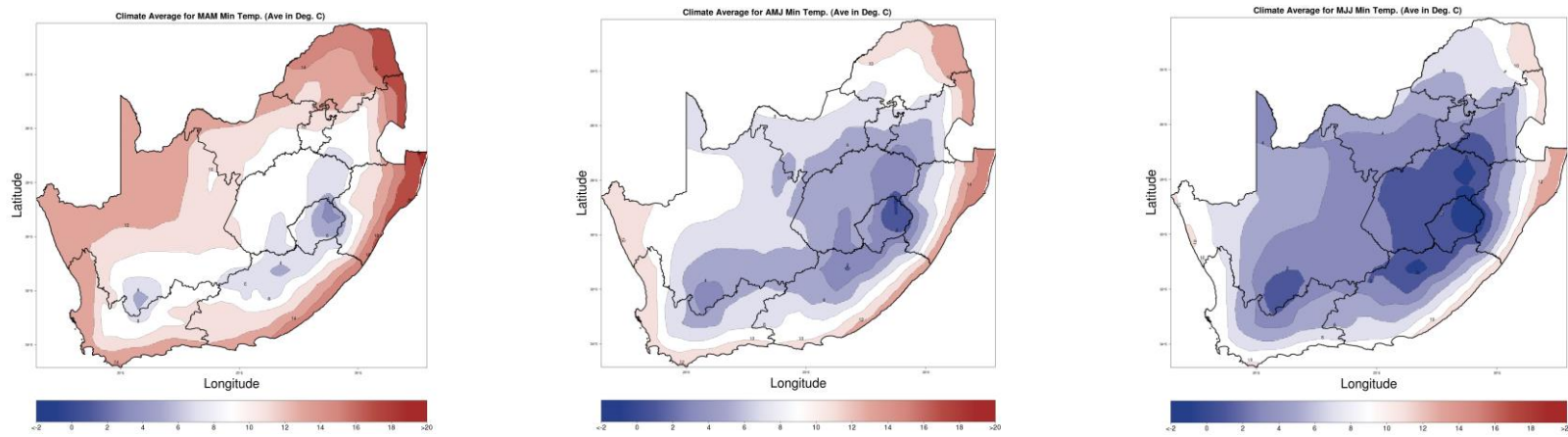
Figure 7:   *Climatological seasonal averages for minimum temperature during Mar-Apr-May (MAM; left), Apr-May-Jun (AMJ; middle) and May-Jun-Jul (MJJ; right).*
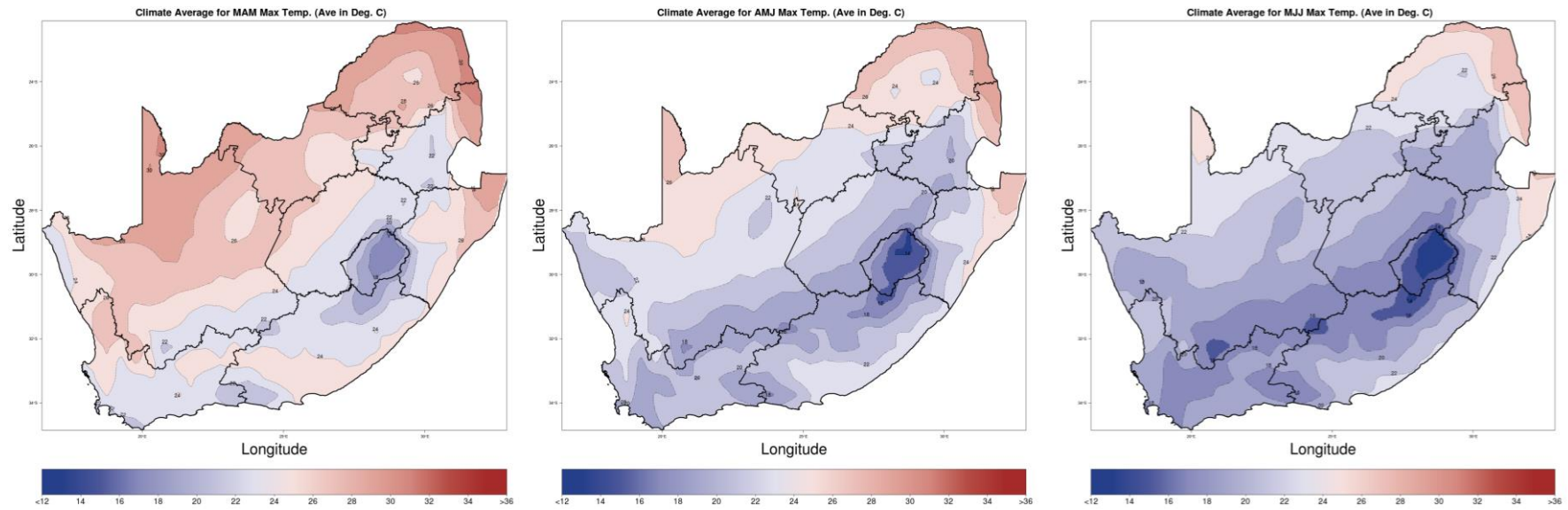
Figure 8:   Climatological seasonal averages for maximum temperature during Mar-Apr-May (MAM; left), Apr-May-Jun (AMJ; middle) and May-Jun-Jul (MJJ; right).

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3.   Contributing Institutions and Useful links

All the forecasts presented here are a result of the probabilistic prediction based on the ensemble members from the coupled climate model from the South African Weather Service. Other useful links for seasonal forecasts are:

http://www.weathersa.co.za/home/seasonal (Latest predictions from SAWS for the whole of SADC)

https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/ (ENSO predictions from various centres)

https://iri.columbia.edu/our-expertise/climate/forecasts/seasonal-climate-forecasts/ (Copernicus Global forecasts)