2015-10-27

By: J Malherbe, R Kuschke

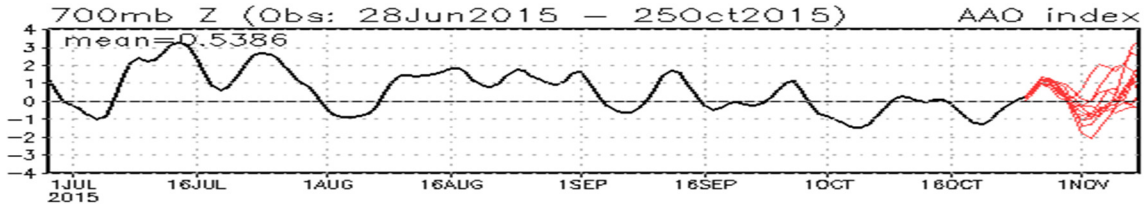
Contents

Summary

Conditions during the past week were somewhat more favorable for precipitation across the summer rainfall region, even though upper-air conditions didn't support the occurrence of widespread or general rainfall events. A large area of anomalously high pressure towards the southwest to southeast of the country resulted in cooler conditions with relatively large amounts of moisture over the eastern areas. Hot conditions however still dominated the western parts where maximum temperatures were on average 7°C above the long-term mean for October.

Thundershowers during the past week were concentrated over 2 separate areas. Around the 20th, the weak cut-off low in the southwest resulted in scattered thundershowers over the eastern parts of the Northern Cape and western parts of the Free State. From the 24th, scattered thundershowers occurred over the eastern parts and to a lesser extent also over the southern parts of the country. Some thundershowers over Mpumalanga and surrounding areas where precipitation is urgently needed for planting produced totals in excess of 20 mm during and after the observation period.

The Southern Annular Mode (SAM) has increased to positive values. Broadly speaking, for the Southern Hemisphere, this shows a tendency for relatively higher pressure along the mid-latitudes. In the southern African sector, high-pressure systems continue to dominate much of the area to the south of the subcontinent – keeping temperatures lower over the eastern parts and indicting more favourable large-scale patterns for the development of thundershowers over the summer rainfall region.



The Annular Mode Website - http://www.atmos.colostate.edu/ao/index.html

Over the coming week, precipitation will be associated with an upper-air low expected to deepen over the far eastern parts resulting in some showers possible over Mpumalanga. At this stage, the system is not likely to penetrate further westwards, limiting the rain during the next 3 – 4 days. The influx of moisture from the east and south due to the presence of anticyclonic circulation around South Africa will result in cooler and wet conditions along the southern to eastern coastal regions. There is a possibility for an increase in occurrence of thundershowers over the eastern interior by early next week as the upper air becomes more favourable while the influx of moisture continues. A cold front and strong ridge to the south may result in cold and wet conditions in the south during the weekend and early next week.

During similar years in the decadal rainfall cycle, total rainfall during this time of the year tended to be normal to above normal from September to early November, with wetter conditions concentrated more towards the 1st and 21st of October and again towards early and mid-November.

The 2015/16 El Niño is still I full swing:

"*In the central tropical Pacific Ocean, sea surface temperatures (SSTs) continue to warm, but at a markedly slower pace than earlier this year. All NINO indices have now been above +1 °C for 11 consecutive weeks, equalling the previous record. Recent bursts of westerly winds in the tropics means some further warming remains possible. All models indicate that the strong El Niño is likely to persist until the end of the year, before a marked decline during the first quarter of 2016.*" - Australian Bureau of Meteorology - http://www.bom.gov.au

Overview of expected conditions over South Africa during the next few days

Significant weather events (27 October – 2 November)

With high-pressure systems dominating the areas to the south, temperatures are expected to be near normal over the eastern parts of the country during the coming week while above-normal temperatures will occur over the central to western parts. The circulation pattern will also maintain higher levels of atmospheric moisture over the eastern parts while heatwave conditions may develop in the west.

Some thundershowers will still occur today over much of the Limpopo Province associated with upper-air instability and surface moisture that supported scattered thundershowers yesterday in the east. These should clear by tomorrow.

A deepening cut-off low over southern Mozambique, moving into the Lowveld of Mpumalanga, may result in scattered showers or thundershowers over the central to eastern parts of Mpumalanga and Limpopo by Thursday and Friday according to current projections. Higher falls should be concentrated towards the east. The system is expected to move out east again by Friday according to current projections.

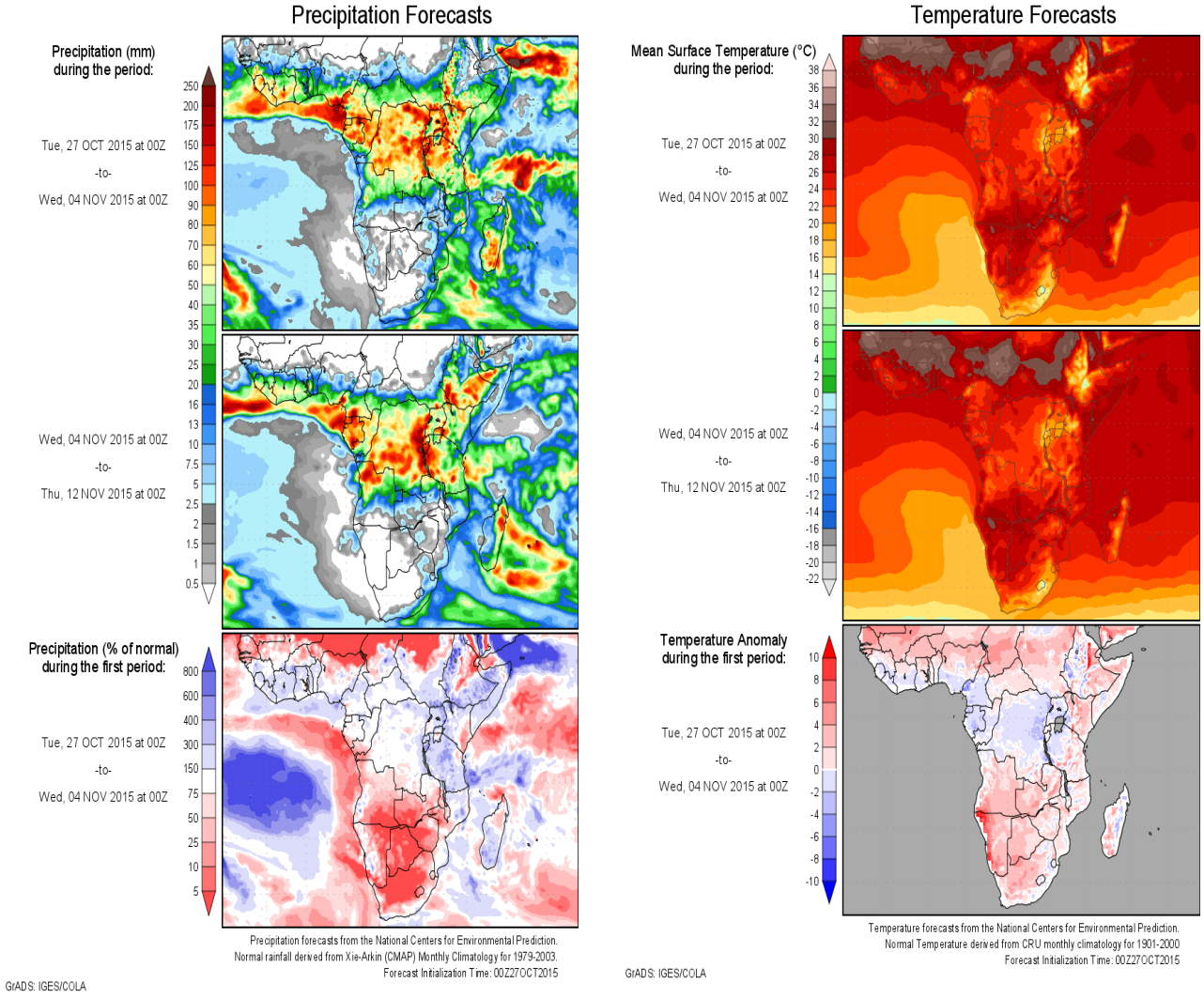
By the weekend, a strong ridge of the Atlantic-Ocean anticyclone, together with a developing upper-air trough over the southern parts, may result in fairly widespread rain or thundershowers over the southern parts of the country, where rainfall has been above normal during the last few months. Low temperatures and strong southerly winds are expected at this stage. Strong southeasterlies may also develop in the southeast – associated with the ridging high.

Maps for total rainfall, mean temperatures and departures from normal are on the next page.

Conditions in main agricultural production regions (27 October – 2 November)

Maize production region: Mild conditions will dominate with some showers possible over the eastern parts, associated with surface moisture and the upper-air cut-off low in the east by Thursday. According to current projections, the system should move back eastwards from Friday, limiting the impact of showers or thundershowers to the far eastern parts of this region. Warmer conditions may develop by early next week, when current projections suggest an improved chance for thundershowers over the entire region as a trough deepens in the upper air over the southern parts and there is a renewed influx of moisture from the east.

Swartland, Cape Wine Lands and Ruens: Hot conditions may develop especially over the western to northern parts today and tomorrow, associated with a surface flow from the northeast. This may enhance the possibility for the development and spread of wild fires in some places where vegetation is dry. Temperatures will fall from Friday, with a strong southerly to southeasterly flow developing during the Weekend. The surface flow from the south and a cold front may result in widespread rain from the Boland eastwards along the Garden Route during the weekend, with only light falls indicated over the western to northern parts – in accordance with patterns that dominated especially during the second half of winter.



Center for Ocean-Land-Atmosphere Studies (COLA) and Institute of Global Environment and Society (IGES) – http://Wxmaps.org

Possible extreme conditions - relevant to agriculture

The South African Weather Service issues warnings for any severe weather that may develop, based on much more information (and in near-real time) than the output of one single weather model (GFS atmospheric model - *Center for Ocean-Land-Atmosphere Studies (COLA) and Institute of Global Environment and Society (IGES)* – http://Wxmaps.org)

considered here in the beginning of a week-long (starting 27 October) period. It is therefore advised to keep track of warnings that may be issued by the SAWS (www.weathersa.co.za) as the week progresses.

According to current model projections (GFS atmospheric model) of weather conditions during the coming week, the following may be deduced:

- Hot and dry conditions will develop over the central western parts of the country during much of the week and the northern to western parts of the winter rainfall region today and tomorrow. Where vegetation is dry, there may be an enhanced probability for the development and spread of wild fires
- Strong southeasterlies may develop over the southwestern coastal areas from time to time, especially during the weekend
- Cold and wet conditions may occur over the southern parts of the country on Saturday and Sunday, with a strong southerly wind

Sources of information

Rainfall, temperature and wind maps over South Africa for the past week:

Agricultural Research Council - Institute for Soil, Climate and Water (ISCW) – Climate Data Bank. Data recorded by the automatic weather station network of the ARC-ISCW.

Vegetation condition maps: Coarse Resolution Imagery Database (CRID), ARC-ISCW.

Information related to: ENSO, IOD and SOI:

Australian Bureau of Meteorology - http://www.bom.gov.au

Climate Prediction Center - http://www.cpc.ncep.noaa.gov
International Research Institute for Climate and Society- http://iri.columbia.edu/

Information related to the SAM:

The Annular Mode Website - http://www.atmos.colostate.edu/ao/index.html

SST map:

NOAA Climate Prediction Center - http://www.cpc.ncep.noaa.gov

Daily conditions over South Africa:

CSIR NRE (National Resources and the Environment)

"CSIR NRE produces forecasts on an experimental basis, doesn't guarantee the accuracy of the daily forecasts and cannot be held accountable for the results of decisions taken based on the forecasts"

Tropical cyclone/hurricane/typhoon information:

Weather Underground - http://www.wunderground.com

Cooperative Institute for Meteorological Satellite Studies (CIMMS) - Tropical Cyclone Group -http://tropic.ssec.wisc.edu/

Tropical Cyclone Centre La Reunion -http://www.meteo.fr/temps/domtom/La_Reunion/webcmrs9.0/anglais/index.html

Information on drought conditions over the USA:

NOAA National Weather Service - http://www.weather.gov

United States Drought Monitor - http://droughtmonitor.unl.edu

Precipitation and temperature outlooks for the coming week:

Center for Ocean-Land-Atmosphere Studies (COLA) and Institute of Global Environment and Society (IGES) – http://Wxmaps.org

"COLA and IGES make no guarantees about and bear no responsibility or liability concerning the accuracy or timeliness of the images being published on these web pages. All images are generated by COLA and do not represent the actual forecasts issued by the National Weather Service. These products are not a substitute for official forecasts and are not guaranteed to be complete or timely. The underlying data are the direct product of the various operational forecast models run by the National Centers for Environmental Prediction, National Weather Service, NOAA and are supplied without interpretation or correction."