



# Food Security Early Warning System Agromet Update



## 2016/2017 Agricultural Season

Issue 04 Month: January

Season: 2016-2017

20-02-2017

### Highlights

- Southern and central areas continued to receive well above average rains in January
- Poor rainfall was received in western and north-eastern SADC and Madagascar
- The Fall Armyworm has been confirmed in 7 countries in the region. The severity of the impact on regional crop production is yet to be established
- Tropical cyclones Carlos and Dineo affected the region in early to mid-February. The impacts of Cyclone Dineo are severe, particularly in southern Mozambique

### Regional Summary

After a slow start to the rains in many areas early in the season, rains improved in December 2016 in the central and south-eastern parts of the region, then intensified considerably to well above average in January 2017. Much of Botswana, eastern Namibia, south-eastern Angola, southern half of Zambia, Zimbabwe, southern and central Mozambique, southern and central Mozambique, and north-western half of South Africa received at least one and half to two times the normal amount of January rainfall (Figure 1, blue oval #1). These high rains led to crops receiving sufficient soil moisture for good harvest potential in many area, although in some areas, the rains resulted in flooding, waterlogging and leaching of soil nutrients. The high rains also affected operations to combat the regional *Fall Armyworm* outbreak, due to dilution and washing away of chemicals.

In contrast to the heavy rains in central and southern areas, many of the western and north-eastern parts of the region, as well as eastern Madagascar, received well below average rainfall (Figure 1: red ovals #2, #3, and #4). In many of these areas, the rainfall received was less than a third of the normal January rainfall. Areas affected include western Namibia, western Angola, north-eastern Tanzania, parts of north-eastern Mozambique and eastern Madagascar. The poor rains, combined with high temperatures in some of these areas in January, likely negatively affected any cereal crops grown there.

The first 10 days of February provided a slight reprieve, with reduced rainfall amounts being received in southern Mozambique, northern South Africa and southern Zimbabwe (Figure 2), after weeks of persistent rains. Such short breaks in rainfall are essential to allow optimal crop growth, facilitate weeding, as well as reduce leaching and waterlogging. Most other areas, excluding western parts of the region, received above average

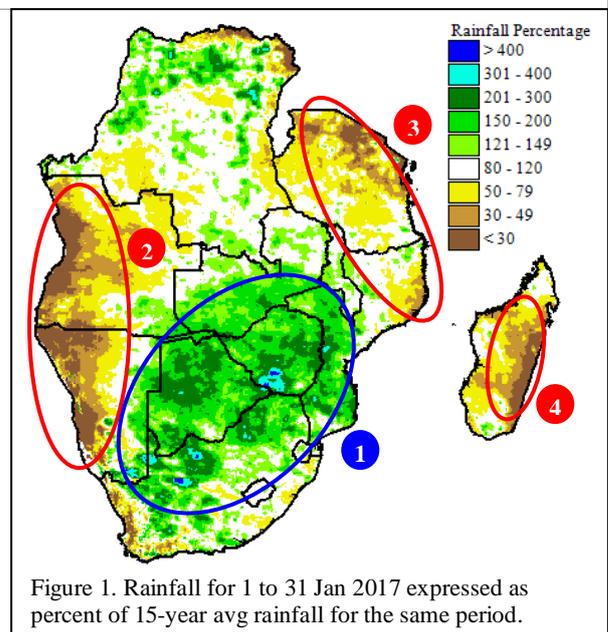


Figure 1. Rainfall for 1 to 31 Jan 2017 expressed as percent of 15-year avg rainfall for the same period.

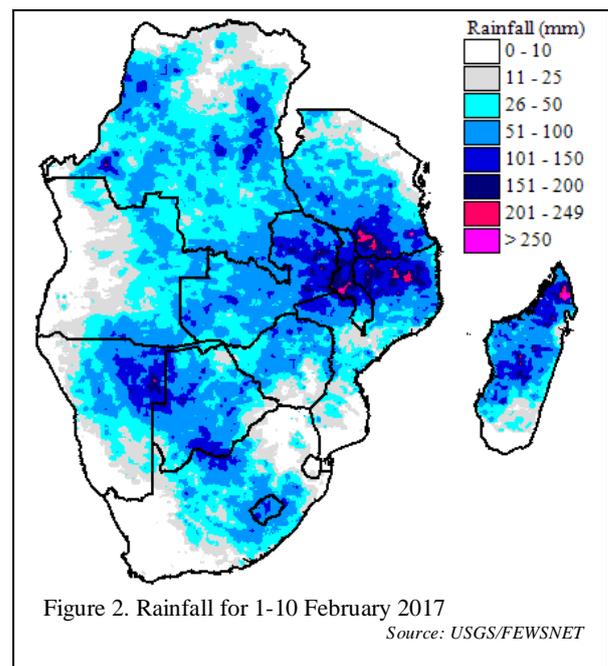


Figure 2. Rainfall for 1-10 February 2017

Source: USGS/FEWSNET

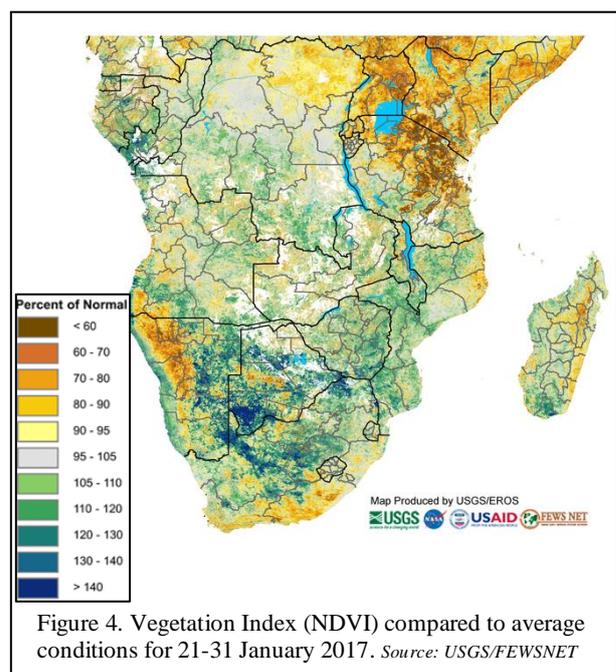
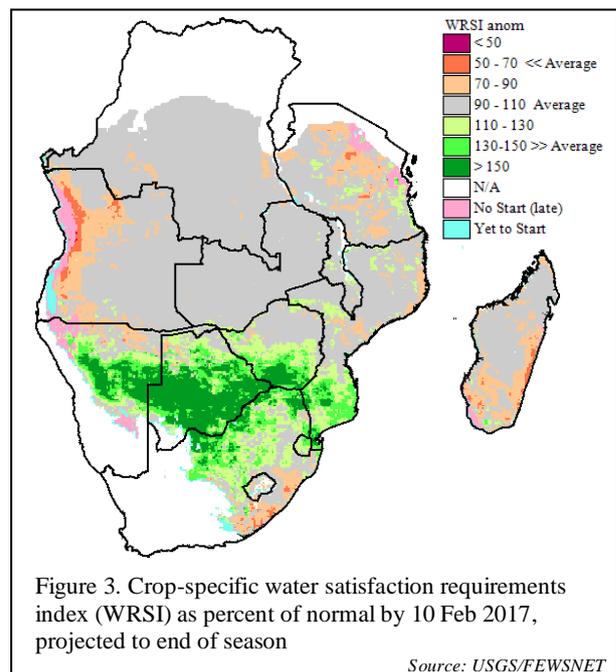
rainfall during this period. In many parts of Botswana, Mozambique, South Africa and Zimbabwe the total rainfall for the 41-day period from 1 January to 10 February 2017 alone was more than what is typically received from January to March combined.

The high amount of rainfall that was received in the central and southern areas has generally been sufficient for crop agriculture. An analysis of the Water Requirements Satisfaction Index (WRSI), a model that indicates the extent to which crops have received the water they require throughout the season, suggests that cereal crops grown in the southern parts of the region have this year received better rainfall distribution than usual, well suited to crop production (green areas, Figure 3). These areas include Botswana, eastern Namibia, northern and central South Africa, Swaziland, southern Mozambique, and southern Zimbabwe. The higher than average WRSI in these areas implies improved potential for good harvests this season. This positive harvest potential only relates to crop water availability however, and the region is facing other challenges that may reduce the good expectations. While many other areas are showing near average WRSI conditions (grey colours, Figure 3), a few areas have below average crop water satisfaction due to the persistent dry conditions that have been observed there (orange colours, Figure 3). These areas include western Angola, parts of north-western Namibia, much of Tanzania, parts of northern Mozambique, eastern and southern Madagascar, and eastern South Africa. Crop production is likely to be affected in many of these areas, as dry conditions have been experienced through much of the current season. In Tanzania, the first season crop in the bimodal areas was the more severely affected, while the slightly improved January rains in the unimodal areas helped to improve the crop outlook.

The good rains in most areas have also facilitated significant improvement of vegetation, after two consecutive poor rainfall seasons led to degradation of pastures. The satellite-based vegetation index (Figure 4), which was showing well below average vegetation conditions earlier in the season, is now showing well above average vegetation conditions in most areas except western Namibia, south western Angola, southern South Africa, eastern Madagascar, parts of northern Mozambique, and Tanzania. These are mainly areas that were affected by poor rains as indicated in the previous sections of this report. The above average vegetation conditions in Figure 4 are denoted by green and blue colours, while below average conditions are shown in brown and orange.

### Crop Pests

The *Fall Armyworm*, which was reported last month to have affected 3 countries in the region, has spread across SADC. At a regional meeting held in Harare in mid-February, the armyworm was confirmed in 7 countries, namely Botswana, Malawi, Mozambique, Namibia, South Africa, Zambia and Zimbabwe. Governments in these countries were making efforts to control the situation. In Zambia, over 87,000 ha of maize, approximately 6% of the planted area, was damaged to the extent of requiring replanting, and large



quantities of chemicals were dispatched nationwide to deal with the outbreak. Experts present at the meeting indicated that the Fall Armyworm, which is new to the region, is resistant to most common pest-control chemicals, and therefore more difficult to control. The incessant rains are also reducing the effectiveness of the chemical applications in some areas. While it is likely that the armyworm will negatively impact production in the region, the extent of impact remains very uncertain due to limited information. Outbreaks of red locusts were also reported in Tanzania, Zambia, Malawi and Mozambique. The locusts were still at the developing stage within the traditional breeding areas and had not yet started migrating. Experts warn that if the locust are not controlled at this stage they can affect regional crop production.

### Tropical Cyclones

Tropical cyclones impacted the region during early February. Cyclone Carlos was active from 3-10 February 2017, and during this time, it passed close by Mauritius, resulting in reports of flooding, water saturation and loss of crops in some areas. Preliminary reports indicate that the cyclone's passage also resulted in improvements in the water table and reservoir levels, which had been affected by extended dry conditions. On 13 February 2017, Cyclone Dineo became active in the Mozambique Channel, and made landfall in southern Mozambique on 15 February. The cyclone subsequently tracked westwards, leaving significant destruction in southern Mozambique, including fatalities, damage to infrastructure and housing, and close to 30,000 ha of various crops lost. Southern Zimbabwe was also negatively affected by flood-related damage of infrastructure, although in some areas, several dams also filled up due to the intense rains, marking an abrupt end to the multi-year hydrological droughts that have recently affected the area. Overall, the strong winds and heavy rains associated with the cyclone negatively impacted on infrastructure, livelihoods, and agriculture, compounded by the high soil moisture levels that were prevailing in the region after at least 2 months of well above-average rainfall.

### Forecast

A recent outlook update report for the February-March-April (FMA) 2017 period released by the SADC Climate Services Centre (CSC) indicated that normal to above normal rainfall is expected for most southern and central parts of the region (light blue colours, Figure 5), while in the northern areas, there is a higher chance for normal to below normal rainfall (yellow colours, Figure 5). However, in the areas covering southern Mozambique, Zimbabwe, southern Zambia, eastern and central Botswana, north-eastern South Africa, Swaziland, and Lesotho, above normal rainfall is predicted as most likely, with a forecast of above normal to normal rainfall (dark blue colour, Figure 5). The general rainfall patterns that have been prevailing for much of the region are thus expected to continue. In north-eastern areas including Tanzania, which for much of the season has experienced poor rainfall distribution, the forecast suggests a possibility of further negative agricultural impacts due to potential dry conditions. In the southern and central parts of the region, some areas had a late and erratic onset of rains earlier in the season. These areas, with an FMA period forecast for normal to above normal rains, have a chance for a good late season, and improved likelihood of crops reaching maturity with the rains. The above-normal to normal forecast in areas that have already have high levels of soil moisture and river levels indicates possibility of further flooding, waterlogging and leaching.

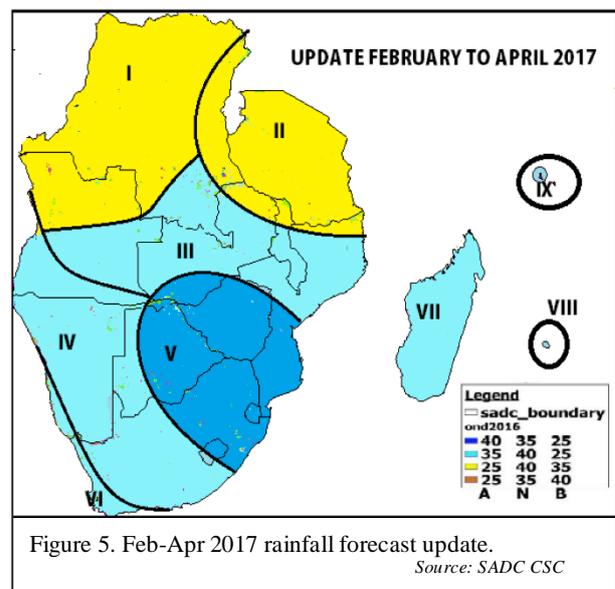


Figure 5. Feb-Apr 2017 rainfall forecast update.

Source: SADC CSC

SADC CSC generally advise that these regional forecasts are relevant only to seasonal time scales over relatively large areas. The forecasts therefore do not address shorter term weather events such as dry spells, intense storms, or the timing of cessation of rains. The SADC CSC strongly advised readers of their forecast update report to contact respective National Meteorological and Hydrological agencies for interpretation of the outlook, as well as for finer details, updates and additional guidance.

## Summary

The high rainfall that has been received in many parts of the region since December 2016 has helped to improve chances of good crop production in many areas. The rains have in some areas been excessive, leading to flooding, waterlogging and leaching of crops. In general, the heavy rains have also improved pasture conditions in many areas, which, in addition to the improved water availability, will aid in the recovery of livestock from the severe droughts of the last 2 seasons. The advent of the Fall Armyworm in the region is likely to negatively affect crop production this season. The severity of the problem is yet to be quantified at a regional scale, but in one of the major maize producing countries in the region, at least 6% of the crop has been affected, requiring replanting. The Fall Armyworm problem is compounded by the newness of the pest to the region, its resistance to commonly used pest control chemicals, and the incessancy of the rains, which reduces the effectiveness of chemical operations. Cyclone Dineo caused significant destruction in southern Mozambique, and excessive rainfall from the cyclone also resulted in flood-related damage in parts of southern Zimbabwe.