



# Food Security Early Warning System Agromet Update



## 2015/2016 Agricultural Season

Issue 05 end-of-December update

Season: 2015-2016

13-01-2016

### Highlights

- October to December 2015 was the driest in at least 35 years in several southern parts of the region.
- Large decreases in planted area are expected in some areas, as planting windows close
- Vegetation conditions improved in some central parts, though conditions remained very poor in many southern areas
- Above normal rainfall was received in some western parts of the region in December, helping to reduce the overall rainfall deficits in those areas.
- Seasonal forecasts are suggesting higher than usual chances that below normal rains will continue in the south

### Regional Summary

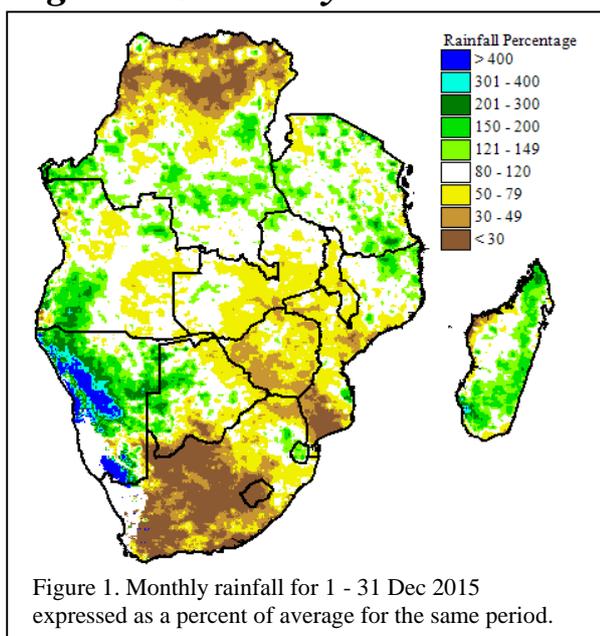


Figure 1. Monthly rainfall for 1 - 31 Dec 2015 expressed as a percent of average for the same period.

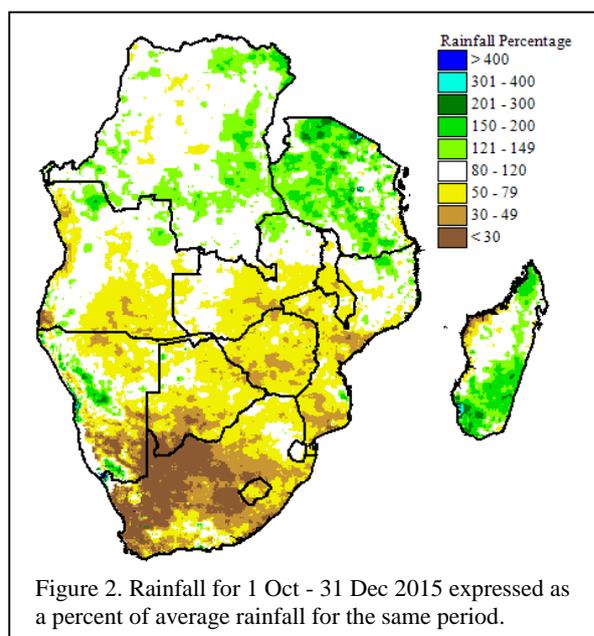
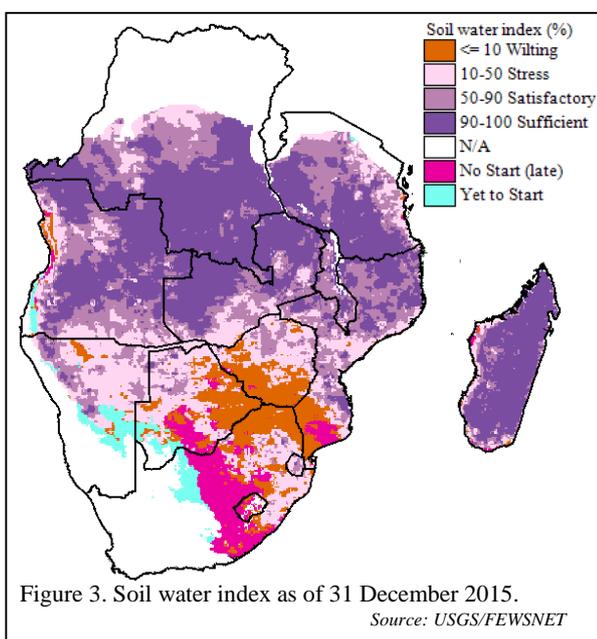


Figure 2. Rainfall for 1 Oct - 31 Dec 2015 expressed as a percent of average rainfall for the same period.

In many parts of the SADC region, the October to December 2015 period has been the driest in at least the last 35 years, based on analyses of the 35-year CHIRPS historical satellite-based rainfall dataset. The areas affected include much of South Africa, Lesotho and Zimbabwe, as well as parts of Botswana, southern and central Mozambique and southern Zambia. For many areas in the southern half of the region, the October-December 2015 rainfall totals were among the 4 driest since 1981. In addition, excessive temperatures throughout the October-December period saw potential evapotranspiration (PET) rates being the highest estimated since 2001, which is as far back as the PET dataset used for the analysis goes. The situation is exacerbated by poor rainfall in many areas during the 2014/15 season, which resulted in low crop production and reduced water supply. These metrics suggest unprecedented climatic strain is being exerted this season on water resources, crop conditions and livestock in many areas, with the consequent negative implications for food security.

During the second half of December, rainfall improved in the western areas and some north-eastern parts of the region, while rainfall deficits intensified in many central and southern areas. For the month of December overall, rainfall was well below normal in the south-western half of South Africa, Lesotho, southern

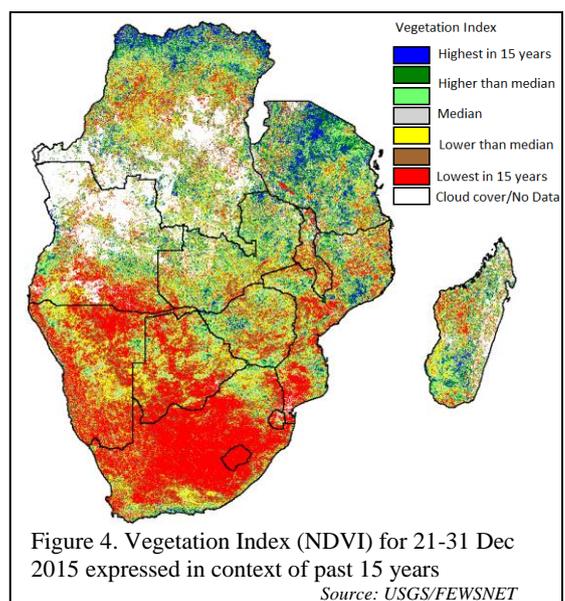
Mozambique and southern Zimbabwe (brown colours, Figure 1). Rainfall was also below normal in eastern half of Angola, south-eastern half of Zambia, Malawi, central Mozambique, Zimbabwe, eastern Botswana and northern South Africa (yellow colours, Figure 1). Combined with the excessive high temperatures that resulted in very high rates of evapotranspiration, the weather conditions have resulted in very dry conditions overall that have not been conducive for crop growth in many areas. In some of the areas mentioned above, planting has not been possible due to the dry conditions. Normally by end of December planting is expected to have been completed in most parts of the region, and crop growth should be well underway. While December rainfall was low in the areas mentioned above, a few areas in the western and northern areas received good rains. The good rains received in western Angola, Namibia, western Botswana and Swaziland helped to slightly reduce, but not eliminate the moisture deficits that have been experienced in these areas since last season. Much more rainfall is required to eliminate the water deficits in these areas, as is the case in most parts of the region, which are showing overall below-average seasonal rainfall accumulations (Figure 2, yellow and brown colours), combined with higher than average evapotranspiration-related water losses due to the high temperatures, and poor rainfall in many areas in the past season. In contrast, good rainfall continued to fall in Tanzania. Northern Mozambique and parts of the DRC also received good rains in December.



The net impact of the poor rainfall and high temperatures thus far on crop production is two-fold. The first is a delay in the onset of rains and the subsequent delay in planting. Reports indicate that the delayed planting has affected several countries, including Lesotho, South Africa, Swaziland, Zambia and Zimbabwe. In some cases the delays are at least 60 days (2 months). The delays may result in reduced yields, as the seasonal cessation of rains can occur before crops have reached maturity. The large delays also result in reduced area planted, as more farmers abandon planting intentions due to the greatly reduced chances of a successful harvest. The second major impact of the low rainfall and excessive temperature on crop production is the moisture stress and wilting experienced by crop. The soil water index (Figure 3), a modelled product that estimates the amount of water in the soil as a fraction of the soil's water retention, shows that in many areas crops are potentially experiencing moisture stress (Figure 3, pink colours) or wilting (Figure 3, orange colours). Reports

indicate that in some of the areas shown in orange on Figure 3, some of the crops that were planted have permanently wilted and replanting is required.

Vegetation continued to improve slightly in some of the northern and central areas, after the moderate to good rains that were received there. Of note, improvements were noted in parts of western Namibia, south-western Angola, Zambia, Zimbabwe, Malawi and northern Mozambique. In many southern areas however, vegetation remains the lowest observed in the last 15 years (Figure 4, red areas), with consequently negative implications for pasture in particular. South-eastern Angola, much of Botswana, Lesotho, southern Mozambique, Namibia, South Africa, Swaziland, appear to be amongst the worst affected in terms of vegetation, according to satellite imagery. Reports indicate approximately 20,000 cattle have died in Swaziland due to effects of the drought, while in Zimbabwe over 8,000 cattle have died.



Short term forecasts through early January suggest a continuation of dry conditions over most central and southern

parts of the region, except for northern South Africa, where some rainfall activity is expected. Northern parts of the region, including Tanzania, DRC and Angola, also expect good rains during this time. By mid-January, rains are expected to have improved significantly across most part of the region, except for some eastern areas where dryness has been forecast to continue. The current El Niño event remains among the 3 strongest on record, although several indicators suggest that it has reached its peak, and is expected to weaken in the near future. The El Niño event has been associated with below normal rainfall experienced across much of southern Africa this season. Seasonal forecasts for January to March 2016 indicate high chances that rainfall will be normal to below normal in the southern half of the region during this period, while normal to above-normal rains are expected in the northern parts of the region.

### *National Agrometeorology Summaries*

#### **Botswana**

Normal to above normal rainfall amounts were received in central and western parts of Botswana during the month of December, helping to reduce water deficits and to improve vegetation conditions in some areas. However, many of the eastern areas, which include the primary crop growing areas of the country received below normal rainfall. Many areas that are normally cropped during the rainy season, including some high production areas, have not been planted due to insufficient rains. Where planting was possible, most crops are currently in the emergence to early-vegetative stage. However, due to the dry conditions, crops in many planted areas are in poor condition, while in others, the crops have succumbed to permanent wilting. There is still a chance for replanting, as the planting window in some areas closes between end of January and mid-February. Despite the good rains received in December in some areas, pasture is still in poor condition due to the extended dryness, water for livestock is limited, and livestock are reported to be thin, with reports of some livestock having succumbed to the drought within the last month. Water availability for domestic use is low in the southern parts of the country. In response to the drought impacts on livestock, the Ministry of Agriculture has increased subsidies on certain livestock feeds to 50 per cent.

#### **Lesotho**

Little to no rainfall was received in most parts of Lesotho during the month of December. Since September 2015, the country has received well below average rainfall amounts. The low rainfall was insufficient for planting and crop development, and resulted in water shortages, poor pasture conditions, large numbers of drought-related cattle deaths, and low expectations for the 2015/16 harvest. The Prime Minister declared a state of drought emergency in Lesotho on 21 December, and listed actions Government is planning to address the situation, including using water tankers to supply water, and providing food assistance, in the short term. The emergency declaration also called on Development Partners to assist response efforts.

#### **Malawi**

Slightly below-normal rainfall was received in many parts of Malawi in December, with more rainfall being received in the northern areas. Much planting was done in December, and the crops were generally in the emergence to early-vegetative stage. In late December, dry conditions led to crops experiencing moisture stress, particularly in the southern areas. However, there is still chance for recovery if rains return by mid-January 2016. Pastures were reported to be in good condition, and water for livestock sufficient. Livestock is in moderate body condition.

#### **Namibia**

Namibia experienced an extended delay in the effective onset of rains, with little to no rainfall being received in October and November. In many areas, the onset was delayed by between 20 to 40 days. This extended dryness, combined with very high temperatures, and a poor 2014/2015 rainfall season, resulted in significant impact on grazing lands and water resources. Veld fires have also contributed to a reduction in the availability of grazing. Water availability for livestock was also reported to be a challenge in many areas, as borehole yields were low, and some boreholes had dried up. A recent assessment indicated that many farmers in the northern, central and southern parts of the country had lost many of the cattle to the drought. In most areas, livestock are in poor to very poor condition. Conditions in the north-western parts of the country are particularly severe, as the drought conditions there started in 2012. Movement of livestock had also been restricted in many areas, as one of the measures to control the spread of livestock diseases. December heralded

the onset of rains in most parts of the country, which received above-normal rains during this time. The rains allowed farmers to plant and helped to improve water availability in some areas. However, many dams are still at low levels, and much more rainfall will be required. Vegetation conditions had not started showing a marked improvement in most areas by the end of December, as significant rainfall and some time will be required for vegetation to recover from the drought which started in the 2014/15 season.

### **South Africa**

Over the last 3 months, some central parts of South Africa received their lowest October-December rainfall totals in at least 35 years. Due to the poor rains, only approximately 50% of the intended area for maize this year has been planted to date, according to a survey done by Grain SA, a South African grain farmers' organization. The first official area-planted estimate is scheduled to be released on 27 January. South African agriculture experts suggest that no new maize plantings are likely even if good rains occur, as the planting window has closed. Crop conditions in areas where planting has occurred range from good in the eastern parts of the main maize growing areas through poor to failure in the central and western parts. Pasture is reported to be in poor condition in the majority of provinces, and water supply for livestock is ranging from sufficient to severe shortages in different areas. Drought-related livestock mortalities have been reported within the last month. The Minister of Water and Sanitation said that 2.7 million households were affected by the drought, with 6 500 rural communities facing critical water shortages. Irrigated crops are also facing moisture stress due to limited water and high temperatures. The Minister of Agriculture recently said the country currently had maize stock equivalent to 4 or 5 months' supply for the country. The Minister further mentioned the potential need to import more maize grain from America. Some estimates have suggested approximately 5 million tons of grain may need to be imported. Government declared five out of the country's nine provinces as drought-related disaster areas, and has set aside ZAR 236 million (approximately USD 14.5 million) to alleviate the impacts of the drought.

### **Swaziland**

After the poor rains received earlier in the season, Swaziland received near-normal rains in the first 20 days of December. The rains allowed some farmers to plant, and crops are reported to be in the emergence to early vegetative stage. However, many farmers did not receive sufficient rains for planting, which will impact on cropped area this season. Due to low rains received in the third decade of the month, combined with the high temperatures, many planted crops are experiencing some moisture stress. Vegetation remains below normal despite the December rains, as the vegetation will require some time and more rains to recover after the severe drought conditions that caused over 20,000 cattle deaths in recent months. Despite recent rains, water levels in most of the major dams remain very low, and water rationing remains in place.

### **Tanzania**

Tanzania has been receiving good rainfall in most areas since the onset of the season. Most areas have been planted, and were reported to be in good condition. In the bimodal areas in the northern and eastern parts of the country, crops were reported to be in the ripening stage, while in the uni-modal areas, crops were at the vegetative stage of development. Pastures and grazing lands are reported to be in good condition, and water supply for livestock is sufficient. Livestock are reported to be in good condition. Hydro-electric dams have been affected by low rainfall from previous seasons, and there is now a shift to alternative power sources taking place.

### **Zambia**

December rainfall was generally below normal in most parts of Zambia, except for northern, north-western and some western areas. Southern, eastern and central areas were the driest areas, although some respite came in mid-December due to good rains that were received at that time. Planting rains were generally late in many areas, with some areas being delayed by approximately 1 month. In some areas, farmers were still planting by end of December. Planted crops were at vegetative stage in many areas. Crops were reported to be in poor condition in many areas due to the moisture stress. Electricity generation is also being affected as the Kariba dam, which generates hydro-electric power, is now at critically low levels.

### **Zimbabwe**

Most part of Zimbabwe have received below normal rainfall since the beginning of the rainfall season, although a few northern and central areas received near-normal rainfall in December. In many southern parts of the

country, the rainfall was insufficient to allow planting, while it was more favourable in the north. The planted crop is reported to be in the early vegetative stage in most areas. In many areas where planting did occur, the crop suffered moisture stress due to the dry conditions and high temperatures. In the north, the stress is temporary and crops may recover if more rains fall soon. In the south however, crops in many areas reached permanent wilting and will not recover with further rains. Replanting will be required in such areas, though there is limited chance of success for such late replanting unless the rainfall season extends to April. Grazing lands are in moderate to poor condition, and water availability for livestock is limited, with severe shortages being experienced in some areas. In the southern parts of the country, livestock is in poor condition, and more than 8000 drought-related cattle deaths were reported. Due to the extended dry conditions, water availability for human consumption is low in some southern parts of the country. Electricity generation is also being affected as the Kariba dam, which generates hydro-electric power, is now at critically low levels. To cover the shortfall arising from the drought-affected 2014/15 harvest, government is in the process of importing 500,000 to 700,000 metric tons of maize. Private buyers were also granted licences to import maize from Zambia. Livestock feed is being sold at subsidized prices under a livestock drought mitigation programme, and hay balling material was distributed to some of the affected areas. Government in partnership with WFP and other NGOs is also implementing food assistance programmes in the districts with high food insecurity prevalence.

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