



# Food Security Early Warning System Agromet Update



## 2018/2019 Agricultural Season

Issue 03 Month: January

Season: 2018-2019

23-01-2019

### Highlights

- Well-below average rainfall has been received in most parts of the region for the October through early January period
- Rainfall improved in parts of December through early and mid-January in some central areas, while erratic rains continued in the south
- Extreme high temperatures affected many parts of the region in December
- Seasonal forecasts for reduced rainfall continue to raise concerns of potentially negative impacts on crop harvests

### Regional Summary

Total rainfall from October 2018 to early January 2019 was well below average across most parts of the region (Figure 1). Most of Angola, western Zambia, Zimbabwe, northern Namibia, southern Mozambique, much of Botswana, eastern Tanzania, western Madagascar, Lesotho, and most of South Africa received less than 75 percent of the rainfall typically expected during this period. At such a large time-scale, this is a significant departure from normal rainfall. The dry conditions were most severe from October to December in many areas. However, in late November through early December, some rains were received in the central and eastern parts of the region. Further rains were received in these and other areas from late December to early January. In contrast, above normal rains were received in much of Malawi, eastern Zambia, northern Mozambique, and northern Madagascar. The high rains in the north-east led to flooding in parts of Malawi. Heavy rains from Cyclone Desmond also led to extensive flooding in Beira, Mozambique in mid-January.

The dry and erratic rainfall conditions were associated with a delay in the onset of rains, particularly in the western and south-eastern parts of the region, with delays of over 40 days (Figure 2) and close to 2 months in some areas including parts of southern Angola, Lesotho and South Africa. The long delays in establishment of planting rains have caused significant delays in planting in some areas, including parts of South Africa, Lesotho, southern and central Mozambique, and southern and eastern Zimbabwe. This delay can potentially cause reductions in end-of-season crop harvests, as the seasonal cycle of rainfall may end before the crops have reached maturity and before harvesting is possible. Additionally, in cold areas such as Lesotho and parts of South Africa, the onset of frost may occur before crops have reached

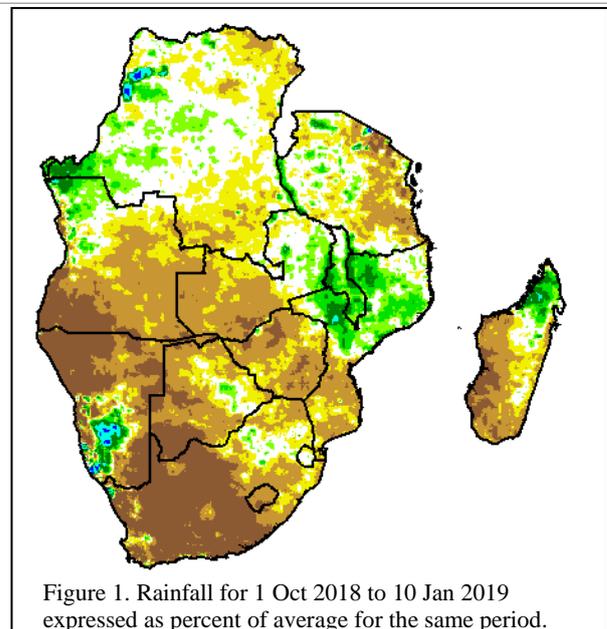


Figure 1. Rainfall for 1 Oct 2018 to 10 Jan 2019 expressed as percent of average for the same period.

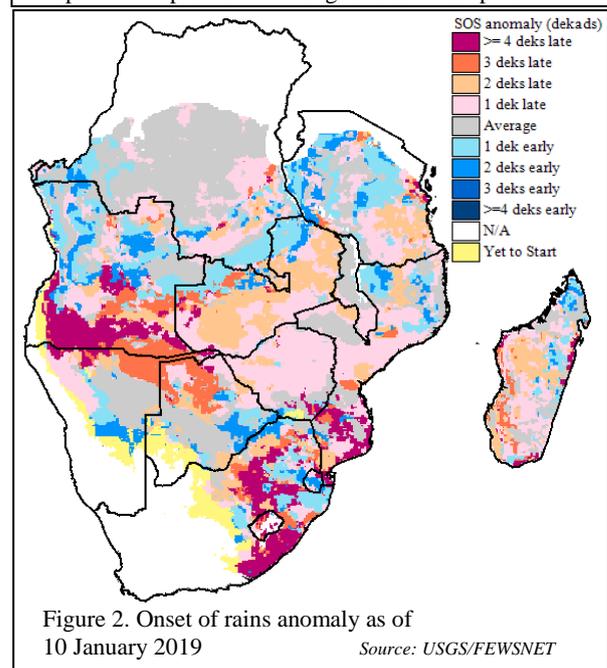
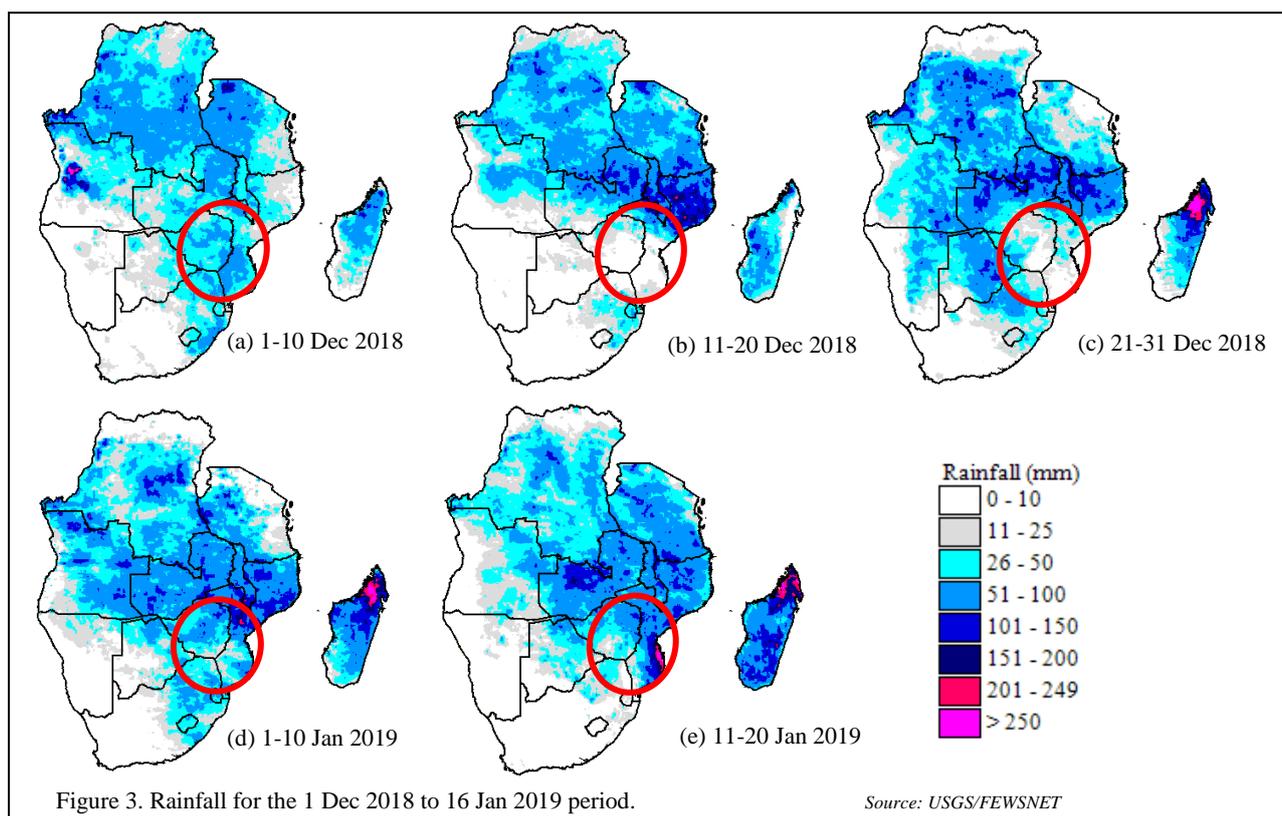


Figure 2. Onset of rains anomaly as of 10 January 2019  
Source: USGS/FEWSNET

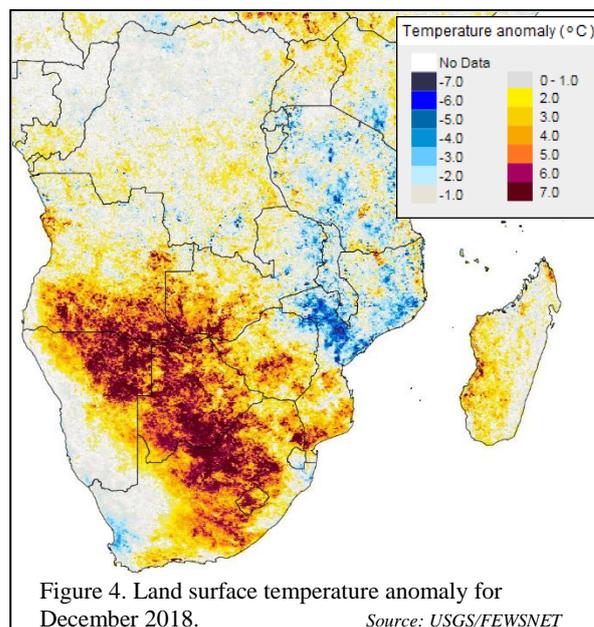
maturity, thereby causing significant reductions in yield. Planted area was also reduced in many areas where rainfall was delayed. In contrast, rainfall in Malawi was generally timely, and planting was normal.

The erratic rainfall to date has caused crop moisture stress in some areas. Crop water balance models indicate that although most parts of the region received sufficient rainfall for planting by the first dekad of January (the first ten-days of January), the rainfall was insufficient to fully meet crop water needs for maize crops planted in some parts of: South Africa, southern Mozambique, southern Zambia, Zimbabwe, and Lesotho. These areas experienced varying degrees of soil moisture stress. In parts of southern Mozambique, Lesotho, and Zimbabwe, the moisture deficits resulted in permanent wilting of some crops at early developmental stages, which necessitated gap-filling and replanting. The sequence of rainfall maps shown in Figure 3 illustrates how the rainfall's temporal distribution between early December and mid-January negatively affected soil moisture.



In the area highlighted in the red oval covering southern and central Mozambique, northern South Africa, and eastern Zimbabwe: (a) in the first ten days of December, good rainfall was received in most areas, establishing the onset of rains that had occurred in late November. However most of these areas received very low rains during the periods (b) 11-20 December and (c), 21-31 December. Along with the very high temperatures that were recorded in December (Figure 4), this resulted in high rates of evapotranspiration, and subsequent moisture stress for crops. Rains resumed in many of these areas in (Figure 3.d, e) the first half of January, although some areas continued to receive low rainfall. Poor temporal rainfall distribution also occurred in parts of Lesotho and central South Africa. Good rainfall in Malawi, northern Mozambique and parts of Madagascar facilitated generally good crop development in many areas.

The impact of low rainfall in much of the region was compounded by extreme temperatures during the same period. Both November and December registered above average land surface temperatures in most areas, with these temperatures significantly elevated in December



(Figure 4). Between October and December, extreme high temperatures were experienced in parts of southern Angola, northern Namibia, Lesotho, southern Mozambique, South Africa, western Zambia and southern Zimbabwe. The extreme temperatures in some areas damaged wheat and potato crops in South Africa. The high temperatures also increased evaporation, resulting in higher rate of water loss of dams and rivers, and caused heat stress to crops, livestock and humans.

The rainfall and temperature patterns experienced since the beginning of the season have had an observable impact on the vegetation conditions (Figure 5), in particular pasture. Analysis of satellite-based vegetation indices indicate that due to the rains received in November and December, some improvements in vegetation conditions were observed in Malawi, Mozambique, central Madagascar, and parts of Zambia and Zimbabwe. In contrast, little relative improvement in vegetation was observed in southern Angola, Botswana, Lesotho, Namibia, and South Africa, where vegetation conditions in many of these areas are well below average. These satellite-based observations of poor vegetation conditions were corroborated by reports of poor pasture and livestock conditions in parts of Botswana, Lesotho, Zimbabwe and South Africa. A report released by the South African Department of Agriculture, Forestry and Fisheries in January indicated that grazing and livestock conditions ranged from reasonable to poor in many parts of the country. Earlier reports noted drought-related livestock deaths in South Africa.

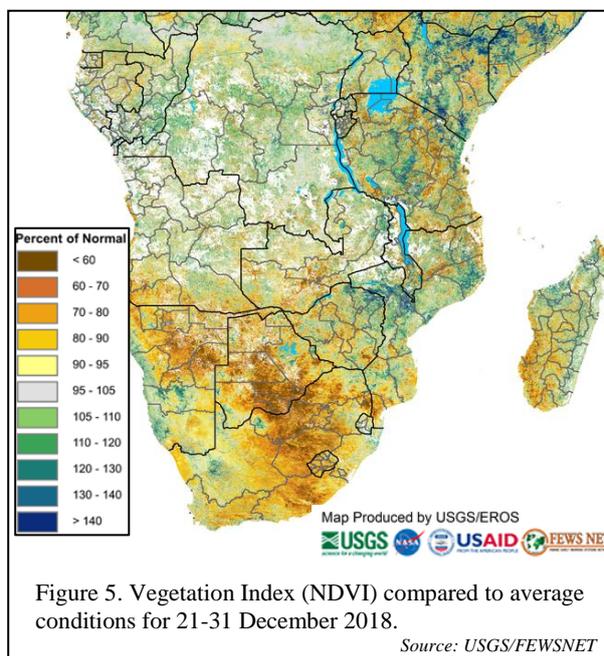


Figure 5. Vegetation Index (NDVI) compared to average conditions for 21-31 December 2018.

Source: USGS/FEWSNET

Short term forecasts through to the end of January suggest the likely continuation of the dry conditions in the southern parts of the region. This may exacerbate crop moisture stress which some non-irrigated crops are already experiencing. The absence of rains during this period also has a tendency to increase temperatures. Close field-based monitoring and reporting is required to check and report on the status of crop growth and development, with a view to continually updating crop production prospects for planning purposes.

Given the seasonal forecast for normal to below normal rainfall for the January-to-March 2019 period in most parts of the region, there remains significant chances for poor rainfall negatively impacting crop production during the season. In some areas the season has already been compromised by a very late onset of rains, increasing chances of rainfall cessation before crop maturity. It should be noted however that some recent past seasons which had experienced a delayed rainfall onset, proceeded to have a late end-of-rainfall-season, which allowed crops to reach maturity. A dry spell in mid-December combined with extreme high temperatures potentially affected some crops in the south. In light of the challenges faced to date this season, a forecast with heightened chances of normal to below normal rainfall, and the need for good rains until late in the season, close monitoring of the seasonal progress, and sector-specific contingency measures will be required.