Food Security Early Warning System

Agromet Update

2019/2020 Agricultural Season

Issue 02 Month: December **Season: 2019-2020** **23-12-2019**

Highlights

- **Early season rainfall has been erratic in southern and central parts of the region, despite a timely onset of the season. This has negatively impacted on crop germination in some areas.**
- **Favourable rainfall conducive to crop development was received in some northern parts of the region.**
- **Heavy rains and a cyclone caused flooding in parts of Tanzania and Madagascar respectively.**
- **A recent forecast update from the South Africa Weather Service has predicted elevated chances of below average rainfall during January to March 2020 in many parts of the region.**

Regional Summary

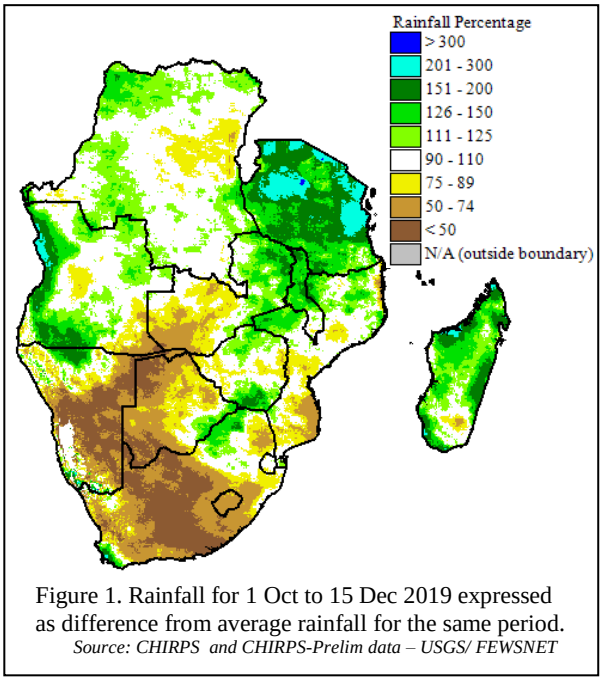

Figure 1. Rainfall for 1 Oct to 15 Dec 2019 expressed as difference from average rainfall for the same period.
Source: CHIRPS and CHIRPS-Prelim data – USGS/ FEWSNET

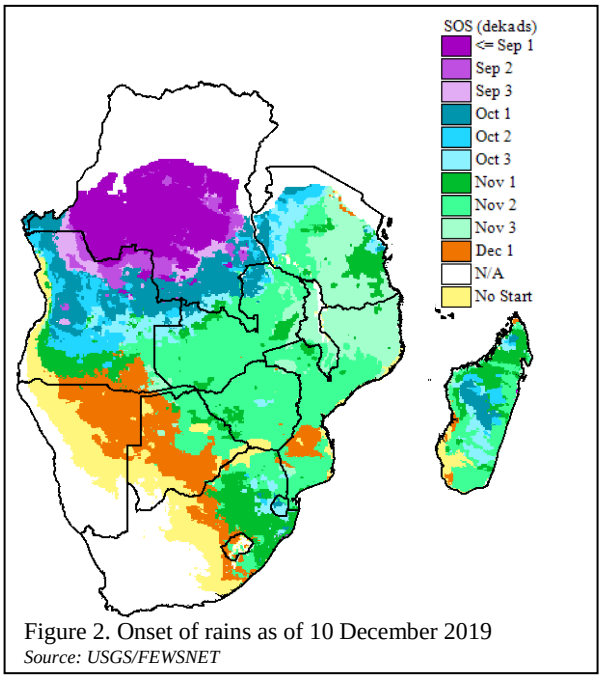

Figure 2. Onset of rains as of 10 December 2019
Source: USGS/FEWSNET

Rainfall was erratic and below normal in many southern and central parts of the region from October to mid-December, despite a timely onset of the rainfall in most areas. This resulted in a delay in planting in some southern areas, poor germination of crops in some of the areas where farmers had planted, as well as continuation of poor pasture and water availability. In contrast, north-eastern parts of the region received above average rainfall resulting in generally favourable conditions for cropping, although persistent heavy rainfall in Tanzania, and a cyclone in Madagascar, caused flooding.

As of mid-December, cumulative rainfall for start of season is below average (Figure 1) across much of the region including parts of southeast Angola, much of Botswana, Lesotho, southern Mozambique, much of Namibia, western South Africa, southwest Zambia, and southeast Zimbabwe. Many of these areas experienced a severe drought last season, which negatively impacted crop yields, grazing lands, and water levels. The poor rainfall to date this season in some of these areas is limiting recovery, particularly for water availability and grazing.

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In most parts of the region, the first substantial rains this season were received in November (Figure 2). This is the typical period during which the seasonal rainfall onset occurs in most areas. However, a delayed onset of over a month occurred in parts of South Africa and Lesotho. Despite the delay in South Africa, the development and availability of short-maturing, high-yielding varieties has allowed farmers in the past to produce high yields after delayed onsets. Delayed onsets have in the past also been associated with a reduction in planted area, as more farmers tend to refrain from planting due to the relatively higher risk of reduced yields. South-western parts of the region typically experience an onset of rains in December or later, and as of mid-December 2019, some of these areas were still awaiting a rainfall onset.

Despite the timely onset in most areas, rainfall has been erratic, and periods of rainy weather have been interspersed by long, hot, dry spells that were not conducive to crop germination and establishment. Figure 3 shows the progression of the rainfall season from early November to mid-December. Significant rainfall, sufficient to support planting, was received in early to mid-November (Figure 3a). This was followed by 2 weeks of hot, dry weather in southern Mozambique, most of Zimbabwe, and southern Zambia (Figure 3b). These dry conditions resulted in crop moisture stress, and reports of poor germination were received for some of these areas. Replanting is required in areas where the first planting was unsuccessful, and farmers' ability to replant will be determined by the sufficiency of their resources, including additional seeds and fertilizer inputs. Many farmers are already strained by the severe 2018/19 drought that significantly reduced their production and farm income. Zambia is a large maize producer in the region, and a significant proportion of that is typically produced in southern Zambia. Challenging macro-economic conditions are likely to affect farmers' ability to purchase farming inputs in Zimbabwe.

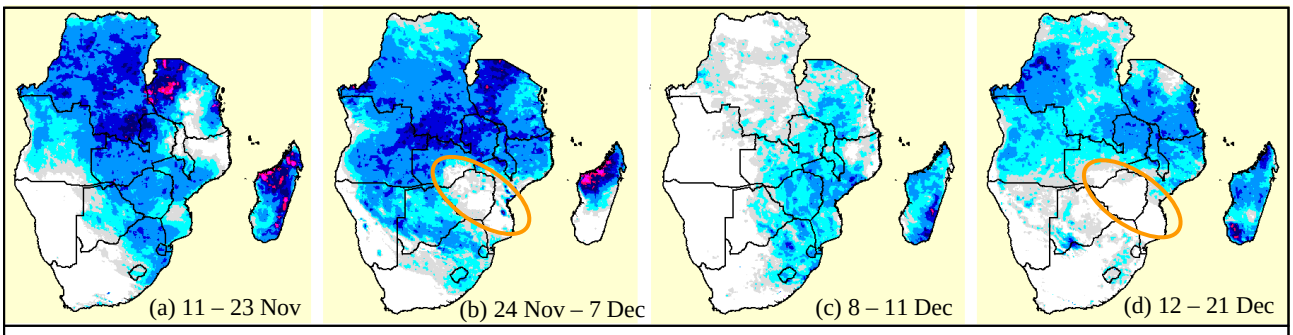

Figure 3. Distribution of rainfall between 11 November and 21 December 2019
Source: RFE data – FEWS NET

Although rains returned in central parts of the region for a few days in early December (Figure 3c), rainfall has since receded in much of the central and southern areas (Figure 3d), with a return to hot, dry weather, which has resulted in moisture stress in some areas. Short term forecasts indicate a high likelihood of continued hot, dry conditions through to late December in central parts of the region. This may exacerbate the situation in these dry areas. Parts of South Africa are however forecast to receive rainfall through late December.

In contrast to the dry spells and high temperatures in the centre and the south, many northern parts of the region have to date received favourable rains conducive for crop establishment and development. These areas include northern and central Malawi, northern Mozambique, and northern and eastern Zambia. Eastern Zambia has become a significant contributor to national maize production. Madagascar and Tanzania also received high rainfall, but this resulted in flooding in parts of these two countries. Tropical Cyclone Belna made landfall in western Madagascar on 9 December and tracked south-eastwards, accompanied by strong winds and heavy rains. The cyclone resulted in fatalities, destruction of infrastructure, and displacement of people.

Poor vegetation conditions persist in many of the areas that have received low rainfall since the beginning of the season (Figure 4). Notable among these include some southern parts of Angola, western and southern Botswana, Lesotho, parts of southern Madagascar and southern Mozambique, western and central South Africa, western Zambia, and southeast Zimbabwe. The poor vegetation conditions in these areas provide further evidence of an extended delay in the recovery of drought-affected livestock, especially in areas where

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farmers cannot afford or obtain stock feed. There are reports of atypically high numbers of drought-related livestock deaths in parts of the region, including southern Angola, Botswana, northern Namibia, and south-western Zimbabwe. Over 40,000 drought-related cattle deaths were reported in Namibia, while in southern and western Zimbabwe, over 20,000 cattle succumbed to drought conditions.

Some improvement in vegetation conditions have been noted in several areas where rainfall has been consistent, including central Angola, eastern Botswana, Eswatini, northern South Africa, and central Zimbabwe. In eastern Tanzania, vegetation conditions are well above normal due to the persistent heavy rainfall. The heavy Tanzania rains however led to flooding in some areas.

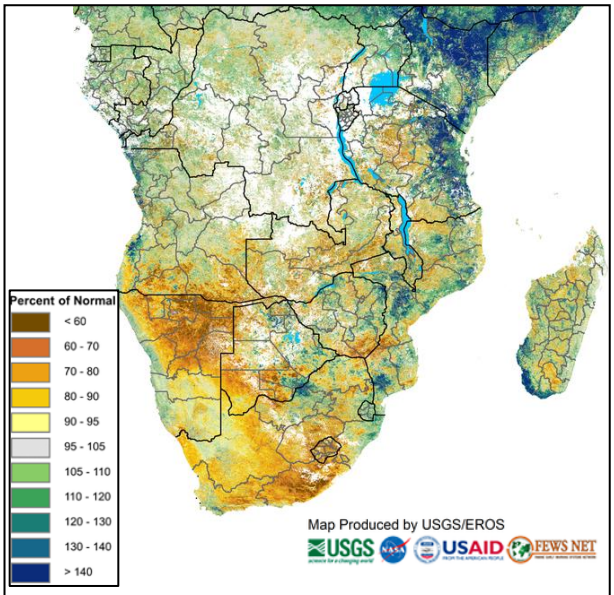

Figure 4. Vegetation Index (NDVI) compared to average conditions for 1-10 December 2019 *Source: USGS/FEWSNET*

The South African Weather Service (SAWS) released on 20 December 2019, updated seasonal rainfall and temperature forecasts for the January to March (JFM) 2020 period. The updated forecast, produced using the latest available data on climate conditions, indicated a high probability of below normal rainfall and above normal temperature for much of the southern half of the SADC region. The SAWS forecast is in close agreement with several recently updated, independently produced international seasonal forecasts. The forecasts are consistent with patterns of sea surface temperatures in the Indian Ocean that favour enhanced East African rainfall and suppressed southern Africa rainfall, namely the Indian Ocean Dipole (IOD) and the Subtropical Indian Ocean Dipole (SIOD) respectively. SAWS is a Global Producing Centre of Long-Range Forecasts recognized by the World Meteorological Organization. Users at country level are advised to consult their National Meteorological Services for downscaled, updated seasonal forecasts at a national level of detail.

The recent JFM forecast update suggests there are heightened chances that crop moisture deficits can occur during critical periods of crop growth. Most cereal crops in the region typically reach the critical flowering and ripening stage during the January-to-March period. Any severe moisture stress during these critical crop growth stages can cause significant levels of yield reduction. The high likelihood of low rainfall during the JFM period also raises the possibility of additional negative impacts on livestock, pastures and water availability. This is likely to exacerbate the impacts of the severe 2018/2019 drought that already affected many countries in the region. Many areas in the region have had unfavourable, low rainfall in several of the last few seasons, resulting in low crop production, reduced water supply, and poor livestock conditions. Coping capacity of households dependent on agriculture are therefore likely to be stretched in these areas. Irrigation potential has also been reduced in areas where river, reservoir and groundwater levels have been severely impacted by past recent droughts. In the case of Kariba dam, the extremely low water levels have also impacted electricity production, thereby affecting farmers' ability to irrigate in Zambia, and more-so in Zimbabwe where rolling power outages of 18 hours per day are occurring in many areas.

As the rainfall season progresses in southern Africa, close monitoring of the situation is required, given the poor start of the rainfall season in many areas, the existing drought from the last season, and the likelihood of low JFM rainfall predicted by forecasting centres.

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