



Food Security Early Warning System Agromet Update



2022/2023 Agricultural Season

Issue 01 Month: November

Season: 2022-2023

30-11-2021

Highlights

- Above average rainfall was received in early November in central and southern parts of the region, signalling a start of the rainfall season in those areas. In contrast, low rainfall has been received in parts of Angola, DRC, and Tanzania.
- Vegetation is above average in southern and central areas, providing ample grazing for livestock. Western and north-eastern areas however continue to experience below average vegetation conditions, with negative implications for grazing.
- Seasonal forecasts indicate enhanced chances of normal to above normal rainfall in southern and central areas, raising the prospects of favourable agricultural outcomes. Northern areas are however forecast to have normal to below normal rainfall.
- Forecasts indicate overall below average tropical cyclone activity is expected this season, although increased tropical cyclone activity is forecast in populated eastern parts of the region later in the second half of the season, putting these areas at risk.

Regional Summary

The 2022-23 rainfall season is off to an early start in many southern and central parts of the region. According to satellite-based CHIRPS rainfall estimates, above normal rainfall was received in central and southern parts of the region, including much of South Africa, Lesotho, eastern Botswana, western half of Zambia, northern and central Zimbabwe, and central Madagascar (Figure 1). In contrast, below average rainfall was received in northern areas, including north-western Angola, southern DRC, and parts of Tanzania. Eastern Madagascar also received low rainfall to date.

Significant rainfall fell in late October in southern parts of the region, gradually intensifying and expanding to central parts of the region in the first dekad of November. A slight reduction in rainfall was then experienced in central areas during the second dekad of November. The late October/early November onset of rains in the above-mentioned areas was earlier than usual by 1 to 2 dekads, and provided an opportunity for farmers to plant. Figure 2 shows areas where sufficient rainfall for planting was received. In these areas, additional consistent rainfall is still required before the end of November in order to avoid early season crop moisture stress, which would necessitate replanting. Monitoring of the early season rains will therefore be important. Figure 2 (grey colours) further highlights that there are few areas where onset of rains remains delayed, including eastern Zambia, southern Angola, northern Mozambique and northern Madagascar. These delays of approximately 10 to 20 days

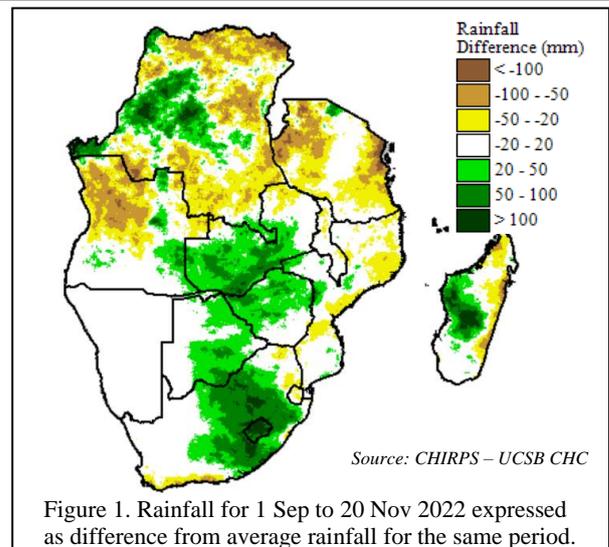


Figure 1. Rainfall for 1 Sep to 20 Nov 2022 expressed as difference from average rainfall for the same period.

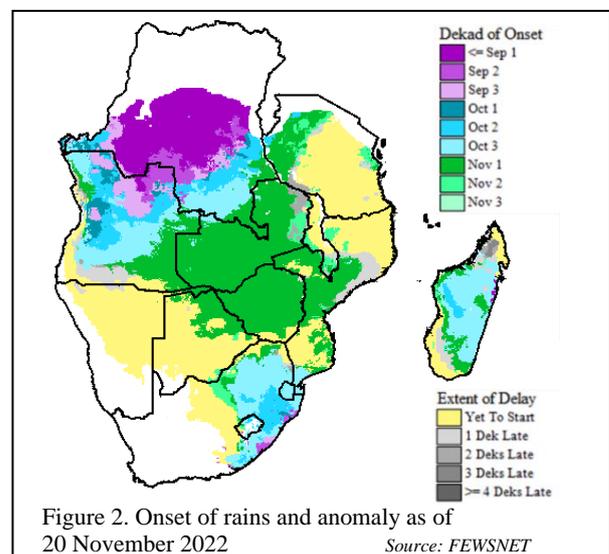


Figure 2. Onset of rains and anomaly as of 20 November 2022

are still minor and have not yet adversely affected the production prospects.

The early start of rains and early planting in many areas, presents potential for an extended growing season, enabling crops to reach maturity if (a) rainfall throughout the season is sufficient and well distributed, (b) no extended severe dry spells occur, and (c) the rains end at the normal time next year. In order to reduce the impact of dry spells that can potentially occur during the growing season, farmers often practice staggered planting so that the crop is not all at the same growth stage and thereby similarly impacted in the event of dry spells.

The normalized difference vegetation index (NDVI) as of 25 November 2022 (Figure 3) shows above average vegetation conditions across central and southern parts of the region, following good rains over the past few dekads. In contrast, vegetation conditions in south-western Angola, north-western Namibia, north-eastern Zambia, Malawi, northern Mozambique, and Tanzania are below average. While the onset of rains typically occurs later in many of these areas, close monitoring will be required, especially in those areas where livestock is an important source of food and livelihood, and NDVI is indicative of pasture conditions. November is still early in the season and rainfall has not yet fully established, thus pasture is likely to start regenerating with the full onset of the season. It is important to note however that drought-affected livestock in poor body condition are likely to continue experiencing the effects of the drought in the short term.

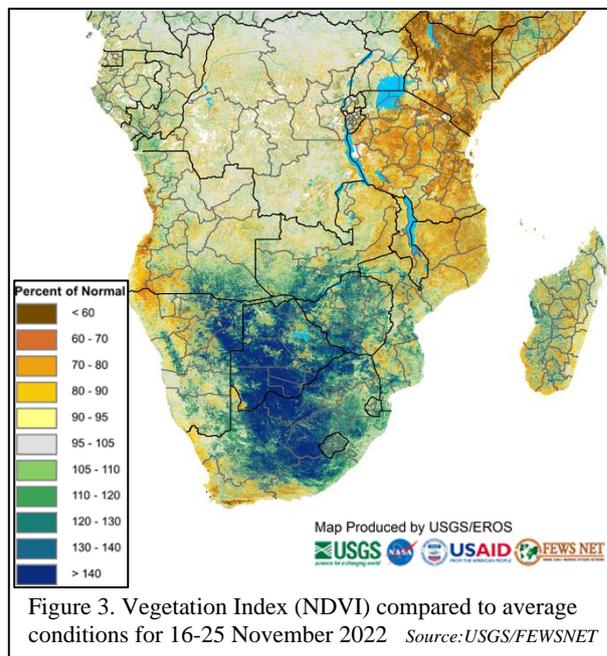


Figure 3. Vegetation Index (NDVI) compared to average conditions for 16-25 November 2022 Source: USGS/FEWSNET

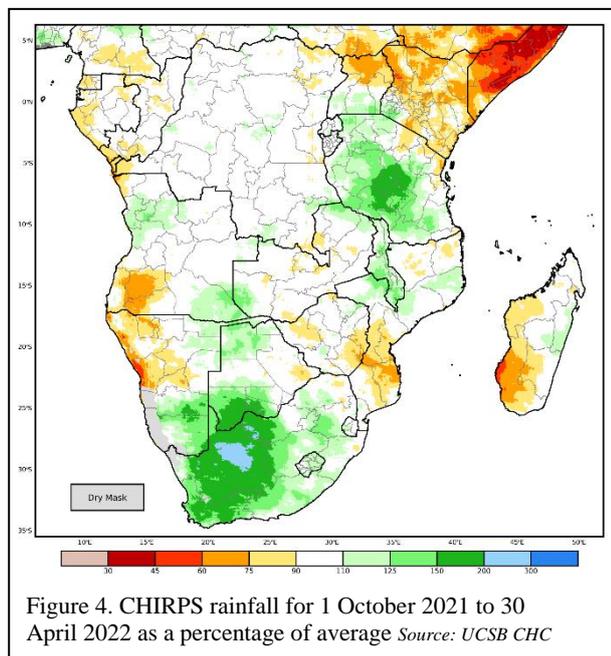


Figure 4. CHIRPS rainfall for 1 October 2021 to 30 April 2022 as a percentage of average Source: UCSB CHC

A few areas in the region have experienced a series of droughts over the last few years which have contributed to poor water, pasture and food security situations. Of note are south-western Angola, north-western Namibia, and south-western Madagascar, which all experienced below average rainfall during the 2021/22 season. Recurring drought conditions in these areas have had severe negative impact on agriculture, food security as well as long-term water storage such as surface water reservoirs and ground-water. Likewise, parts of western and eastern Zimbabwe, as well as central and southern Mozambique recorded rainfall deficits during the previous season (Figure 4) which bore negative outcomes for agricultural production and water availability. At the start of the current season however, these areas have experienced moderate to good rainfall onset which has supported regeneration of vegetation and water reserves.

The SADC seasonal rainfall forecast released at the SARCOF in August 2022 by the SADC Climate Services Centre predicted that most parts of the region are likely to receive normal to above normal rainfall between October 2022 and March 2023, with exceptions being northern parts of the region and Madagascar (Figure 5). Several Member States proceeded to downscale the SARCOF regional forecast, and released detailed national-level forecasts. In these downscaled forecasts, many countries noted enhanced chances of receiving normal to above normal rainfall during the season. These included much of Botswana, Malawi, southern and central Mozambique, and South Africa. Some areas where chances of normal to below normal rainfall were noted in the national forecasts included much of Madagascar, northern Mozambique. In parts of Zambia and Zimbabwe, normal to below normal rainfall is also forecast during the first half of the rainfall season. The

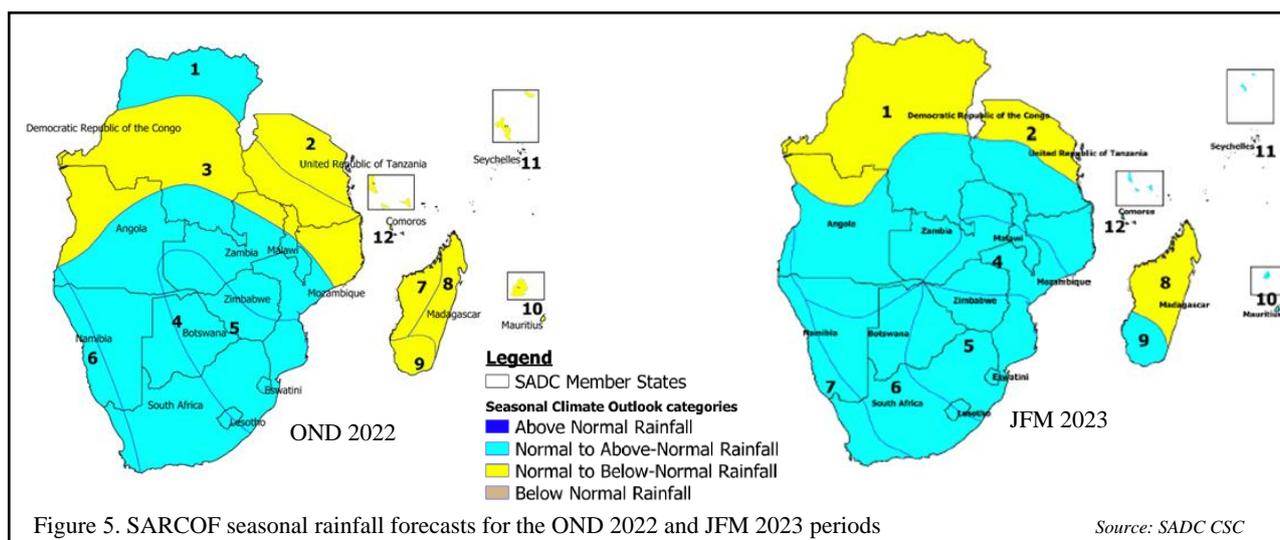


Figure 5. SARCOF seasonal rainfall forecasts for the OND 2022 and JFM 2023 periods

Source: SADC CSC

season rainfall for Tanzania's two rainfall seasons is forecast for below normal in most parts of the country. Users requiring higher accuracy forecasts available at national level are advised to contact the respective national meteorological agencies for downscaled national seasonal forecasts and updates to those forecasts.

Good crop production is expected in light of the forecasts for normal to above normal rainfall in most areas. This will be contingent upon the timely acquisition by and provision to farmers of agricultural inputs. The realization of high crop production will also be partially determined by the extent to which high yielding crop varieties are planted. A mix of both lower-yielding, drought tolerant varieties and higher yielding varieties is typically recommended in order to maximize production potential while simultaneously providing a safety net in the event of poor rainfall outcomes. The actual proportions to be planted will depend in part on the climate of the area in question. In seasons when the outlook is for good rainfall such as the current season, the mix would ideally lean towards a greater proportion of higher yielding varieties.

The rainfall forecast is also expected to positively impact on livestock condition, with an improvement expected both in condition of grasslands for grazing, as well as water availability for livestock. Regeneration of grasslands is however expected to be delayed in areas that had suffered repeat incidents of drought, causing severe depletion of grasses, and reducing regeneration potential. This includes areas such as southern Madagascar, south-western Angola and north-western Namibia.

A number of risks are also noted in light of the seasonal rainfall forecast. One of these is the risk of flooding due to excessive rainfall. This is more likely to occur in flood-prone areas, particularly low lying areas, as well as those that already have high water levels from last season. Some southern parts of the region received above average rainfall during the 2021/22 rainfall season, and soil moisture and river levels may be relatively high in some areas. Waterlogging may also occur should heavy rainfall occur in areas with poor drainage, including flat slopes and heavy soils. Wet humid conditions also increase the chance of occurrence of many crop pests and crop and livestock diseases.

Cyclones remain another significant risk to a number of countries in the region, particularly in Member States bordering or close to the Indian Ocean, with the potential for significant damage including loss of life, destruction of infrastructure, displacement, and damage to agricultural assets such as livestock and cropland. Countries typically at risk of cyclones include Comoros, Eswatini, Madagascar, Mauritius, Mozambique, Seychelles and South Africa. Countries further inland such as Malawi and Zimbabwe are also sometimes affected, but less frequently so. The Météo France La Réunion Regional Specialized Meteorological Centre for Tropical Cyclones in the South-West Indian Ocean released a seasonal forecast for tropical cyclones in October 2022. The forecast indicated the likelihood of a below normal tropical cyclone activity (60% probability of 6-10 named tropical storms) occurring in the South-West Indian Ocean during the 2022/2023 cyclone season. The forecast however mentions that between January and April, tropical cyclone activity may increase in the south-western part of the Indian Ocean, increasing the risk of impact in inhabited areas in the

eastern SADC region. Contingency measures need to be prepared and implemented in light of the enhanced risk of cyclones making landfall as indicated by the La Réunion forecast.

The evolving state of factors that influence weather and climate in southern Africa will continue to have a bearing on the outcome of the season, and forecast updates from national meteorological agencies and the SADC CSC will therefore need to be followed closely. Such factors include the state of the El Niño Southern Oscillation (ENSO), climate drivers in the Indian Ocean, and other local and regional factors. The ENSO is currently in La Niña phase and is currently forecast to remain this way throughout the 2022/23 rainfall season. La Niña is associated with a tendency for above normal rainfall in parts of southern Africa, and below normal rainfall in east Africa.