Disaster & Food Security Early Warning System

Agromet Update

2024/2025 Agricultural Season

Issue 01 Month: November Season:2024-2025 22 November 2024

Highlights

- As of early November 2024, many areas had not yet recorded an effective onset of rainfall. The rainfall season typically starts in mid-November in most parts of the region. North-western and southeastern parts of the region that usually have an onset by October have received below average rainfall to date, indicating a slow start to the season. For many areas, the planting window is still open, and planting is possible until December.
- Vegetation conditions are currently below average, following the 2023/24 drought that reduced grazing and water availability for livestock in many areas, negatively affecting livestock conditions. This is expected to impact draught power available for the planting season.
- The Southern African Regional Climate Outlook Forum (SARCOF) was released in August and predicted there is a greater probability of normal to above normal rainfall in most parts of the region. The central, southern and northeastern areas are forecast to have normal to below-normal rainfall in October-to-December, signaling a potential slow onset to the season.
- The El Niño Southern Oscillation (ENSO) is forecast to transition to a weak La Niña phase before the end of 2024. La Niña typically results in above average rainfall in most parts of the region, except in the northern areas where it usually results in below average seasonal rainfall. The forecast weak La Niña conditions are associated with greater uncertainty in rainfall outcomes compared to typical La Niña events. Timely updates and localized advisories will be vital for proactive planning.
- Critically low water levels at Kariba Dam, caused by consecutive low rainfall seasons in the Zambezi Basin, have led to extensive load-shedding in Zambia and Zimbabwe. This has disrupted irrigation, industrial activities, and livelihoods.
- A forecast for a normal to above normal tropical cyclone season for 2024/25 is indicating near to above normal risk of impacts in the eastern parts of the region. The first Tropical Cyclone of the season, Bheki formed in mid-November and was forecast to move westwards, passing close to Mauritius.

Regional Rainfall Summary

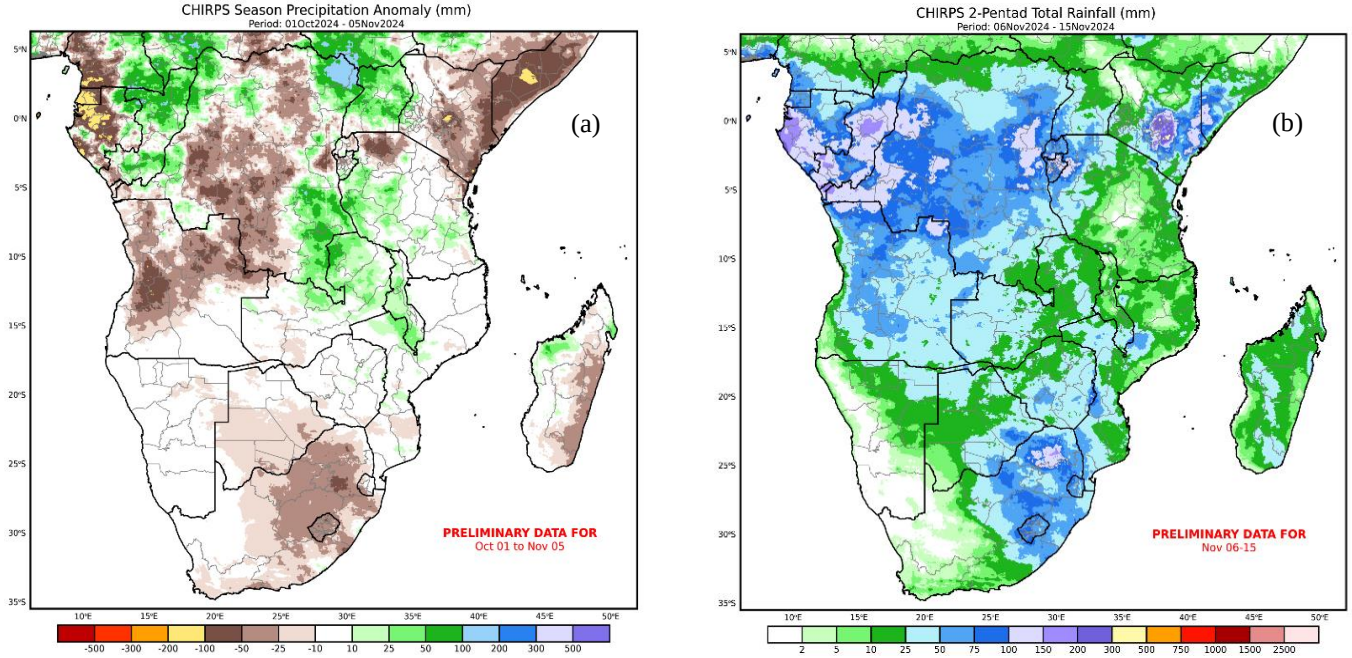

Figure 1. (a) Rainfall for 1 October to 5 November 2023, expressed as a difference from average and (b) rainfall for 6-15 November 2024. Source: UCSB CHC

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Rainfall between 1 October and 5 November 2024 was near average in many parts of the region, while the north-western and south-eastern areas received below-average rainfall, and some north-eastern areas had above average rainfall (Figure 1a). In particular, north-western half of Angola, much of DRC, northern Tanzania, eastern Madagascar, Lesotho, and much of South Africa received below-average rainfall. Rainfall typically starts in September and October in many of these areas, and the below average rainfall is indicative of a slow onset of rains. In contrast, south-eastern DRC, Malawi south-western Tanzania, and eastern Zambia received above average rainfall during this period. From 6-15 November, rainfall improved in South Africa and Lesotho, reducing season-to-date water deficits (Figure 1b). Parts of Angola, Mozambique, southern Malawi, Zambia, and Zimbabwe also received significant rainfall during this period, signifying a potential start to the rainfall season.

Start of Season

As of early November 2024, seasonal rains have not yet started in most areas (Figure 2a). Across most of the SADC region, an effective start to the rainy season typically begins in mid-November (Figure 2b). In some areas, such as northern and central Angola, southern DRC, central and eastern Madagascar, Eswatini, Lesotho, and eastern South Africa, an effective start to the rainy season typically begins in October. However, in the north-western parts of South Africa, northern Namibia, southern Angola, much of Botswana, western Madagascar, northern Mozambique, parts of Malawi, and central Tanzania, an effective onset of the rainy season is usually in December or even January.

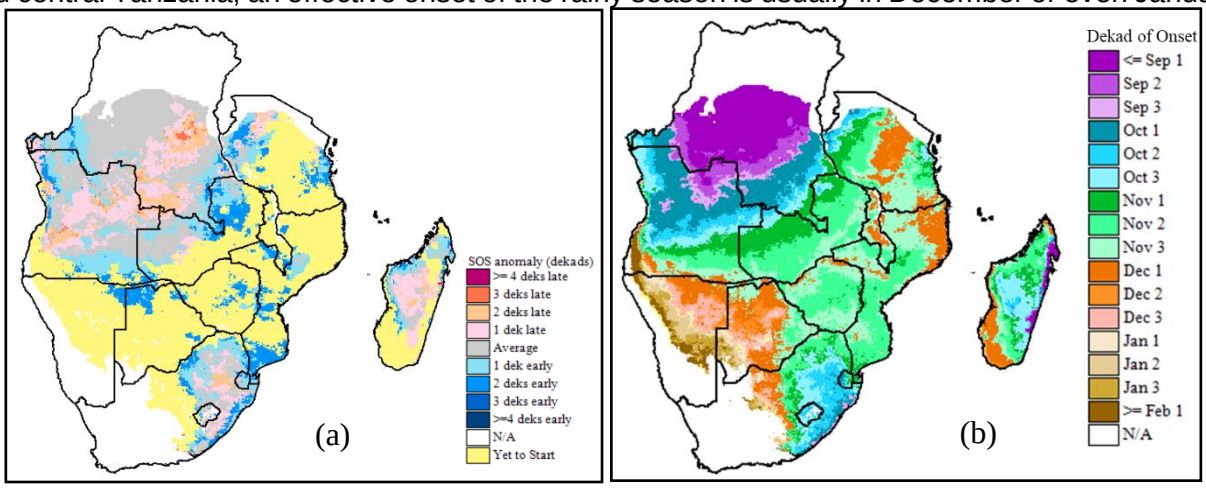

Figure 2. (a) Onset of rainfall anomaly as of 10 Nov 2024, and (b) Median onset of rains.
Source: USGS/FEWS NET

In eastern South Africa, some areas experienced a slight delay in the onset of rainfall, and rainfall has been near-average to below-average since the onset in late October. Rainfall however improved slightly in early November, improving the quality of the season. Central Angola and central and southern DRC also experienced a slightly delayed onset.

Short-term forecasts for north-western parts of the region especially Angola, indicate an increase of rainfall through mid-November, indicating a decrease in rainfall deficits. A few areas in the central and eastern parts of the region have experienced an early onset including northern Zambia and parts of Mozambique. Short term forecasts suggest that rainfall may occur through late November in some of these areas, potentially expanding the early onset to more areas

Vegetation & Livestock

As the rainy season begins, vegetation conditions across much of the central and western parts of the region are well below average (Figure 3), attributed to the severe drought conditions during the 2023/2024 rainy season. Many drought-impacted areas currently exhibit below-average vegetation and pasture conditions, indicating poor grazing conditions, negatively impacting livestock. Water resources are currently below average further impacting livestock conditions and other agricultural activities as the region awaits effective seasonal rains. While water availability and vegetation

conditions are expected to improve as rainfall accumulates, there is uncertainty in the overall rainfall performance this season in light of the forecast weak La Niña. The poor livestock conditions resulting from the inadequate grazing and water availability will negatively affect draught power for many smallholder farmers that rely on ox-drawn ploughs for land preparation and planting.

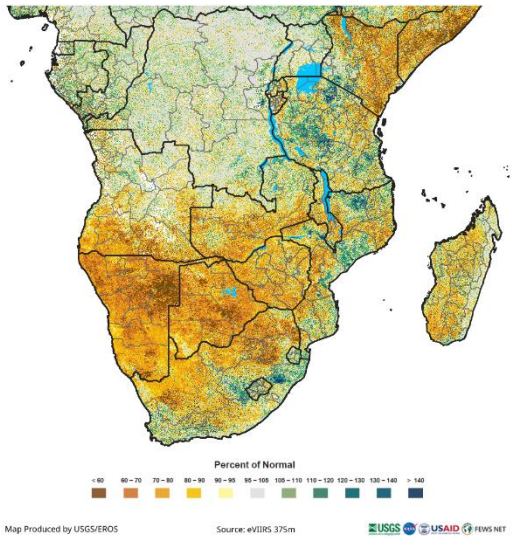

Figure 3. Vegetation Index (NDVI) expressed as percent of average for 1-10 November 2024. Source: USGS/FEWSNET

Energy and Water – impacts on agriculture and food security

The 2023/24 El Niño-induced drought, coupled with consecutive low rainfall seasons in the Zambezi River Basin, has led to critically low water levels at Kariba Dam—the primary hydroelectric power source for Zambia and Zimbabwe. Monitoring bulletins from the Zambezi River Authority indicate that the reservoir is currently just above its minimum operating threshold. This situation has resulted in widespread load-shedding in both countries, severely disrupting irrigation and other agricultural operations reliant on electricity. Industrial activities are also affected, amplifying economic challenges and reducing productivity across key sectors, and impacting households dependent on industrial labour for their livelihoods.

Seasonal forecast & implications for Agriculture

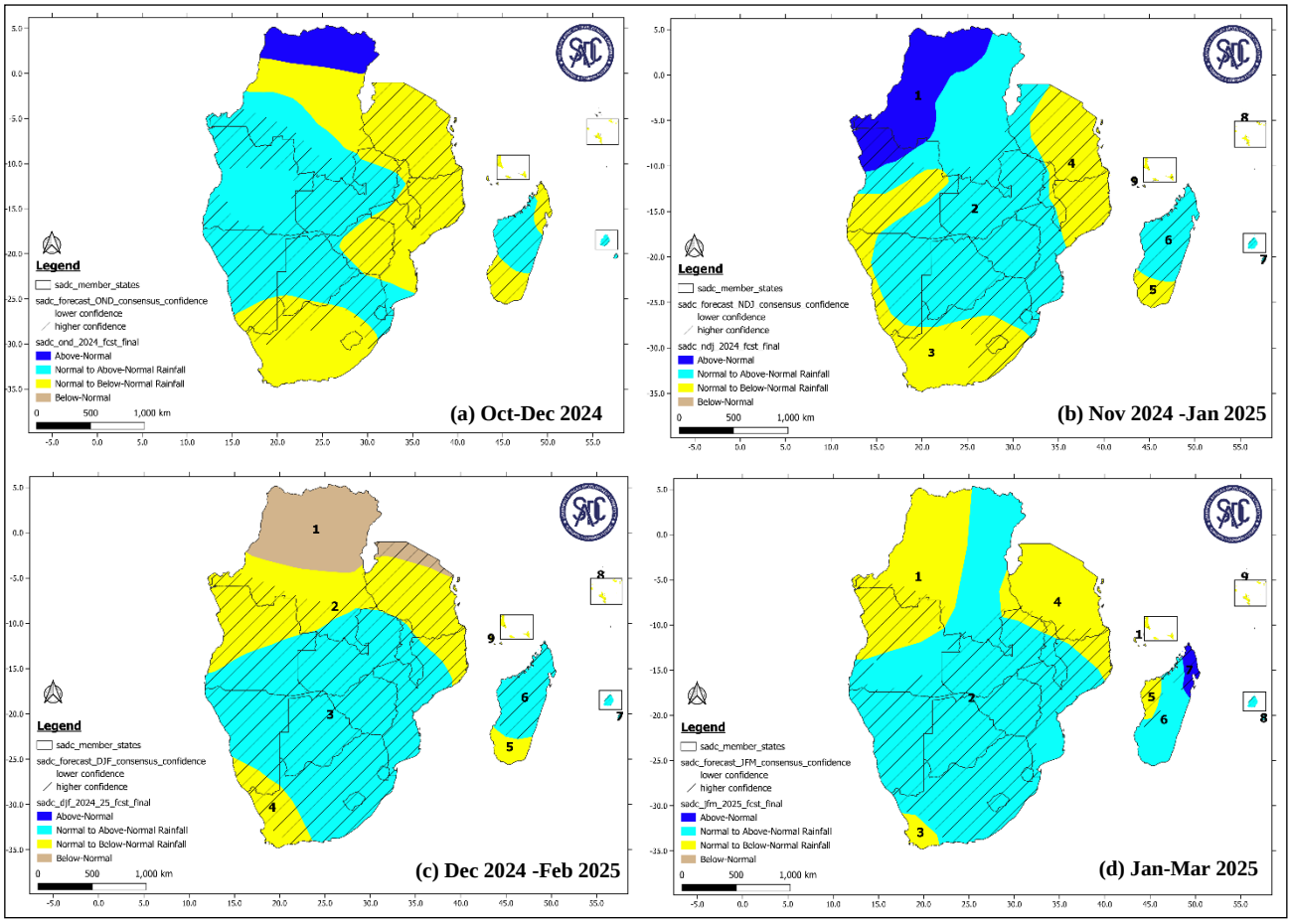

Figure 4. SARCOF rainfall forecast for (a) October to December 2024, (b) November 2024 to January 2025, (c) December 2024 to February 2025, and (d) January to March 2025. Source: SADC CSC

The SADC seasonal rainfall forecast released at SARCOF by the SADC Climate Services Centre predicted normal to above normal rainfall across many of the central parts of the region and normal to below normal rainfall for the northeast and southwest. For the October-December period (Figure

4(a)), central DRC, Tanzania, much of Malawi, Mozambique and Zimbabwe as well as southern Namibia and central and western South Africa, Seychelles and north-eastern and southern Madagascar were forecast for normal to below normal rainfall, suggesting a slow onset of rains in these areas. The expected rainfall pattern in Figure 4(a) is generally maintained through much of the season, with however more areas tipped for normal to above normal rainfall predicted as the season progresses, including central and eastern parts of the region.

Users should note that the SARCOF forecast is a consensus forecast designed for a regional audience. The forecast is aggregated over large zones, and is applicable only at large scales and long time scales. The forecast does not account for rainfall distribution within the season that can include short term weather events such as dry spells, tropical cyclones and intense rainfall. Users requiring higher accuracy forecasts available at national level should contact the respective national meteorological agencies for downscaled national seasonal forecasts, as well as regular updates to those forecasts, which can increase in accuracy as the forecasts are updated based on the most recent weather systems and climate drivers.

Temperatures are confidently forecast to be above normal across the region for much of the growing season, based on projections from multiple climate forecasting centres. Elevated temperatures intensify crop water demand and accelerate evaporation from water bodies, significantly increasing the water required to meet crop needs and replenish the reservoirs depleted by last season's record El Niño-induced drought. High temperatures are particularly concerning during dry spells, as they can reach extreme levels, negatively impacting crops, livestock, and human health.

State of El Niño-Southern Oscillation (ENSO)

Climate modes such as the El Niño-Southern Oscillation (ENSO) influence weather and climate patterns around the world, including seasonal climate performance in Southern Africa. ENSO is currently in a neutral state that is forecast to transition to a weak La Niña by late 2024 through early 2025. La Niña is frequently associated with above-average rainfall and below-average temperature during the rainfall season in the southern and central regions, while below-average rainfall is usually experienced in north-eastern parts of the region.

Rainfall performance during La Niña seasons also directly impacts crop production. Historically, La Niña years have typically had above-average crop production in much of the region associated with the high rainfall that usually comes with La Niña. However, the current forecast for a weak, short-duration La Niña, reflected in updated forecasts that indicate high levels of uncertainty, mean that the typical high La Niña rainfall and associated above-average rainfall are not assured.

Tropical Cyclone Forecasts

Tropical cyclones and tropical storms remain a significant risk to several Member States, particularly those 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 tropical 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 (RSMC) for Tropical Cyclones in the South-West Indian Ocean released a seasonal forecast for tropical cyclones in October 2024. The forecast indicated that an average to above average tropical cyclone season was likely, with 9 to 13 named storms expected, and 4 to 7 of these expected to reach tropical cyclone intensity. The forecast indicated a near to above normal risk of impacts in the Mascarene islands, Madagascar and Mozambique. Tropical Cyclone (TC) Bheki formed in mid-

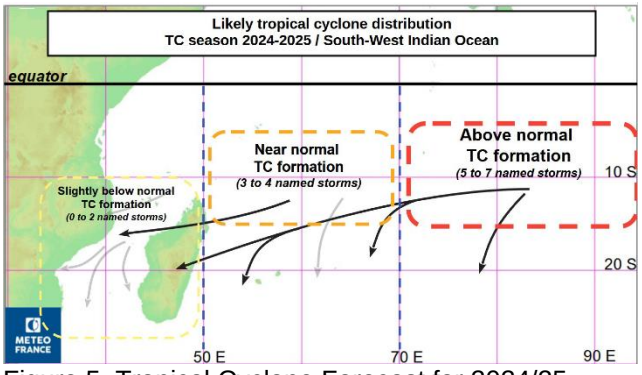

Figure 5. Tropical Cyclone Forecast for 2024/25 Season. Source: Météo France La Réunion RSMC

November north-east of Mauritius. As of 20 November, TC Bheki was moving south-westwards, and was expected to pass close to Mauritius by 21 November before turning southwards.

Recommendations

Given the impact of the 2023/24 season and the forecast conditions for the 2024/25 season, regular updates to seasonal and sub-seasonal forecasts, including impact-based forecasts, are critical for decision-making. These forecasts should be widely disseminated to farmers and other stakeholders. Leveraging downscaled national forecasts for localized planning is essential, while early warnings and advisories on rainfall and temperature patterns – such as potential dry spells, extreme heat, intense rainfall, and tropical cyclones – can empower farmers to make timely and informed decisions.

Water harvesting initiatives and the maintenance of irrigation infrastructure will be vital, especially given the heightened forecast uncertainty under the weak La Niña conditions and in areas where rainfall is expected to be low. Climate-smart agriculture practices such as staggered planting, growing a mix of drought-tolerant and high-yielding crops and varieties, intercropping to optimize land use and reduce pest risks, and employing soil and water conservation techniques like mulching and planting basins should be utilized where relevant. In areas prone to water-logging, particularly where high rainfall is forecast, ensuring fields are well-prepared and adequately drained will be essential to reduce the impacts of potential waterlogging.

Mechanized or alternative ploughing support should be provided to farmers whose livestock, often relied upon for draught power, have been weakened by poor grazing conditions resulting from the previous season's drought. Additionally, governments and stakeholders should support access to seeds, fertilizers, and other inputs, particularly for farmers whose resources have been depleted. Post-harvest management strategies applied at the end of the season will also be necessary to prevent crop losses due to spoilage and to protect gains made during the season.

For wildlife, measures to address water scarcity will help to prevent competition for limited resources and potential human-wildlife conflicts. Livestock, which were significantly impacted by the 2023/24 drought, will require targeted interventions to recover. In areas with forecast low rainfall, farmers should be supported with supplementary feeding programs, access to water points, and herd management training to optimize stocking rates. Where grazing conditions are expected to improve with seasonal rainfall, fodder crops should be promoted and harvested to create reserves for future dry periods. Increased surveillance of livestock diseases, which may arise under high temperatures and changing rainfall patterns, will also be critical for maintaining herd health and productivity.

Tropical cyclone-prone areas will need to prioritize contingency planning to protect crops, livestock, and infrastructure from potential cyclone impacts. Awareness campaigns and community preparedness initiatives will be critical for mitigating the risks associated with these events. Governments and development partners should collaborate to provide resources and training to affected communities to enhance their readiness and resilience.