Food Security Early Warning System

Special Issue: Agromet Update

2023/2024 Agricultural Season

Issue 04 Month: February **Season: 2023-2024** **29-02-2024**

Highlights

- **A record mid-season dry spell of over 30 days has affected vast parts of the region including, Angola, Botswana, DRC, Malawi, Mozambique, Namibia, Zambia, and Zimbabwe. These areas have received the lowest rainfall for the late-January/February timeframe in at least 40 years.**
- **Short term forecasts indicate the continuation dry spell until early March 2024, potentially extending to mid-March in central and southern parts of the region.**
- **The extended dry conditions have severely impacted crops with widespread permanent wilting of crops reported in parts of Malawi, Zambia, and Zimbabwe. Crop failure in affected parts likely due to forecasted dry conditions with little hope of recovery for crops in many areas.**
- **The ongoing dry spell has also negatively affected vegetation and water availability for livestock, with deteriorating conditions expected to worsen. Over 9,000 drought-related cattle deaths have been reported in Botswana, Namibia, Zambia and Zimbabwe between October 2023 and February 2024.**
- **Heavy rains in parts of Madagascar, Malawi, and Tanzania cause flooding, displace populations and cause damage to property and infrastructure.**
- **Stakeholders need to urgently coordinate and implement integrated strategies for water resource management, conduct comprehensive assessments of crop and livestock conditions, ensure immediate support to affected communities, and evaluate current and forecast regional cereal staple stock levels until the 2025 harvest.**

Regional Rainfall Summary

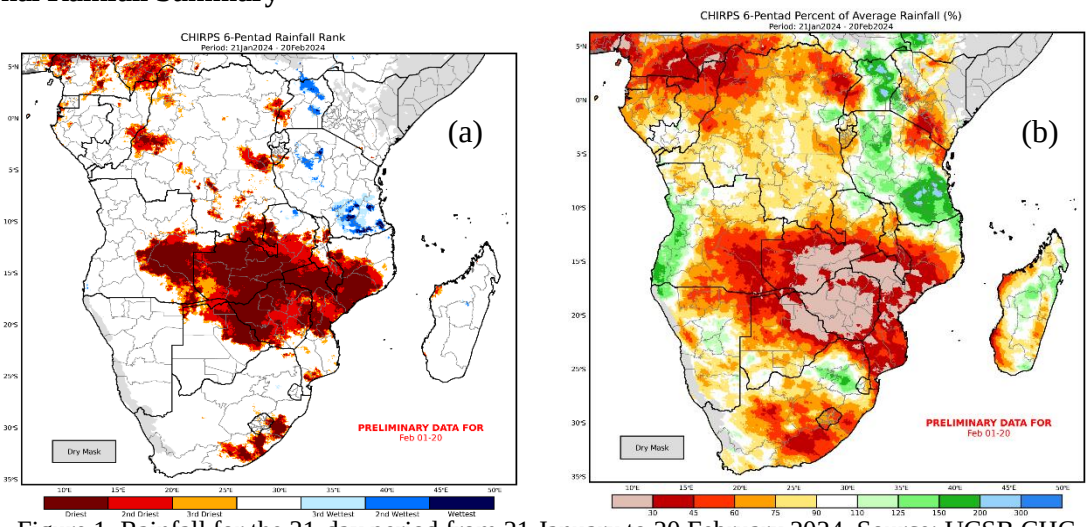

Figure 1. Rainfall for the 31-day period from 21 January to 20 February 2024. Source: UCSB CHC

From 21 January to 20 February 2024, the SADC region experienced extremely dry, hot conditions in south-eastern Angola, eastern Botswana, southern DRC, eastern Lesotho, southern Malawi, Mozambique, south-eastern South Africa, Zambia, and Zimbabwe. Rainfall in these areas is ranked as the lowest on record for this time (21 January – 20 February) since 1981 (Figure 1a). Much of the rest of the region has also recorded below-average rainfall, including much of Angola, Botswana, DRC, Lesotho, western and eastern Madagascar, northern Malawi, southern Mozambique, northern Namibia, and central South Africa (Figure 1b).

Cumulative rainfall from October 2023 to February 2024 has been below average in the central and southern parts of the region, and southern Madagascar (Figure 1(b)), while above-average rain was recorded in western Angola, Tanzania, and northern Zambia. The low seasonal accumulations are primarily due to (a) very low

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rainfall in November across most parts of the region, which resulted in a delayed onset of rainfall, and (b) a dry period of over 30 days (Figure 2), beginning in late January and continuing through most of February 2024. However, October 2023, December 2023, and the first half of January 2024 had well above average rainfall in many areas, which slightly helped to mitigate the impacts of the extremely dry conditions in November and February.

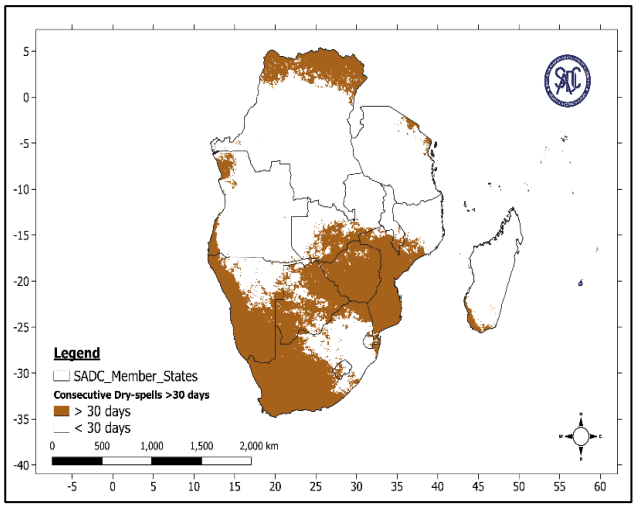

Figure 2: Consecutive dry days more than 30 days.

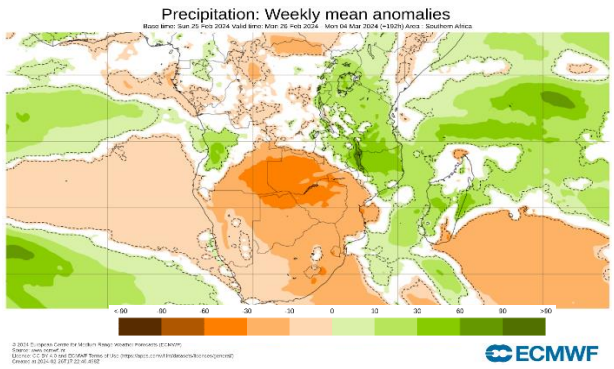

Figure 3. Precipitation forecast anomaly for the period 26 Feb to 4 Mar 2024, expressed as an anomaly in mm. Source: ECMWF

Heavy rains in parts of the Region

Some heavy rains were reported in Madagascar (6th to 11th February) affecting 6 regions of the country and caused loss of life and damage to critical infrastructure. In Tanzania, heavy rains in Manyara and Dar es Salaam region caused landslides and damage to crops and critical infrastructure. Malawi reported flooding in Nkhotakota district in central region and Karonga district in the north, displacing about 7,000 people and damaging crop fields.

Short-term rainfall forecast.

The dry spell in central parts of the region, that has already lasted for over 35 days, is forecast to continue until at least early March (Figure 3) in many of the affected areas, bringing the total dry spell period to over 40 days, with little to no rainfall occurring during a critical period of crop growth. Forecasts from different global climate centres concur that rainfall will likely be very low across central and southern parts of the region from 26 February until around 5 March, with some forecasts suggesting these dry conditions may extend until even mid-March. The dry conditions are forecast to be accompanied by high, above-average temperatures. In contrast, much of and eastern and northern Madagascar, Malawi, northern Mozambique, Tanzania and northern Zambia, are forecast to receive above-average rainfall through early March, potentially resulting in flooding in some areas. This short-term forecast aligns with the SARCOF 28 for February-March-April 2024 which forecasts normal to below normal-rainfall in central parts of the region over this period.

Crop Conditions

The extended dry conditions have had a widespread, severe impact on crops. A crop-specific water balance modelling analysis using rainfall and evapotranspiration throughout the season suggests that as of 20 February, soil moisture was close to the wilting point across the southern half of the region (Figure 4a). Furthermore, the water requirements satisfaction index (WRSI) is below normal in the central parts of the region (Figure 4b), indicating that these areas have experienced greater water deficits than usual due, a condition that indicates reductions in crop yield. Information in mid-February from several countries, including Malawi, Zambia, and Zimbabwe, indicates that maize crops in many areas had reached permanent wilting point, or were under severe moisture stress that could reach permanent wilting point if rainfall does not occur soon. Given short-term forecasts for low rainfall through early-to-mid March, further crop failures are expected to occur in the affected areas as the dryness intensifies. In South Africa, rainfall deficits have not been as severe as in central parts of the region, and crop conditions are expected to be fair to good in some of the main maize-producing areas.

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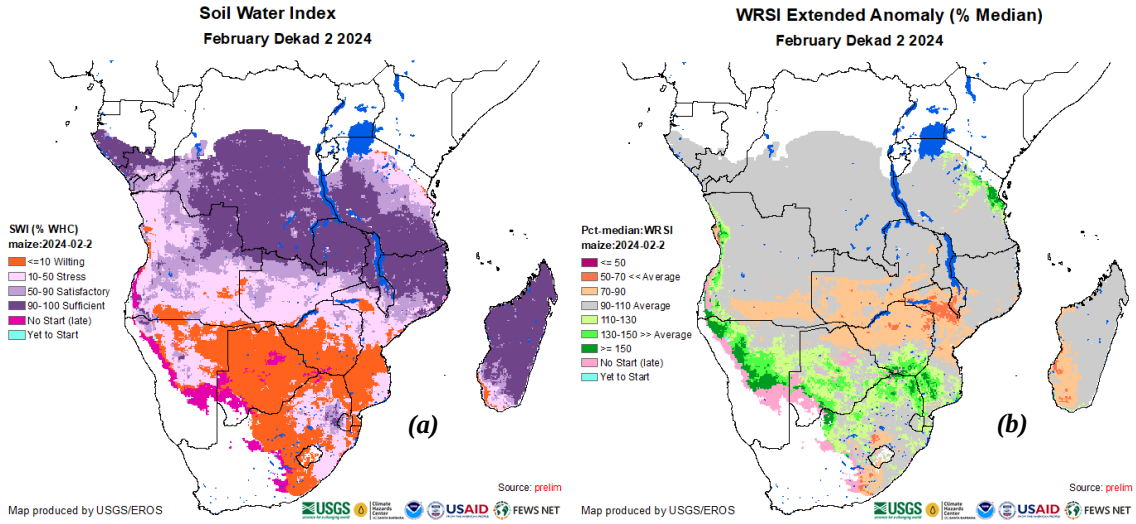

Figure 4. Soil water index and (b) Water requirements satisfaction index (WRSI) percent of median, as of 20 February 2024. Source: USGS/FEWSNET

Vegetation, grazing and livestock.

Because of the high rainfall experienced across the region in December and the first half of January, vegetation conditions improved considerably in the central and south-eastern areas. However, the ongoing dry conditions experienced since late January have negatively affected vegetation, and the impacts are expected to become more pronounced as the dry spell continues. The normalized difference vegetation index (NDVI) is above average in northern Eswatini, Lesotho, southern Madagascar, central and northern South Africa, Tanzania, and Zimbabwe, (Figure 3). However, there are localized areas of below-average NDVI within these countries, which will likely expand with the continuing dryness. Due to low rainfall, extremely poor vegetation conditions are present in central Botswana, Namibia, and south-western South Africa . Pasture and livestock were noted to be in poor condition in Namibia and Zambia due to prolonged dry spells recorded in the previous and the current seasons. In Zimbabwe, over 9,000 drought-related cattle deaths have been reported, and over 1.4 million cattle were reported as being at high risk of drought conditions and death due to lack of pasture and water.

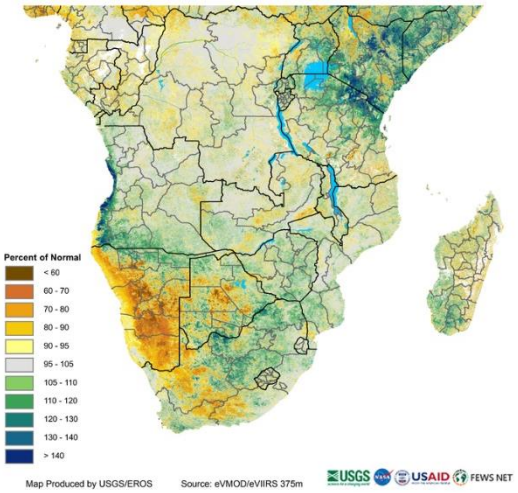

Figure 5. Vegetation Index (NDVI) expressed as percent of average for 11-20 February 2024. Source: USGS/FEWSNET

Water availability

The dry conditions experienced in the central parts of the SADC region pose significant challenges to water resources. Given the reduced rainfall and extended dry spells, water levels in reservoirs, rivers, and groundwater sources are likely to diminish, impacting irrigation capacities, hydroelectric power generation, drinking water supplies and ecosystem health.

Recommendations

- As the agricultural season nears its end amidst **severe dry and hot conditions in many central parts of the region**, stakeholders, including governments and cooperating partners, need to coordinate and implement adaptive and resilient strategies that will mitigate the impact on livelihoods, crops and livestock. There is a critical need for an integrated approach to address the immediate impacts of these challenges on agriculture, ensuring food security, and strengthening the foundation for sustainable agricultural development.

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- There is an urgent need for **comprehensive national assessments** of crop conditions, livestock health, and overall livelihood impacts of the extended dry conditions. These assessments are crucial for accurately determining the extent of damage and areas requiring immediate intervention and will not only guide targeted relief efforts but also inform policy development and program implementation aimed at enhancing agricultural resilience. Further, Member States need to start preparing for in-depth assessments that will inform response.

- Affected Member States need to take concerted action to manage water resources efficiently, considering the largely deficit rainfall season. Given the variability in rainfall patterns across the region, there is a need to prioritize the allocation and **use of water resources** to sustain agricultural activities. This may involve the enhancement of water harvesting techniques, investment in efficient irrigation systems, and the promotion of practices that reduce water wastage.

- Member States are encouraged to **provide immediate safety nets to support communities and farmers** affected by adverse weather conditions. This support could include the provision of emergency water supplies, and other forms of social protection including cash transfers. Additionally, Member States need to consider initiatives to support winter cropping in areas where applicable, including provision of appropriate seed varieties. It is also important for governments to work closely with local and international partners to mobilize resources for emergency response and recovery efforts.

- Considering the extensive impact of the current drought conditions, which have not spared traditionally high-producing, maize-exporting countries within the region, there is an **urgent need to assess the current and projected regional cereal staple stock levels through to the 2025 harvest**. This evaluation should encompass the **potential need for cereal imports from outside the region to ensure food security and stabilize markets** across affected member states. Such assessments will provide critical insights for strategic planning, enabling timely interventions to address possible shortfalls and mitigate the risk of food insecurity.

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