

World Food
Programme

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Southern Africa Seasonal Monitor #2

WFP Regional Bureau Johannesburg

January 2023

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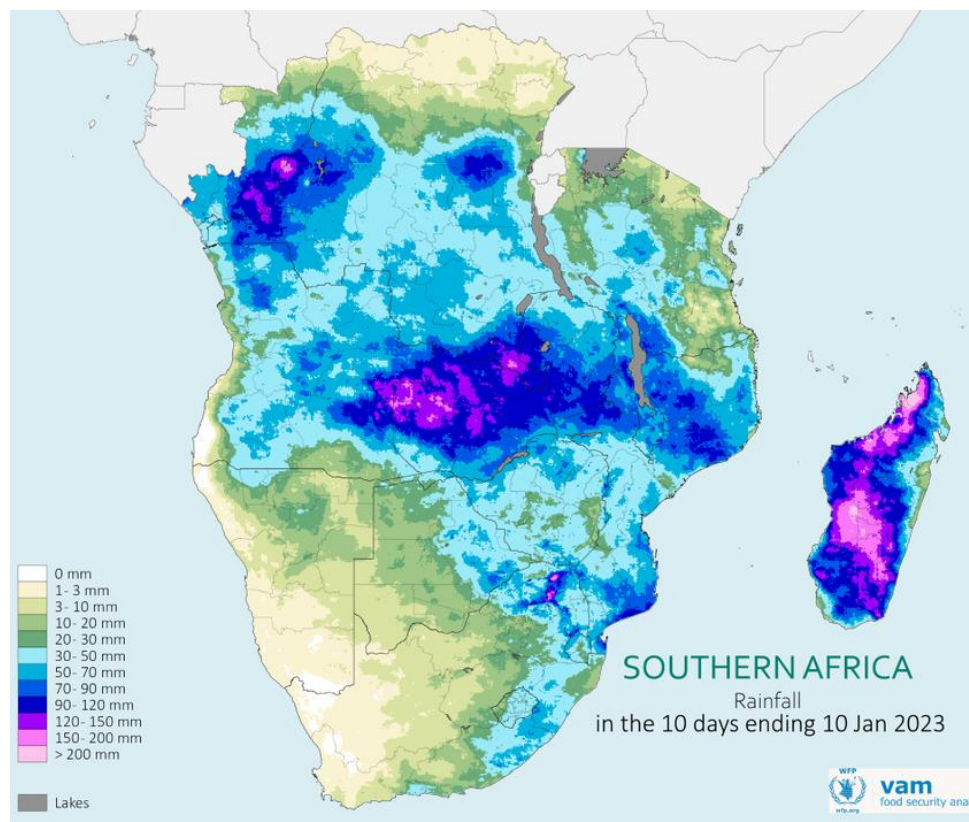
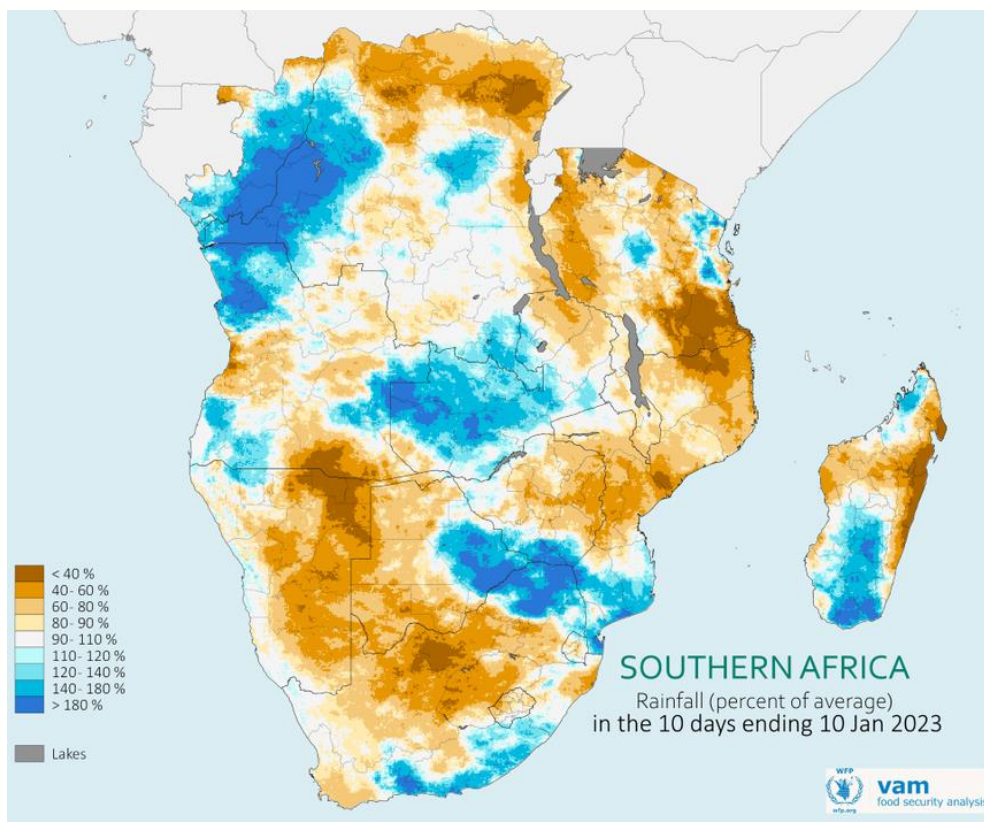
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Areas of Concern

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- After a good start with normal to above normal rainfall across most countries in October and November, the progression of the 2022/23 rainfall season in Southern Africa has been stalled by a drier than average period that began in December.
- Although the broad seasonal rainfall pattern remains normal to above normal across the region, there are areas where dryness has been persistent such as NE Namibia, central and southeast Angola, Tanzania, northern Mozambique and northern areas of Madagascar.
- These patterns are supported by analysis of the timing of the onset of the growing season, satellite vegetation and land surface temperature. The drier conditions since early December may be affecting early planted crops or delayed the start of agricultural activities.
- Indications from short range forecasts, which point to the continuation of drier conditions throughout January, raise some concern. If this continues into February, important consequences may result for crops. Long range rainfall forecasts remain favourable with indications of wetter than average second half of the season, but this does not account for irregularities in its distribution.
- Areas of concern are the areas of southern Angola and northern Namibia, the border areas of Tanzania and northern Mozambique and northeast Madagascar, where there has been a rainfall deficit since the start of the season and negative consequences for food security in the harvest season may develop.

LATEST RAINFALL



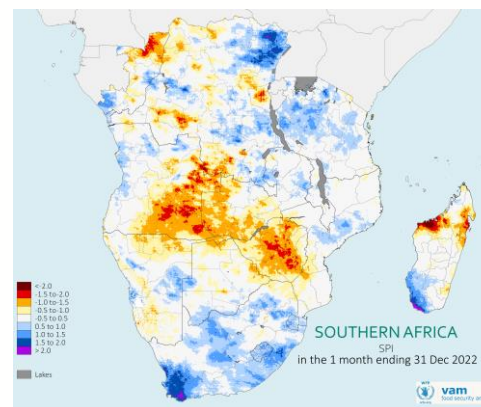
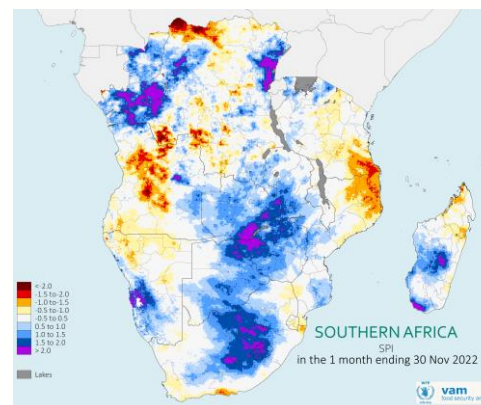
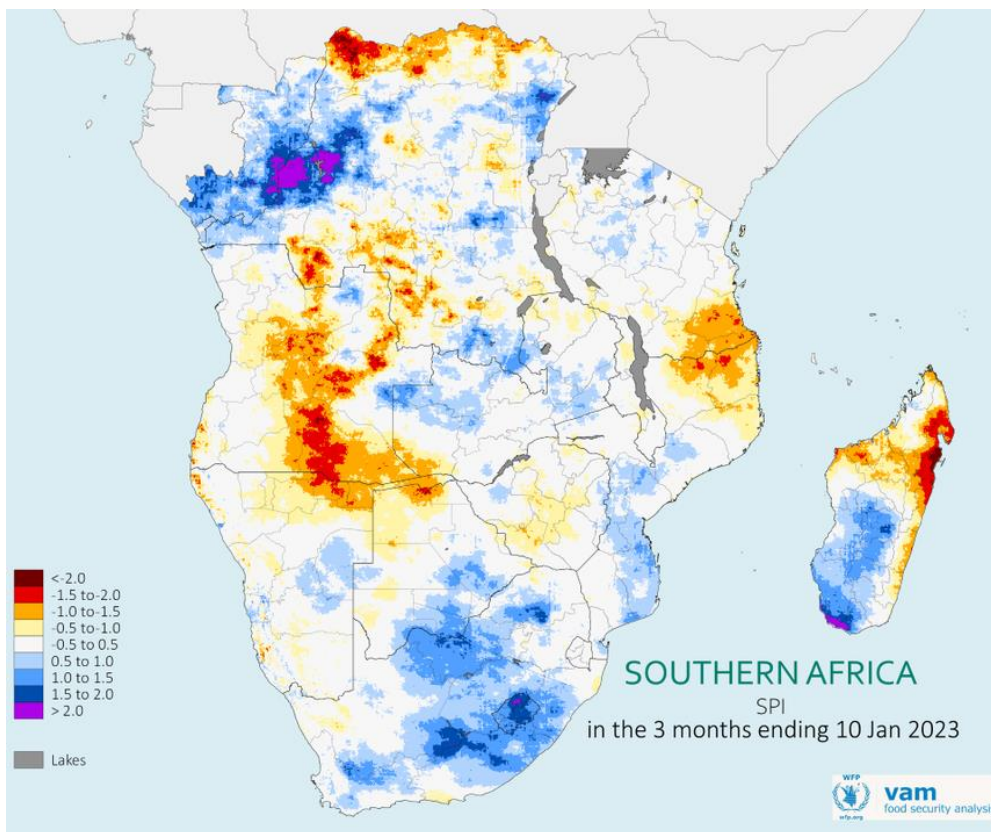
Rainfall in the first dekad of January (left) and in the month leading up to the 10th January (right), as a proportion of the long-term average.

Blues for above average conditions, oranges and browns for below average conditions.

Recent developments show continued dry areas in parts of the region. The eastern part of the border between Angola and Namibia, the Tanzania-Mozambique border and eastern Madagascar have received less than half of normal rainfall for this dekad. Parts of Zimbabwe, Botswana and DRC are also unseasonably dry. Heavy rainfall is expected in parts of Madagascar, Zambia and the Republic of Congo.

This generally presents a continuation of a drier than average period that commenced in December for much of the region.

THE SEASON SO FAR



Left: Standard Precipitation Index (SPI) for the three-month period ending on January 10, 2023.

Right: SPI for the months of November (above) and December (below)

The SPI is a rainfall index, that compares the total rainfall during a given time interval with its long-term mean value accounting for how variable the rainfall has been historically.

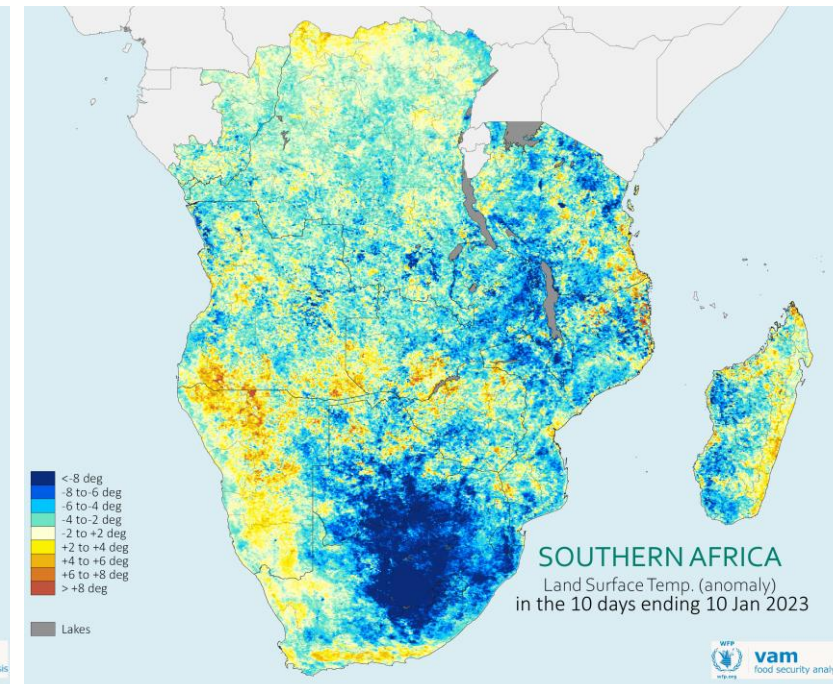
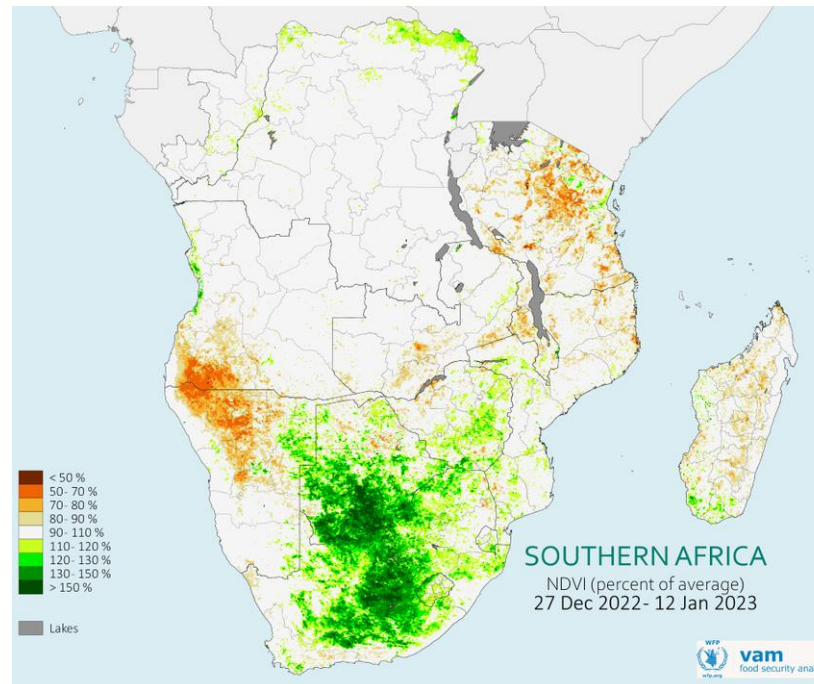
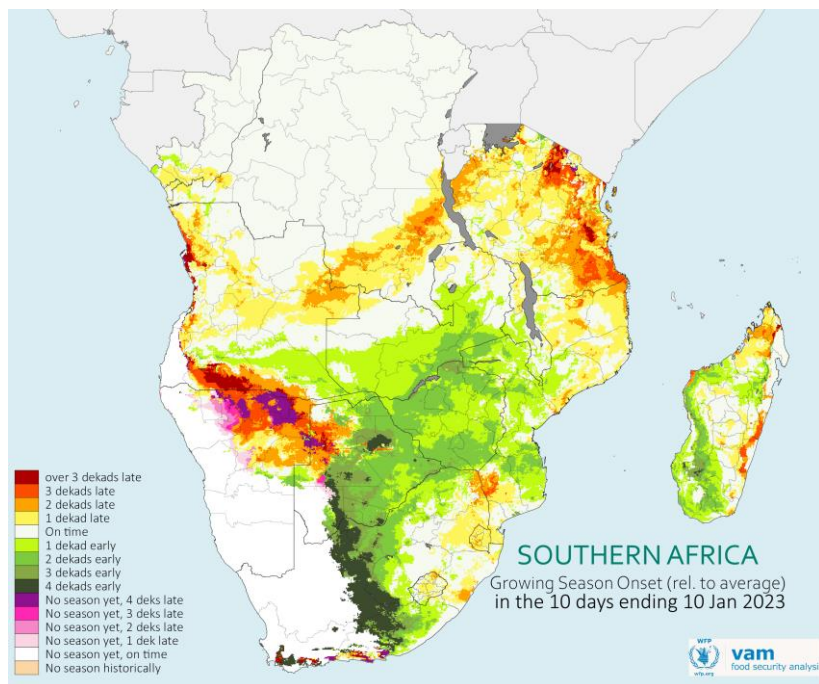
SPI negative values (oranges and browns in the maps) indicate drier than average conditions and positive values (blues and purples) wetter than average conditions.

Increasingly severe rainfall deficits are indicated by SPI values below -1.0 , while increasingly severe excess rainfall are indicated as SPI above 1.0 .

The performance of the season so far can be judged by the Standard Precipitation Index (SPI) for the 3 months ending in early January (map left): this indicates worryingly low levels of rainfall in north-eastern Madagascar, on the Namibia-Angola border and in the Mozambique-Tanzania border areas. The cropland areas of Analanjirofo and Atsinanana, Madagascar, southern and central Angola and Niassa and Cabo Delgado in Mozambique may be affected by this unusual rainfall deficit. In contrast, south-western Madagascar and the Republic of Congo have been wetter than usual so far this season, bringing much needed rain to southern Madagascar after years of drought and flooding to the Republic of Congo. South Africa has also been wetter than usual.

This overall picture arises from two contrasting periods: a favourable earlier stage of the season with average to above average rainfall across most of the region lasting through October and November. From early December, many areas entered a drier than average period that has continued into January. The 1 month SPI maps for November and December above, display these contrasting conditions across the region.

GROWING SEASON CONDITIONS



Left: Variations in the onset of growing season conditions relative to the long-term average. Greens where onset has been earlier than usual. Reds and oranges where onset has been later than usual. Pink shades where onset is delayed and has not yet taken place. (Date of start of the growing season is defined as the occurrence of enough rainfall to satisfy a standard water requirement of an emerging crop for two consecutive 10-day periods.)

Center: Vegetation development compared with the long-term average. Green shades for above average vegetation, orange shades for below average vegetation.

Right: Land Surface Temperature (LST) compared with the long-term average. Usually, cooler temperatures broadly correspond to areas of higher soil moisture (and vice-versa). Blue shades for cooler temperatures and orange shades for warmer temperatures.

Overall, the start of the rainfall season has been variable. The ample early rainfall in October and November led to early onsets of the season across much of the region – see widespread green shades in the growing season onset anomaly map (above left). In other areas, persistent below average and irregular rainfall led instead to delayed onsets of season – see areas in shades of orange and purples, mainly in NE Namibia and southern Angola, as well as in Tanzania and northern Mozambique.

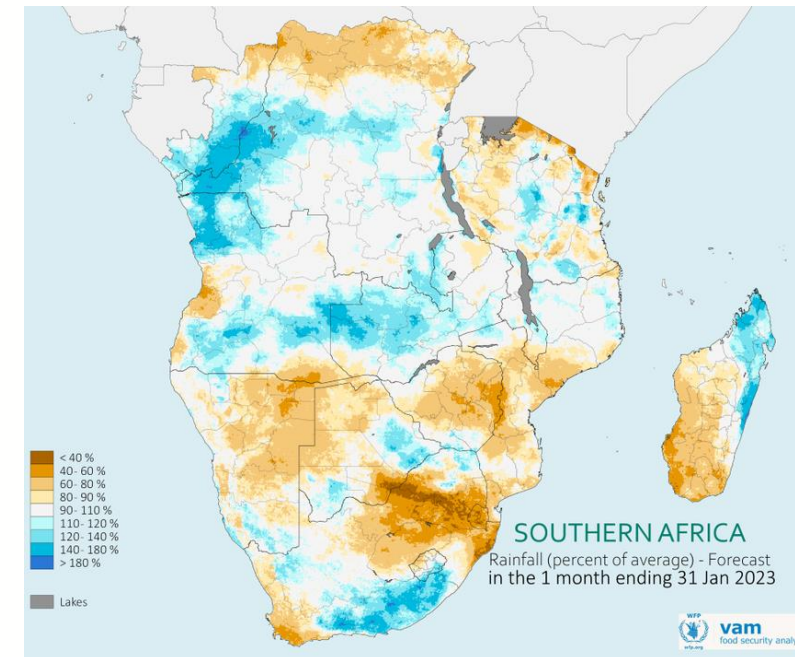
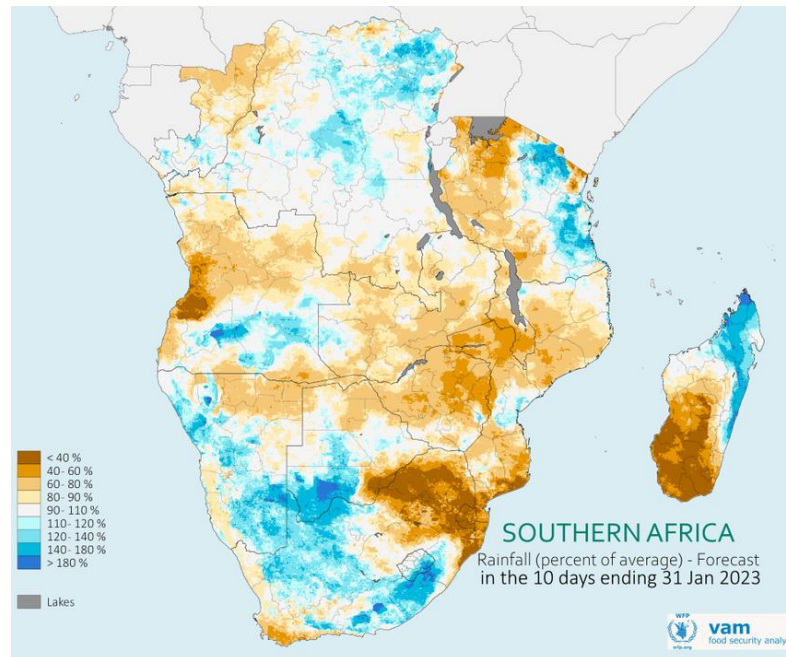
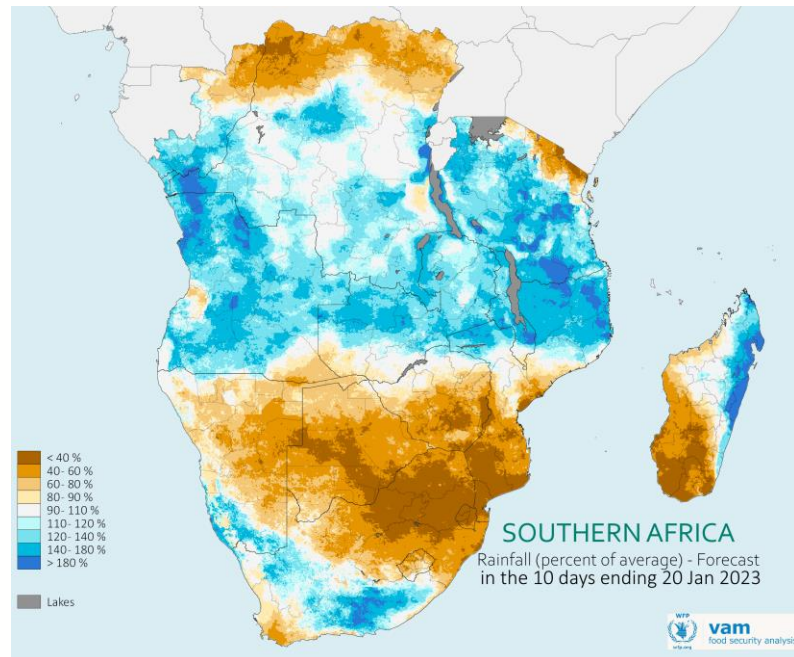
However, since December conditions have turned drier. Early planting, if it took place during the favourable rains, may now be suffering due to the dry conditions. Where planting didn't take place, the start of agricultural activities may be undergoing delays.

The broad patterns of growing season onset are consistent with a satellite vegetation indicator (NDVI, map centre): vegetation cover is higher than average in the areas of earlier onset of the season. Below average vegetation cover is seen in the areas of delayed onset.

Land temperature data also relates to these patterns: cooler than usual areas broadly correspond to where vegetation is developing earlier, while drier than average areas show warmer than usual temperatures, due to sparser vegetation cover and lower soil moisture.

SHORT RANGE OUTLOOK

Short Term Rainfall Forecast



The short-range outlook for mid-January (map left) indicates a wide area of drier than average conditions extending from Namibia across Botswana and Zimbabwe, into south and central Mozambique, the southern half of Madagascar and South Africa's NE main maize growing region. Elsewhere (Angola, Zambia and Northern Mozambique and Tanzania) should enjoy favourable rainfall.

In late January (map centre), dry conditions may continue in NE South Africa, most of Mozambique and Zimbabwe and intensify in south and central Madagascar (a reversal of the situation until early January). Overall, for the month of January, we expect the continuation of drier conditions in Namibia-Botswana, Zimbabwe and south and central Mozambique. NE South Africa and most of Madagascar should also experience of fairly drier than average month.

The key question is if these forecasts will verify and if so whether these drier than average conditions will continue throughout February. This could have significant consequences for crop production and pasture resources, depending on when the planting took place, as the risk of dry conditions during flowering of the maize crop increases.

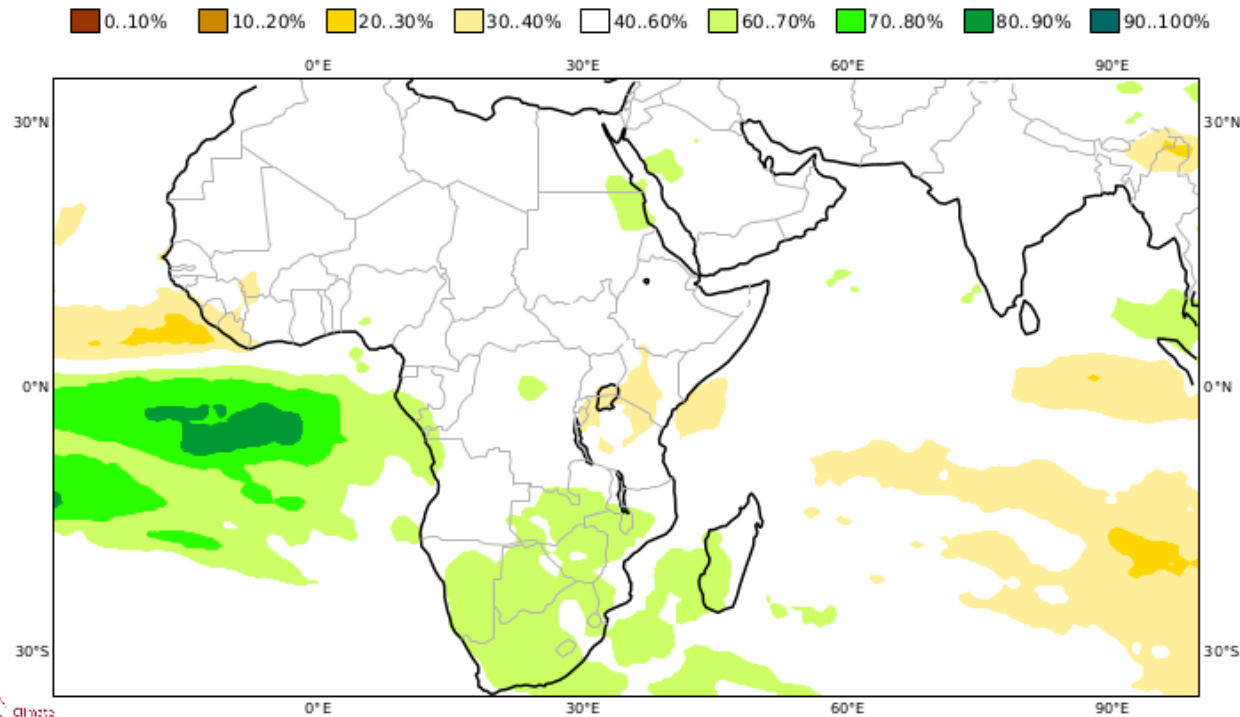
(Left) Forecasted rainfall in the second dekad of January 2023 as a proportion of the long-term average.

(Centre) Forecasted rainfall in the third dekad of January 2023 as a proportion of the long-term average.

(Right) Actual and forecasted rainfall combined into a January 2023 rainfall anomaly. Blues for above average conditions, oranges and browns for below average conditions

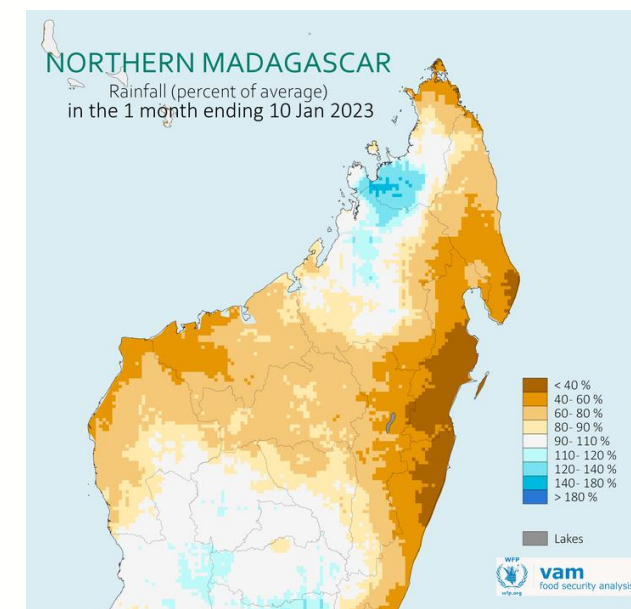
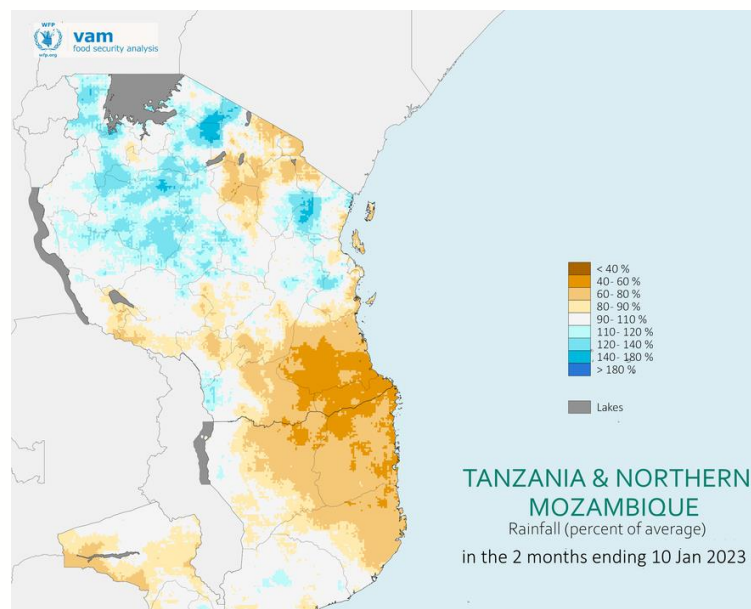
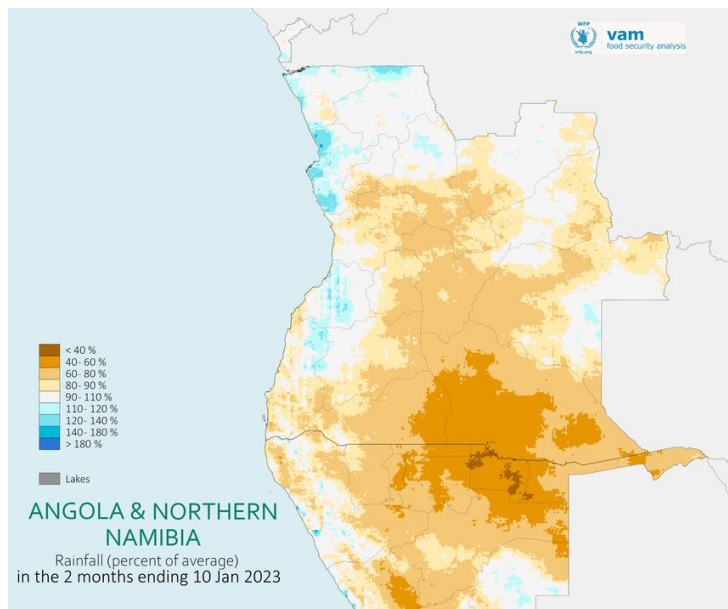
LONG RANGE OUTLOOK: January-March 2023

C3S multi-system seasonal forecast ECMWF/Met Office/Météo-France/CMCC/DWD/NCEP/JMA/ECCC
Prob(precipitation > median) FMA 2023
Nominal forecast start: 01/12/22
Unweighted mean



The long range forecasts from a variety of sources remain favourable for the February, March, April period. However, after the favourable early rains, the rest of the season is not necessarily developing in line with what the forecast models predicts.

AREAS OF CONCERN



While much of the region experienced favourable conditions at the start of the season followed by drier conditions in December, the area of southern Angola and northern Namibia and Tanzania and northern Mozambique have experienced below average rainfall throughout the season. In Angola and northern Namibia (map left) the areas of Cunene and Cuando Cubango have been particularly affected. In Tanzania and Mozambique (map centre), the areas of Mtwara, Lindi, Ruvuma and Cabo Delgado have been particularly affected.

The north-east coast of Madagascar has received consistently lower than average rainfall and is a cultivated area. In particular, the southern part of the districts of Analanjirofo and the northern part of the district of Atsinanana. The growing season onset relative to average in this region was over 3 dekads late. There will be heavy incoming rainfall this week due to the tropical systems developing in the SWIO, but whether it will be timely enough to support crops will have to be seen. Seasonal progress in these three areas will be closely monitored and reported on throughout the season.

FOR FURTHER INFORMATION:

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