



Food Security Early Warning System Agromet Update



2021/2022 Agricultural Season

Issue 04 Month: March

Season: 2021-2022

11-04-2022

Highlights

- Seasonal rainfall totals for the 2021-22 season are below normal in central parts of the region, south-western Madagascar, and south-western Angola. Crops in central parts of the region were negatively affected by dry conditions in February and early March, with reports of crop losses due to permanent wilting.
- After dry conditions in central parts of the region in February and early March, rainfall improved slightly in mid-March, but remained overall below normal.
- The region was hit by a series of five tropical storms and cyclones, affecting Madagascar, Mauritius, Mozambique, Malawi, Zambia, and Zimbabwe. The cyclones brought many adverse impacts, and over 200,000 hectares of crops were destroyed in Mozambique.
- The rainfall season in main maize-growing areas of South Africa performed well, with favourable rainfall received for much of the season.

Seasonal Rainfall Performance

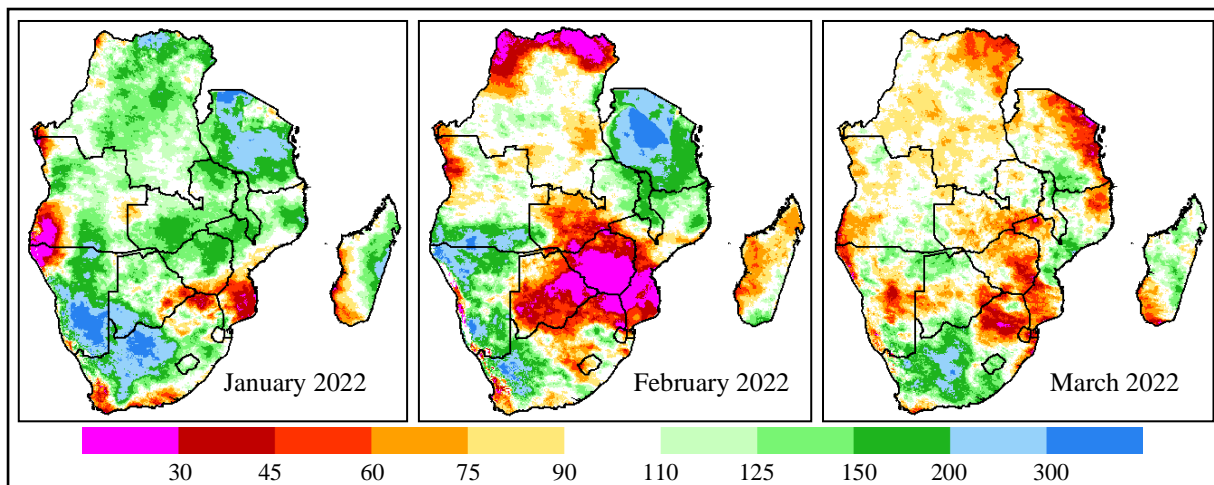


Figure 1. Rainfall for January to March 2022 as percent of average. *Source: CHIRPS, CHIRPS-Prelim*

After the prolonged dry conditions in February across central parts of the region (including eastern Botswana, southern and central Mozambique, northern South Africa, south-western and central Zambia, and Zimbabwe), rainfall improved in March, although remaining below normal in many areas. Below-average rainfall was also received in south-western Madagascar in January and March, and in parts of western Madagascar throughout the January to March period. As a result of the low rainfall in the central areas of the region and Madagascar, as well as the preceding very dry October to December 2021 period, the seasonal rainfall for the October 2021 to March 2022 period was well below normal in southern Mozambique, south-western Madagascar, south-western Angola, south-eastern Zimbabwe and western Namibia (Figure 2), while seasonal rainfall was also below normal in southern Madagascar, northern and central Mozambique, eastern Botswana, western half of Zambia, much of Zimbabwe, and north-eastern South Africa. In contrast, much of Tanzania, north-western

and south-eastern Angola, southern Namibia, southern Botswana, and much of South Africa received above-average seasonal rainfall. Malawi, the eastern half of Zambia, much of northern Mozambique, and central/eastern Madagascar received near-average seasonal rainfall totals, despite heavy rainfall that was received due to several cyclones affecting some of these areas. The seasonal totals in Malawi, the eastern half of Zambia, much of northern Mozambique, and central/eastern Madagascar areas are near normal despite the high rainfall received during cyclone events in late January to early-March period. The heavy rainfall during early 2022 decreased seasonal rainfall deficits; however, the poor temporal distribution of rainfall caused sub-optimal crop performance in a number of areas including parts of Malawi, Mozambique and Zimbabwe.

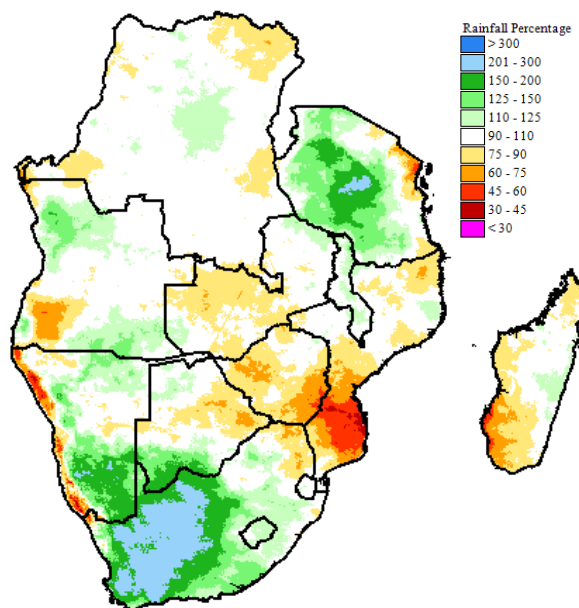


Figure 2. Rainfall for October 2021 to March 2022 as percent of average. *Source: CHIRPS, CHIRPS-Prelim*

Crop Conditions

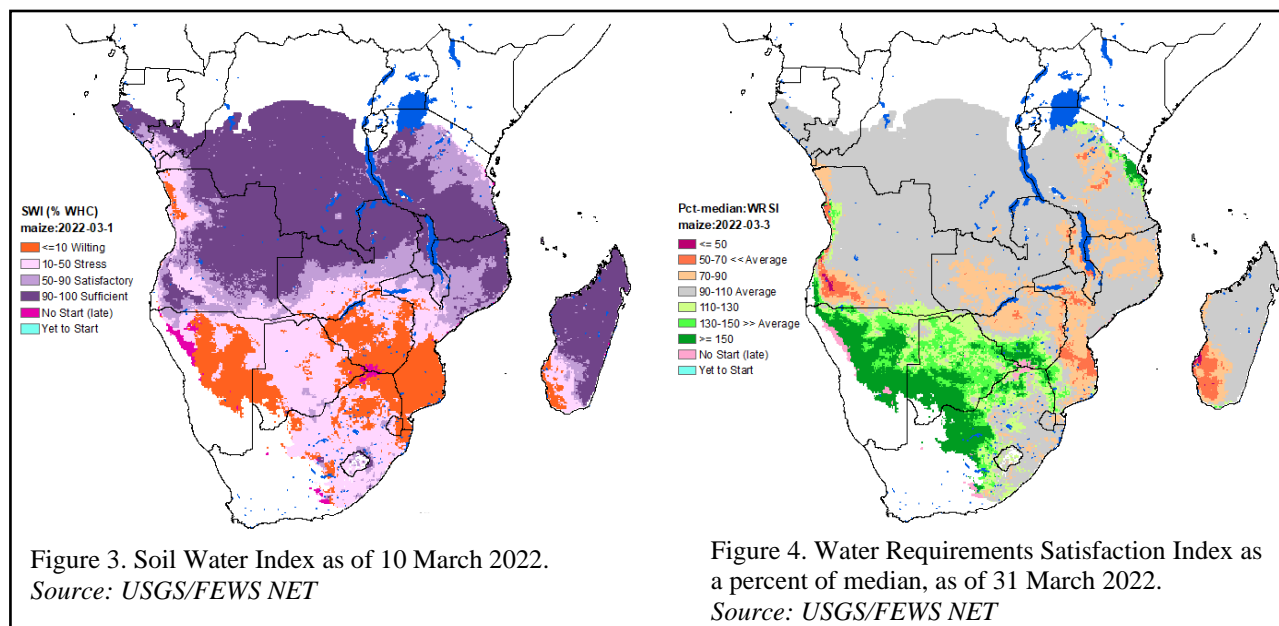


Figure 3. Soil Water Index as of 10 March 2022. *Source: USGS/FEWS NET*

Figure 4. Water Requirements Satisfaction Index as a percent of median, as of 31 March 2022. *Source: USGS/FEWS NET*

The prolonged dryness in February and early March caused a reduction in soil moisture available to crops in southern Mozambique, northern Namibia, north-eastern South Africa, and much of Zimbabwe, and by early March, soil moisture had reached permanent wilting point in some of these areas (Figure 3). While the precise impact of the dryness will depend to some extent on local farm management practices including use of conservation agriculture techniques, selection of crop variety and crop type (particularly drought tolerant varieties), soil management, and dates of planting, the general observation was that crops in many central areas were negatively affected. In southern Mozambique and in Zimbabwe, reports indicated that crops in several areas were a write-off, with little to no harvest due to drying up. Analysis of the water requirements satisfaction index (WRSI), which is an indicator showing the extent to which crops received the water they needed throughout the growing season, indicated that maize crops in many areas received a lower percentage of their water requirements than usual. Preliminary reports suggest that maize crops, which are the predominant crops grown in many of the affected areas, were more severely affected than other

drought-tolerant crops. These areas included southern and parts of northern Mozambique, parts of Zimbabwe, southern Madagascar, eastern Botswana, parts of Malawi, south-western Angola, and north-western Angola. Based on the relationship between WRSI and yield, it is likely that many of these areas may have experienced below average crop yields. In contrast, the main maize-growing areas of South Africa had average to above average WRSI due to the favourable rainfall conditions that persisted through much of the crop growing season.

Livestock and Pasture

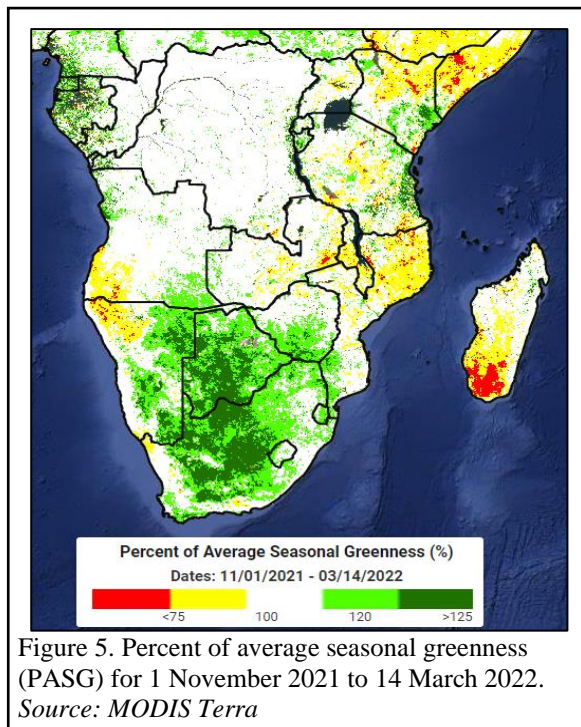


Figure 5. Percent of average seasonal greenness (PASG) for 1 November 2021 to 14 March 2022. Source: MODIS Terra

Despite the extended dry spell that affected central parts of the region, vegetation performed relatively well in these areas, based on an analysis of the the percent of average seasonal greenness (Figure 5). The PASG is the accumulated NDVI (vegetation index) compared to average conditions for the same period, and over the course of a season, it tends to give a good indicator of the total amount of biomass (e.g. grazing matter, in areas that are primarily grasslands) accumulated, and hence the amount of grazing available to livestock. Most parts of the region had above average PASG, except for southern Madagascar, where the PASG was well below average, and south-western Angola, north-western Namibia, Malawi, eastern Zambia and northern Mozambique, where the PASG was slightly below to well-below average. In these areas, grazing conditions are likely to have been negatively affected by the poor rainfall performance, especially in southern Madagascar where conditions are well

below average.

Cyclone Impacts

Five tropical storms and cyclones struck and affected several SADC Member States, including Madagascar, Malawi, Mauritius, Mozambique, South Africa, Zambia and Zimbabwe. The tropical storms and cyclones brought heavy rains and strong winds, causing significant flooding and landslides, and resulting in fatalities, displacements, destruction of infrastructure and flooding of cropped areas. This is a higher than average number of cyclone strikes for the season. Agricultural impacts include over 60,000 hectares of rice being flooded twice in eastern Madagascar from Intense Tropical Cyclones Batsirai and Emnati, with concerns for end-of-season rice production in Madagascar. In Mozambique, over 220,000 hectares of crops are estimated to have been lost due to the 3 cyclones and storms that struck Mozambique over the course of the season.

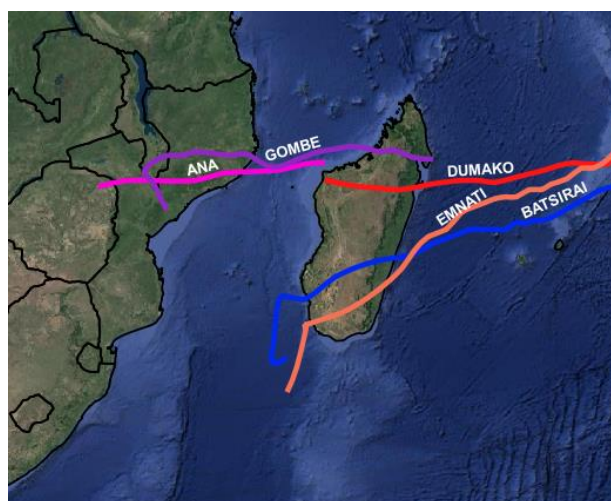


Figure 6. Tropical storms and Tropical Cyclones that have affected southern Africa in the 2021/2022 season. Data Source: IBTRACs, Google Satellite Imagery