SOUTHERN AFRICAN DEVELOPMENT COMMUNITY

CLIMATE SERVICES CENTRE (SADC-CSC)

REGIONAL CLIMATE MONTHLY MONITOR

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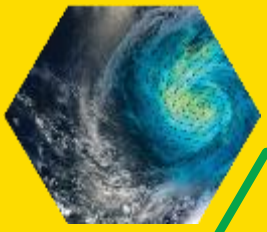

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INTRA-ACP CLIMATE SERVICES AND RELATED APPLICATIONS PROGRAMME

An initiative of the Organisation of African, Caribbean and Pacific States funded by the European Union

BENEFICIARIES

A. HIGHLIGHTS

- **Rainfall during the month of July 2024 was well below the monthly long-term average** over most of the contiguous SADC region, except over extreme north of DRC, and northern parts of Tanzania where above average rainfall was observed.
- **Persistent dry conditions continued** over much of the central and western parts of the sub-continent. Parts of southern Madagascar also experienced moderately dry conditions.
- The **minimum temperature anomalies** were mostly close to slightly above the long-term average over most of the SADC region.
- Positive **maximum temperatures anomalies of 2-4ºC above average,** were recorded almost everywhere within the subcontinent, during the month of July 2024.
- Almost 30 **days of daytime heat wave conditions were observed** in July over most of the southern part of the SADC region, and the northernmost part that encompasses the DRC. This was also noted over patchy areas of the western part of Madagascar.

1. REGIONAL RAINFALL PERFORMANCE

The rainfall during the month of July 2024 was well below the long-term monthly average over most of the eastern parts of the SADC region, except over patchy parts of the of the northern DRC and Tanzania, where above normal rainfall was observed. Most of the central parts of SADC, located in northern South Africa, Zimbabwe, Mozambique, south Tanzania and all Madagascar, received precipitation below normal or no precipitation at all, [Figure 1]. This pattern matches very well with the winter conditions, a season known to be dry in most parts of the subcontinent.

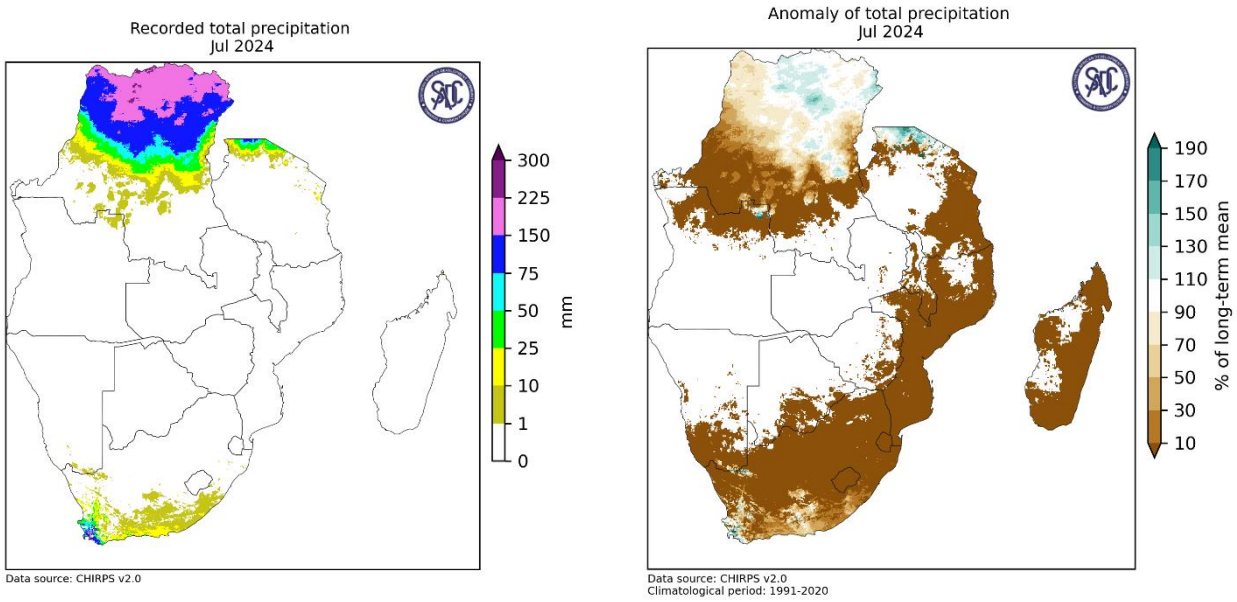

Figure 1: Observed rainfall (left) and rainfall anomaly (right) for the month of July 2024

1.1 Drought Monitoring

1.1.1 Seasonal and Annual Drought Assessment

Persistent drought conditions, defined by 12-month SPI (SPI-12) were prevalent over much of the region, with extremely dry conditions over the western fringes of Namibia, central parts of Angola and DRC and the northeaster parts of Mozambique. Moderate to very wet conditions were observed in most parts of Tanzania. Overall, the subcontinent experienced moderately dry conditions inferred from the 12-months SPI [Figure 2 left].

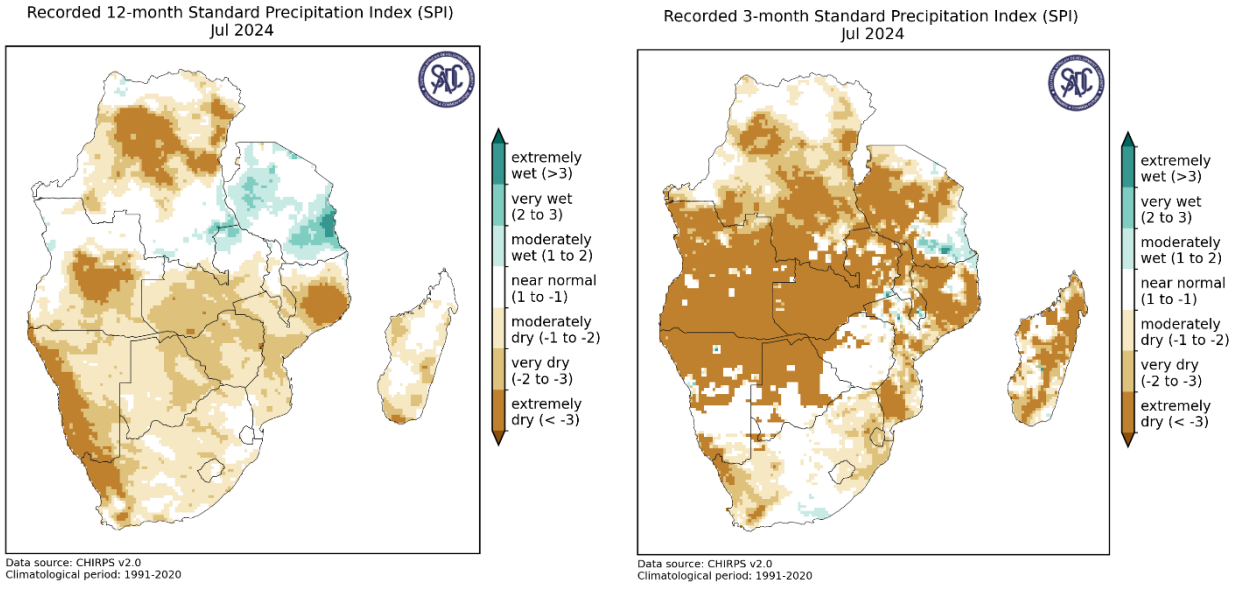

Figure 2: Drought assessment: SPI for 12-months (left) and 3-months SPI (right)

The 3-month Standardized Precipitation Index (SPI-3) is a meteorological drought indicator to monitor precipitation anomalies over 3-month accumulation periods and is a proxy indicator for immediate impacts of droughts including reduced soil moisture. It highlights that the drought was more severe over the western parts of the subcontinent covering the northernmost parts of Namibia and Botswana, all Angola and Zambia and parts of DRC, Mozambique and Tanzania.

1.1.2 Short term drought (dry spells)

Figure 3, shows that consecutive number of dry days ranging from 25 to 30 were recorded over most of the subcontinent including Madagascar in July, highlighting the winter patterns within the region, which is known to be dry during this period. The northern part of the region covering minor areas of northern Tanzania and DRC, and patches of southern South Africa and Mozambique recorded dry days less than 12 days.

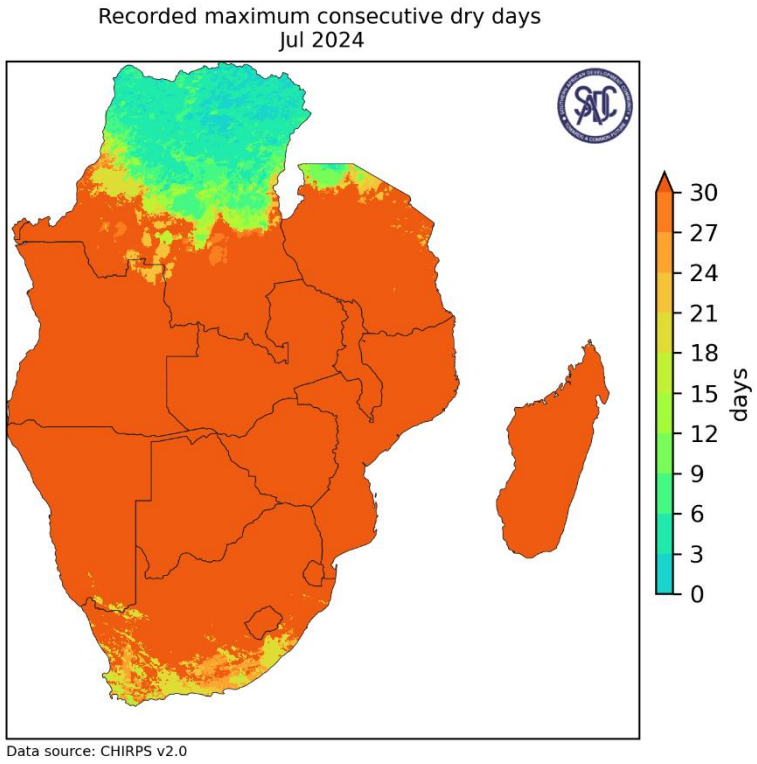

Figure 3: Dry spells prevalence during the month of July 2024

1.2 Extreme Rainfall

The whole subcontinent recorded no extreme precipitation, except the northernmost part of DRC, and parts of western Cape in South Africa, a region known to be dominated by mediterranean type of climate, where rainfall occurs in the winter, with records up to 100mm in a day around Cape Town, [Figure 4].

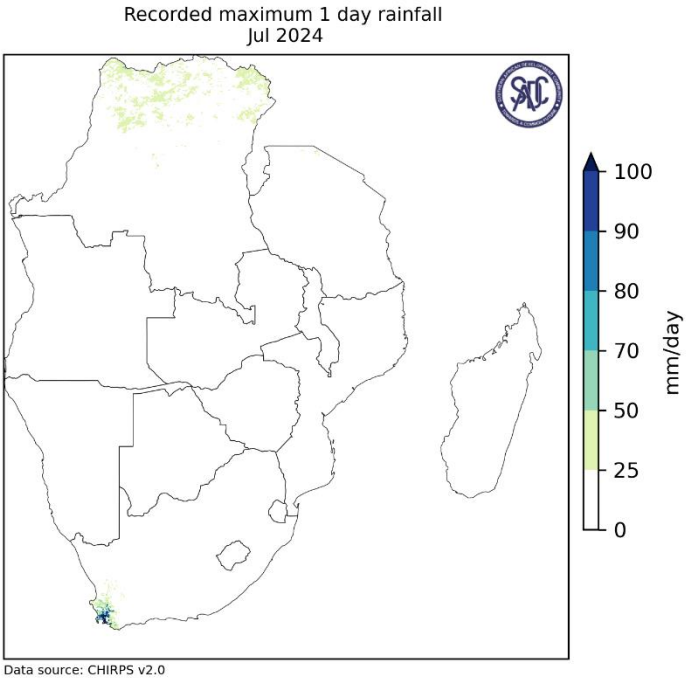

Figure 4: Maximum rainfall recorded over a one-day period during the month of July 2024

2. REGIONAL TEMPERATURE

2.1 Minimum Temperature

The average minimum of daily temperatures of 24 ^{0}C were recorded within most of DRC, and parts of Angola, Mozambique, Tanzania and most of Madagascar. The central and the southernmost parts of the region that cover most of Botswana, Zambia, South Africa, Zimbabwe, recorded minimum temperatures between 3 and -5^{0}C, [Figure 5 left]. The absolute anomaly of minimum temperatures, shows that they were positive over the northern parts of the region and within Mozambique and parts of Zimbabwe and Malawi, with amplitude of 3^{0}C. The whole region recorded anomalies of around, -3 ^{0}C, [Figure 5 right].

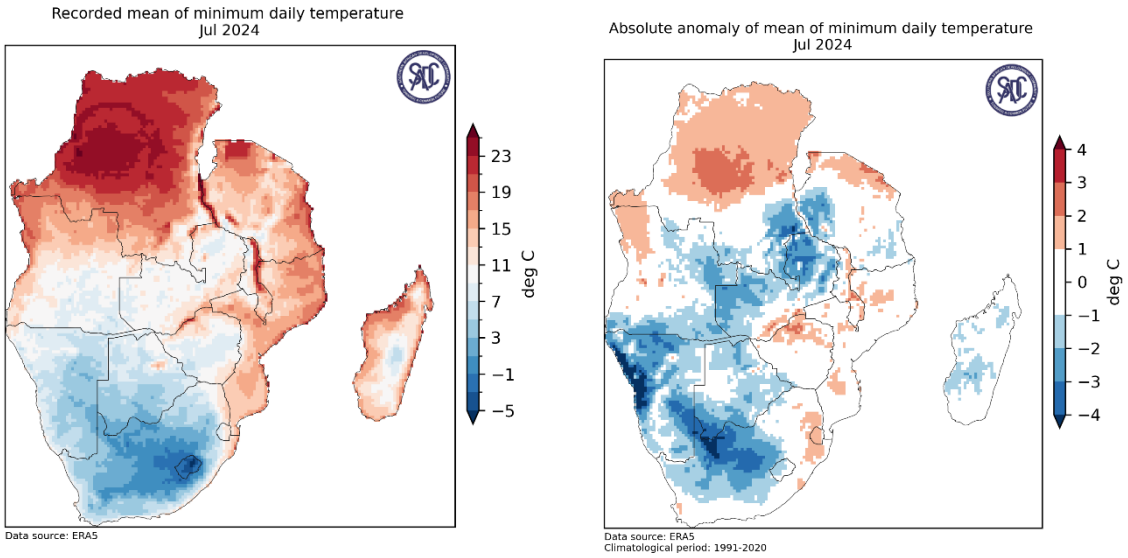

Figure 5: Observed average minimum temperature (left) and anomalies (right) for July 2024

2.2 Maximum Temperature

The average of maximum temperatures in July, peaked to above 35^{0}C over the central DRC. Other areas, especially the countries on the central parts, such as Angola, Zambia, north Botswana, Mozambique and Tanzania on the East, recorded maximums between 27 and 30^{0}C. Wester Madagascar also recorded similar maximums, but not the eastern side, which is highly impacted the Indian Ocean moisture fluxes, and hence cooler maximums of 21^{0}C. The southernmost tip of the subcontinent recorded even cooler maximums of less than 15^{0}C [Figure 6 left].

Positive absolute of maximum temperatures anomalies above 2-4^{o}C were recorded over the central parts of the region lying within southeast Angola, Northwest Namibia, Zambia, Botswana, and Zimbabwe. Likewise, parts of eastern Madagascar exhibited similar patterns. The wester fringe of the subcontinent covering parts of west Angola, west Namibia and west South Africa have recorded negative minimum anomalies within -1 and -4^{0}C, [Figure 6 right].

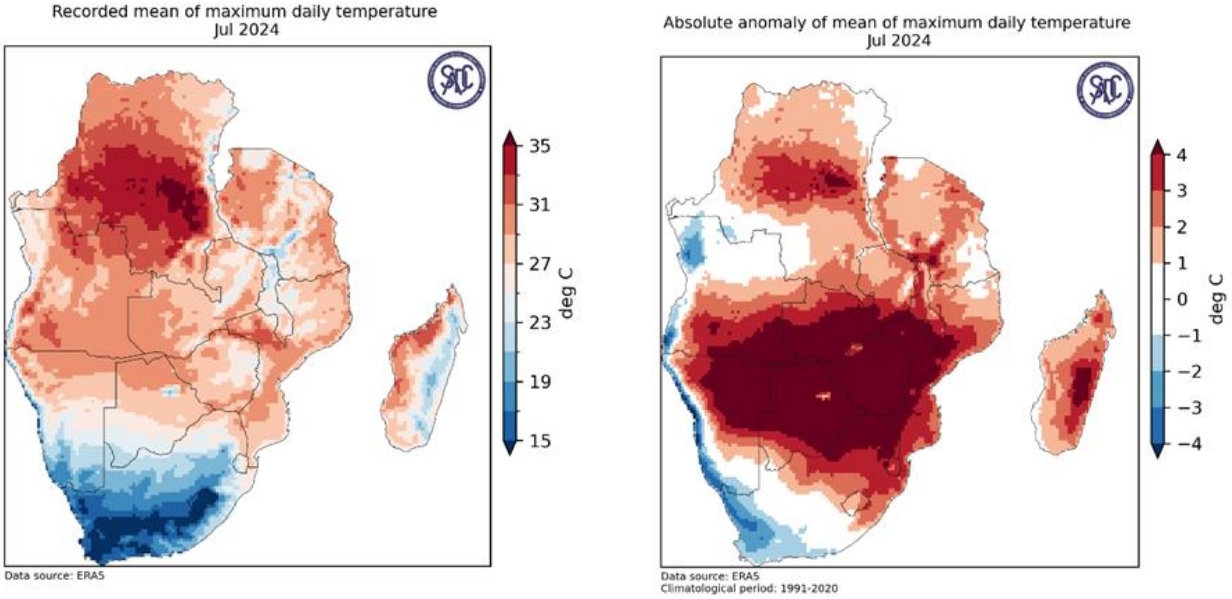

Figure 6: Observed maximum average temperature (left) and anomalies (right) for July 2024

2.3 Heatwaves

We distinguish here two types of heatwaves which differ in economic and human health impacts – daytime defined based on maximum temperature recorded during daytime, and night-time, defined based on minimum temperature recorded during nighttime.

Daytime heat waves of 24-30 days were recorded over most of the DRC and western Madagascar, [Figure 7 left].

Night-time heatwaves below 27 were recorded within the northern pards of the DRC, whereas the rest of the region recorded below 3 days, of the night time heat waves, [Figure 7 right].

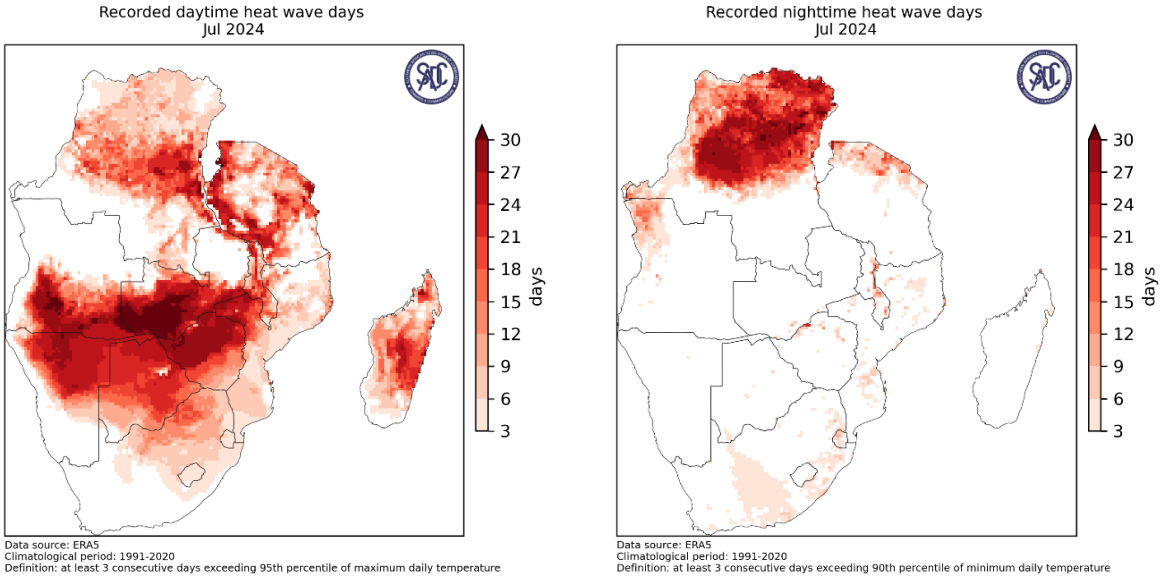

Figure 7: Heatwaves detected during the month of July 2024

NOTE:

This bulletin used CHIRPS and ERA5 data. While these datasets are considered broadly representative to local conditions over the SADC region, the results presented here may differ from those derived using local observations from Member States.

Users are therefore, urged to consult the local National Meteorological and Hydrological Services (NMHSs) for local conditions and detailed interpretation of the contents of this bulletin.

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