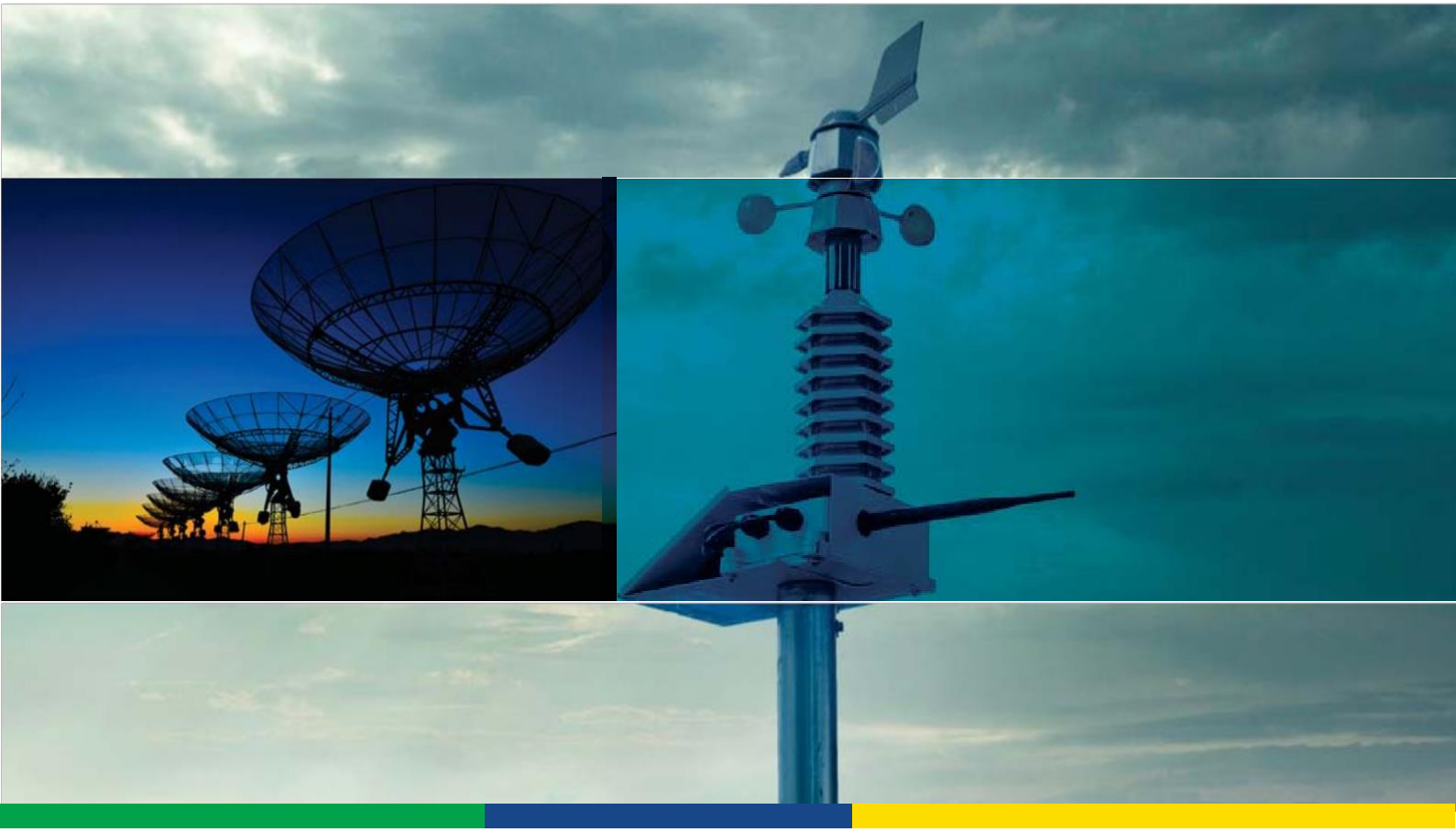
STATEMENT FROM THE TWENTY-NINTH SOUTHERN AFRICA REGIONAL CLIMATE OUTLOOK FORUM (SARCOF-29)

26 to 28 August 2024, Harare, Zimbabwe



STATEMENT FROM THE TWENTY-NINTH SOUTHERN AFRICAN REGIONAL CLIMATE OUTLOOK FORUM (SARCOF-29) HELD IN HARARE, ZIMBABWE, 26 – 28 AUGUST 2024.

SUMMARY

Bulk of the SADC region is likely to receive normal to above-normal rainfall for most of the period of October to December (OND) 2024 including Mauritius and central Madagascar, apart from north-western part of Democratic Republic of Congo where above-normal rainfall is expected. The remainder of the region is likely to normal to below normal rainfall during this period of the 2024/25 season including the island states of Comoros and Seychelles.

The period January to March (JFM) 2025 is expected to have normal to above normal rainfall for most of the region except for, south-western fringes of South Africa, south-eastern and western most of DRC, north-western Angola, Tanzania, northern Zambia, northern Malawi, northern Mozambique and central western tip of Madagascar where normal to below-normal rains are expected including Comoros and Seychelles. Northern Madagascar is likely to receive above normal rainfall during this period of the 2024/25 rainfall season.

Temperature outlook for the entire 2024/25 rainfall season are expected to be mostly above long-term averages over the whole SADC region.

STATEMENT FOR THE TWENTY-NINTH SOUTHERN AFRICA REGIONAL CLIMATE OUTLOOK FORUM (SARCOF-29)

The Twenty-Ninth Southern Africa Regional Climate Outlook Forum (SARCOF-29) was held in hybrid mode from 26 to 28 August 2024 to present a consensus outlook for the 2024/2025 rainfall season over the SADC region. Climate Experts from the SADC National Meteorological and/or Hydrological Services (NMHSs) and the SADC Climate Services Centre (CSC) formulated this Outlook. Inputs were acquired from African Centre for Meteorological Application for Development (ACMAD) and Global Producing Centres (GPCs) namely, European Centre for Medium Range Weather Forecast (ECMWF), National Oceanic and Atmospheric Administration (NOAA), Beijing Climate Centre (BCC), Météo-France, Australian Bureau of Meteorology (BoM), UK Met Office, Japan Meteorological Agency (JMA) and Korea Meteorological Agency (KMA). Inputs from International Research Institute for Climate and Society (IRI) and National Centre for Atmospheric Research (NCAR) were also used in this work. This Outlook covers the major rainfall season from October 2024 to March 2025. The Outlook is presented in overlapping three-monthly periods as follows: October-November-December (OND) 2024; November-December-January (NDJ), December-January-February (DJF) and January-February-March 2025.

NOTE: *This Outlook is relevant only to seasonal (overlapping three-monthly) timescales and relatively large areas and may not fully account for all factors that influence regional and national climate variability, such as local and month-to-month variations (intra-seasonal). As such, it must not be interpreted as indicating probable rainfall anomalies at sub-regional, country-level and local spatial scales, and at shorter - sub-seasonal (monthly) time scales.*

Users are strongly advised to contact the National Meteorological and Hydrological Services for interpretation of this Outlook, additional guidance, and updates.

METHODOLOGY

Using statistical analysis, other climate prediction schemes and expert interpretation, the climate scientists determined likelihoods of above-normal, normal, and below-normal rainfall for each area (Figures 1 to 4) for overlapping three-monthly periods i.e., October-November-December (OND), November-December-January (NDJ); and December-January-February (DJF) and January-February-March (JFM). Above-normal rainfall is defined as rainfall lying within the wettest third of recorded rainfall amounts recorded over the 1991-2020 period; below-normal is defined as within the driest third of rainfall amounts and normal is the middle third, centred on the climatological mean. Figures 5(a), 5(b), 5(c) and 5(d) show the Long-term (1971-2000) mean rainfall for October-November-December, November-December-January, December-January-February and January-February-March seasons, respectively, over SADC countries.

The climate scientists took into account oceanic and atmospheric factors that influence the climate over the SADC region. These include the El Niño-Southern Oscillation (ENSO), which is currently in Neutral phase. The ENSO is projected to reach a weak La Nina phase during the forecast period. Another driver affecting SADC's regional climate, the Indian Ocean Dipole (IOD) is currently in a neutral phase and is forecasted to remain neutral throughout the 2024-2025 rainfall season..

OUTLOOK

The period October to March is the main period of interest for this outlook for Southern Africa. Owing to the differences and evolution patterns in the predominant rainfall-bearing systems, the rainy season has been subdivided into three overlapping three-month periods (i.e., OND, NDJ, DJF and JFM as defined below).

FIGURE CAPTION

It is emphasis d that boundaries between zones should be considered as transition areas. Outlook information is provided only for countries that comprise the Southern Africa Development Community (SADC) region.

The colours for each zone indicate four forecast categories (above normal, normal to above normal, normal to below normal and below normal) representing different probabilities of rainfall anomalies.

The first colour (blue) indicates that the above normal rainfall has the highest probability of occurring.

The second colour (cyan) indicates the highest probability of normal rainfall, but with increased probability of above normal.

The third colour (yellow) indicates the highest probability of normal rainfall but with increased chance for below-normal rainfall.

The last colour (brown) indicates that the below normal rainfall has the highest probability of occurring.

The probabilities associated with each category are listed in inset in the bottom-right corner of the figure. For example, Figure 1, for Zone 2 with the colour yellow, depicts that there is the highest probability of normal rainfall (40% chance), but with increased probability of below normal (35% chance) and lower probability of above normal rainfall (25% chance).

In addition to forecast categories, the outlook maps present information about forecast confidence. This has been derived based on 1) level of agreement of various forecasting approaches in terms of direction and magnitude of forecasted anomalies, 2) ability of these approaches to correctly predict anomalies during previous forecasts and 3) level of confidence in the forecast expressed by the forecasters based on their knowledge and understanding of the regional climate system. Increased level of confidence in the forecast reflects the higher likelihood that the forecast is correct.

Figure 1: Rainfall forecast for February-March-April 2024

OCTOBER-NOVEMBER-DECEMBER 2024

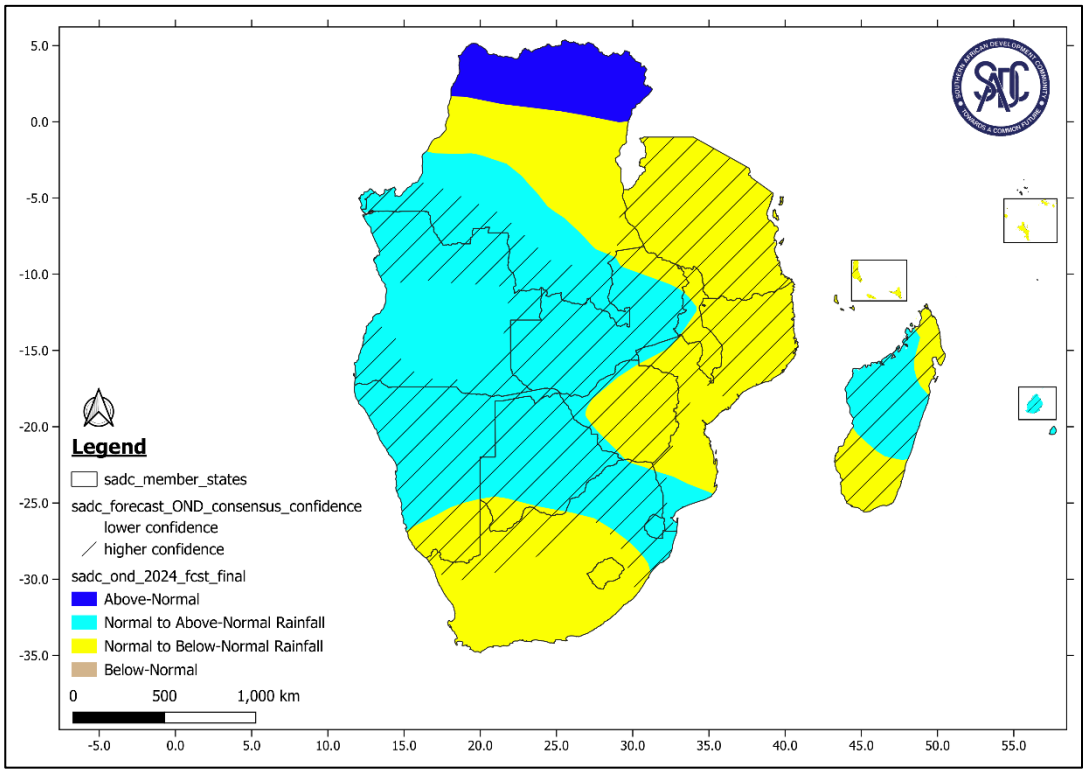


Figure 1: Rainfall forecast for October-November-December 2024

Zone 1: Northern Democratic Republic of Congo (DRC)
Increased chances of above normal rainfall

Zone 2: Central DRC, northern fringes of Zambia, eastern most Malawi, Tanzania, most of Mozambique and Zimbabwe.
Normal rainfall with increased chances of below-normal rainfall (High Confidence)

Zone 3: Southern DRC, Angola, most of Namibia, Zambia, Botswana, western fringes of Zimbabwe, north-eastern South Africa, southern Mozambique and eSwatini.
Increased chances of above normal rainfall (High Confidence)

Zone 4: Southern Namibia, southern Botswana, most of South Africa and Lesotho.
Normal rainfall with increased chances of below-normal rainfall (High Confidence)

Zone 5: Southern Madagascar.
Normal rainfall with increased chances of below-normal rainfall

Zone 6: Central Madagascar.
Normal rainfall with increased chances of above-normal rainfall

Zone 7: Northern Madagascar.
Normal rainfall with increased chances of below-normal rainfall (High Confidence)

Zone 8: Mauritius.
Normal rainfall with increased chances of above-normal rainfall (High Confidence)

Zone 9: Seychelles.
Normal rainfall with increased chances below-normal rainfall

Zone 10: Comoros.
Normal rainfall with increased chances of below-normal rainfall

NOVEMBER-DECEMBER 2024-JANUARY 2025

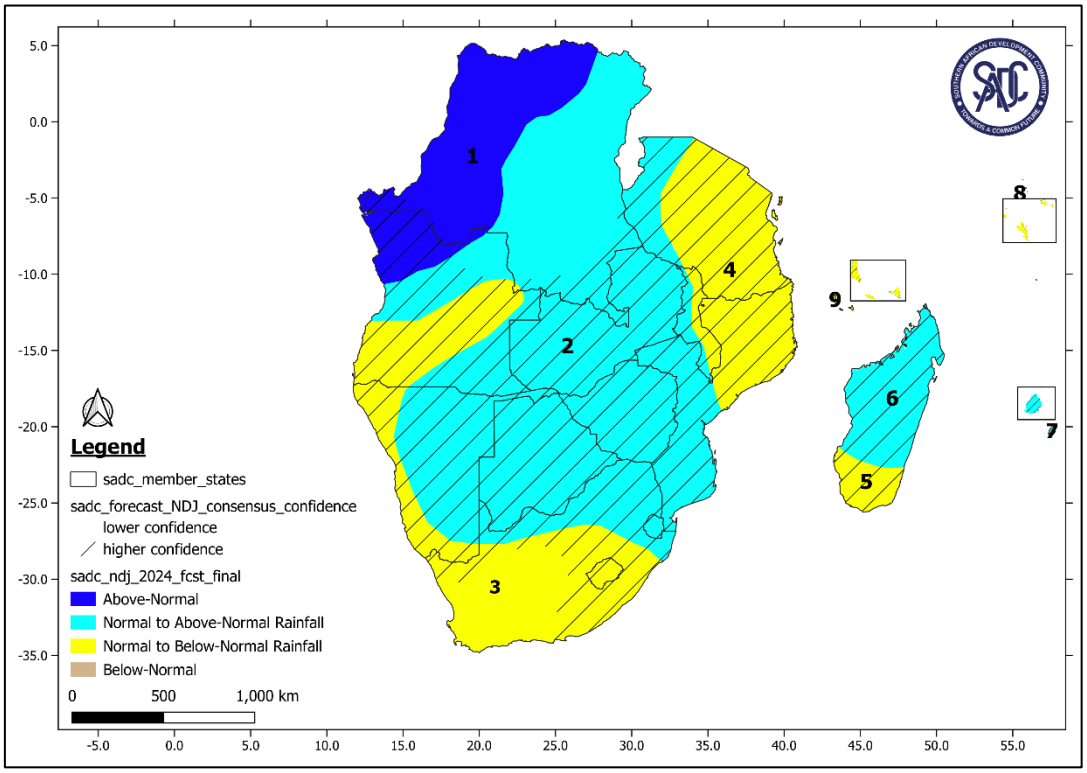


Figure 2: Rainfall forecast for November-December 2024, January 2025

Zone 1: Western DRC and north-western Angola.
Increased chances of above normal rainfall (High Confidence)

Zone 2: Central and southern Angola, eastern most DRC, North-western Tanzania, Zambia, Zimbabwe, Botswana, most of Namibia western Malawi, central to southern Mozambique, eSwatini and north-eastern South Africa.
Normal rainfall with increased chances of above-normal rainfall (High Confidence)

Zone 3: Central to south-western Angola, western coastal Namibia, most of central South Africa and Lesotho
Normal rainfall with increased chances of below-normal rainfall

Zone 4: Bulk of Tanzania, eastern Malawi and northern Mozambique
Normal rainfall with increased chances of below-normal rainfall (High Confidence)

Zone 5: Southern Madagascar
Increased chances of below normal rainfall

Zone 6: Central and Northern Madagascar.
Normal rainfall with increased chances of above-normal rainfall

Zone 7: Mauritius
Normal rainfall with increased chances of above-normal rainfall

Zone 8: Seychelles.
Normal rainfall with increased chances of below-normal rainfall

Zone 9: Comoros.
Normal rainfall with increased chances of below-normal rainfall

DECEMBER 2024, JANUARY-FEBRUARY 2025

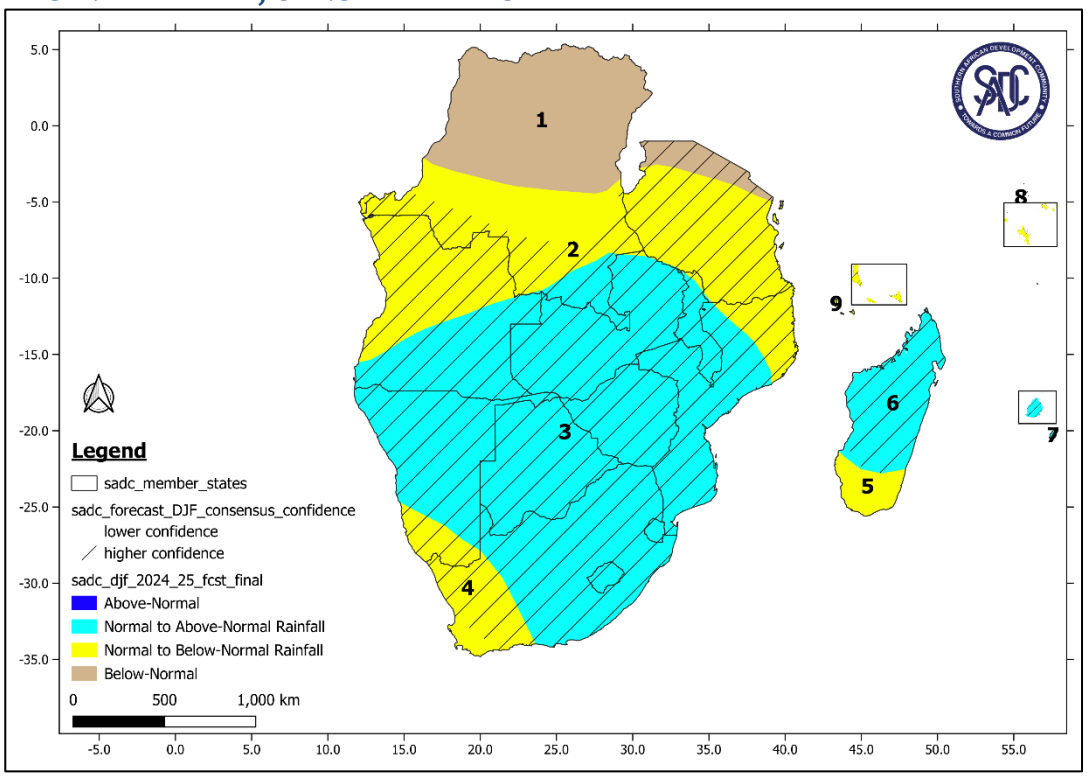


Figure 3: Rainfall forecast for December 2024, January-February 2025

Zone 1: Northern fringes of Tanzania and northern half of DRC.
Increased chances of below normal rainfall

Zone 2: Most of Tanzania, north-eastern Mozambique, northern tip of Malawi, southern most DRC and Angola.
Normal rainfall with increased chances of below-normal rainfall (High Confidence)

Zone 3: South-eastern Angola, most of Namibia, Botswana, Zambia, Zimbabwe, Malawi, most of South Africa, Lesotho, eSwatini, and most of Mozambique.
Normal rainfall with increased chances of above-normal rainfall (High Confidence)

Zone 4: South-western Namibia and south-western South Africa.
Normal rainfall with increased chances of below-normal rainfall

Zone 5: Southern Madagascar.
Normal rainfall with increased chances of below-normal rainfall

Zone 6: Central and northern Madagascar.
Normal rainfall with increased chances of above-normal rainfall

Zone 7: Mauritius.
Normal rainfall with increased chances of above-normal rainfall

Zone 8: Seychelles.
Normal rainfall with increased chances of below-normal rainfall

Zone 9: Comoros.
Normal rainfall with increased chances of below-normal rainfall

JANUARY-FEBRUARY-MARCH 2025

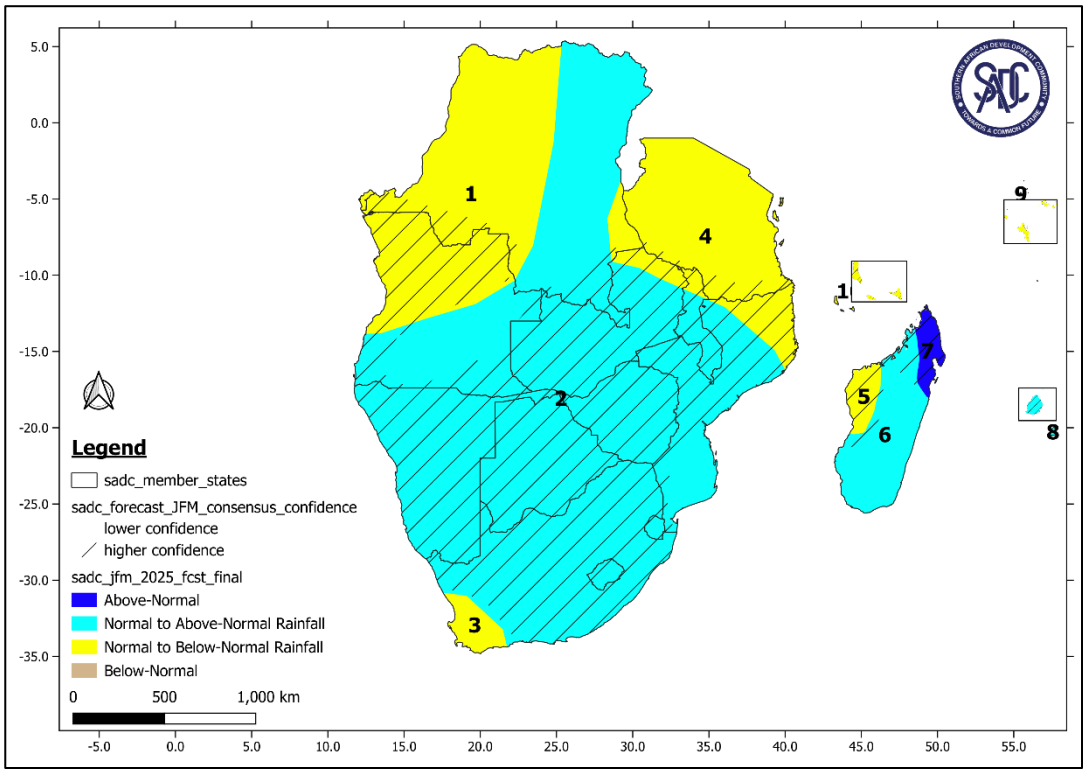


Figure 1: Rainfall forecast for January-February-March 2025

Zone 1: Western DRC and north western Angola.
Normal rainfall with increased chances of below-normal rainfall (High Confidence)

Zone 2: Eastern DRC, southern Angola, most of Zambia, Malawi, Zimbabwe, Botswana, Namibia, most of South Africa, Lesotho, Eswatini and most of Mozambique.
Normal rainfall with increased chances of above-normal rainfall (High Confidence)

Zone 3: South-western fringes of South Africa.
Normal rainfall with increased chances of below-normal rainfall

Zone 4: Tanzania, eastern fringes of DRC, northern fringes of Zambia, northern Malawi and northern Mozambique.
Normal rainfall with increased chances of below-normal rainfall (High Confidence)

Zone 5: Western Madagascar.
Normal rainfall with increased chances of below-normal rainfall

Zone 6: Bulk of Madagascar.
Normal rainfall with increased chances of above-normal rainfall

Zone 7: Northern tip of Madagascar.
Increased chances of above normal rainfall

Zone 8: Mauritius.
Normal rainfall with increased chances of above-normal rainfall

Zone 9: Seychelles.
Increased chances of below normal rainfall

Zone 10: Comoros.
Increased chances of below normal rainfall

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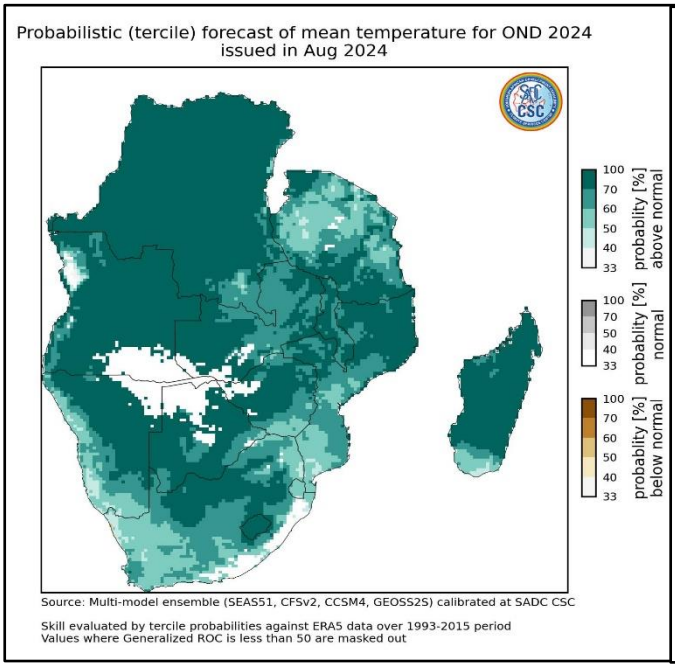
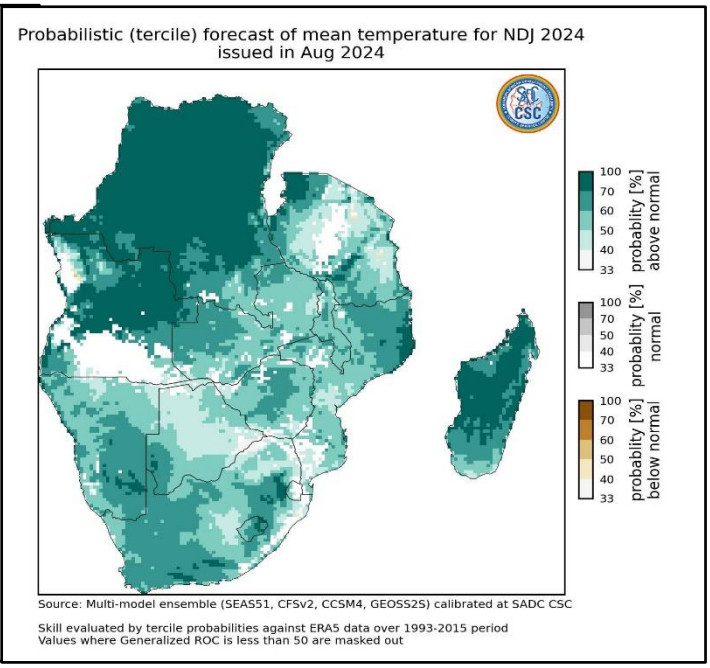
TEMPERATURE OUTLOOK

The period October to March is the main period of interest for this outlook for Southern Africa. Temperature outlook covering the period from October 2024 to January 2025 indicates a highly likelihood for above normal temperatures in most parts of the region.

OCTOBER-NOVEMBER-DECEMBER 2024

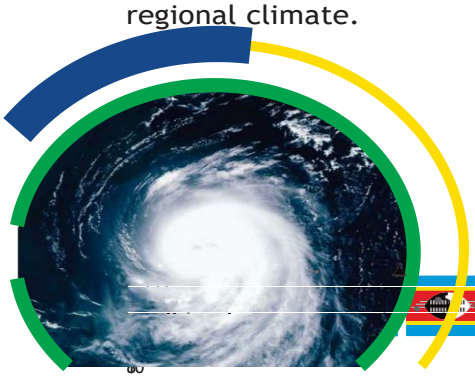


NOVEMBER-DECEMBER 2024-JANUARY 2025



OVERVIEW OF DYNAMICAL MODELS FORECAST FROM GLOBAL PRODUCING CENTRES

The above presented outlook is broadly consistent with the forecasts generated with the multi-model ensemble of international dynamical climate forecast models presented by the World Meteorological Organization. In summary, increased probability of normal to above normal conditions is forecasted consistently across the October to March 2024/25 period for the central part of SADC region (Zambia, Botswana, Zimbabwe and central Mozambique) as well as small island states of Mauritius. Increased probability of normal to below normal conditions during the October to December (OND) period is forecasted for central DRC, Tanzania, northern Zambia, Malawi, Northern Mozambique, parts of Madagascar, Seychelles and southern South Africa. The ensemble has a demonstrated forecast skill in central parts of the SADC region, and over Tanzania, but limited elsewhere, including Madagascar. The forecasted probabilities are broadly consistent with the known influence of La Niña on the regional climate.



LONG-TERM MEAN SEASONAL RAINFALL (1971-2000)

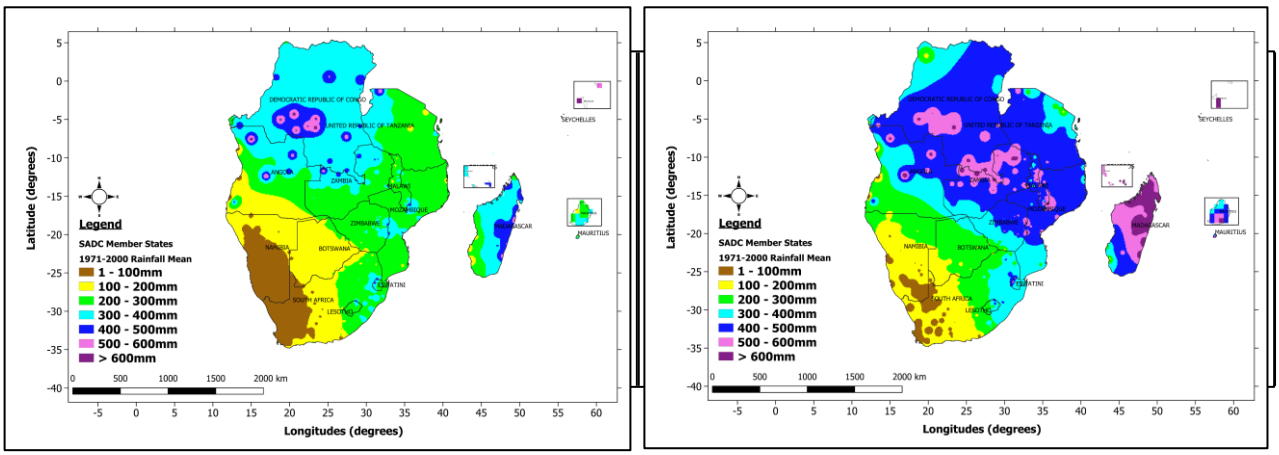


Figure 4, Long-term mean rainfall over SADC countries (a) October-November-December and (b) November-December-January (1971-2000).

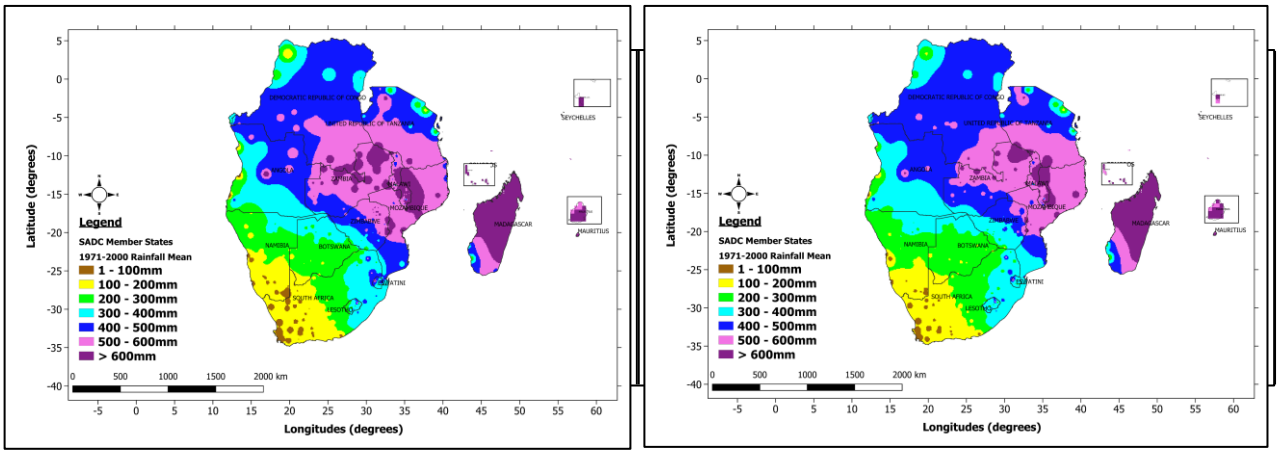


Figure 5, Long-term mean rainfall over SADC countries (c) December-January-February and (d) January-February-March (1971-2000).

The long-term median rainfall for October-November-December (Figure 5(a)), increases from Southwest to Northeast over contiguous SADC in either case. Over Madagascar the rains increase from West to East, while the rains are more uniformly distributed in Comoros, Mauritius and Seychelles. The November- December-January long-term median total rainfall (Figure 5(b)) shows maxima of above 500 millimetres over much of Malawi, Zambia, Angola, southern half of DRC, central and Northern Mozambique as well as Mauritius, Madagascar and Seychelles. The remainder of the region receives rainfall less than 400 millimetres gradually decreasing south-westwards to southwest of South Africa and Namibia where the median rainfall is below 100 millimetres.

The long-term median for December-January-February rainfall (Figure 5(c)) shows maxima of above 600 millimetres over much of Malawi, Zambia, Angola, southern half of DRC, central and northern Mozambique as well as Mauritius, Madagascar and Seychelles. The remainder of the region receives rainfall less than 400 millimetres gradually decreasing south-westwards to southwest South Africa and Namibia where the median rainfall is below 100 millimetres. For January-February-March rainfall (Figure 5(d)) shows maxima of above 600 millimetres over much of Malawi and upper parts the region.

SPONSORSHIP

The Twenty-Ninth Southern Africa Climate Outlook Forum Update was hosted in Harare, Zimbabwe with support from SADC Member States, European Union through the Intra-ACP Climate Services, and related Applications (ClimSA) project, and other partners such as WFP and UK Met Wiser Project.

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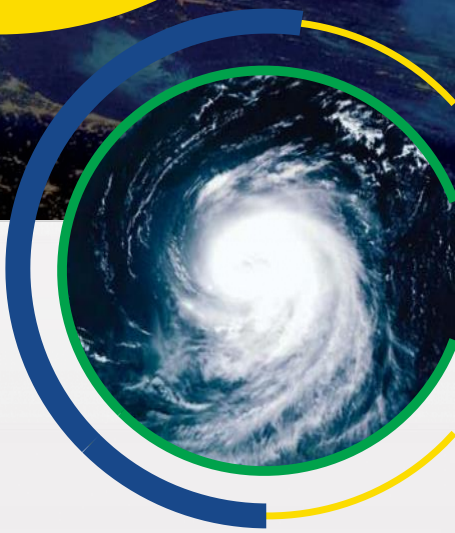

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