



# STATEMENT FROM THE TWENTY-SEVENTH SOUTHERN AFRICA REGIONAL CLIMATE OUTLOOK FORUM (SARCOF-27)



26 to 28 September 2023, Mauritius



## SARCOF-27 SEASONAL RAINFALL OUTLOOK STATEMENT



### STATEMENT FROM THE TWENTY-SEVENTH SOUTHERN AFRICA REGIONAL CLIMATE OUTLOOK FORUM (SARCOF-27) HELD AT OCEAN CREEK, MAURITIUS, 26 – 28TH SEPTEMBER 2023.

#### SUMMARY

Bulk of the SADC region is likely to receive normal to below-normal rainfall for most of the period October to December (OND) 2023, apart from north-western part of Angola, much of Democratic Republic of Congo, southern half of United Republic of Tanzania, north-eastern Zambia, northern Malawi, northern Mozambique, Comoros, eastern Madagascar, and Mauritius where normal to above-normal rains are expected. The northern half of the United Republic of Tanzania and Seychelles are likely to receive above normal rainfall during this period of the 2023/24 season.

The period December, January and February (DJF) 2023/24 is expected to have normal to above normal rainfall for most of the region except for, south-western fringes of Namibia, south-western South Africa, southern part of Zimbabwe, eastern half of Botswana, northern South Africa, Eswatini and southern Mozambique where normal to below-normal rains are expected. Southernmost Madagascar will likely receive below normal rainfall during this period of the 2023/24 season. Seychelles is likely to receive above normal rainfall during this period of the 2023/24 season



## SARCOF-27 SEASONAL RAINFALL OUTLOOK STATEMENT

### STATEMENT FOR THE TWENTY-SEVENTH ANNUAL SOUTHERN AFRICA REGIONAL CLIMATE OUTLOOK FORUM (SARCOF-27)

The Twenty-Seventh Annual Southern Africa Regional Climate Outlook Forum (SARCOF-27) was held virtually from 26 to 28 September 2023 to present a consensus outlook for the 2023/2024 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 2023 to February 2024. The Outlook is presented in overlapping three-monthly periods as follows: October–November–December (OND); November–December–January (NDJ) and December–January–February (DJF).

**NOTE: This Outlook is relevant only to seasonal (three-monthly) timescales and relatively large areas and may not fully account for all factors that influence sub-regional, country-level and local climate variability. 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 3) for overlapping three-monthly periods i.e., October–November–December (OND), November–December–January (NDJ); and December–January–February (DJF). Above-normal rainfall is defined as rainfall lying within the wettest third of recorded rainfall amounts recorded over the 1981–2010 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) and 5(c) show the Long-term (1981–2010) mean rainfall for October–November–December, November–December–January, and December–January–February 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 a El Niño phase. The ENSO is projected to remain in the El Niño phase during the forecast period. Another driver affecting SADC’s regional climate - Indian Ocean Dipole (IOD) is currently in a positive state and is forecasted to shift into neutral toward the end of the 2023–2024 rainy season.

## SARCOF-27 SEASONAL RAINFALL OUTLOOK STATEMENT

### OUTLOOK

The period October to February 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 as defined below).

### FIGURE CAPTION

It is emphasised 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 categories: above-normal, normal-to-above, normal-to-below and below-normal, differing in probabilities of rainfall in each of the three tercile categories (below normal, normal and above normal as per legend in the figure). The first colour (blue) indicates the highest probability of rainfall occurring in the above-normal tercile, the second colour (cyan) indicates the highest probability of normal rainfall, but with a tendency to above-normal rainfall. The third colour (yellow) represents the highest probability for normal but with a tendency to below-normal rainfall. The last colour (brown) indicates the highest probability of below-normal rainfall. For example, in Figure 1, for Zone 4 with the colour yellow, depicts that there is a probability of rainfall occurring in the normal-to-below-normal category.

### OCTOBER-NOVEMBER-DECEMBER 2023

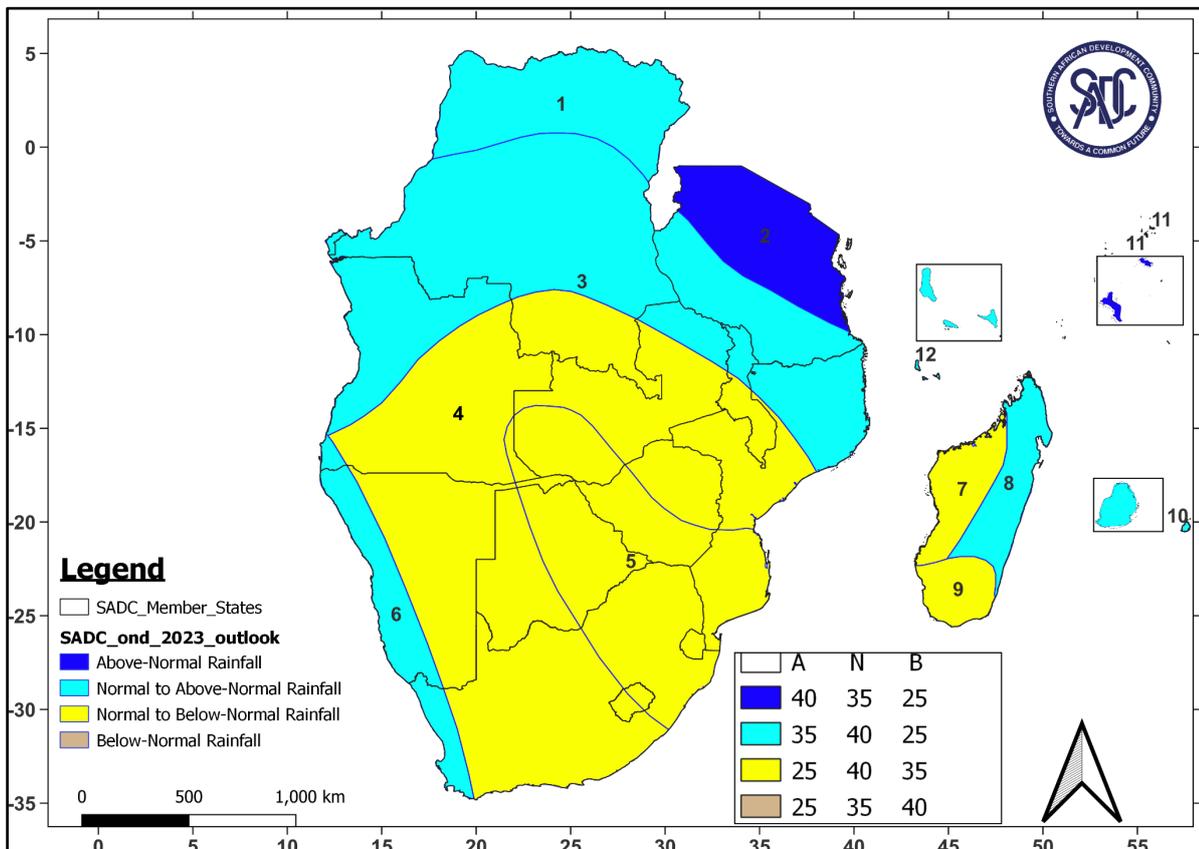


Figure 1: Rainfall forecast for October-November-December 2023



## SARCOF-27 SEASONAL RAINFALL OUTLOOK STATEMENT

- Zone 1: Northern Democratic Republic of Congo (DRC)**  
Increased chances of normal to above-normal rainfall
- Zone 2: Northern Tanzania**  
Increased chances of above normal rainfall
- Zone 3: Northern Mozambique, Southern Tanzania, northern Malawi, northeastern Zambia, bulk of DRC and north-western part of Angola.**  
Increased chances of normal to above-normal rainfall
- Zone 4: Central Mozambique, southern Malawi, northern half of Zimbabwe, most of Zambia, southernmost DRC, south-eastern half of Angola, bulk of Namibia, western half of Botswana, most of central and western parts of South Africa, western parts of Lesotho.**  
Increased chances of normal to below-normal rainfall
- Zone 5: Much of Zambia, Kavango area, south-easternmost Angola, south-western half of Zimbabwe, eastern half of Botswana, most of northern South Africa, eastern Lesotho, Eswatini, and southern Mozambique.**  
Increased chances of normal to below-normal rainfall
- Zone 6: South-western most Angola and western coastal areas of Namibia and western fringes of South Africa.**  
Increased chances of normal to above-normal rainfall
- Zone 7: Western Madagascar.**  
Increased chances of normal to below-normal rainfall
- Zone 8: Eastern Madagascar.**  
Increased chances of normal to above-normal rainfall
- Zone 9: Southern Madagascar**  
Increased chances of normal to below-normal rainfall
- Zone 10: Mauritius.**  
Increased chances of normal to above-normal rainfall
- Zone 11: Seychelles.**  
Increased chances of above normal rainfall
- Zone 12: Comoros.**  
Increased chances of normal to above-normal rainfall

**SARCOF-27 SEASONAL RAINFALL OUTLOOK STATEMENT**

**NOVEMBER–DECEMBER 2023–JANUARY 2024**

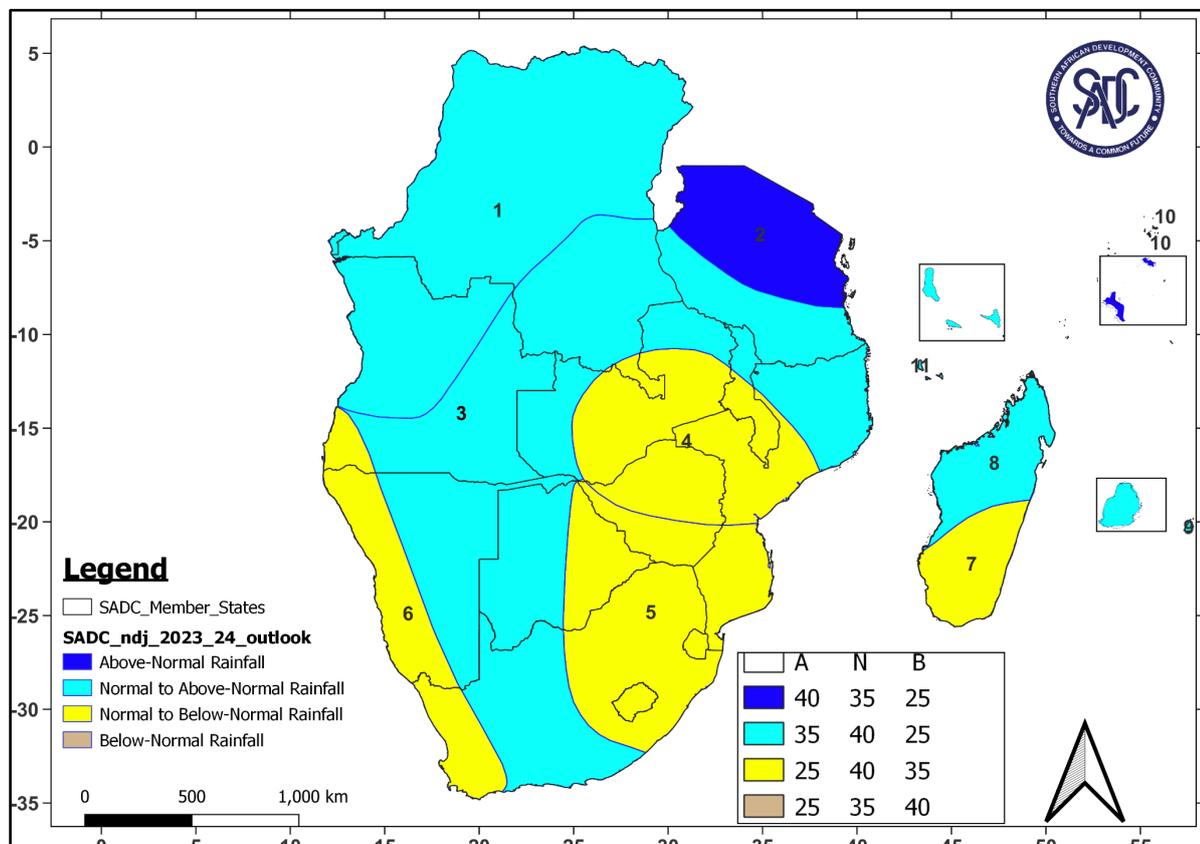


Figure 2: Rainfall forecast for November-December 2023-January 2024

- Zone 1:** Bulk of DRC and north-western Angola.  
Increased chances of normal to above-normal rainfall
- Zone 2:** Northern half of Tanzania.  
Increased chances of above normal rainfall
- Zone 3:** Northern Mozambique, southern half Tanzania, northern Malawi, northern and western Zambia, southernmost DRC, bulk of Angola, eastern half of Namibia, western half of Botswana, most of central South Africa.  
Increased chances of normal to above-normal rainfall
- Zone 4:** Central parts of Zambia, southern Malawi, northern half of Zimbabwe and central parts of Mozambique.  
Increased chances of normal to below-normal rainfall
- Zone 5:** Southern half of Zimbabwe, eastern half of Botswana, north and central South Africa, Lesotho, Eswatini and southern Mozambique.  
Increased chances of normal to below-normal rainfall
- Zone 6:** South-westernmost Angola, western fringes of Namibia and western fringes of South Africa.  
Increased chances of normal to below-normal rainfall

## SARCOF-27 SEASONAL RAINFALL OUTLOOK STATEMENT

- Zone 7: Southern Madagascar.**  
Increased chances of normal to below-normal rainfall
- Zone 8: Northern Madagascar.**  
Increased chances of normal to above-normal rainfall
- Zone 9: Mauritius.**  
Increased chances of normal to above-normal rainfall
- Zone 10: Seychelles.**  
Increased chances of above normal rainfall
- Zone 11: Comoros.**  
Increased chances of normal to above-normal rainfall

### DECEMBER 2023–JANUARY–FEBRUARY 2024

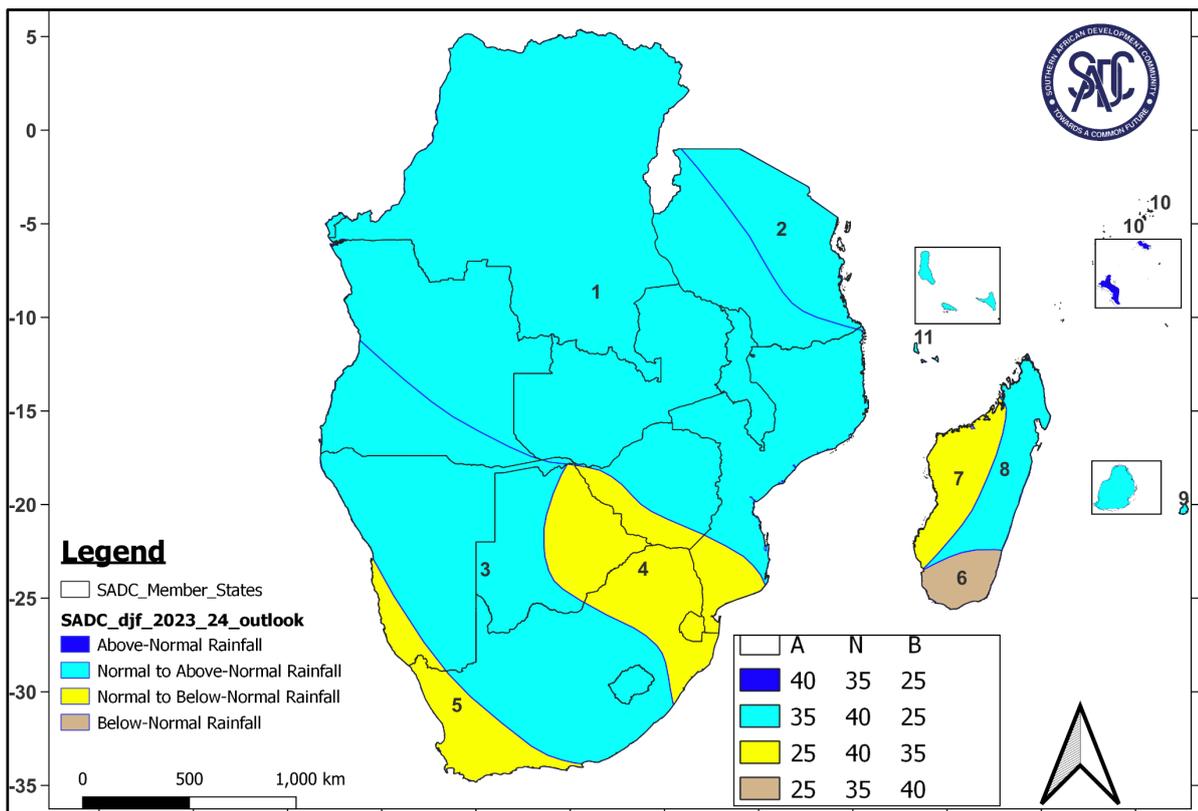


Figure 3: Rainfall forecast for December 2023-January-February 2024



## SARCOF-27 SEASONAL RAINFALL OUTLOOK STATEMENT

- Zone 1:** DRC, Zambia, Malawi, bulk of Angola, most of Zimbabwe, greater part of Mozambique and western half of Tanzania.  
Increased chances of normal to above-normal rainfall
- Zone 2:** Eastern half of Tanzania.  
Increased chances of normal to above-normal rainfall
- Zone 3:** South-western Angola, most of Namibia, western half of Botswana, central South Africa and Lesotho.  
Increased chances of normal to above-normal rainfall
- Zone 4:** Southern part of Zimbabwe, eastern half of Botswana, northern South Africa, Eswatini and southern Mozambique.  
Increased chances of normal to below normal rainfall
- Zone 5:** South-western fringes of Namibia and south-western South Africa.  
Increased chances of normal to below-normal rainfall
- Zone 6:** Southernmost Madagascar.  
Increased chances of below normal rainfall
- Zone 7:** Western Madagascar.  
Increased chances of normal to below-normal rainfall
- Zone 8:** Eastern-most of Madagascar.  
Increased chances of normal to above-normal rainfall
- Zone 9:** Mauritius.  
Increased chances of normal to above-normal rainfall
- Zone 10:** Seychelles.  
Increased chances of above normal rainfall
- Zone 11:** Comoros.  
Increased chances of normal to above-normal rainfall

## GLOBAL PRODUCING CENTRES' (GPCS) OVERVIEW FOR THE 2023/24 SEASON

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 above normal conditions is forecasted consistently across the October to February 2023/24 period for the northern part of SADC region (Tanzania, DRC and northern Mozambique) as well as small island states (Comoros, Mauritius and Seychelles). Increased probability of below normal conditions during the October to December (OND) period is forecasted for south-western Zambia, Zimbabwe, Botswana, and north-east South Africa. The areas with increased probability of below normal rainfall are expected to expand to cover south-western South Africa and Namibia by the December to February (DJF) period. In the remaining areas, including Madagascar, dynamical models do not indicate increased probabilities of rainfall anomalies, suggesting likelihood of normal conditions. The ensemble has a demonstrated forecast skill in south-eastern parts of the SADC region, and over Tanzania and small island states, but limited elsewhere, including Madagascar. The forecasted probabilities are broadly consistent with the known influence of El Niño on the regional climate.

## SARCOF-27 SEASONAL RAINFALL OUTLOOK STATEMENT

### LONG-TERM MEDIAN RAINFALL (1981-2010)

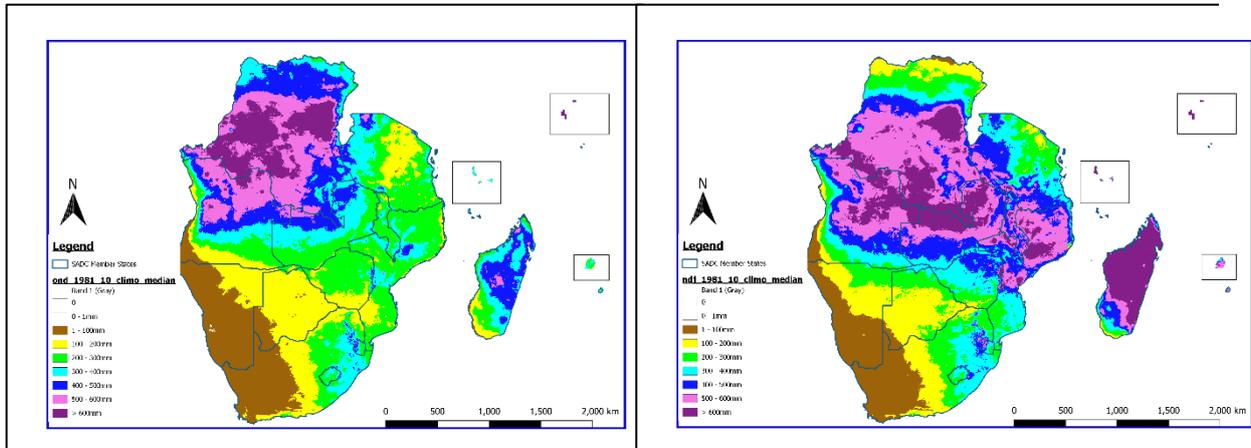


Figure 5, Long-term median rainfall over SADC countries (a) October-November-December (1981-2010), (b) November-December-January (1981-2010)

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 legend shows the amounts

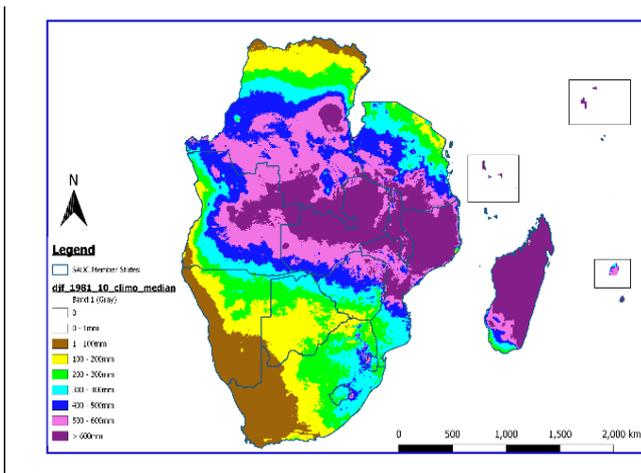


Figure 5, Long-term median rainfall over SADC countries (c) December-January-February (1981-2010)

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.

### SPONSORSHIP

The Twenty-Seventh Annual Southern Africa Climate Outlook Forum was hosted with support from SADC Member States, the European Union through the Intra-ACP Climate Services and related Applications project, and other partners.

