STATEMENT FROM THE TWENTY FIRST ANNUAL SOUTHERN AFRICAN REGIONAL CLIMATE OUTLOOK FORUM (SARCOF-21), MASA CONFERENCE CENTRE, GABORONE, BOTSWANA, 23 – 25 AUGUST 2017.

SUMMARY

The bulk of Southern African Development Community (SADC) is likely to receive normal to below-normal rainfall for most of the period October to December (OND) 2017 and normal to above-normal rainfall for the January to March (JFM) 2018. However, northernmost Democratic Republic of Congo (DRC), northern Tanzania, the islands states, eastern-most Madagascar and the south-eastern contiguous SADC region are likely to receive normal to above-normal rainfall throughout the 2017/18 rainy season.

THE TWENTY FIRST ANNUAL SOUTHERN AFRICA REGIONAL CLIMATE OUTLOOK FORUM

The Twenty First Annual Southern Africa Regional Climate Outlook Forum (SARCOF-21) was held in Gaborone, Botswana 23 to 25 August 2017 to present a consensus outlook for the 2017/2018 rainfall season over the SADC region. Climate scientists from the SADC National Meteorological and/or Hydrological Services (NMHSs), the SADC Climate Services Centre (CSC) formulated this Outlook. Additional inputs were acquired from other global climate prediction centres namely, European Centre for Medium Range Weather Forecast (ECMWF), National Oceanic and Atmospheric Administration (NOAA), Beijing Climate Center (BCC), Météo-France and Bureau of Meteorology, Australia (BoM), Famine Early Warning Systems Network (FEWS NET), International Research Institute for Climate and Society (IRI), Korea Meteorological Agency, Japan Meteorological Agency (JMA) and UK Met Office. This Outlook covers the major rainfall season from October 2017 to March 2018. The Outlook is presented in overlapping three-monthly periods as follows: October-November-December (OND); November-December-January (NDJ); December-January-February (DJF); and January-February-March (JFM)

This Outlook is relevant only to seasonal (overlapping three-monthly) time-scales 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). ***Users are strongly advised to contact the National Meteorological and Hydrological Services for interpretation of this Outlook, additional guidance and updates.***

METHODOLOGY

Using statistical, 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); December-January-February (DJF); and January-February-March (JFM). Above-normal rainfall is defined as rainfall lying within the wettest third

of recorded (30 year, that is, 1971 -2000 and 1981-2010 mean) rainfall amounts; below-normal is defined as within the driest third of rainfall amounts and normal is the middle third, centred on the climatological median. The climate scientists took into account oceanic and atmospheric factors that influence our climate over the SADC region. In particular, the El Niño-Southern Oscillation (ENSO) which is currently in its neutral phase. The ENSO is projected to continue in the Neutral phase during the entire forecast period with some models predicting neutral with a tendency of weak La Niña while most models predict neutral with a tendency towards weak El Niño.

SPONSORSHIP

The Twenty-First Annual Southern Africa Climate Outlook Forum was hosted by the Department of Botswana Meteorological Services. Support was provided by Government of the Republic of Botswana, SADC, World Bank, Food and Agricultural Organization of the United Nations, African Development Bank, and other partners.

OUTLOOK

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

OCTOBER-NOVEMBER-DECEMBER 2017

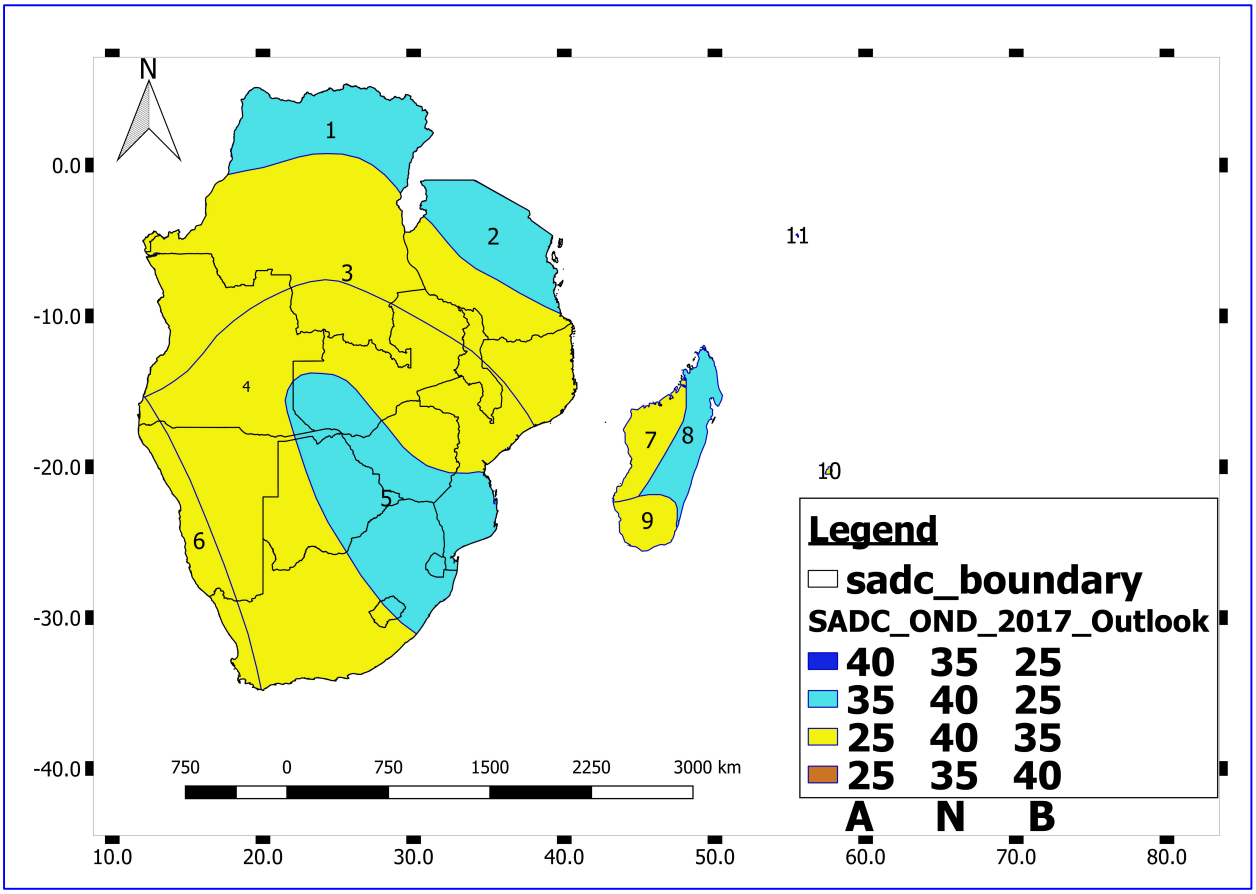


Fig 1: Rainfall outlook for October-December 2017

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

Zone 2: Northern Tanzania.
Increased chances of normal to above-normal rainfall

Zone 3: Northern Mozambique, southern Tanzania, northern Malawi, northernmost Zambia, bulk of DRC and north-western half of Angola.
Increased chances of normal to below-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: Extreme south-western Zambia, Caprivi area, south-easternmost Angola, south-western half of Zimbabwe, eastern half of Botswana, most of northern South Africa, eastern Lesotho, Swaziland, southern Mozambique.

Increased chances of normal to above-normal rainfall

Zone 6: South-westernmost Angola and western coastal areas of Namibia and South Africa.
Increased chances of normal to below-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 below -normal rainfall

Zone 11: Seychelles.
Increased chances of normal to above-normal rainfall

NOVEMBER-DECEMBER 2017-JANUARY 2018

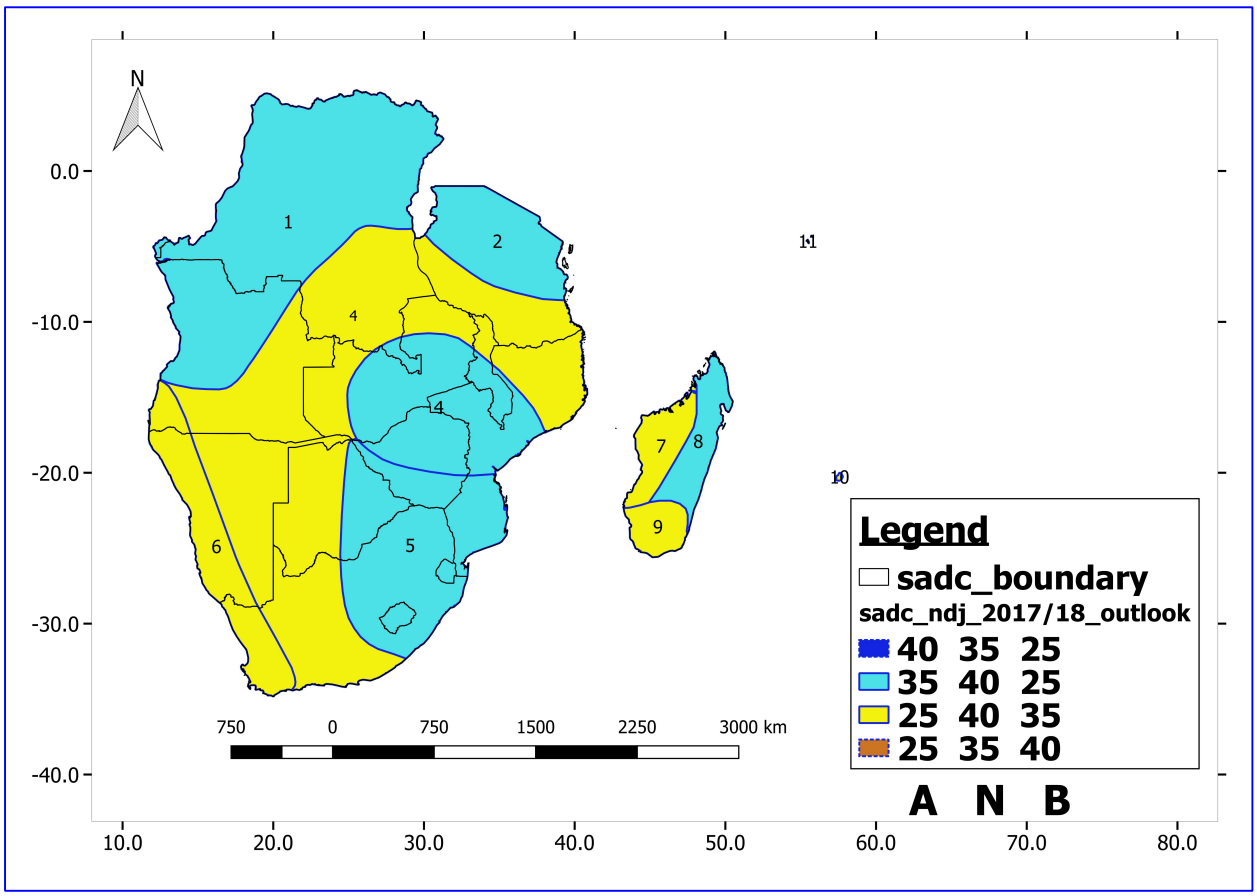


Fig 2: Rainfall forecast for November-December 2017-January 2018

Zone 1: Bulk of DRC and northernmost Angola.
Increased chances of normal to above-normal rainfall

Zone 2: Northern half of Tanzania.
Increased chances of normal to above-normal rainfall

Zone 3: Northern Mozambique, southern half Tanzania, northern Malawi, eastern Zambia, southern DRC, bulk of Angola, most of Namibia, western half of Botswana, most of central and western parts of South Africa.
Increased chances of normal to below-normal rainfall

Zone 4: Central parts of Zambia, southern Malawi, Northern half of Zimbabwe and central parts of Mozambique.
Increased chances of normal to above-normal rainfall

Zone 5: Southern half of Zimbabwe, eastern half of Botswana, north and central South Africa, Lesotho, Swaziland and southern Mozambique.
Increased chances of normal to above-normal rainfall

Zone 6: South-westernmost Angola, western fringes of Namibia and South Africa.
Increased chances of normal to below-normal rainfall

Zone 7: Western of Madagascar.
Increased chances of normal to below-normal rainfall

Zone 8: Eastern Madagascar.
Increased chances of normal to above-normal rainfall

Zone 9: Southernmost 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 normal to above-normal rainfall

DECEMBER 2017-JANUARY-FEBRUARY 2018

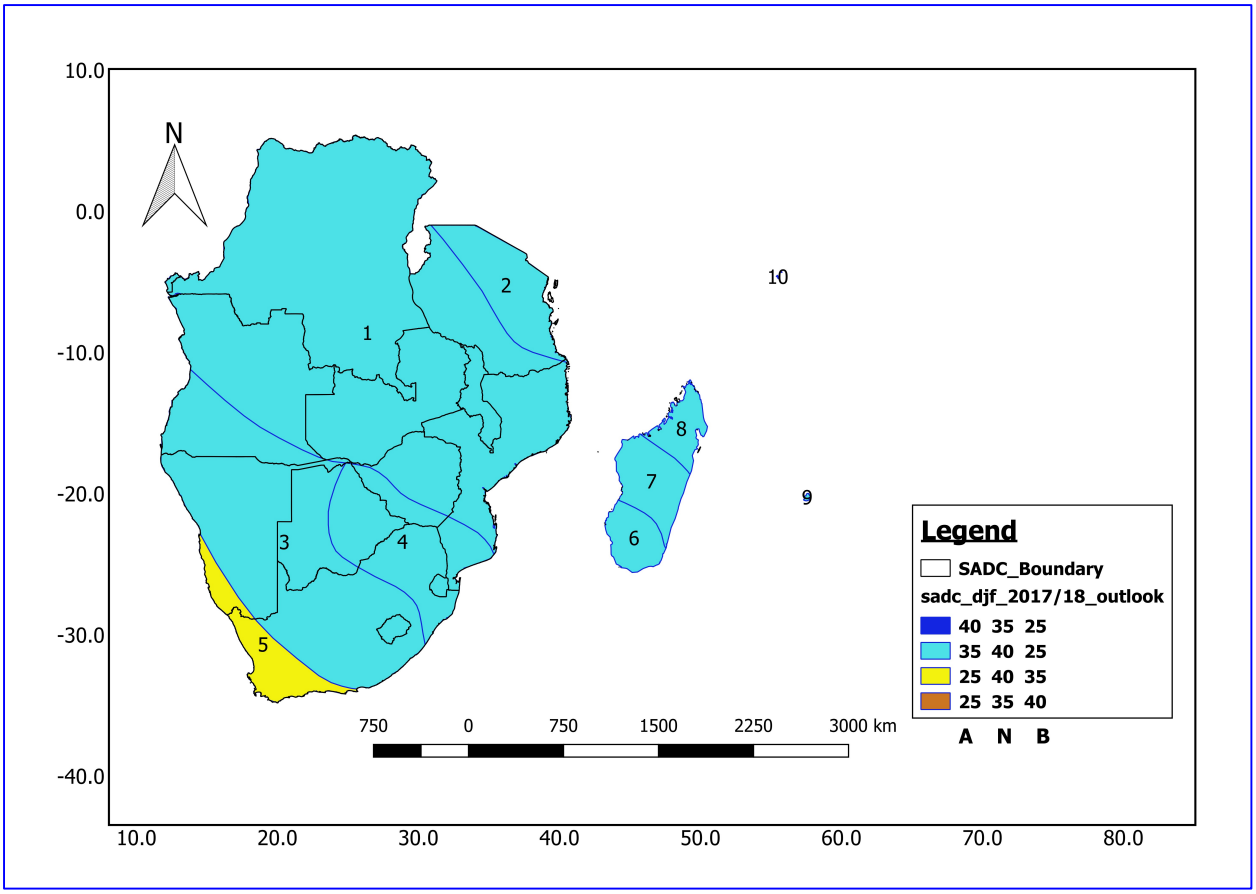


Fig 3: Rainfall forecast for December 2017-January-February 2018

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, most of central and western parts of South Africa and Lesotho.
Increased chances of normal to above-normal rainfall

Zone 4: Southern third of Zimbabwe, eastern half of Botswana, north and central South Africa, Swaziland and southern Mozambique.
Increased chances of normal to above-normal rainfall

Zone 5: South-western fringe of Namibia and south-western South Africa.
Increased chances of normal to below-normal rainfall

Zone 6: Southernmost Madagascar.
Increased chances of normal to above-normal rainfall

Zone 7: Central Madagascar.
Increased chances of normal to above-normal rainfall

Zone 8: Northernmost 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 normal to above-normal rainfall

JANUARY-FEBRUARY-MARCH 2018

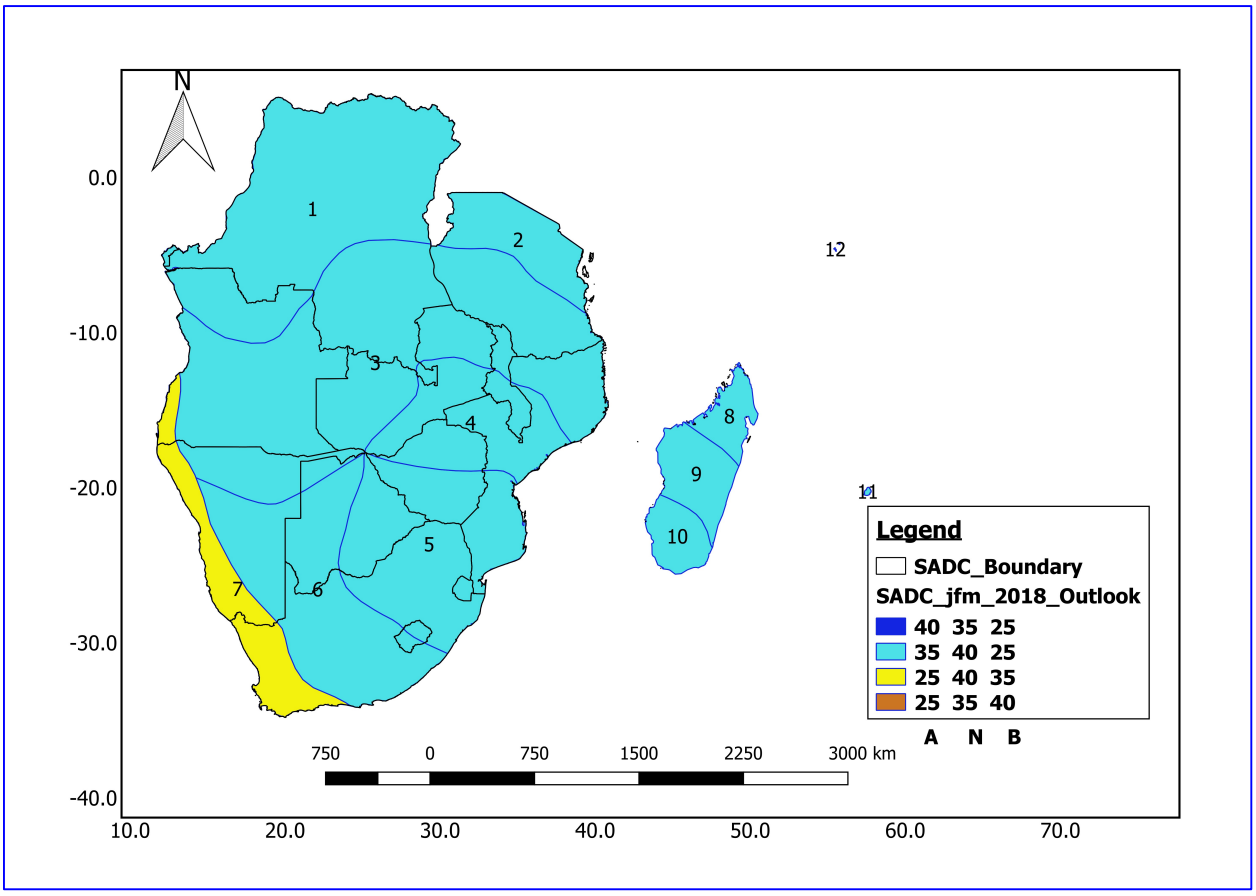


Fig 4: Rainfall forecast for January-February-March 2018

Zone 1: Bulk of DRC and northernmost Angola.
Increased chances of normal to above-normal rainfall

Zone 2: Northernmost Tanzania.
Increased chances of normal to above-normal rainfall

Zone 3: Northern Mozambique, bulk of Tanzania, northern Malawi, northern and western Zambia, bulk of Angola, south eastern DRC, north-western tip of Botswana and northernmost Namibia.
Increased chances of normal to above-normal rainfall

Zone 4: Central Mozambique, southern Malawi, central Zambia and northern half of Zimbabwe.
Increased chances of normal to above-normal rainfall

Zone 5: Southern Mozambique, southern half of Zimbabwe, eastern half of Botswana, central and northern South Africa, Swaziland and eastern Lesotho.
Increased chances of normal to above-normal rainfall

Zone 6: Western half of Botswana, central to southern Namibia, western Lesotho and central South Africa.
Increased chances of normal to above-normal rainfall

Zone 7: South-western tip of Angola, western fringes of Namibia and South Africa.
Increased chances of normal to below-normal rainfall

Zone 8: Northernmost Madagascar.
Increased chances of normal to above-normal rainfall

Zone 9: Central Madagascar.
Increased chances of normal to above-normal rainfall

Zone 10: Southernmost Madagascar.
Increased chances of normal to above-normal rainfall

Zone 11: Mauritius.
Increased chances of normal to above-normal rainfall

Zone 12: Seychelles.
Increased chances of normal to above-normal rainfall

FIGURE CAPTION

It is emphasized 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 numbers for each zone indicate the probabilities of rainfall in each of the three categories, below-normal, normal and above-normal. The first number indicates the probability of rainfall occurring in the above-normal category, the second number is for normal and the last number is for below-normal. For example in Figure 4, for Zone 5, there is a 35% probability of rainfall occurring in the above-normal category; a 40% probability in the normal category; and 25% probability in the below-normal category.

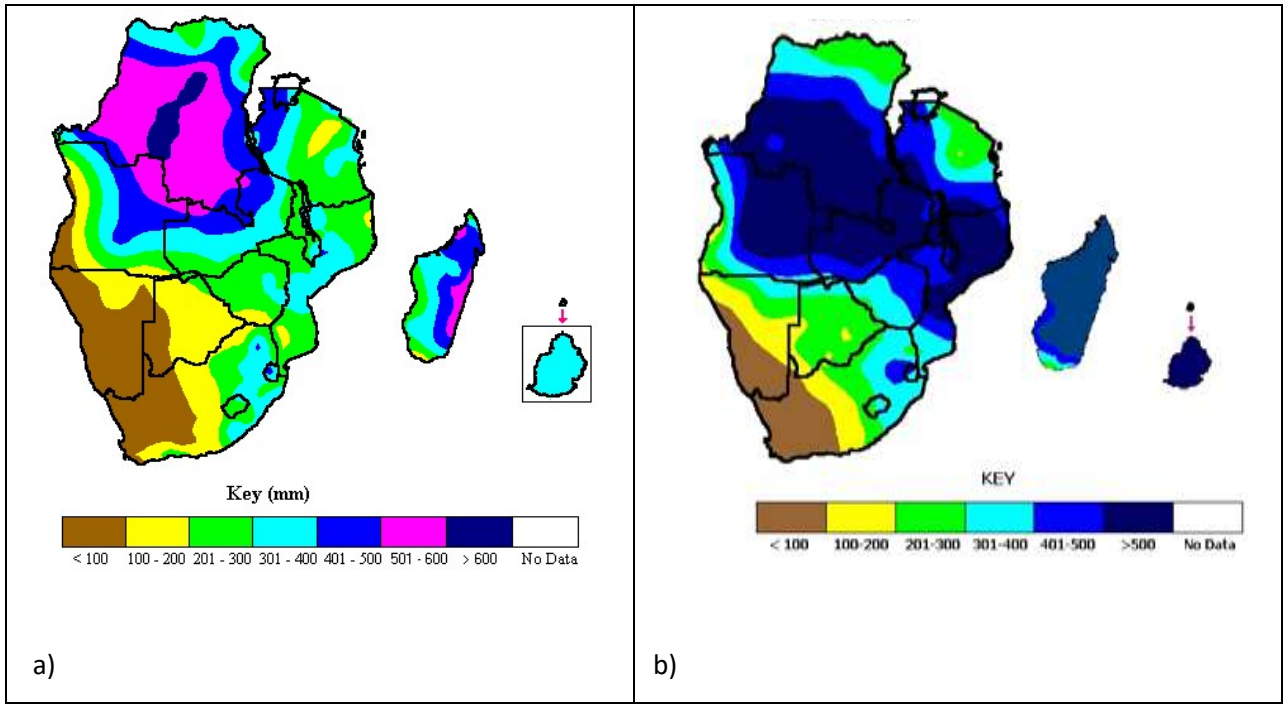


Figure 5 Long-term mean rainfall over SADC countries (a) October-November-December (1971-2000), (b) November-December-January (1961-1990)

The long-term mean October-November-December rainfall 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 Mauritius, Figure 5(a). The November-December-January long-term mean total rainfall 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, Figure 5(b). The remainder of the region receives rainfall less than 400 millimetres gradually decreasing south-westwards to southwest South Africa and Namibia where the mean rainfall is below 100 millimetres. The legend shows the amounts in millimetres.

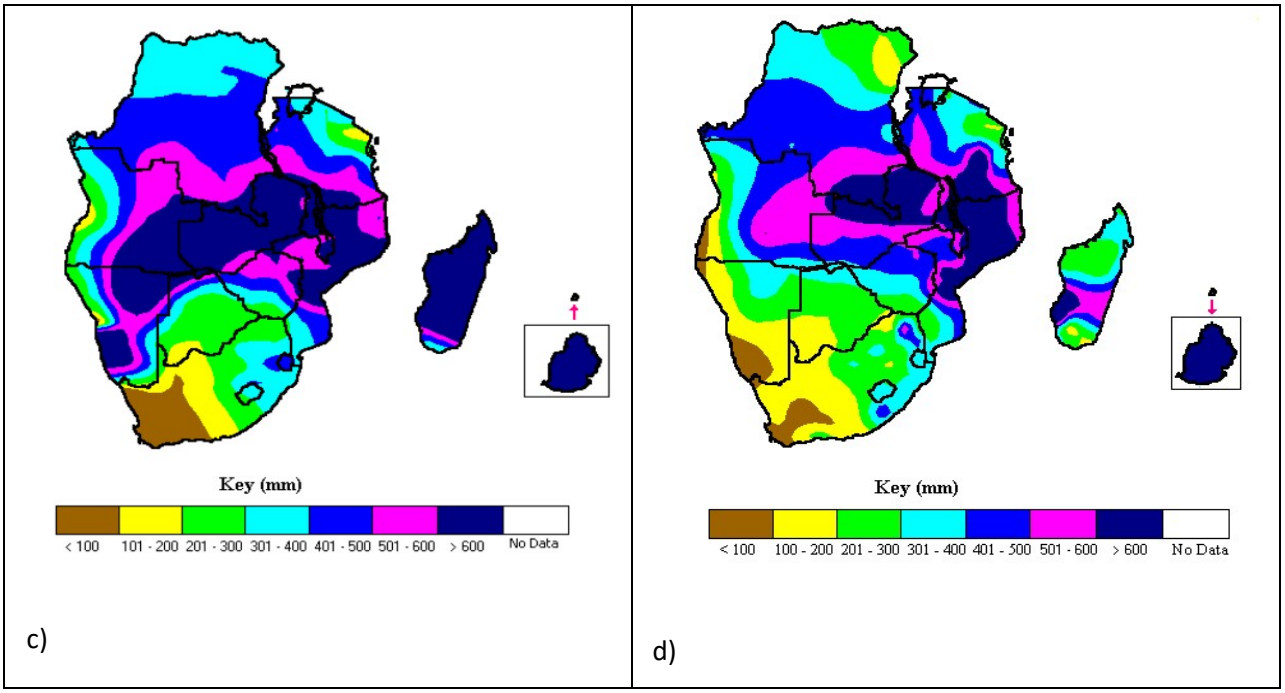


Figure 5 Long-term mean rainfall over SADC countries (c) December-January-February (1961-2000) and (d) January-February-March (1971-2000)

The long-term mean for December-January-February rainfall 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, Figure 5(c). The remainder of the region receives rainfall less than 400 millimetres gradually decreasing south-westwards to southwest South Africa and Namibia where the mean rainfall is below 100 millimetres. The January-February-March shows a significant reduction in the rainfall received in most of the southern parts of the region with the central and eastern parts remaining wet, Figure 5(d). Mauritius shows sustained rainfall pattern over the while Madagascar shows a decline of rainfall in most parts except the extreme south western parts of the country.