



SADC Climate Services Centre
P/ Bag 0095 ,
Gaborone ,
Botswana
Tel : + 267 - 3953411/13, 3951863
Fax + 267 - 3972848 / 3181070
Web : www.sadc.int

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OUTLOOK FOR DECEMBER 2013— FEBRUARY 2014

HIGHLIGHTS

Inside this issue:

Summary and Highlights	1
Global SST forecasts	2
State of the rainy season	3
DJF Rainfall Outlook update	4

GLOBAL SST FORECAST

- Persistence of the El Nino Southern Oscillation (ENSO)-neutral conditions during the entire Southern Hemisphere summer.
- Phase of Indian Ocean Dipole (IOD) is predicted to remain neutral for the rest of austral summer period.
- Brandon Marion Index (BMI) is projected to remain negative for the entire forecasting period (DJF).
- Sea Surface Temperature (SST) anomalies over Southeastern Atlantic is forecast to be slightly cooler than normal.

Nov 2013 Rainfall Update

Sporadic rainfall was received in parts of the SADC region as a result of an active Inter-tropical Convergence zone (ITCZ) which continues its southward drift. There were also westerly waves that contributed to the rains. However these were occasionally suppressed by predominant high pressure system over the region.

Thus seasonal rainfall anomalies to-date indicated:

- below-average conditions in the bulk of continental SADC.
- above-average conditions south-west of DRC and north-east of Angola.
- above-average conditions east of DRC and Western Tanzania .
- above-average conditions over southern Namibia South Africa .
- above-average conditions in much of Madagascar

DJF SUMMARY

For the period of December 2013-February 2014, there is a high likelihood of:

- **normal to above-normal rainfall conditions over the bulk of SADC region including the Island States.**
- **normal to below-normal rainfall conditions are likely to be experienced in the north-easternmost of continental SADC as well as extreme south-west coastal parts of the region.**

For more information:
registry@sadc.int
Tel: +267 3951 863
www.sadc.int

El Nino Southern Oscillation

Almost all models are predicting the continuation of El Nino-Southern Oscillation (ENSO)-neutral conditions. This is depicted by the sea-surface-temperature (SST) anomalies in the Niño-3.4 region, which are projected to be within +/-0.5°C for the DJF (Fig. 1).

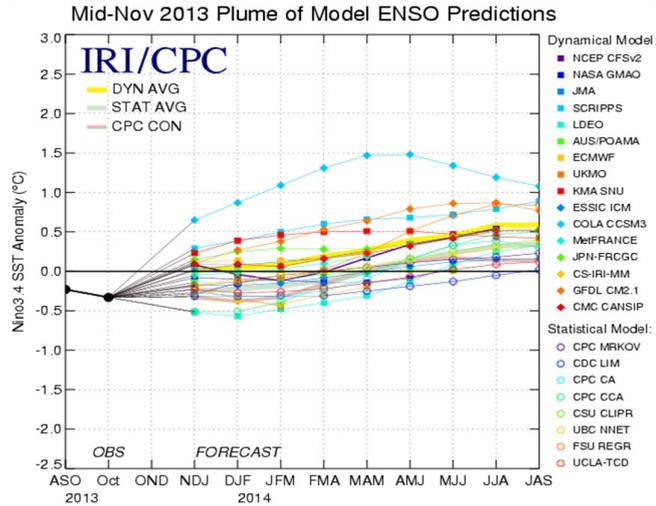


Fig.1. Multi-model ENSO forecasts (Source: CPC/NOAA)

Brandon Marion Index

The SSTs around the Marion Island in south-western Indian Ocean which have been cooler than normal whereas the Brandon area (east of Madagascar) were warmer than average. The SST anomaly differences between these areas defines the Brandon Marion Index (BMI) which is projected to be in negative phase. This state usually results in increased rainfall over the SW Indian Ocean.

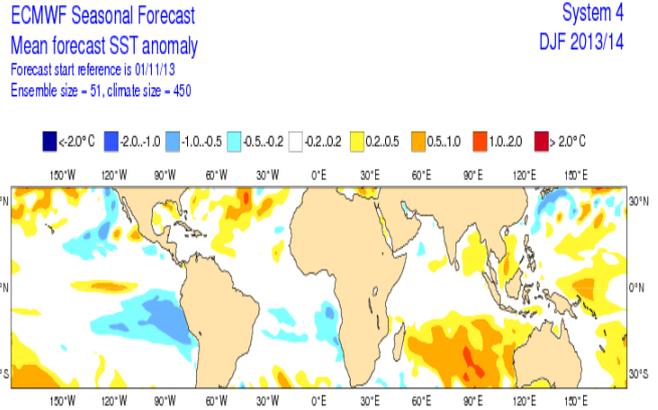


Fig. 3. DJF global SST predicted to be in the negative conditions for the BMI [Source: ECMWF]

Indian Ocean Dipole

The Indian Ocean Dipole (IOD) is positive when characterised by cooler than normal water in the tropical eastern Indian Ocean and warmer than normal water in the tropical western Indian Ocean. The forecast is for the IOD to remain in the neutral phase during DJF (2013/14), Fig. 2. A neutral phase generally has negligible impact on SADC rainfall performance.

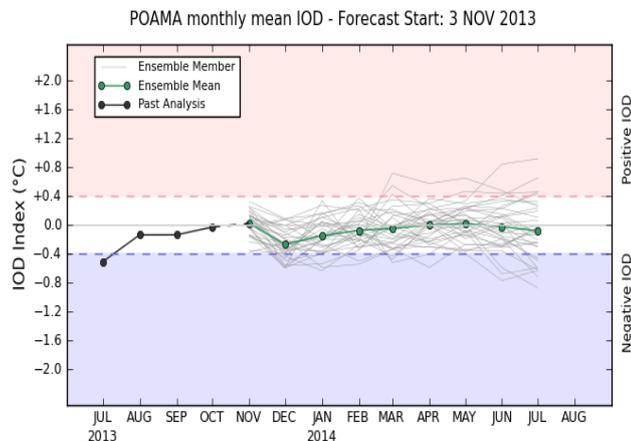


Fig. 2. Indian Ocean Dipole is predicted to be in neutral conditions [Source: BoM]

November 2013 precipitation

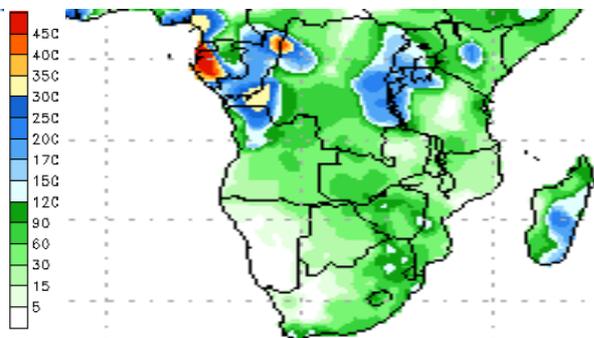


Fig. 4. Accumulated precipitation (mm) for the period 28 Oct to 26 Nov [Source: NOAA/CPC]

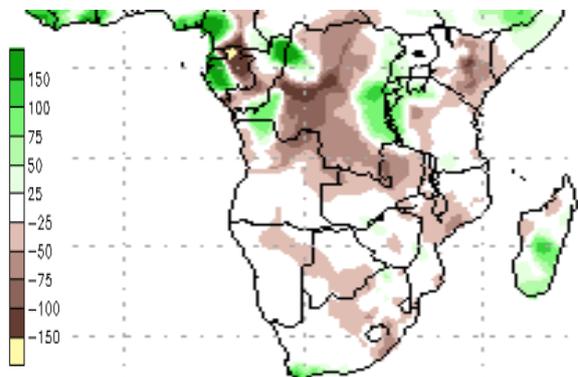


Fig. 5. 30 days precipitation anomalies (mm) from 28 Oct to 26 Nov 2013 (source: NOAA-CPC)

STATE OF THE RAINY SEASON

Major rain-producing mechanisms influenced the rainfall amounts for the period 28 October to 26 November 2013 (Fig. 4). The gradual southward motion of the ITCZ resulted in above normal rainfall in northern sections of contiguous SADC (Fig.5). The southern part of the continental SADC region was characterized by transient westerly cloud bands. These produced precipitation from time to time; and also resulted above normal rainfall over the southwestern tip of South Africa (Fig.5). There were below-normal conditions in most parts of the SADC region especially over Botswana, Namibia, parts of South Africa and Zimbabwe in November (Fig.5).

During the period December 2013 through to February, 2014; most parts of the SADC region are expected to receive normal to above-normal rainfall. The exceptions include the north-eastern half of Tanzania as well as the southwestern coastal regions of Namibia and south Africa. Meantime, the period 28 November to 5 December 2013, should witness sporadic rains across the SADC region (Fig.6). Increased precipitation is expected in the period 6 to 14 December (Fig.7). There are exceptions in the western parts of Namibia and South Africa.

SADC mean rainfall for DJF for 1961-90

The period DJF is when highest rainfall is expected across the SADC region. A tongue stretching from southern DRC to northern Zimbabwe and from Angola to Mozambique and Madagascar expects between 500 and 600 mm. The portions from south of Zimbabwe, south-westwards expects much more diminished rains as low as less than 100 mm in the south-western parts of Namibia as well as areas around the Cape provinces Fig. 8.

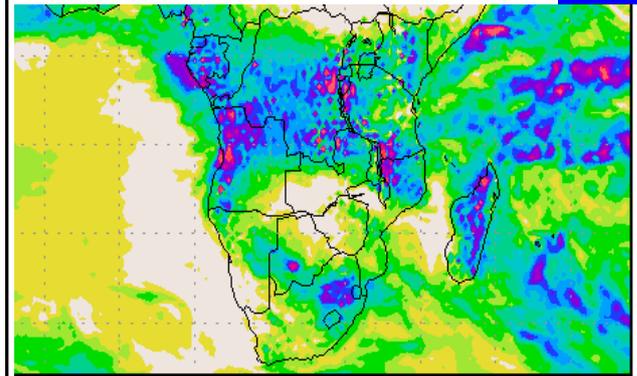


Fig.6. Precipitation forecast from 28 Nov to 5 Dec, 2013 (source: IGES/COLA)

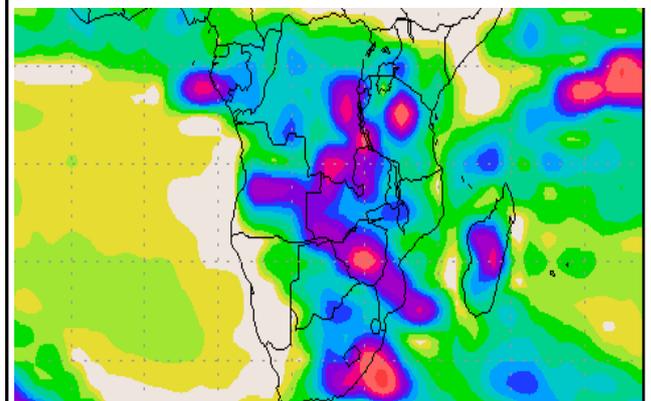


Fig.7. Precipitation forecast from 06 to 14 Dec 2013 (source: IGES/COLA)

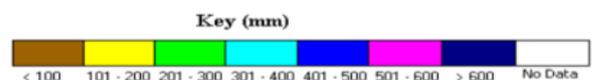
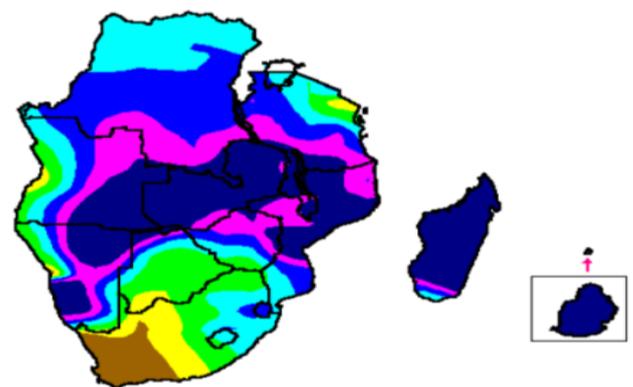


Fig. 8. SADC mean rainfall (mm) for December-January- February season for the period 1961-1990

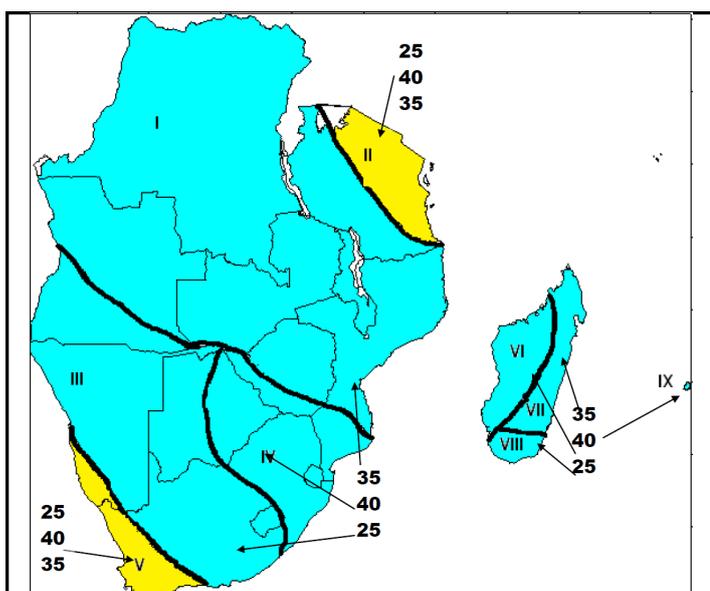


Fig 9. SADC rainfall outlook for Dec to Feb 2013/14

DJF FORECAST DETAILS

Zone 1: (DRC, Zambia, Malawi, bulk of Angola, most of Zimbabwe, most 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 below-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, eastern Lesotho, 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: (Western Madagascar).

Increased chances of normal to above-normal rainfall

Zone 7: (Eastern Madagascar).

Increased chances of normal to above-normal rainfall

Zone 8: (Southernmost Madagascar).

Increased chances of normal to above-normal rainfall

Zone 9: (Mauritius).

Increased chances of normal to above-normal rainfall

Notes:

1. The users are strongly advised to contact their NMHSs for interpretation of this Outlook, finer details, updates and additional guidance.
2. The numbers in each zone (Fig. 9) indicate the probabilities of the DJF 2013/14 rainfall in each of the three categories: Above normal, Normal and Below normal relative to the 1961-1990 climatological baseline (Fig. 8).
3. The top number indicates the probability of rainfall occurring in the Above-normal category, the middle number for Normal and the bottom number for Below-normal category.

Acknowledgements:

- SADC NMHSs,
- Global climate monitoring and prediction centres
- WMO