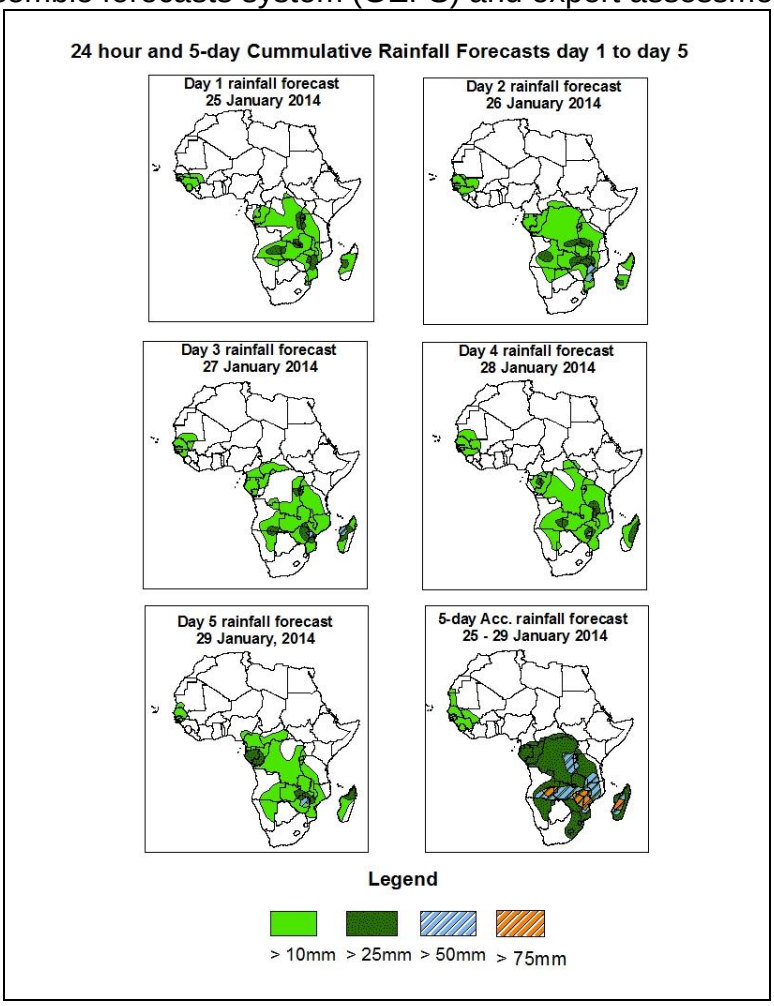
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 25 January – 06Z of 29 January, 2014. (Issued at 1800Z of 24 January 2014)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



Summary

Mascarene high pressure is expected to intensity with its central pressure increasing from 1027hpa to 1030hpa. Due to its Eastern position, some rains are expected over South Mozambique and Zimbabwe. However Botswana and South Africa are expected to remain dry during most part of the forecast period. St. Helena High Pressure System is expected to remain dominant intensifying slightly from 1020 hpa to 1024 hpa. This will result into continued dry conditions over Namibia, Botswana, and South Africa for most part of the forecast period. However existence of strong convergence over Namibia and Angola will results in some moderate rains. Parts of Senegal, Mauritania, Guinea, Gambia, and Mali are expected to receive some rainfall during the forecast period as a result of strong extra-tropical- Tropical interactions.

1.2. Atmospheric Dust Forecasts: Valid 25 January - 27 January 2014

Atmospheric Dust Forecasts, day 1 to day 3,
Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

Day 1 Dust forecast
25 January 2014

Day 2 Dust forecast
26 January 2014

Day 3 Dust forecast
27 January 2014

Highlights

There is an increased chance for moderate dust over Chad, Niger, Mauritania and Libya

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of 24 January 2014

Model comparison (GFS and UKMET Valid from 00Z: 24 January 2014) shows general agreement in terms of depicting positions of the northern and southern hemisphere sub-tropical highs, while they showed slight differences in depicting their intensity.

According to both the GFS model and the UKMET model, St. Helena High Pressure System is expected to be dominant and slightly intensity from 1020 to 1024 hpa. This will result into continued dry conditions over Namibia, Botswana, and South Africa for most part of the forecast period. However existence of strong convergence of Namibia and Angola will results in some moderate rains.

According to both the GFS model and the UKMET model, the Mascarene high pressure is expected to intensity with its central pressure changing from 1027 hpa to 1030 hpa. Due to its Eastern position, some rains are expected over South Mozambique and Zimbabwe. However Botswana and South Africa are expected to remain dry during most part of the forecast period.

At 850hpa level, Moderate to strong convergence is still expected over Democratic Republic of Congo (DRC), Gabon, Congo Brazzaville, Central African Republic (CAR) , Cameroon, Namibia, Uganda, Zambia, Angola, Tanzania, Malawi, Mozambique, and Madagascar. During the forecast period, moderate to severe weather is expected over these areas as shown by the rainfall map above.

At 500hpa level, troughs associated with mid-latitude frontal systems persist during the forecast period. The systems are expected to have the effect of isolated rains over Senegal, Mauritania, Guinea, Gambia, and Mali during the forecast period.

At 200hpa level, the sub-tropical Westerly Jet mainly (with wind speed >70 ktnots and <150 knots), extending between Senegal, Mauritania, Algeria, and Egypt, and across, Mali, Togo, Benin, Algeria, Tunisia, Niger, Chad, Libya and Northern Sudan persist during the forecast period. Winds of over 150 Knots are also expected over Libya and Egypt. In the south, the sub-tropical westerly Jet (with 70 to 90kts wind speed) is expected though rarely over South Africa and the Indian Ocean.

Therefore, the Mascarene high pressure is expected to intensity with its central pressure changing from 1027hpa to 1030hpa. Due to its Eastern position, some rains are expected over South Mozambique and Zimbabwe. However Botswana and South Africa are expected to remain dry during most part of the forecast period.

St. Helena High Pressure System is expected to remain dominant intensifying slightly from 1020 hpa to 1024 hpa. This will result into continued dry conditions over Namibia, Botswana, and South Africa for most part of the forecast period. However existence of strong convergence of Namibia and Angola will results in some moderate rains. Parts of Senegal, Mauritania, Guinea, Gambia, and Mali are expected to receive some rainfall during the forecast period as a result of strong extra-tropical- Tropical interactions.

2.0. Previous and Current Day Weather Discussion over Africa

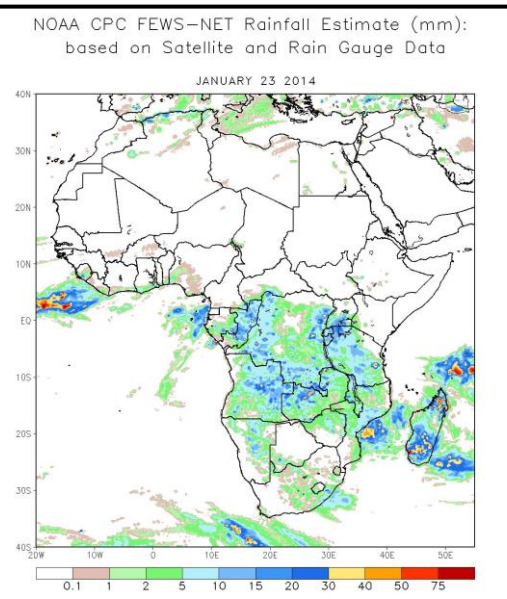
(23 January 2014 – 24 January 2014)

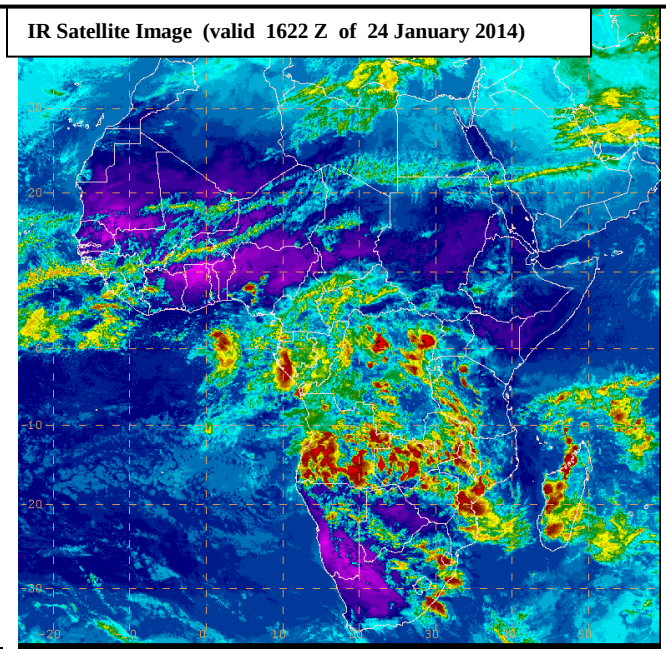
2.1. Weather assessment for the previous day (23 January 2014)

During the previous day, moderate to heavy rainfall was observed over Congo Brazzaville, Uganda, DRC, Angola, Zambia, Malawi, Madagascar and Tanzania.

2.2. Weather assessment for the current day (24 January 2014)

Intense clouds were observed over Gabon, DRC, Angola, Zambia, Malawi, Zimbabwe, Mozambique, Madagascar, South Africa and Tanzania.





Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day cloud cover (top right) based on IR Satellite image

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