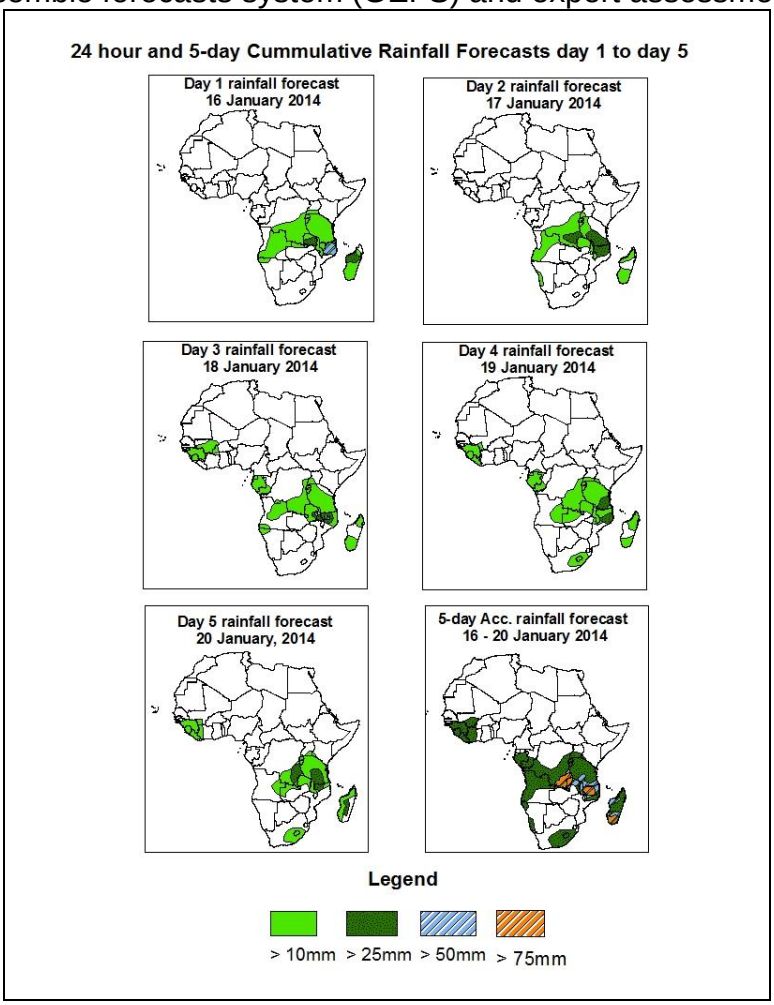
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of 16 January – 06Z of 20 January, 2014. (Issued at 1800Z of 15 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.

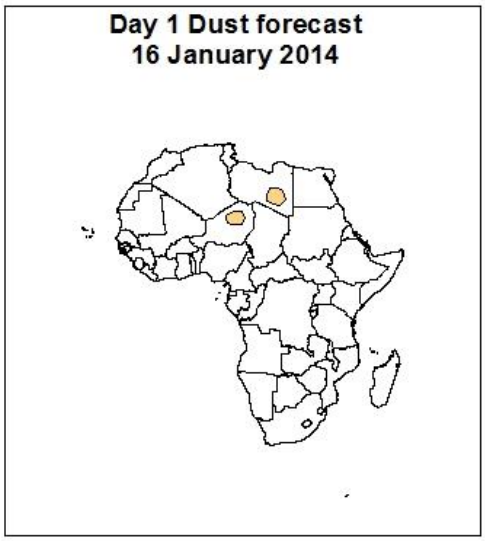


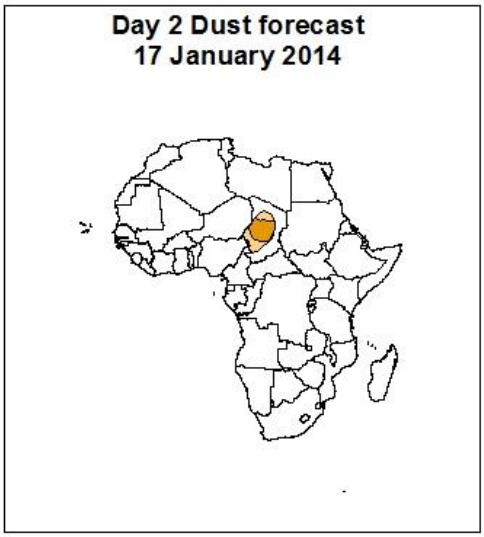
Summary

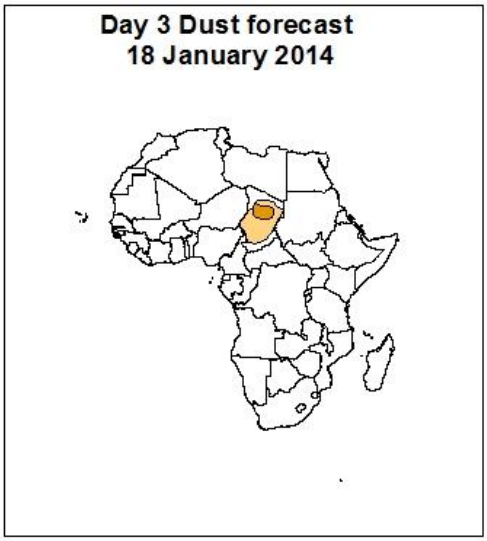
Mascarene high pressure is expected to generally weaken from 1026hpa to 1019 hpa but remain active over the western Indian coast through the forecast period. This will result in minimized rains over South Mozambique, Zimbabwe and South Africa. St. Helena High Pressure System is expected to slightly intensify with its central pressure increasing from 1019hpa to 1023hpa. This will result into dry conditions over Namibia, Botswana, Angola and South Africa for most part of the forecast period. Parts of Mali, Burkina Faso, Liberia, Ivory Coast and Guinea 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 16 January - 18 January 2014

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







Highlights

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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of 15 January 2014

Model comparison (GFS and UKMET Valid from 00Z: 15 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 slightly intensify with its central pressure increasing from 1019hpa to 1023hpa. This will result into dry conditions over Namibia, Botswana, Angola and South Africa for most part of the forecast period.

According to both the GFS model and the UKMET model, the Mascarene high pressure is expected to generally weaken from 1026hpa to 1019 hpa but remain active over the western Indian coast throughout the forecast period. This will result in minimized rains over South Mozambique, Zimbabwe and South Africa.

At 850hpa level, Moderate to strong convergence is still expected over Democratic Republic of Congo (DRC), Congo Brazzaville, 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 are occasional during the forecast period. The systems are expected to have the effect of isolated rains over Mali, Burkina Faso, Liberia, Ivory Coast and Guinea during the forecast period.

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

Therefore, the Mascarene high pressure is expected to generally weaken from 1026hpa to 1019 hpa but remain active over the western Indian coast through the forecast period. This will result in minimized rains over South Mozambique, Zimbabwe and

South Africa. St. Helena High Pressure System is expected to slightly intensify with its central pressure increasing from 1019hpa to 1023hpa. This will result into dry conditions over Namibia, Botswana, Angola and South Africa for most part of the forecast period. Parts of Mali, Burkina Faso, Liberia, Ivory Coast and Guinea 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

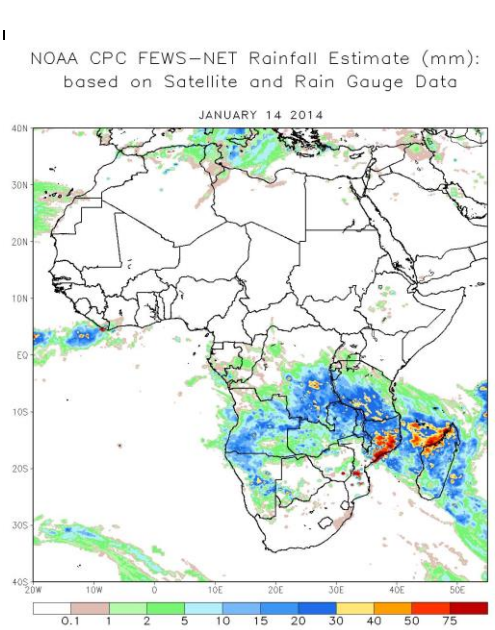
(14 January 2014– 15 January 2014)

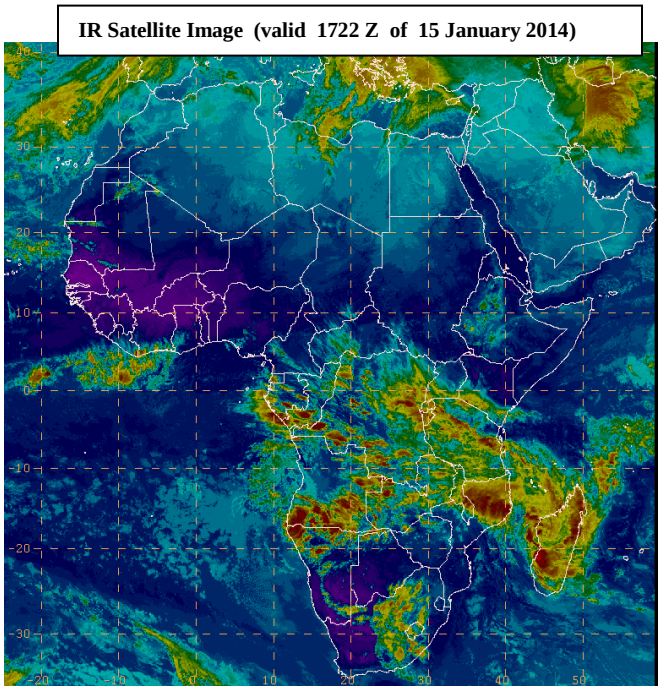
2.1. Weather assessment for the previous day (14 January 2014)

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

2.2. Weather assessment for the current day (15 January 2014)

Intense clouds were observed over Gabon, Congo Brazzaville, Angola, DRC, Mozambique, Malawi, Tanzania, Zambia and Madagascar.





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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