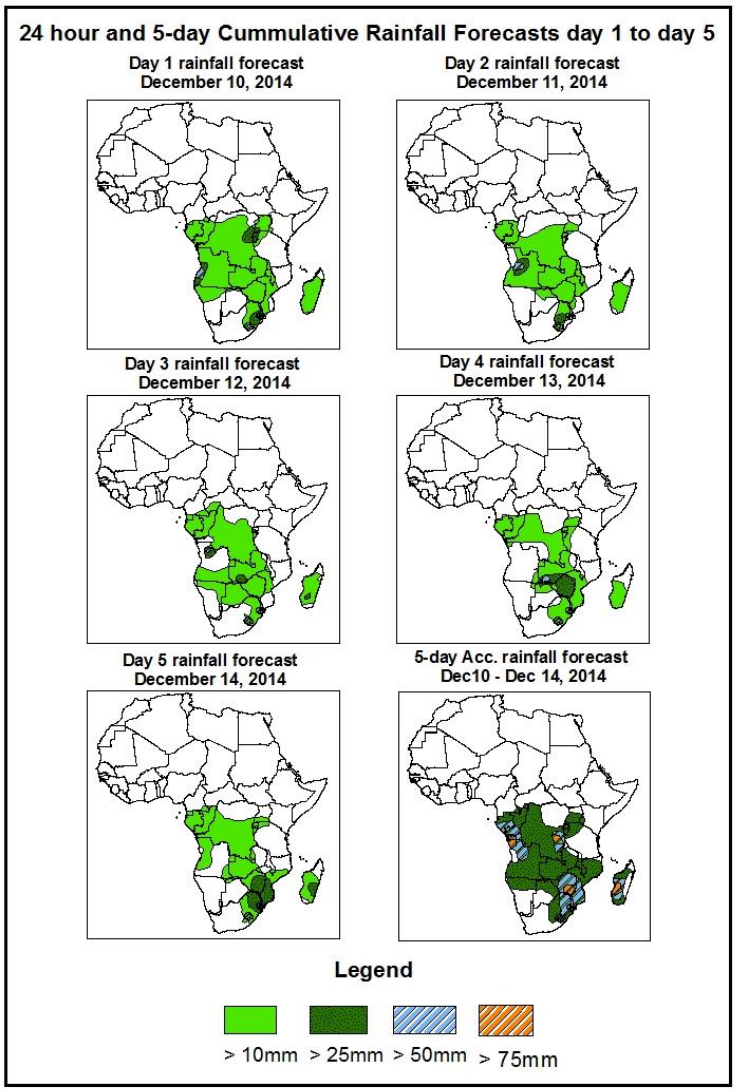
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of December 09 – 06Z of December 14, 2014. (Issued at 1930Z of December 09, 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/GFS and the NCEP global ensemble forecasts system (GEFS) and expert assessment.



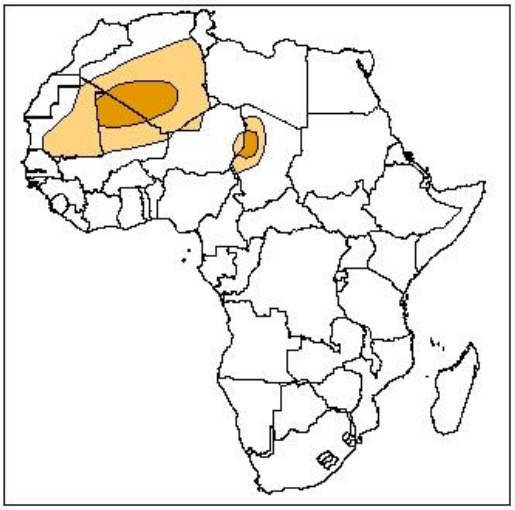
Summary

In the next five days, westward propagating convective systems across the Equatorial Africa region, lower-level wind convergence over Equatorial Guinea , Congo Brazzaville and DRC, low level wind convergence over Angola and Namibia, a mid-latitude trough in the Mozambique Channel, are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over portions of Gabon, Equatorial Guinea, Congo Brazzaville, Angola, Northern Namibia and Zimbabwe.

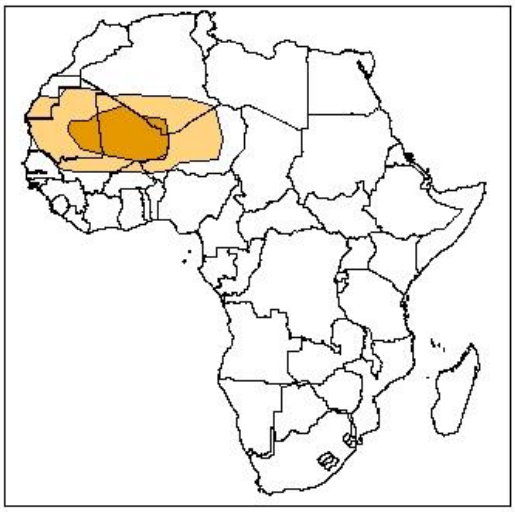
Atmospheric Dust Forecasts, day 1 to day 3,

Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

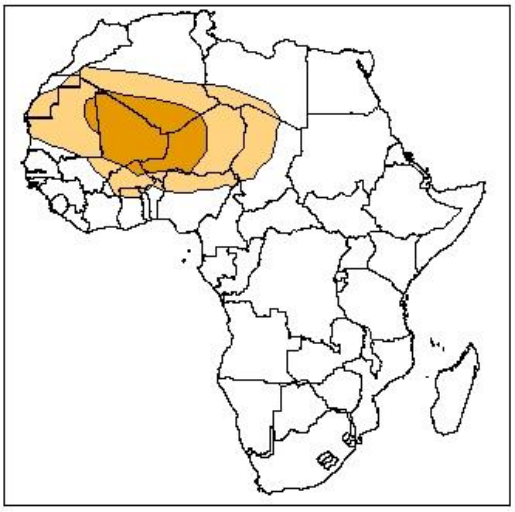
Day 1 Dust forecast
December 10, 2014



Day 2 Dust forecast
December 11, 2014



Day 3 Dust forecast
December 12, 2014



Highlights

There is an increased chance for moderate to high dust concentration over portions of Mauritania, Algeria, Mali, Chad, Libya, Northern Nigeria, Burkina Faso, Ghana, Western Sahara and Niger.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of December 9, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to shift from long.19 to 28 degrees West, with a central pressure value of about 1038hpa in 24 hours to 1037hpa in 120hours, according to the GFS model.

The Arabian High Pressure system is expected to maintain central pressure value of 1023hpa during the forecast period.

The Mascarene high pressure system is expected to shift eastwards from long. 62 to 85 degrees East over the southwestern Indian Ocean. The central pressure value is expected to decrease from 1033hpa to 1029hpa through 24 to 120hours, according to the GFS model.

The central pressure value of the St Helena high pressure system, over the Southeast Atlantic Ocean, is expected to increase slightly from 1022hpa to 1026hpa through 24 to 120hours, according to the GFS model.

At 925Hpa level, dry northeasterly wind (>25kts) is expected to prevail across portions of Mauritania, Senegal, Southern Algeria, Ghana, Nigeria Mali, Niger, and Chad through 24 to 120 hours. This will extend to Eastern Sahel including Sudan towards the end of the forecast period.

At 850Hpa level, seasonal wind convergences are expected to remain active over DRC, Angola, South Africa, Equatorial Guinea, Madagascar, Namibia, Congo Brazzaville and Zambia, during the forecast period, according to the GFS model.

At 700hpa level, a cyclonic circulation is expected over Angola and Namibia, whereas northeasterly to easterly flow is expected to prevail across DRC and much of East Africa.

In the next five days, westward propagating convective systems across the Equatorial Africa region, lower-level wind convergence over Equatorial Guinea , Congo Brazzaville and DRC, low level wind convergence over Angola and Namibia, a mid-latitude trough

in the Mozambique Channel, are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over portions of Gabon, Equatorial Guinea, Congo Brazzaville, Angola, Northern Namibia and Zimbabwe.

2.0. Previous and Current Day Weather Discussion over Africa

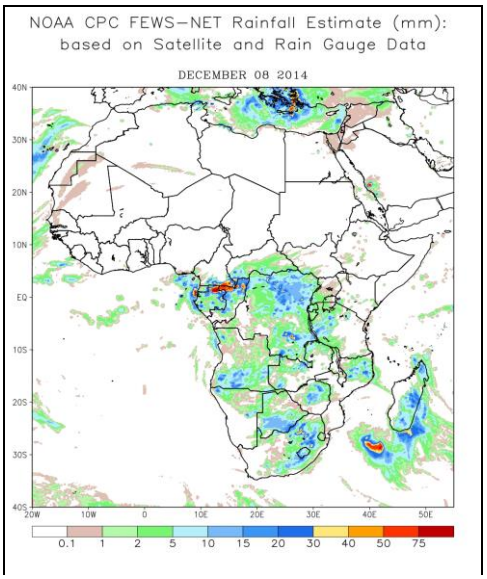
(December 08, 2014 – December 09, 2014)

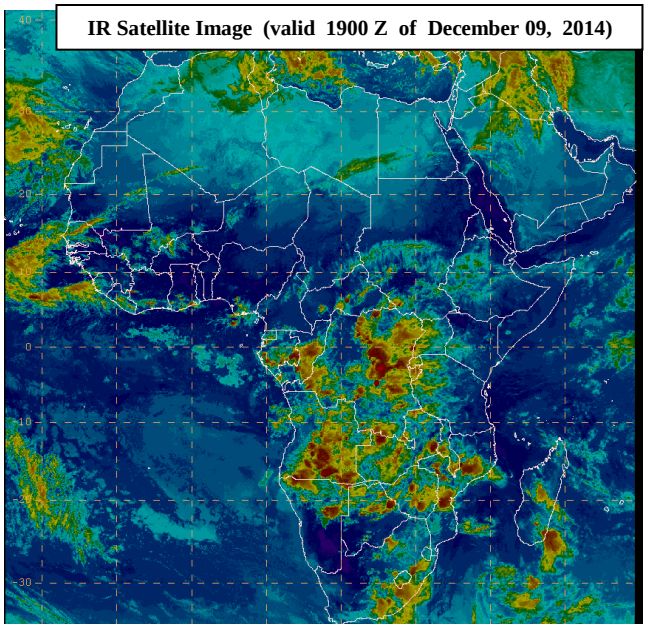
2.1. Weather assessment for the previous day (December 08, 2014)

During the previous day, moderate to locally heavy rainfall was observed over portions of Angola, DRC, Gabon, Namibia, South Africa, Western Tanzania, and Madagascar.

2.2. Weather assessment for the current day (December 09, 2014)

Intense convective deep clouds are observed across portions of DRC, Congo Brazzaville, Angola, Zambia, Mozambique, Northern Namibia, Madagascar and South Africa.





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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