

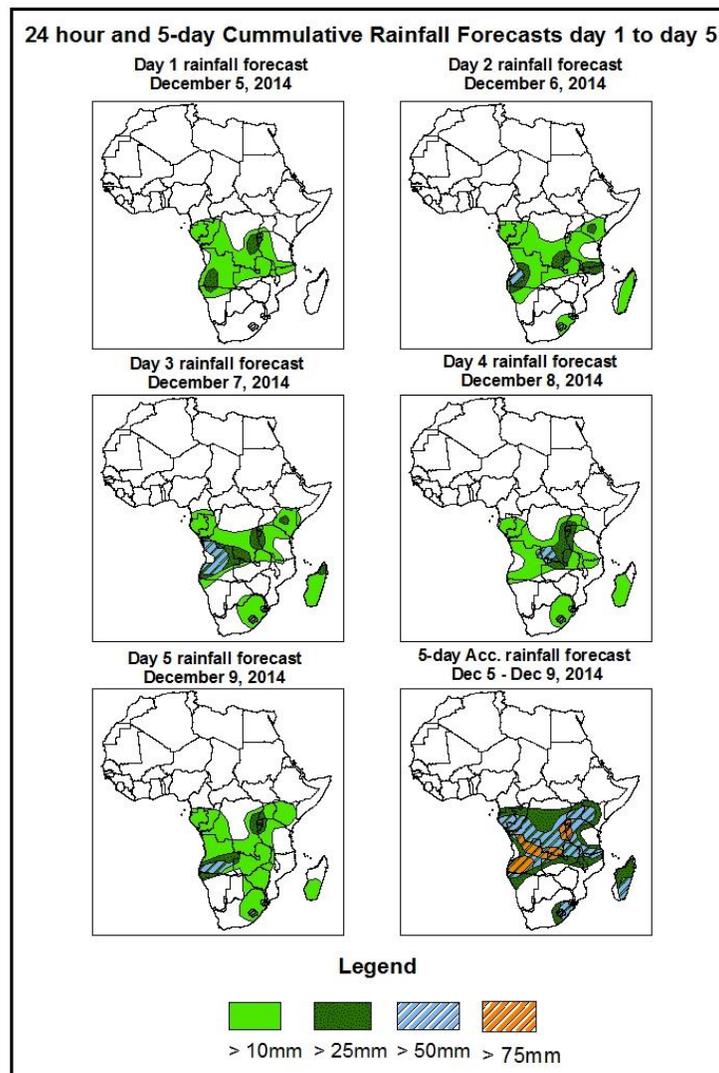


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall Forecast: Valid 06Z of December 05 – 06Z of December 09, 2014. (Issued at 1800Z of December 04, 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.

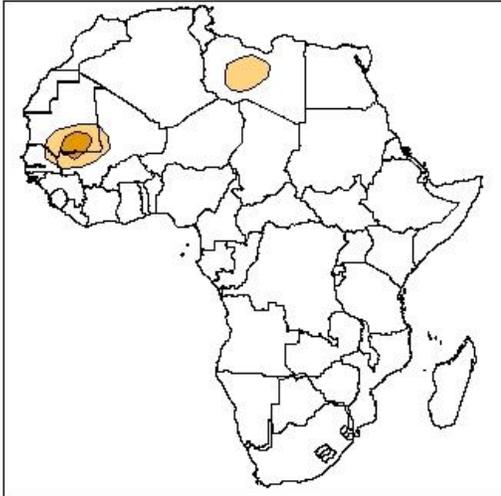


### Summary

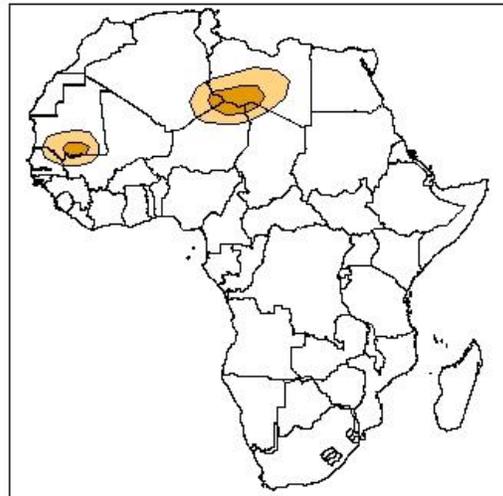
In the next five days, lower-level wind convergence over Gabon, Congo-Brazzaville and the neighboring areas, seasonal wind convergences over the Lake Victoria region, lower-level wind convergence across Angola and Zambia, and wind convergence across South Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over parts of Gabon, Congo-Brazzaville, Equatorial Guinea, Angola, northern Namibia, eastern and southern DRC, Rwanda, Burundi, western Tanzania, portions of Kenya, northern Zambia, portions of Malawi, northern Mozambique, eastern South Africa and parts of Madagascar.

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

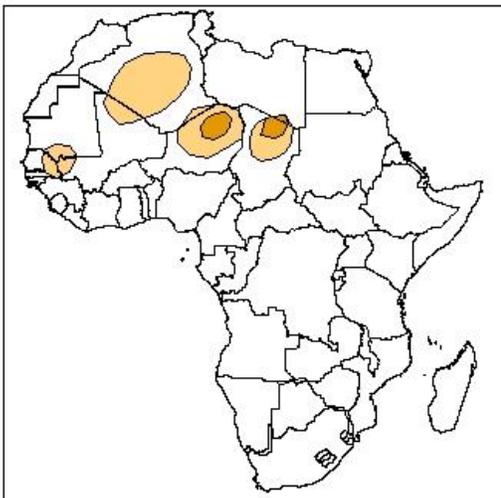
**Day 1 Dust forecast**  
December 5, 2014



**Day 2 Dust forecast**  
December 6, 2014



**Day 3 Dust forecast**  
December 7, 2014



**Highlights**

There is an increased chance for moderate to high dust concentration over portions of Mauritania, Algeria, Mali, eastern Senegal, Libya, Niger and northern Chad.

**Legend**



MDC, Vis. < 5km



HDC, Vis. < 1km

## **1.2. Model Discussion: Valid from 00Z of December 4, 2014**

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken gradually with its central pressure value decreasing from about 1044hpa in 24 hours to 1038hpa in 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 decrease from about 1026hpa to 1021hpa through 24 to 120hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to intensify while shifting eastwards, with its central pressure increasing from 1022hpa to 1029hpa through 24 to 120hours, according to the GFS model.

The 1012mb isobar, associated with the East African ridge, is expected to retreat southwards from northern Kenya to northern Mozambique during the forecast period.

At 925Hpa level, dry northeasterly wind (>25kts) is expected to prevail across portions of Mali, Niger, Chad and Sudan through 24 to 120 hours.

At 850Hpa level, seasonal wind convergences are expected to remain active in the vicinity of Lake Victoria. Wind convergences across Gabon, Angola, Zambia, southern DRC and Namibia and South Africa are also expected to remain active during the forecast period. A lower level trough in the Mozambique Channel is expected to shift eastwards across Madagascar while weakening towards end of the forecast period, according to the GFS model.

In the next five days, lower-level wind convergence over Gabon, Congo-Brazzaville and the neighboring areas, seasonal wind convergences over the Lake Victoria region, lower-level wind convergence across Angola and Zambia, and wind convergence across South Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over parts of Gabon, Congo-Brazzaville, Equatorial Guinea, Angola, northern Namibia, eastern and southern DRC,

Rwanda, Burundi, western Tanzania, portions of Kenya, northern Zambia, portions of Malawi, northern Mozambique, eastern South Africa and parts of Madagascar.

## **2.0. Previous and Current Day Weather Discussion over Africa**

**(December 03, 2014 – December 04, 2014)**

### **2.1. Weather assessment for the previous day (December 03, 2014)**

During the previous day, moderate to locally heavy rainfall was observed over portions of Angola, DRC, parts of Kenya and Southeastern South Africa.

### **2.2. Weather assessment for the current day (December 04, 2014)**

Intense clouds are observed across portions of DRC, Angola, Zambia, western Tanzania, Botswana, eastern Namibia, and coastal South Africa.

