

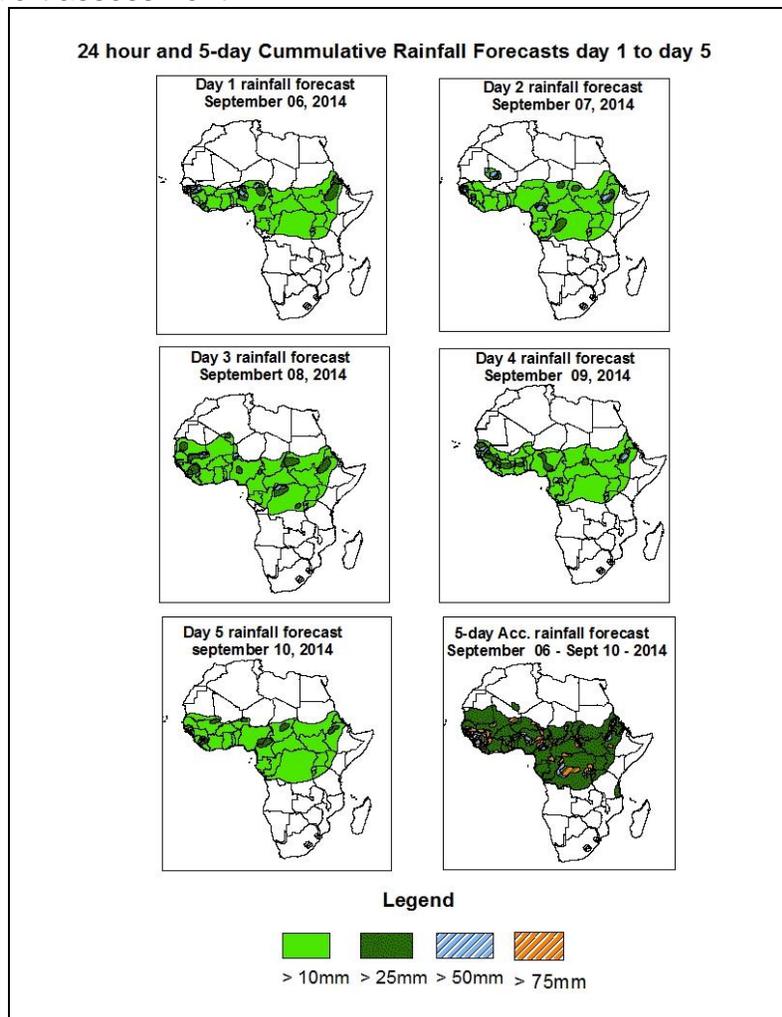


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall Forecast: Valid 06Z of September 06 – 06Z of September 10, 2014. (Issued at 1800Z of September 05, 2014)

### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

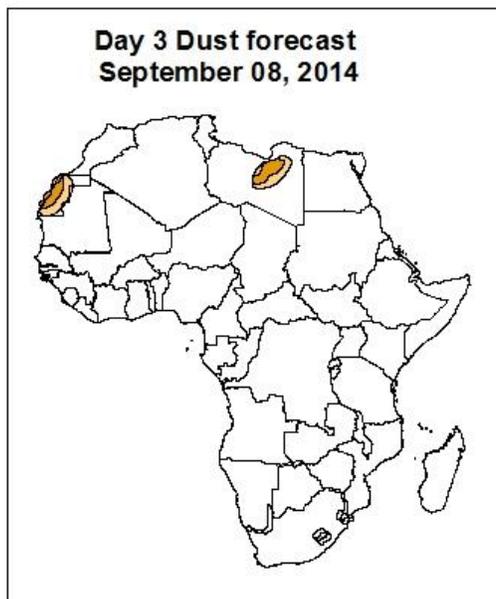
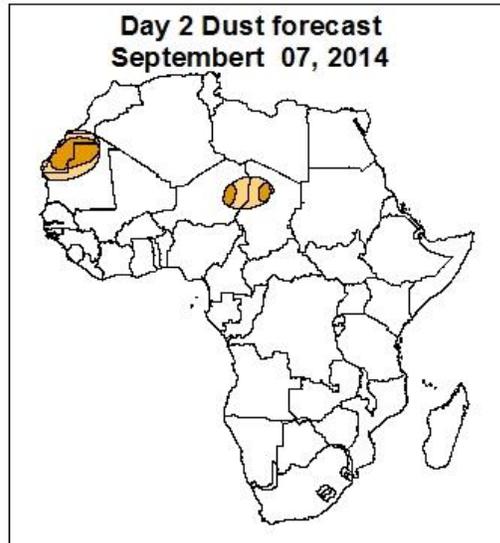
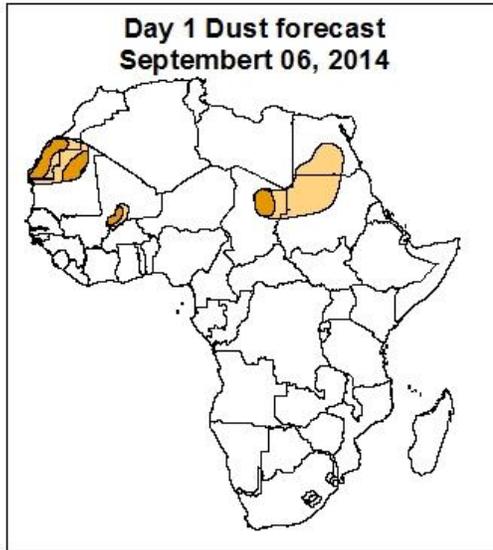
The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP/GFS and the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### Summary

In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC and Uganda and the neighboring areas, and active easterly wave activity across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over local areas in Mauritania, Uganda and Tanzania, Guinea-Conakry, Sierra Leone, Liberia, Nigeria, Gabon, Cameroon, CAR, Benin, Togo, portions of DRC, Congo Brazzaville, Ghana, Ivory Coast, Senegal, Chad, Mali, Sudan, Eritrea and Ethiopia, western Kenya, southeastern Niger.

**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 to high dust  
concentration over Western  
Sahara, Libya, Egypt, Mali,  
Mauritania, border Niger-Chad  
and northern Sudan.**

**Legend**



MDC, Vis. < 5km



HDC, Vis. < 1km

## **1.2. Model Discussion: Valid from 00Z of September 05, 2014**

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify from 24 hours to 96 hours, with its central pressure value increasing from about 1019hpa in 24 hours to 1026hpa in 96 hours, and then it is expected to maintain its central pressure value of about 1026hpa through 96 hours to 120 hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken from 24 to 96 hours, with its central pressure value decreasing from about 1036hpa in 24 hours to 1030hpa in 96 hours, and then it is expected to maintain its central pressure value of about 1030hpa through 96 hours to 120 hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken from 24 to 72 hours with its central pressure value decreasing from about 1037hpa in 24 hours to 1024hpa in 72 hours, and it intensify from 72 hours to 96 hours, with its central pressure value increasing from about 1024hpa in 72 hours to 1026hpa in 96 hours, and then it is expected to maintain its central pressure value of about 1026hpa through 96 hours to 120 hours, according to the GFS model.

The central pressure value associated with the heat low in the region between western and central Sahel is expected to vary in the range between 1006hpa and 1007hpa during the forecast period. The heat low over Sudan is expected to vary in the range between 1005hpa and 1006hpa from 24 to 120 hours. The heat low across DRC is expected to vary slightly in the range between 1010hpa and 1011hpa during the forecast period, according to the GFS model.

At 925Hpa level, a zonal wind convergence is expected to prevail in the region between Mauritania and Sudan through 24 to 120 hours. Dry northeasterly winds are expected to prevail over parts of Western Sahara, Libya, Egypt and Sudan. Local wind convergences are also expected over DRC, Tanzania, Rwanda, Uganda, Kenya and Ethiopia during the forecast period.

At 850Hpa level, cyclonic circulation is expected to propagate westwards between Nigeria and Senegal through 24 to 120 hours. Local wind convergences are expected to remain active over DRC, Uganda, Rwanda, Tanzania, Eritrea and Ethiopia during the forecast period.

At 700hpa level, a trough in the easterly flow is expected to propagate westwards between Nigeria and southern Senegal through 24 to 120 hours.

At 500Hpa level, a zone of moderate wind (>30kts), associated with African easterly jet is expected to propagate across Niger, Burkina, Mali, Mauritania and Senegal through 24 to 120 hours.

In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC and Uganda and the neighboring areas, and active easterly wave activity across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over local areas in Mauritania, Uganda and Tanzania, Guinea-Conakry, Sierra Leone, Liberia, Nigeria, Gabon, Cameroon, CAR, Benin, Togo, portions of DRC, Congo Brazzaville, Ghana, Ivory Coast, Senegal, Chad, Mali, Sudan, Eritrea and Ethiopia, western Kenya, southeastern Niger.

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

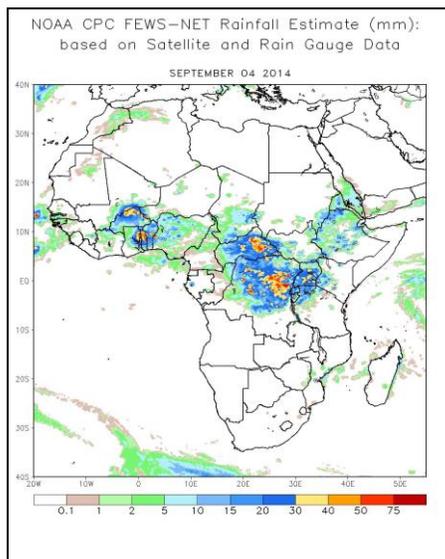
(September 04, 2014 – September 05, 2014)

### 2.1. Weather assessment for the previous day (September 04, 2014)

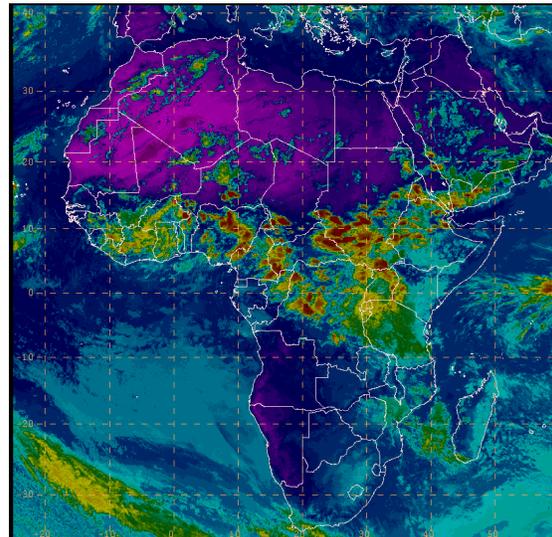
During the previous day, moderate to heavy rainfall was observed over local areas in Mauritania, Senegal, Sierra Leon, Guinea-Conakry, Niger, Kenya, Tanzania, Gabon, Sudan and Cameroon, Togo, Benin, Nigeria, CAR, Uganda and Eritrea, portions of Mali, Ivory Coast, Chad, Ethiopia, DRC and Congo Brazzaville.

### 2.2. Weather assessment for the current day (September 05, 2014)

Intense clouds are observed over portions of CAR and DRC, local areas in Niger, DRC, Ethiopia, Ivory Coast, Guinea Conakry, Cameroon and Uganda, northern Tanzania, Burkina Faso and Congo Brazzaville, western Kenya, portions of Nigeria, Sudan, Chad, CAR and Eritrea.



IR Satellite Image (valid 1622 Z of September 05, 2014)



*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*

**Author: Kouakou YA** (Cote d'Ivoire, Service National de la Meteorologie / CPC-African Desk); [kouakou.ya@noaa.gov](mailto:kouakou.ya@noaa.gov)

