

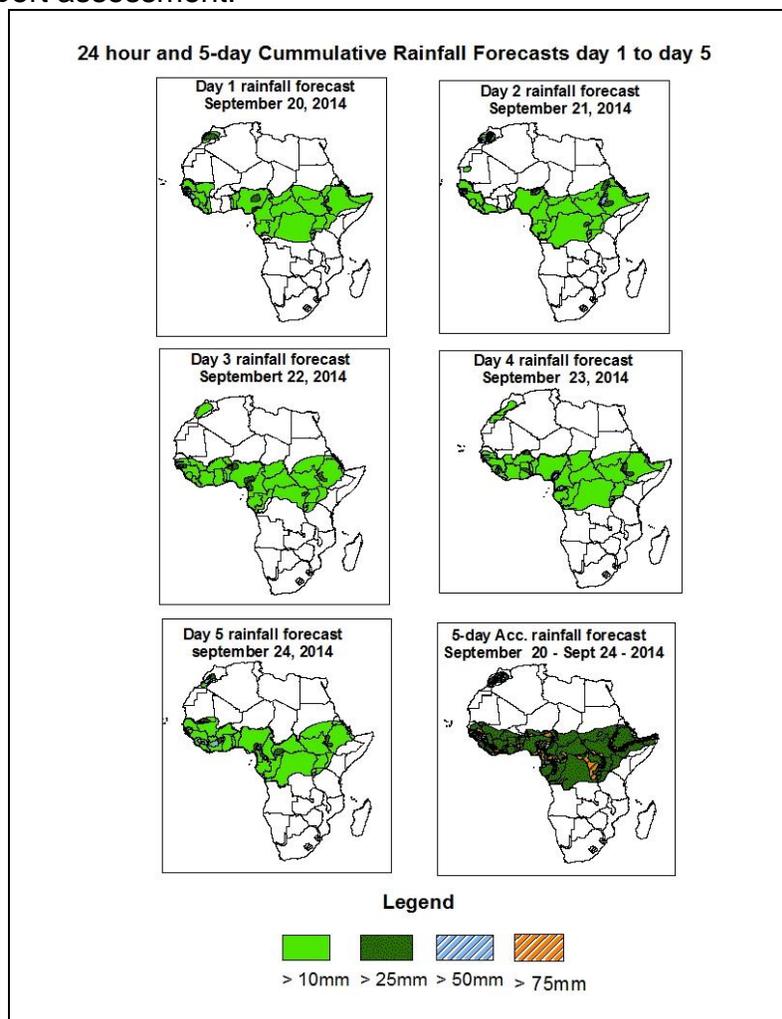


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Rainfall Forecast: Valid 06Z of September 20 – 06Z of September 24, 2014. (Issued at 1800Z of September 19, 2014)

### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

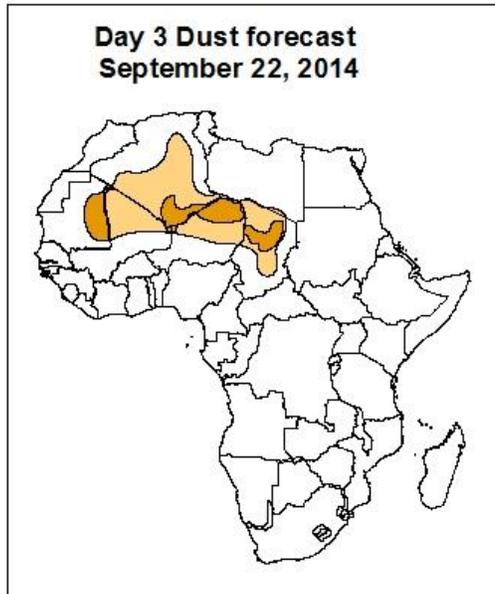
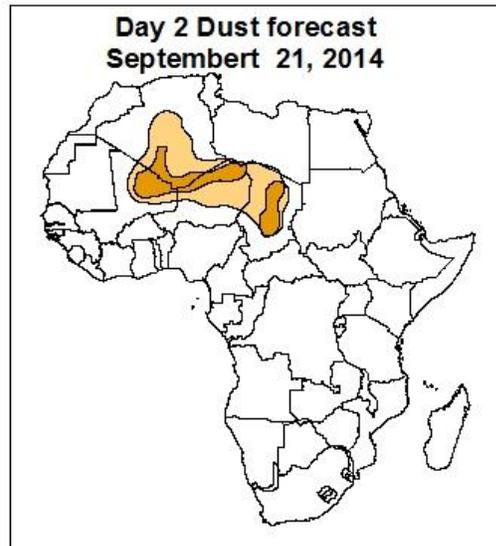
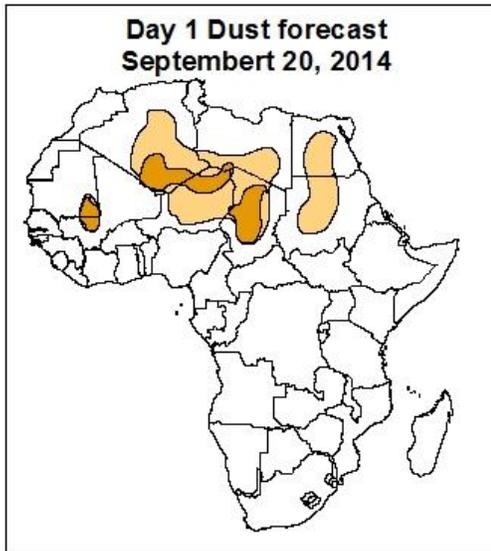
The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP/GFS and the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### 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 eastward propagating trough across the Gulf of Guinea region are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Guinea-Conakry, Liberia, Benin, Togo, Ghana, Ivory Coast, Nigeria, Gabon, Sierra Leone, Cameroon and CAR, portions of Sudan, DRC, Mali, Senegal and Congo Brazzaville, local areas in Ethiopia and Uganda, western Kenya, southern Chad and Burkina Faso.

**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 Algeria,  
Niger, Chad, Mali and Sudan.**

**Legend**



MDC, Vis. < 5km



HDC, Vis. < 1km

## **1.2. Model Discussion: Valid from 00Z of September 19, 2014**

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify from 24 hours to 72 hours, with its central pressure value increasing from about 1026hpa in 24 hours to 1034hpa in 72 hours, and it maintains from 72 to 96 hours, its central pressure value of about 1034hpa, and then it is expected to weaken from 96 to 120 hours with its central pressure value decreasing from about 1034hpa in 96 hours to 1031hpa in 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 72 hours with its central pressure value decreasing from about 1026hpa in 24 hours to 1022hpa in 72 hours, and then it is expected to intensify from 72 to 120 hours, with its central pressure value increasing from about 1022hpa in 72 hours to 1031hpa in 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 1031hpa in 24 hours to 1026hpa in 72 hours, and it maintains from 72 to 96 hours, its central pressure value of about 1026hpa, and then it is expected to intensify from 96 to 120 hours, with its central pressure value increasing from about 1026hpa in 96 hours to 1029hpa in 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 1007hpa and 1010hpa during the forecast period. The heat low over Sudan is expected to vary in the range between 1006hpa and 1008hpa from 24 to 120 hours. The heat low across DRC is expected to vary in the range between 1009hpa and 1010hpa 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 Algeria, Libya, Sudan, Niger, Chad and Mali. Local wind convergences are also expected over DRC, Tanzania, Uganda, Burundi, Rwanda and Ethiopia during the forecast period.

At 850Hpa level, a cyclonic circulation with its associated trough is expected to propagate westwards between Nigeria and Guinea Conakry-Sierra Leone through 24 to 120 hours. Local wind convergences are expected to remain active over DRC, Uganda, Kenya, Tanzania, Burundi, Rwanda, Eritrea and Ethiopia during the forecast period.

At 700hpa level, a trough in the easterly flow is expected to propagate westwards between Nigeria and Guinea Conakry-Sierra Leone 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 eastward propagating trough across the Gulf of Guinea region are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Guinea-Conakry, Liberia, Benin, Togo, Ghana, Ivory Coast, Nigeria, Gabon, Sierra Leone, Cameroon and CAR, portions of Sudan, DRC, Mali, Senegal and Congo Brazzaville, local areas in Ethiopia and Uganda, western Kenya, southern Chad and Burkina Faso.

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

**(September 18, 2014 – September 19, 2014)**

**2.1. Weather assessment for the previous day (September 18, 2014)**

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

**2.2. Weather assessment for the current day (September 19, 2014)**

Intense clouds are observed over portions of Cameroon, CAR and Sudan, local areas in Ivory Coast, Guinea-Conakry, Nigeria, Cameroon, Congo Brazzaville, DRC and Ethiopia, western Senegal, Mauritania and Kenya, Northern Gabon and Tanzania, eastern Chad.

