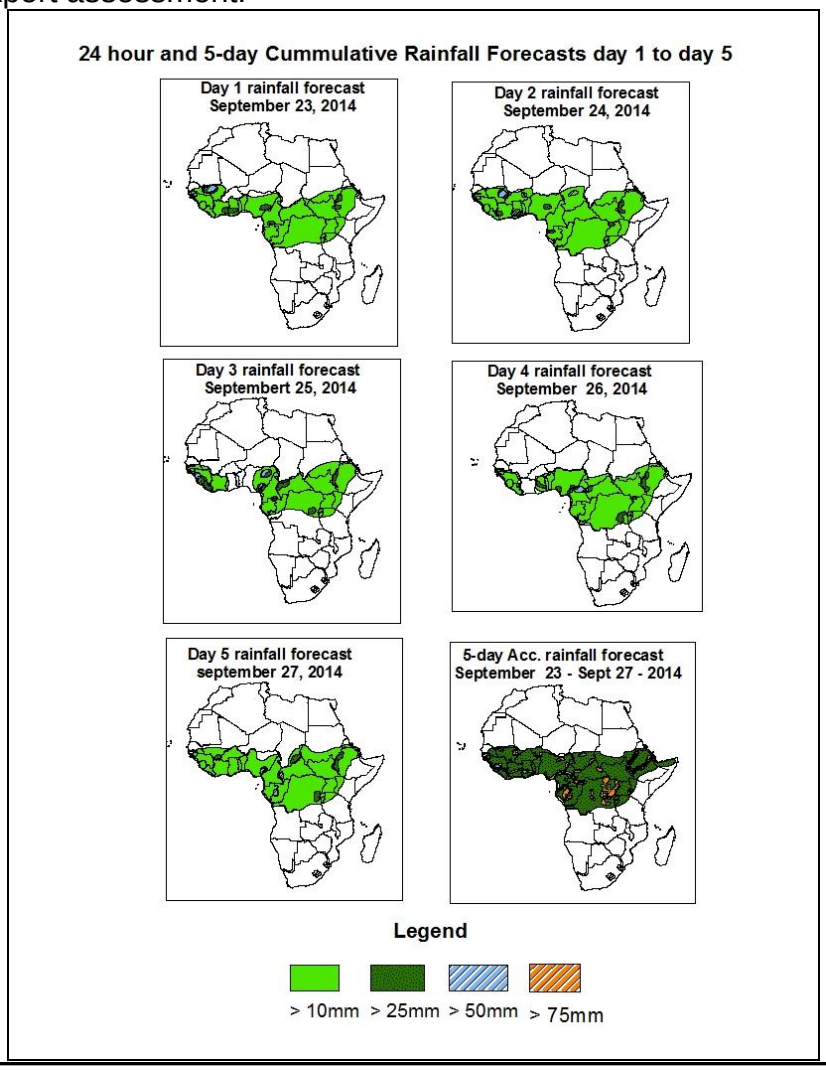
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of September 24 – 06Z of September 27, 2014. (Issued at 1800Z of September 22, 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.

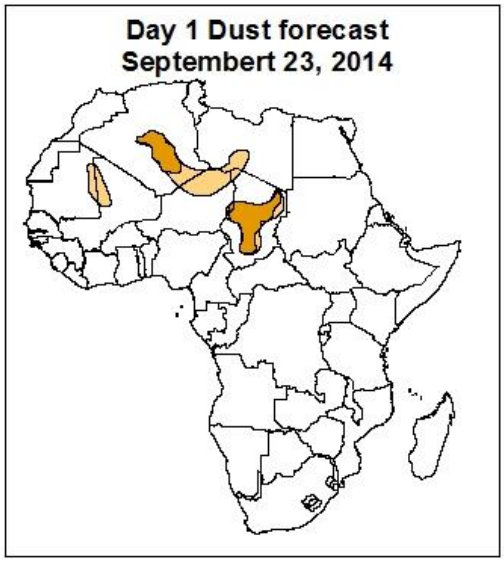


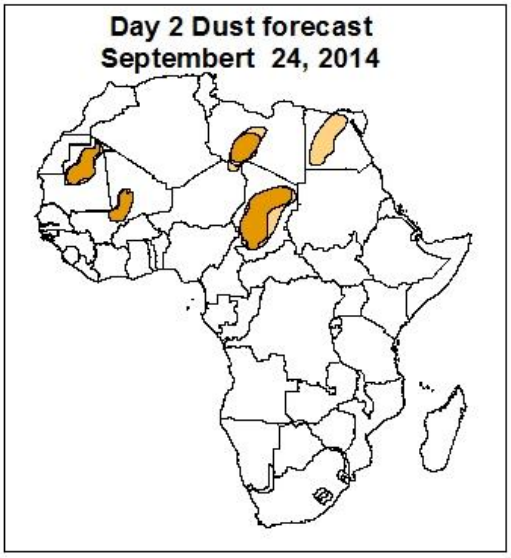
Summary

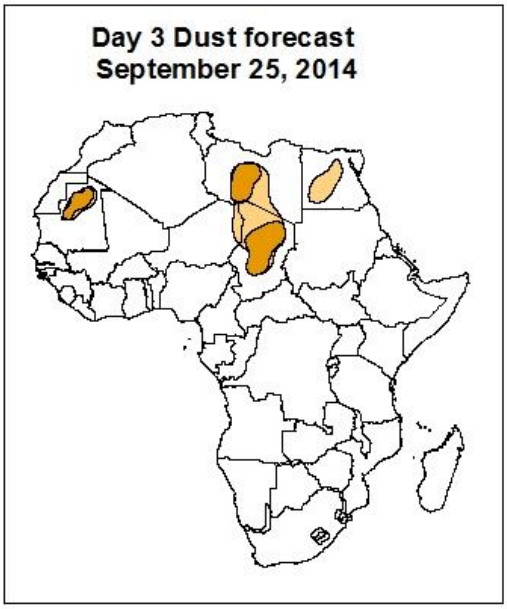
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC and Uganda and the neighboring areas, and eastward propagating trough across the Gulf of Guinea region are expected to enhance rainfall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

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, Libya, Mauritania, Chad, Mali and Sudan.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of September 22, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken from 24 to 48hours with its central pressure value decreasing from about 1035hpa in 24 hours to 1034hpa in 48hours, and it intensifies from 48 to 72 hours, with its central pressure value increasing from about 1034hpa in 48hours to 1037hpa in 72 hours, and then it is expected to weaken from 72 to 120hours, with its central pressure value decreasing from about 1037hpa in 72 hours to 1024hpa in 120hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify from 24 to 120 hours, with its central pressure value increasing from about 1027hpa in 24 hours to 1039hpa in 120hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to intensify from 24 to 96 hours, with its central pressure value increasing from about 1024hpa in 24 hours to 1037hpa in 96hours, and then it is expected to weaken from 96 to 120hours with its central pressure value decreasing from about 1037hpa in 96 hours to 1036hpa in 120hours, 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 1009hpa during the forecast period. The heat low over Sudan is expected to vary in the range between 1005hpa 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, Mauritania, 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 southern Nigeria and Sierra Leone through 24 to 120 hours. Local wind convergences are expected to remain active over DRC, Uganda, 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 southern Nigeria and southwestern 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 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, Gabon, Sierra Leone, Cameroon and CAR and Congo Brazzaville, portions of Nigeria, Sudan, DRC, Mali, Chad and Burkina Faso, local areas in Ethiopia and Uganda, southern Senegal, Niger and Eritrea, western Kenya.

2.0. Previous and Current Day Weather Discussion over Africa

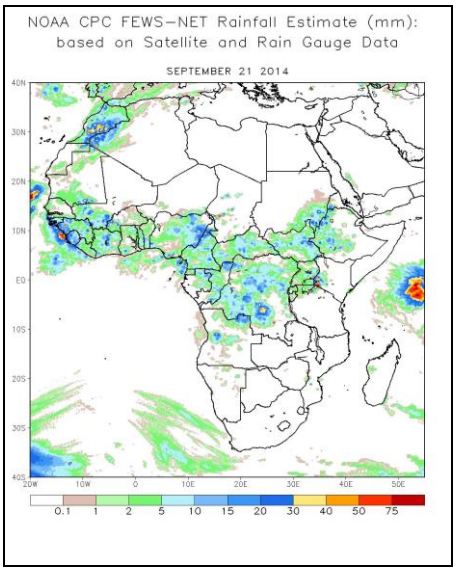
(September 21, 2014 – September 22, 2014)

2.1. Weather assessment for the previous day (September 21, 2014)

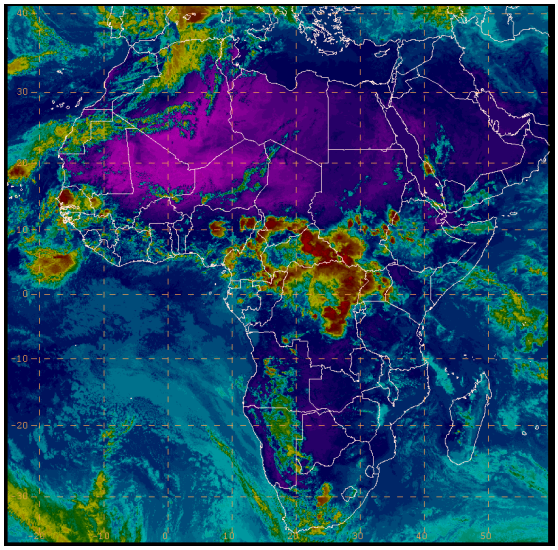
During the previous day, moderate to heavy rainfall was observed over Ghana, Benin, Togo, Liberia, Sierra Leone, CAR, Cameroon, Guinea-Conakry, Ivory Coast and Uganda, portions of Senegal, Nigeria, Mali, Congo Brazzaville, DRC, Gabon, Burkina Faso, Sudan, Burundi and Rwanda, local areas in Mauritania,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

2.2. Weather assessment for the current day (September 22, 2014)

Intense clouds are observed over portions of Senegal, DRC, CAR, Uganda and Sudan, local areas in Nigeria, Niger, Cameroon and Ethiopia, southern Mali, and Chad, Northern Congo Brazzaville, Western Kenya.



IR Satellite Image (valid 1552 Z of September 22, 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

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