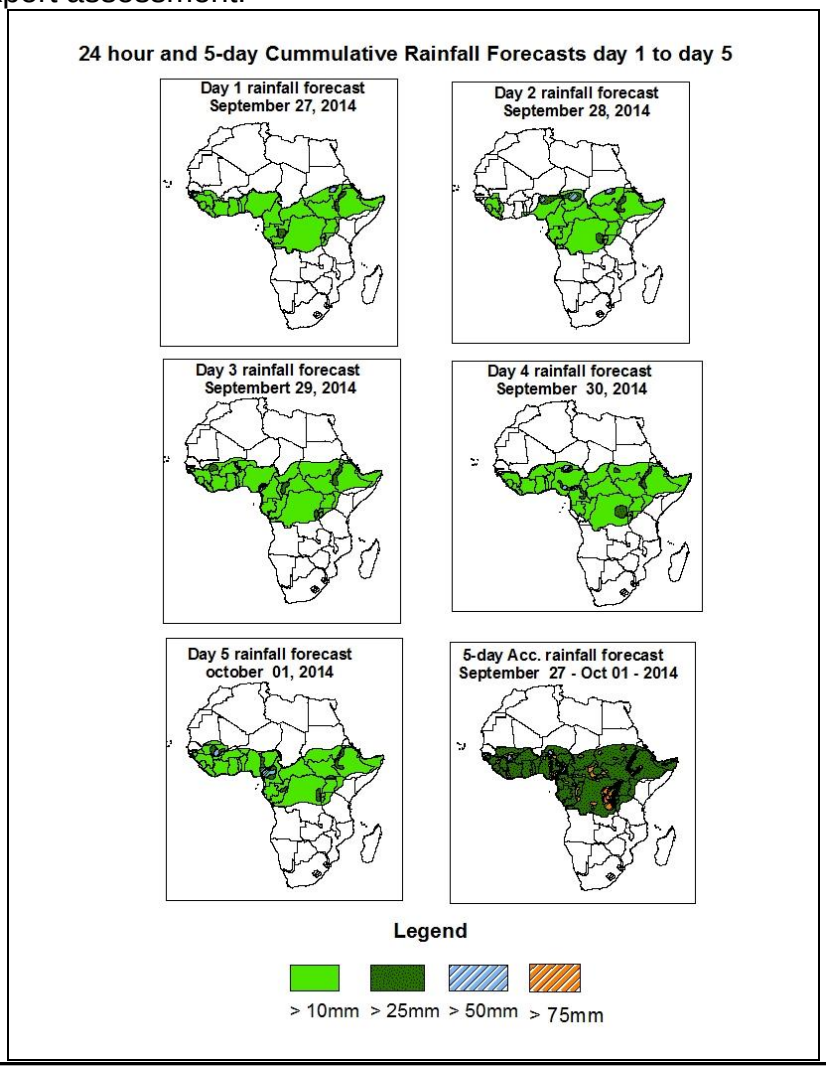
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of September 27 – 06Z of October 01, 2014. (Issued at 1800Z of September 26, 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.

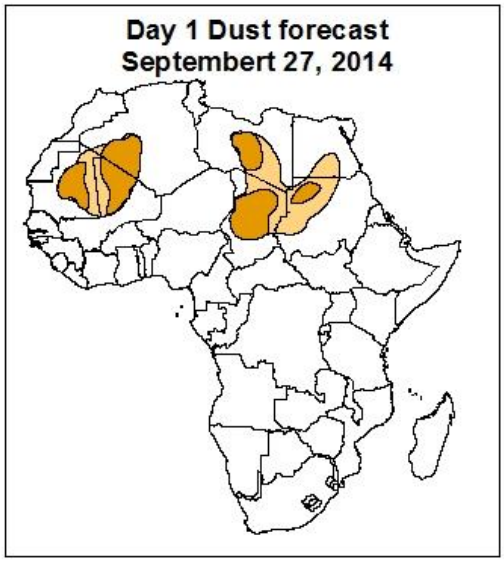


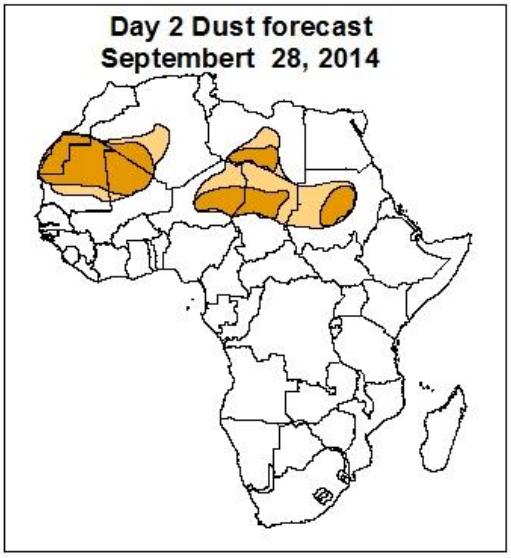
Summary

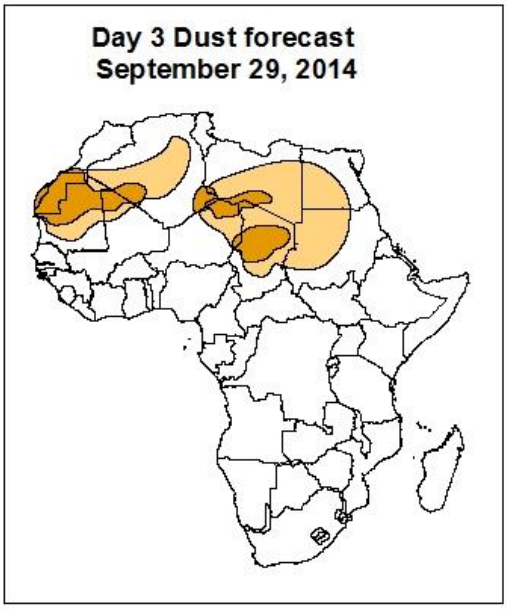
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, active convergence in the CAB region, localized wind convergences over Ethiopia, and eastward propagating trough across the Gulf of Guinea region are expected to enhance rainfall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

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, Algeria, Libya, Mali, Sudan, Mauritania, Niger and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of September 26, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to maintain from 24 to 72 hours, its central pressure value of about 1023hpa, and then it is expected to intensify from 72 to 120hours, with its central pressure value increasing from about 1022hpa in 72 hours to 1027hpa in 120hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken from 24 to 72hours, with its central pressure value decreasing from about 1037hpa in 24 hours to 1033hpa in 72hours, and it maintains from 72 to 96 hours, its central pressure value of about 1033hpa, and then it is expected to weaken again from 96 to 120hours, with its central pressure value decreasing from about 1033hpa in 96 hours to 1031hpa in 120hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken from 24 to 48hours, with its central pressure value decreasing from about 1037hpa in 24 hours to 1032hpa in 48hours, and it intensifies from 48 to 72 hours, with its central pressure value increasing from about 1032hpa in 48 hours to 1036hpa in 72hours, and then it is expected to weaken from 72 to 120hours, with its central pressure value decreasing from about 1036hpa in 72 hours to 1028hpa 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 1008hpa during the forecast period. The heat low over Sudan is expected to vary in the range between 1006hpa and 1010hpa 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 Western Sahara, Algeria, Libya, Mauritania, Sudan, Mali, Niger and Chad. Local wind convergences are also expected over DRC, Tanzania, Uganda, Kenya and Ethiopia during the forecast period**.**

At 850Hpa level, a cyclonic circulation with its associated trough is expected to propagate westwards between Nigeria and Liberia through 24 to 120 hours. Convergence associated with the Congo Air Boundary (CAB) is expected to remain active over eastern DRC and the neighboring areas. Local wind convergences are expected to remain active 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 southwestern Sierra Leone through 24 to 120 hours.

At 500hpa level, a zone of moderate wind (>30kt) associated with African easterly jet is expected to propagate Nigeria and Ivory Coast into the Atlantic ocean from 24 to 48hours.

In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, active convergence in the CAB region, localized wind convergences over Ethiopia, 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, Sierra Leone, Cameroon, Nigeria, CAR, Congo Brazzaville, Burundi and Rwanda, Uganda, portions of Sudan, Ethiopia and DRC, Gabon, Burkina Faso, southern Mali and Chad, eastern Niger, western Kenya and northern Tanzania.

2.0. Previous and Current Day Weather Discussion over Africa

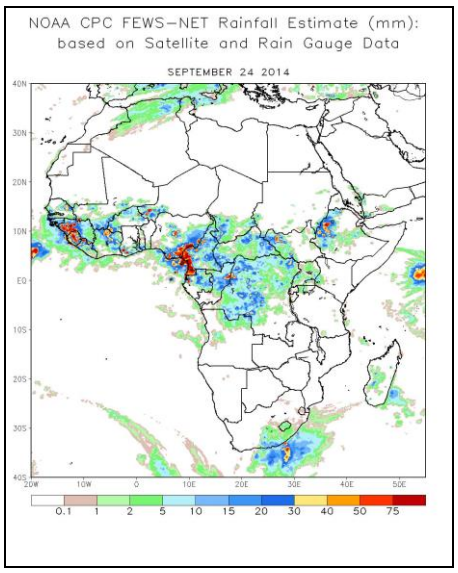
(September 25, 2014 – September 26, 2014)

2.1. Weather assessment for the previous day (September 25, 2014)

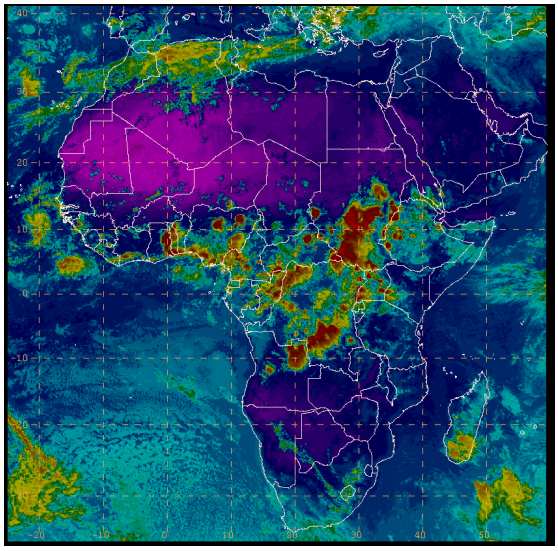
During the previous day, moderate to heavy rainfall was observed over Guinea-Conakry, Sierra Leone, CAR, Liberia, Ivory Coast , Burkina Faso, Cameroon, Uganda, portions of Mali, Congo Brazzaville, DRC, Gabon, Senegal, Nigeria, Ethiopia and Sudan, local areas in Benin, Togo, Tanzania, Eritrea, southern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

2.2. Weather assessment for the current day (September 26, 2014)

Intense clouds are observed over portions of Sudan, Congo Brazzaville, Togo, Ghana, local areas in Nigeria, Mali, Benin, Ethiopia, DRC, Cameroon, Uganda, and CAR, southern Ivory Coast, western Senegal and eastern Niger.



IR Satellite Image (valid 1622 Z of September 26, 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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