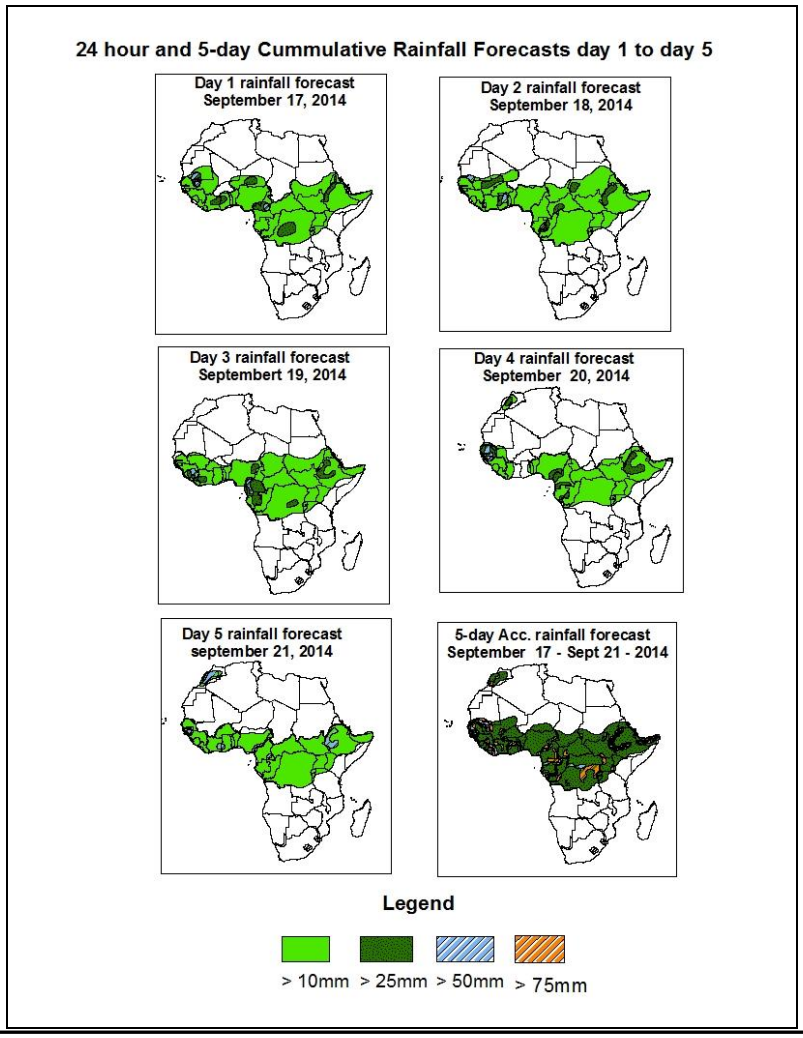
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of September 17 – 06Z of September 21, 2014. (Issued at 1800Z of September 16, 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.

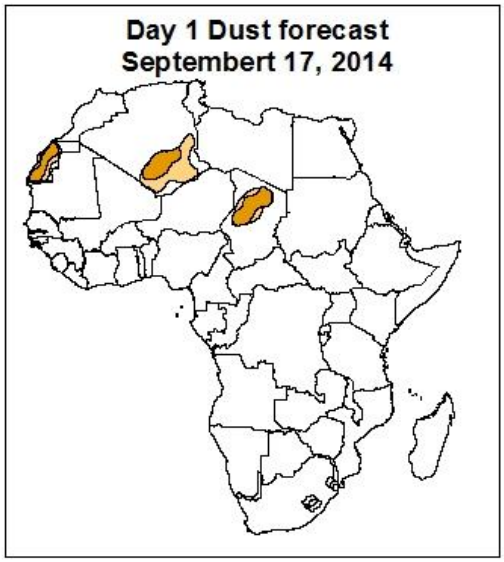


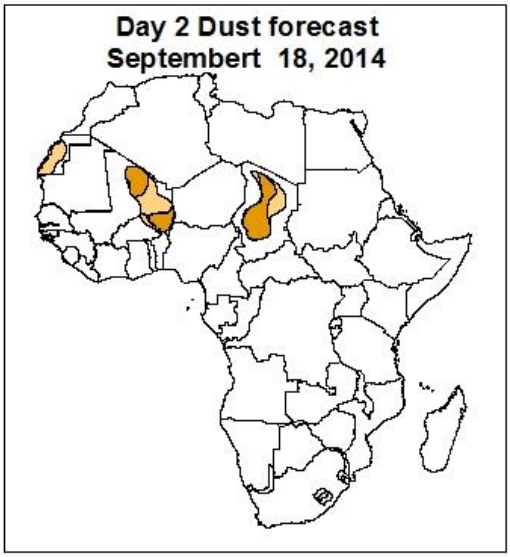
Summary

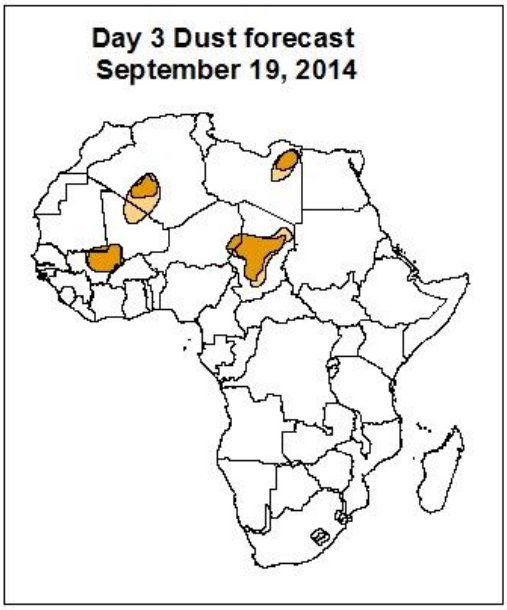
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC and Uganda and the neighboring areas, and active easterly wave activity across West Africa are expected to enhance rainfall in their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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of September 16, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to maintain from 24 to 48 hours, its central pressure value of about 1023hpa, and it weakens from 48 to 96hours with its central pressure value decreasing from about 1023hpa in 48 hours to 1021hpa in 96hours, and then it is expected to intensify from 96hours to 120 hours, with its central pressure value increasing from about 1021hpa in 96hours 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 48hours with its central pressure value decreasing from about 1030hpa in 24 hours to 1024hpa in 48hours, and it intensifies from 48hours to 72 hours, with its central pressure value increasing from about 1024hpa in 48hours to 1027hpa in 72 hours, and then it is expected to weaken from 72 to 120hours with its central pressure value decreasing from about 1027hpa in 72 hours to 1025hpa in 120hours, 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 1035hpa in 24 hours to 1030hpa in 72hours, and then it is expected to intensify from 72 to 120 hours, with its central pressure value increasing from about 1030hpa in 72 hours to 1033hpa 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 1005hpa and 1008hpa from 24 to 120 hours. The heat low across DRC is expected to vary in the range between 1008hpa 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, Chad and Mali. Local wind convergences are also expected over DRC, Tanzania, Uganda, Burundi and Ethiopia during the forecast period**.**

At 850Hpa level, a cyclonic circulation with its associated trough 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, Tanzania, Burundi, 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 Mauritania through 24 to 120 hours.

At 500Hpa level, a zone of moderate wind (>30kts), associated with African easterly jet is expected to propagate Burkina Faso and Mali into the Atlantic Ocean through 24 hours. Another zone moderate wind speed is expected to emerge over Chad and Senegal towards end of the forecast period.

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 Senegal, Guinea-Conakry, Liberia, Benin, Togo, Ghana, Ivory Coast, Gabon, Sierra Leone, Congo Brazzaville, Cameroon and CAR, portions of Mali, Burkina Faso, Nigeria, DRC, Ethiopia and Sudan, local areas in Uganda, western Kenya, southern Mauritania and Chad, eastern Niger.

2.0. Previous and Current Day Weather Discussion over Africa

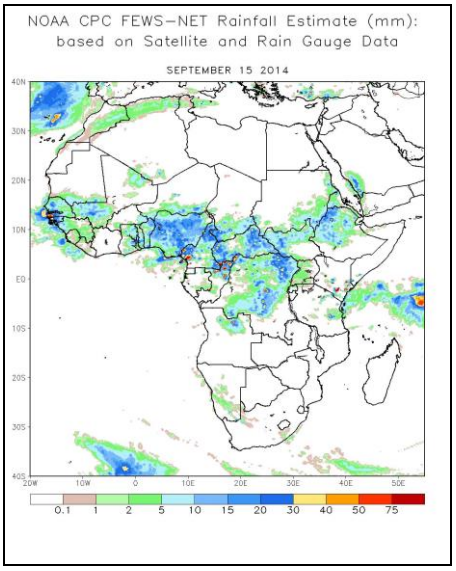
(September 15, 2014 – September 16, 2014)

2.1. Weather assessment for the previous day (September 15, 2014)

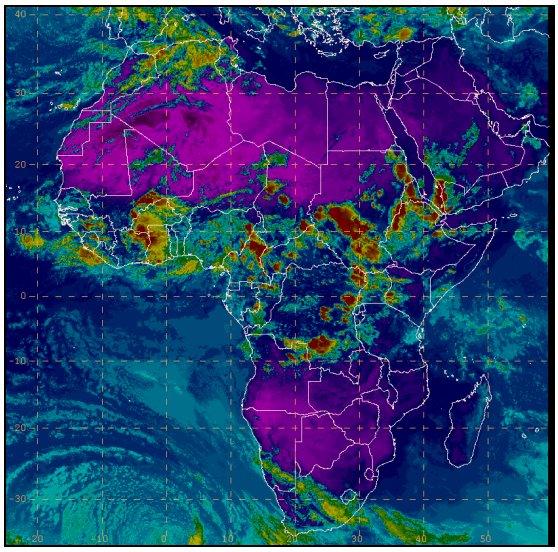
During the previous day, moderate to heavy rainfall was observed over Senegal, Guinea-Conakry, Benin, Togo, Nigeria, Cameroon, CAR and Eritrea, portions of Mali, Ghana, Niger, DRC, Uganda, Sudan, Congo Brazzaville and Ethiopia, local areas in Liberia, Sierra Leone, Burkina Faso, Gabon, Tanzania and Kenya,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

2.2. Weather assessment for the current day (September 16, 2014)

Intense clouds are observed over portions of Burkina Faso, Ivory Coast, Ghana, Sudan, Eritrea and Ethiopia, local areas in Cameroon, CAR, DRC, Guinea-Conakry, Nigeria, Mali, Liberia, Uganda and Chad, Northern Congo Brazzaville, Eastern Gabon, western Kenya.



IR Satellite Image (valid 1500 Z of September 16, 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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