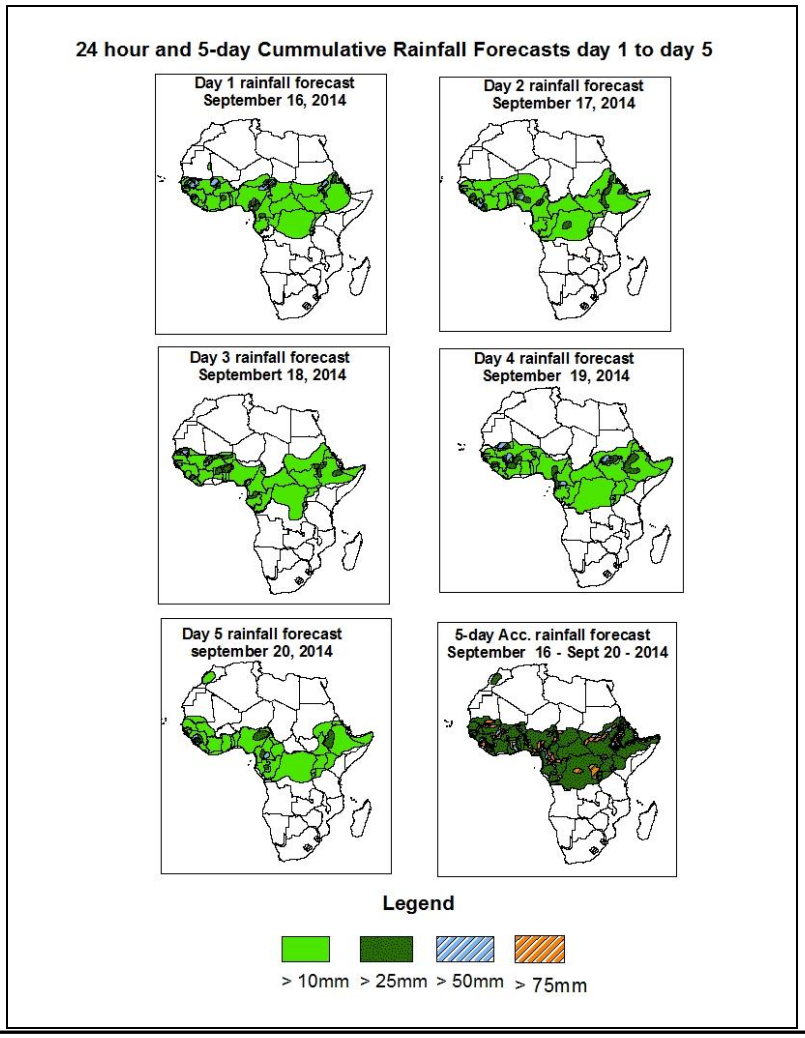
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of September 16 – 06Z of September 20, 2014. (Issued at 1800Z of September 15, 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.

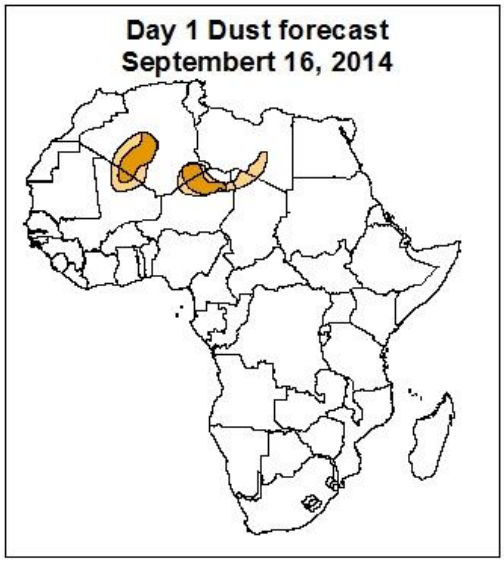


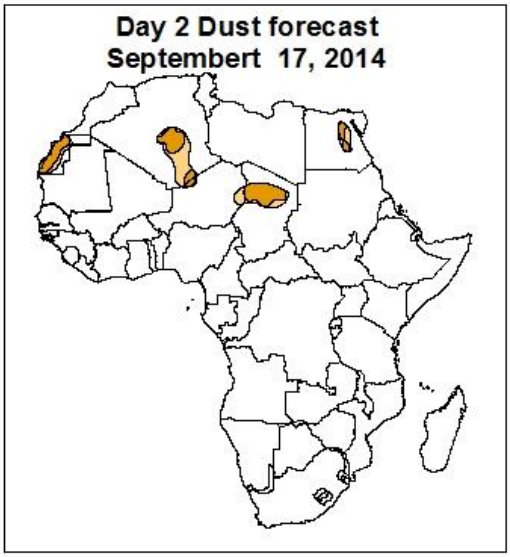
Summary

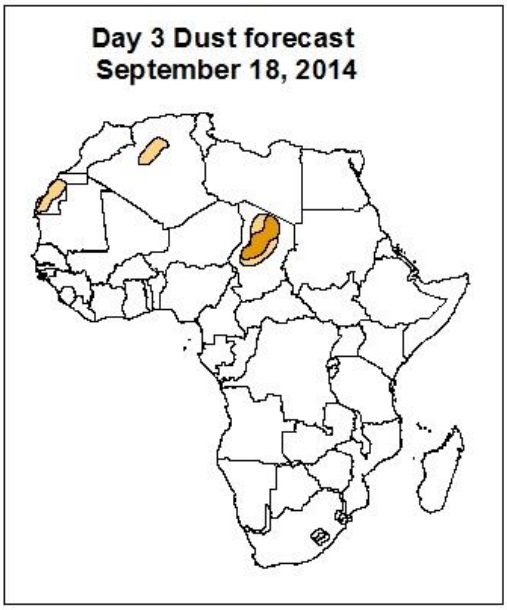
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC and Uganda and the neighboring areas, and active easterly wave activity across West Africa are expected to enhance rainfall in their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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of September 15, 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 1026hpa in 24 hours to 1023hpa in 48hours, and it maintains from 48 to 72 hours, its central pressure value of about 1023hpa, and then it is expected to weaken again from 72 to 120hours with its central pressure value decreasing from about 1023hpa in 72 hours to 1020hpa in 120hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify from 24hours to 72 hours, with its central pressure value increasing from about 1028hpa in 24hours to 1032hpa in 72 hours, and it weakens from 72 to 96 hours, with its central pressure value decreasing from about 1032hpa in 72 hours to 1026hpa in 96hours, and then it is expected to intensify from 96hours to 120 hours, with its central pressure value increasing from about 1026hpa in 96hours to 1028hpa 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 48 hours, with its central pressure value decreasing from about 1025hpa in 24 hours to 1022hpa in 48hours, and then it is expected to intensify from 48 to 120 hours, with its central pressure value increasing from about 1022hpa in 48 hours to 1032hpa 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 1007hpa from 24 to 120 hours. The heat low across DRC is expected to vary slightly in the range between 1008hpa and 1009hpa 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 Niger. Local wind convergences are also expected over DRC, Tanzania, Rwanda, 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 southern Mauritania 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 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 Mauritania into the Atlantic Ocean through 24 hours. Another zone moderate wind speed is expected to emerge over Chad 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 Guinea-Conakry, Liberia, Benin, Togo, Ghana, Gabon, Sierra Leone, Congo Brazzaville, Cameroon, CAR and Eritrea, portions of Ivory Coast, Mali, Senegal , Burkina Faso, Nigeria, DRC, Sudan, local areas in Uganda and Ethiopia, southern Mauritania, Niger and Chad, western Kenya.

2.0. Previous and Current Day Weather Discussion over Africa

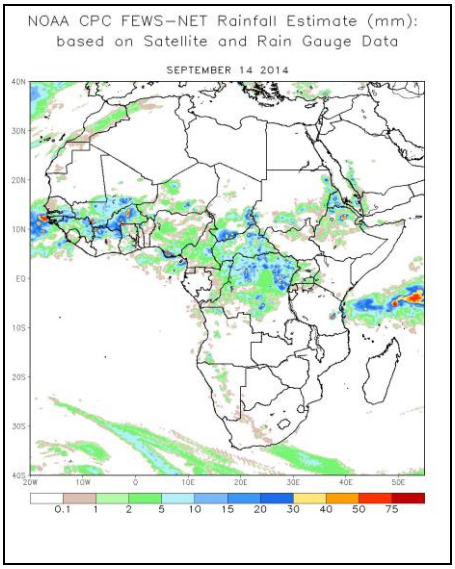
(September 14, 2014 – September 15, 2014)

2.1. Weather assessment for the previous day (September 14, 2014)

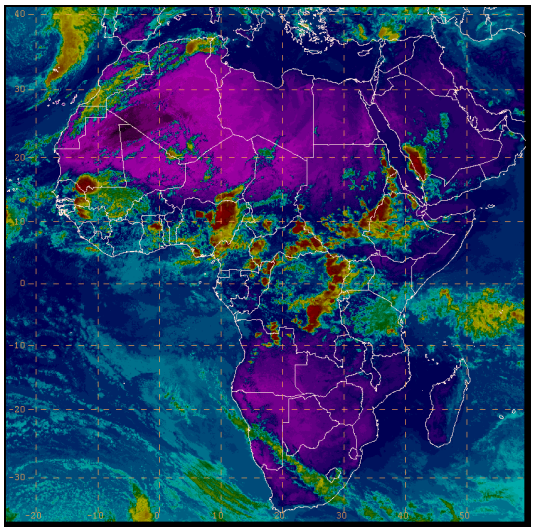
During the previous day, moderate to heavy rainfall was observed over Guinea-Conakry, Sierra Leone, Burkina Faso, Nigeria, Cameroon, CAR, Uganda and Eritrea, portions of Senegal, Mali, Ivory Coast, DRC, Ethiopia and Congo Brazzaville, local areas in Niger, Ghana, Tanzania, Sudan, Chad, Rwanda and Mauritania,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

2.2. Weather assessment for the current day (September 15, 2014)

Intense clouds are observed over portions of Senegal, Guinea-Conakry, Nigeria, DRC, Sudan, Eritrea and Ethiopia, local areas in Cameroon, CAR, Niger, Mali, Uganda and Tanzania, southern Mauritania and Chad, Northern Congo Brazzaville, Togo and Ghana.



IR Satellite Image (valid 1500 Z of September 15, 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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