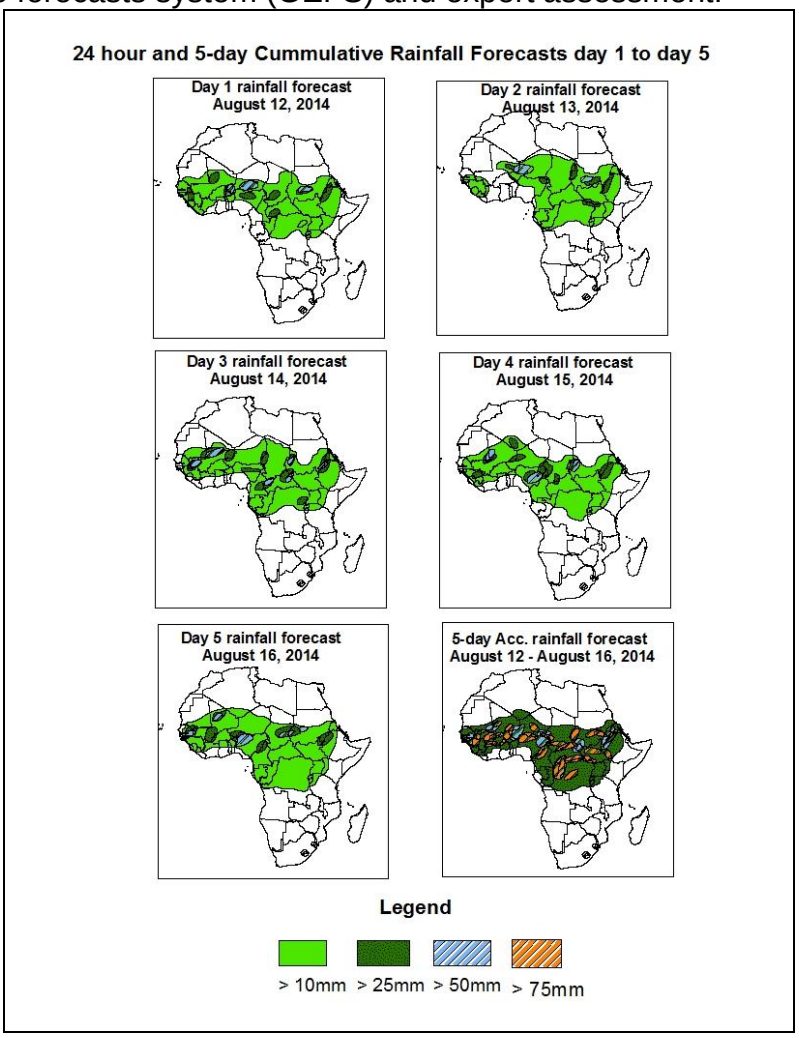
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of August 12 – 06Z of August 16, 2014. (Issued at 1800Z of August 11, 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 UK Met Office NWP outputs, 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 Sahel region, localized wind convergences over Ethiopia, DRC, Uganda, and the neighboring areas, and westward propagating cyclonic circulation 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, Sierra Leone, Liberia, portions of Mali, northern Cote d'Ivoire, northern Ghana, northern Togo, northern Benin, Burkina Faso, Niger, northern Nigeria, CAR, Chad and South Sudan, northern DRC, portions of Uganda, Eritrea, western Kenya and Ethiopia.

Atmospheric Dust Forecasts, day 1 to day 3,

Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

Day 1 Dust forecast
August 12, 2014

Day 2 Dust forecast
August 13, 2014

Day 3 Dust forecast
August 14, 2014

Highlights

There is an increased chance for moderate to high dust concentration over Western Sahara, Mauritania, Algeria and Mali.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of August 11, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken slightly from 24 to 48 hours with its central pressure decreasing about 1028hpa in 24 hours to 1027hpa in 48 hours, and then it is expected to maintain its central pressure value about 1027hpa from 48 to 120hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to maintain its central pressure about 1029hpa from 24 to 72hours, and then it is expected to increase from about 1029hpa in 72hours to 1033hpa in 120 hours, according to the GFS model.

The central pressure values associated with the Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken from 24 to 72 hours with its central pressure decrease about 1027hpa in 24 hours to 1022hpa in 72 hours, and then it is expected to intensify from 96 to 120 hours with its central pressure value about 1034hpa in 96 hours to 1037hpa 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 1004hpa to about 1007hpa during the forecast period. The heat low over Sudan is also expected to weaken from 24 to 72 hours with its central pressure decrease about 1009hpa in 24 hours to 1004hpa in 72 hours, and then it is expected to vary in the range between 1004hpa to 1005hpa from 96 to 120 hours, during the forecast period. The heat low across DRC is expected to vary in the range between 1010hpa to about 1011hpa 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 Mauritania, Libya Egypt and northern Sudan. Local wind convergences are also expected over DRC, Tanzania, Uganda, Rwanda, Burundi and Ethiopia during the forecast period**.**

At 850Hpa level, seasonal wind convergences are expected to remain active in the region between western Sahel and Sudan through 24 to 120 hours. Local wind convergences are also expected to remain active over DRC, Uganda, Kenya, Burundi, Rwanda Tanzania, Eritrea, and Ethiopia during the forecast period.

At 700hpa level, a cyclonic circulation and its associated trough is expected to propagate westwards between Chad and Mauritania-Senegal across West Africa through 24 to 120 hours.

At 500Hpa level, a zone of moderate wind (>30kts), associated with African easterly jet is expected to prevail over West Africa and chad, with its core propagating between southern Mauritania and Niger.

At 150hpa level, moderate wind (>30kts) is expected to prevail over northern part of western and central Sahel through 24hours to 120 hours**,** whereas strong wind (>50kts) associated with the Tropical Easterly Jet (TEJ) is expected to prevail over southern parts of West Africa, and central and eastern Africa, through 24 hours to 120 hours.

In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Ethiopia, DRC, Uganda, and the neighboring areas, and westward propagating cyclonic circulation 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, Sierra Leone, Liberia, portions of Mali, northern Cote d'Ivoire, northern Ghana, northern Togo, northern Benin, Burkina Faso, Niger, northern Nigeria, CAR, Chad and South Sudan, northern DRC, portions of Uganda, Eritrea, western Kenya and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

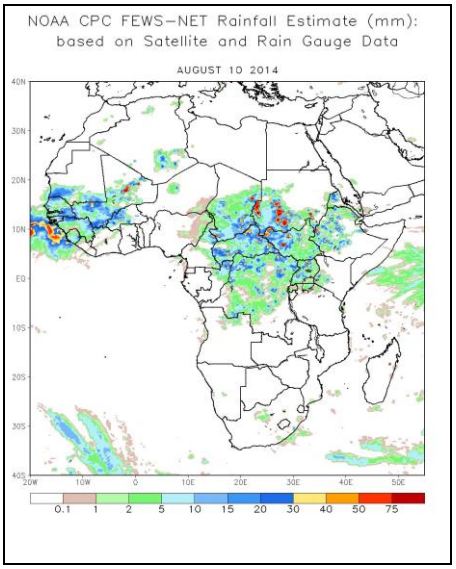
(August 10, 2014 – August 11, 2014)

2.1. Weather assessment for the previous day (August 10, 2014)

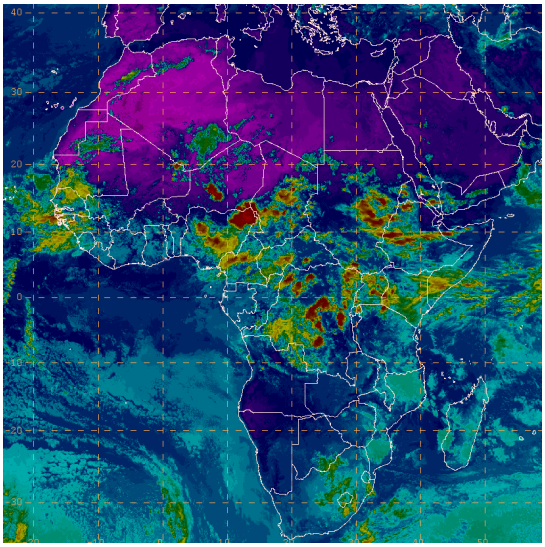
During the previous day, moderate to heavy rainfall was observed over portion of Northwestern to Cote d'Ivoire, Nigeria, Benin, Chad, Liberia, Northern DRC, CAR, portions of North Sudan and South Sudan, local areas in Uganda and Western Kenya, portions of Ethiopia.

2.2. Weather assessment for the current day (August 11, 2014)

Intense clouds are observed over northwestern Mali, Southern Mauritania, Gambia, local areas of Niger, western Cameroon, CAR, DRC, Nigeria, Sudan, Chad, Uganda, Ethiopia and Eritrea.



IR Satellite Image (valid 1630 Z of August 11, 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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