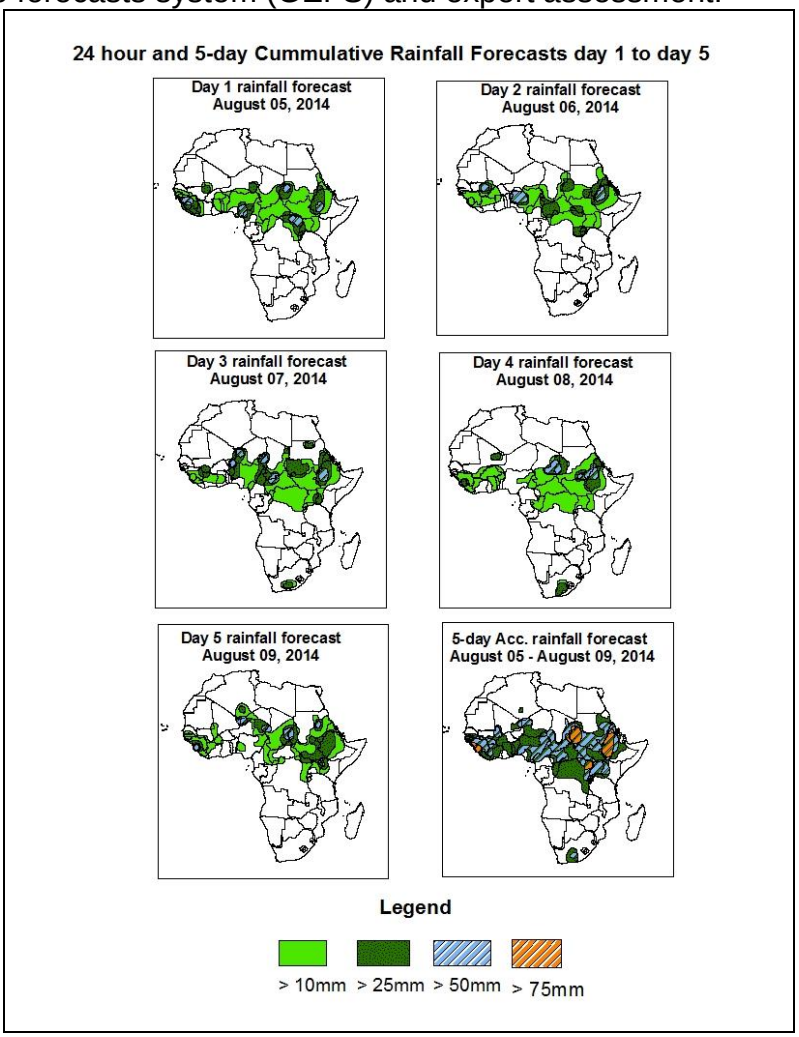
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of August 05 – 06Z of August 09, 2014. (Issued at 1800Z of August 04, 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.



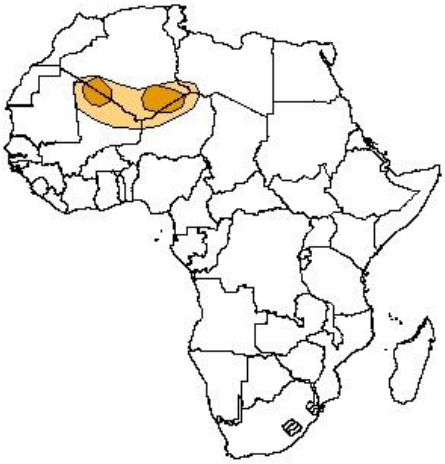
Summary

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 convective systems 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, western Liberia, portions of Mali, Nigeria, Chad, Sudan, and northern DRC, local areas in 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 05, 2014



Day 2 Dust forecast
August 06, 2014

Day 3 Dust forecast
August 07, 2014

Highlights

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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of August 04, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify gradually through 24 to 120 hours with its central pressure value increasing from about 1026hpa in 24hours to 1028hpa 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 72 hours with its central pressure value increasing from about 1029hpa in 24 hours to 1032hpa in 72hours, and it tends to weaken towards end of the forecast period with its central pressure decreasing from about 1027hpa in 96 hours to 1023hpa in 120hours according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to intensify from 24 to 120hours with its central pressure value increasing from about 1022hpa in 24 hours to 1029hpa 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 deepen gradually with its central pressure value decreasing from about 1011hpa in 24 hours to about 1002hpa in 120hours. The heat low over Sudan is expected to maintain its central pressure value about 1005hpa from during the forecast period. The heat low across DRC is expected to maintain its central pressure value about 1010hpa from 24 to 120 hours, 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, Kenya, Uganda 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 and Ethiopia during the forecast period.

At 700hpa level, northeasterly flow is expected to prevail over much of West Africa, whereas northeasterly o easterly flow with a feeble trough is expected to propagate between Sudan and central Africa during the forecast period.

At 500Hpa level, a zone of moderate easterly wind (30kts), associated with African easterly jet is expected to prevail over Mauritania, Senegal, Mali, Burkina-Faso, Niger, Guinea-Conakry, , Nigeria and Chad, with the core of the jet propagating westward between central Sahel and western Sahel, through 24hours to 120 hours.

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 convective systems 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, western Liberia, portions of Mali, Nigeria, Chad, Sudan, northern DRC, local areas in Uganda, Eritrea, western Kenya and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

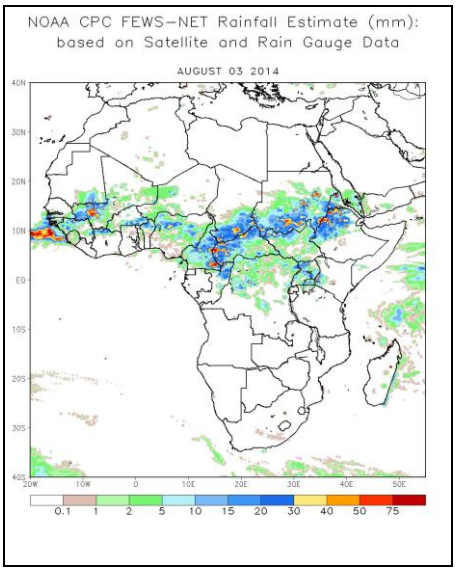
(August 03, 2014 – August 04, 2014)

2.1. Weather assessment for the previous day (August 03, 2014)

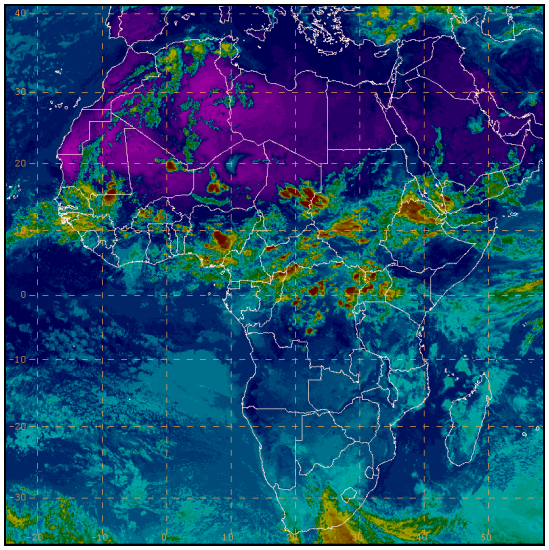
During the previous day, moderate to heavy rainfall was observed over western Mali, local areas in Burkina Faso and Nigeria, Cameroon, southern Chad, CAR, southern and eastern Sudan, northern Ethiopia and Eritrea.

2.2. Weather assessment for the current day (August 04, 2014)

Intense clouds are observed over local areas in West Africa and many places of central Africa region, and northern Ethiopia.



IR Satellite Image (valid 1722 Z of August 04,



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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