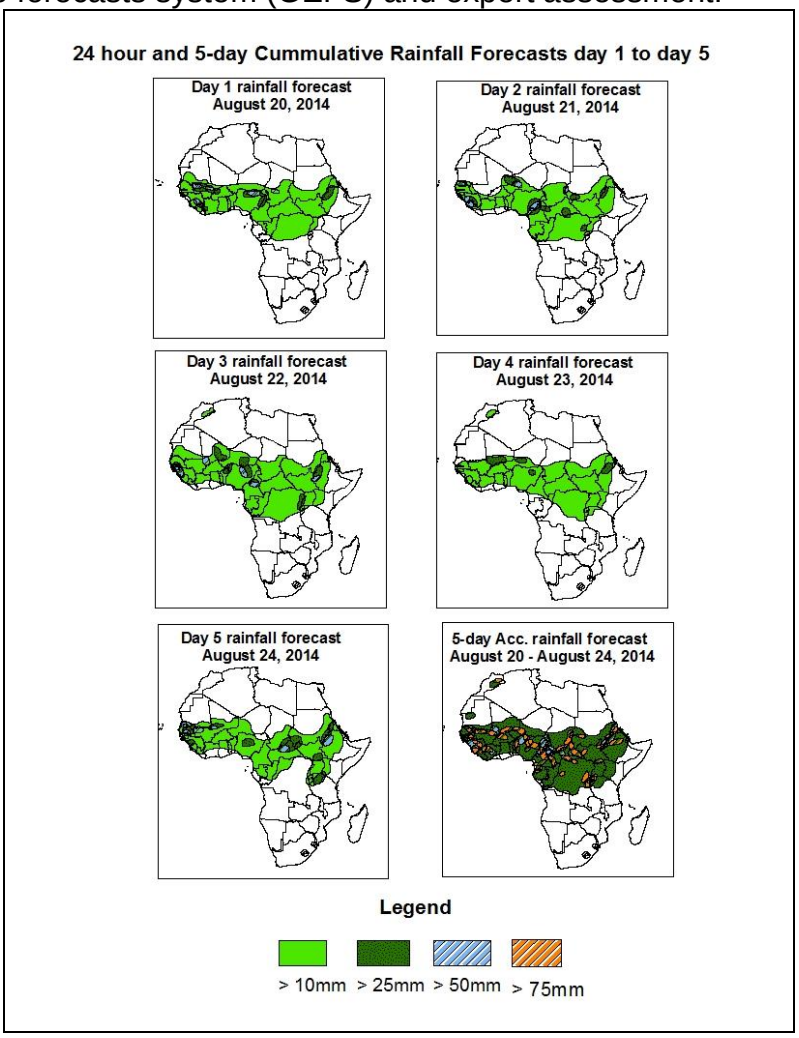
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of August 20 – 06Z of August 24, 2014. (Issued at 1800Z of August 19, 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.

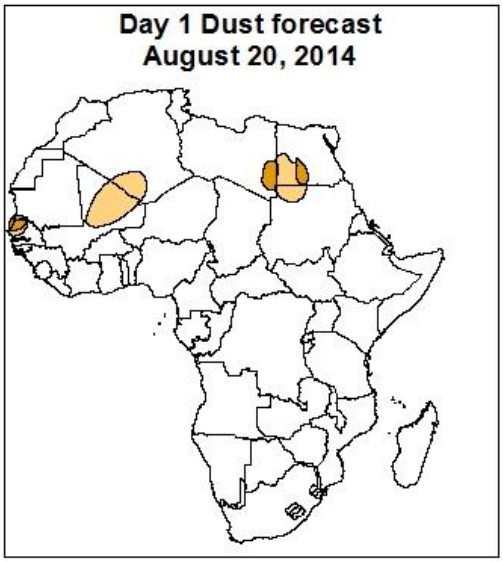


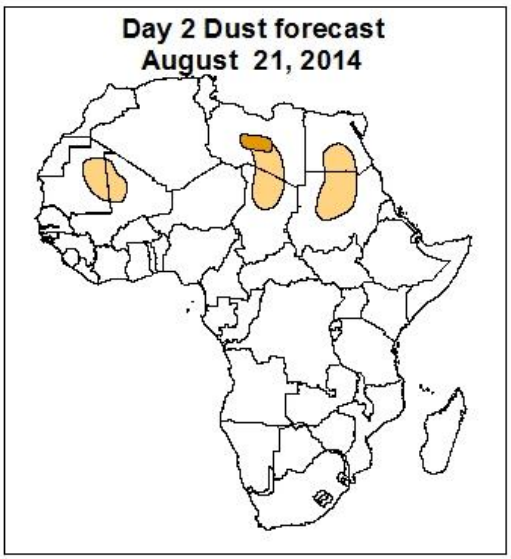
Summary

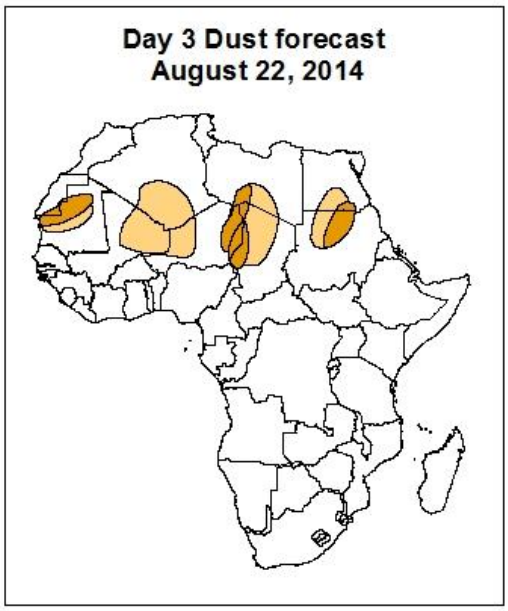
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Ethiopia, DRC, Uganda, and the neighboring areas, and westward propagating cyclonic circulation across West Africa are expected to enhance rainfall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

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 Libya, Western Sahara, northern Mauritania, southern Algeria and Egypt, northern Chad, Sudan, Niger and Mali.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of August 19, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken from 24 hours to 96 hours with its central pressure value decreasing from about 1029hpa in 24 hours to 1023hpa in 96hours, and then it is expected to intensify slightly with its central pressure value increasing from about 1023hpa in 96hours to 1024hpa in 120 hours according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to Maintain from 24 hours to 48 hours with its central pressure value of about 1026hpa, and then it is expected to weaken from 48 hours to 120 hours with its central pressure value decreasing from about 1026hpa in 48 hours to 1022hpa in 120hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken from 24 hours to 96 hours with its central pressure value decreasing from about 1030hpa in 24 hours to 1022hpa in 96hours, and then it is expected to Maintain central pressure value of about 1022hpa, 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 1005hpa to about 1007hpa during the forecast period. The heat low over Sudan is also expected to vary in the range between 1006hpa to 1008hpa from 24 to 120 hours. The heat low across DRC is expected to vary in the range between 1008hpa to about 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 Mauritania, Libya Egypt and northern Sudan. Local wind convergences are also expected over DRC, Tanzania, Uganda, Burundi and Ethiopia during the forecast period**.**

At 850Hpa level, a weak cyclonic circulation is expected to propagate westwards between Chad and the southwestern Corner of West Africa through 24 to 120 hours. Local wind convergences are expected to remain active over DRC, Uganda, Rwanda, Burundi Tanzania, Eritrea, and Ethiopia during the forecast period.

At 700hpa level, a trough in the easterly flow is expected to propagate westwards between southern Chad and southern Mauritania 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 Niger and southern Mauritania.

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, northern Liberia, portions of Mali, Senegal, northwestern Ivory Coast, northern Benin, local areas in Burkina Faso, local areas in Niger, portions of Nigeria, CAR, eastern Chad, local areas in Sudan, local areas in DRC, northern Cameroon, northern Gabon and Congo Brazzaville, local areas in Uganda, western Kenya, Eritrea and western Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

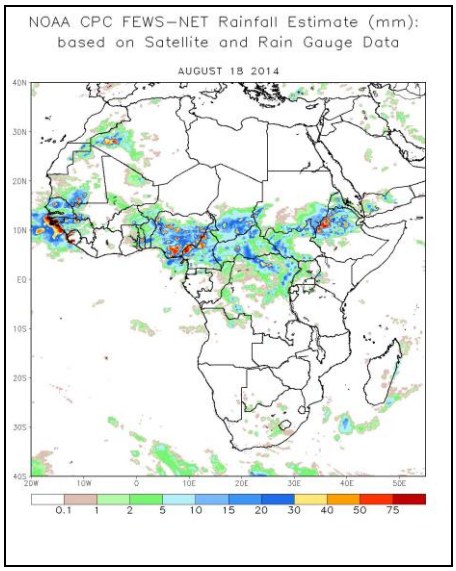
(August 18, 2014 – August 19, 2014)

2.1. Weather assessment for the previous day (August 18, 2014)

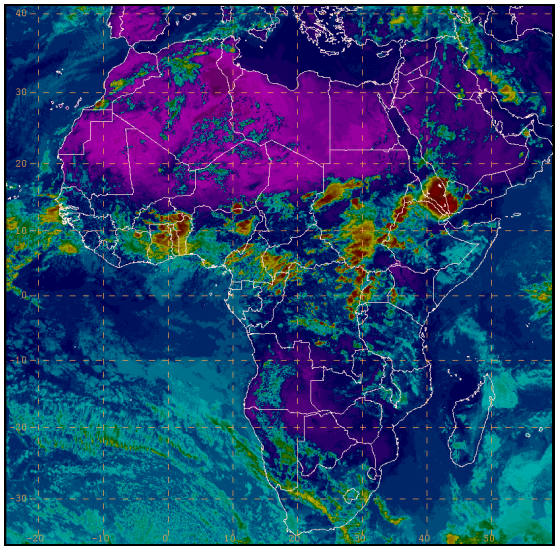
During the previous day, moderate to heavy rainfall was observed over local areas in Senegal, local areas in Mauritania, portions of Guinea, local areas in Mali, northern Sierra Leon, northern Burkina Faso, southern Togo, northern Benin, portion of Nigeria, southern Chad, local areas in DRC, local areas in CAR, local areas in Cameroun, local areas in Sudan, local areas in Uganda, northwestern Ethiopia and Eritrea.

2.2. Weather assessment for the current day (August 19, 2014)

Intense clouds are observed over southern Burkina Faso, northern Ghana, northern Togo, northern Benin, northeastern Ivory Coast, northern Nigeria, eastern Niger, local areas in CAR, and local areas in Cameroon, local areas in Uganda, portion of Sudan, local areas in DRC, Eritrea and western Ethiopia.



IR Satellite Image (valid 1630 Z of August 19, 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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