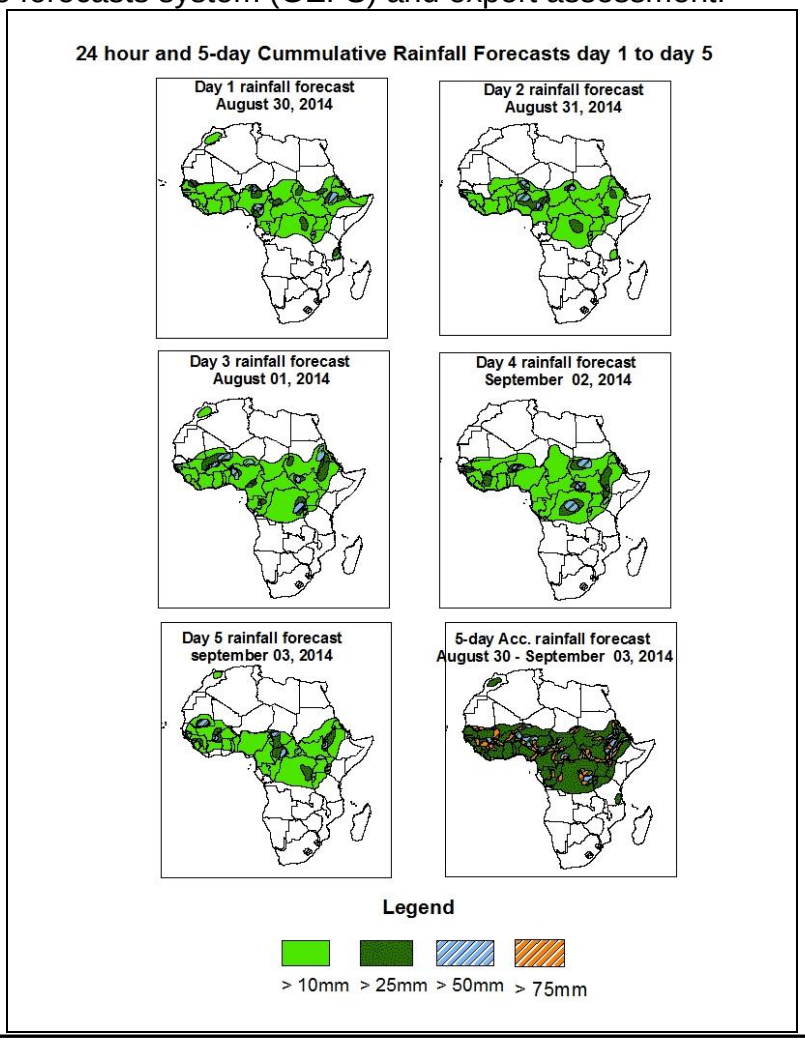
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of August 30 – 06Z of September 03, 2014. (Issued at 1800Z of August 29, 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.

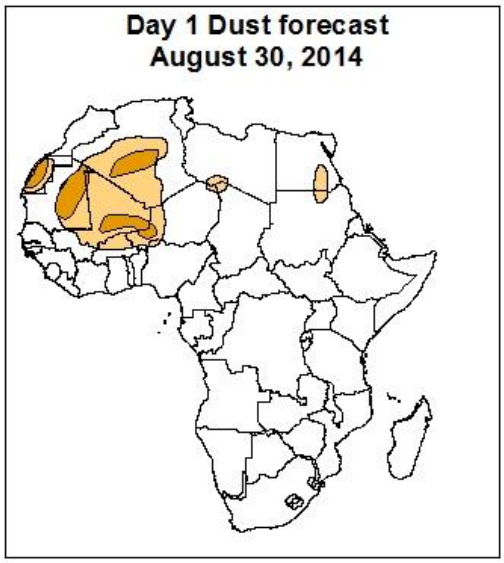


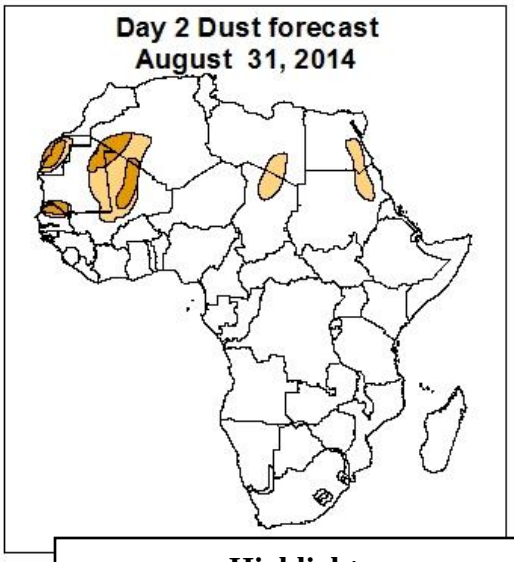
Summary

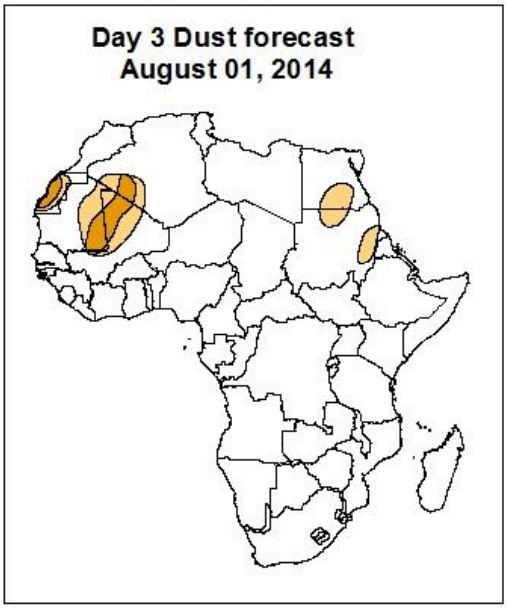
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC, and Tanzania and the neighboring areas, and westward propagating cyclonic circulation across West Africa are expected to enhance rainfall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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of August 29, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify from 24 to 48 hours with its central pressure value increasing from about 1023hpa in 24hours to 1026hpa in 48 hours, and it maintains its central pressure value of about 1026hpa through 48hours to 72 hours, and then it is expected to weaken from 72 to 120 hours with its central pressure value decreasing from about 1026hpa in 72 hours to 1021hpa in 120hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to maintain its central pressure value of about 1024hpa through 24hours to 48 hours, and then it is expected to weaken from 48 to 120 hours with its central pressure value decreasing from about 1024hpa in 48 hours to 1021hpa in 120hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken from 24 to 120 hours with its central pressure value decreasing from about 1035hpa in 24 hours to 1028hpa 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 1004hpa and 1006hpa during the forecast period. The heat low over Sudan is expected to vary in the range between 1004hpa and 1005hpa 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, southern Algeria and Libya, Sudan. Local wind convergences are also expected over DRC, Tanzania, Burundi, Rwanda, Kenya and Ethiopia during the forecast period**.**

At 850Hpa level, cyclonic circulation is expected to propagate westwards between southern Sudan and southern Mauritania through 24 to 120 hours. Local wind

convergences are expected to remain active over DRC, 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 Chad and Mauritania through 24 to 120 hours.

At 500Hpa level, a zone of moderate wind (>30kts), associated with African easterly jet is expected to propagate across Chad, Niger, Nigeria, Burkina-Faso, and Mali through 24 to 120 hours.

At 150Hpa level, a zone of high wind (>50kts), associated with Tropical easterly jet is expected to strengthen towards end of the forecast period across Central, East Africa, and southern Sahel countries.

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

2.0. Previous and Current Day Weather Discussion over Africa

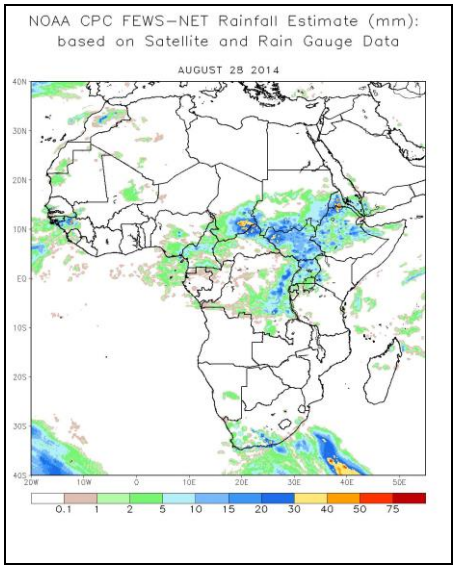
(August 28, 2014 – August 29, 2014)

2.1. Weather assessment for the previous day (August 28, 2014)

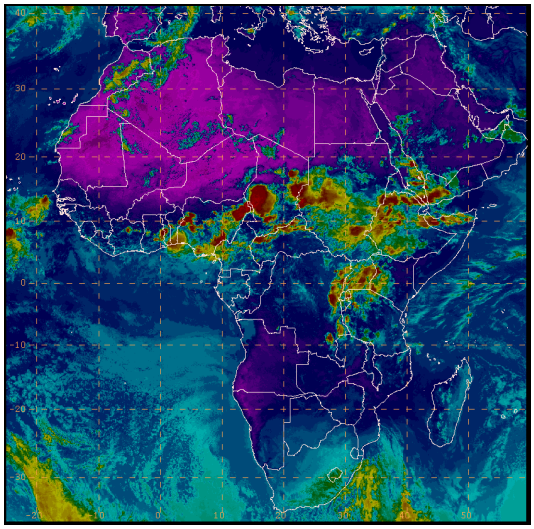
During the previous day, moderate to heavy rainfall was observed over local areas in Mauritania, Senegal and Mali, portions of Nigeria, Guinea Conakry, Chad, CAR, Sudan and DRC, Sierra Leon, Cameroon, southern Sudan, Uganda, Rwanda, local areas in Tanzania and Burundi, western Kenya, portions of Ethiopia and Eritrea.

2.2. Weather assessment for the current day (August 29, 2014)

Intense clouds are observed over southern local areas in Cameroon, Tanzania and CAR, northern Ivory Coast, portions of Nigeria, Togo, Benin, Ethiopia, Sudan and Chad, western Kenya, eastern Ghana, DRC and Rwanda.



IR Satellite Image (valid 1600 Z of August 29, 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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