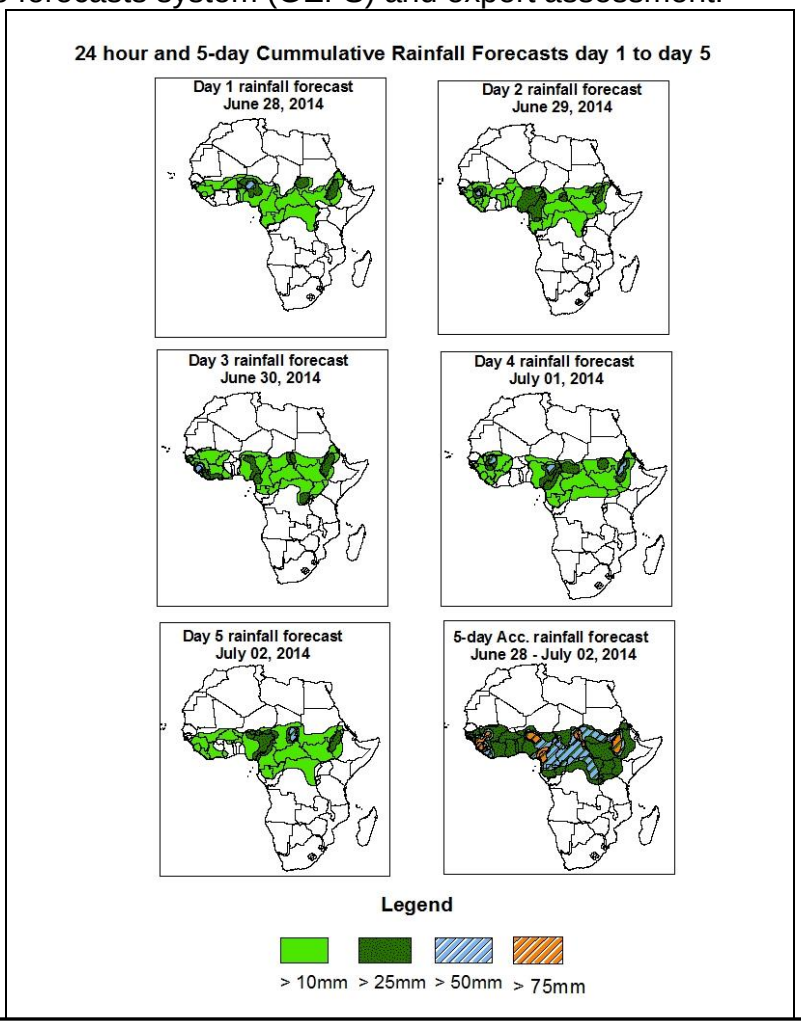
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of June 28 – 06Z of July 02, 2014. (Issued at 1600Z of June 27, 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, DCR, Gabon, Cameroon, CAR, and Congo-Brazzaville 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 Mali, Sierra Leone, Liberia, Guinea-Conakry, portion of Ivory-Coast, northern Burkina-Faso, southern Niger, Ghana, Togo and Benin, Nigeria, Southern Chad and Sudan, Cameroon, Gabon, northern Congo-Brazzaville and DRC, , and western Kenya and Ethiopia, eastern Djibouti.

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Atmospheric Dust Forecasts, day 1 to day 3,

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

Day 1 Dust forecast
June 28, 2014

Day 2 Dust forecast
June 29, 2014

Day 3 Dust forecast
June 30, 2014

Highlights

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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of June 27, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken through 24 to 72 hours with its central value decreasing from about 1030hpa in 24hours to 1028hpa in 72hours, and then it tends to intensify trough 96 to 120hours with its central value increasing from about 1030hpa in 96hours to 1034hpa in 120hours according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken through 24 to 48 hours with its central pressure value decreasing from about 1029hpa in 24 hours to 1025hpa in 48 hours, then it is expected to intensify from 48 to 72hours with its central pressure value increasing through about 1025hpa in 48 to 1030 in 72hours, and then it is expected to weaken from 96 to 120 hours with its central pressure value decreasing through about 1029hpa in 96 hours to 1028 in 120hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken through 24 to 48 hours with its central pressure value decreasing from about 1030hpa in 24 hours to 1027hpa in 48 hours and then it tends to maintain its value from 48 to 96 hours, and then it tends to weaken from 96 to 120 hours with its central pressure value decreasing about 1027hpa in 96 hours to 1025hpa in 120 hours according to the GFS model.

The central pressure associated with the heat low in the region between western Sahel and Chad is expected to vary in the range between 1005hpa to 1007hpa during the forecast period. Central pressure associated with the heat low over Sudan is also expected to vary in the range between 1005hpa to 1009hpa during the forecast period. The heat low across central Sahel is expected to weaken from 24 to 72 hours with its central pressure value about 1012hpa from 24 to 1009hpa in 72hours, and then it tends to fill up through 96 to 120 hours with its central pressure value increasing through 1010hpa in 96 hours to 1011hpa in 120hours according to the GFS model.

At 925Hpa level, a zonal wind convergence is expected to prevail in the region between southern Mauritania and Sudan through 24 to 120 hours. Dry northeasterly winds are expected to prevail over parts of Mauritania, Mali, Algeria, Chad, Libya, north of Sudan

and Egypt. Local wind convergences are also expected over DRC, Congo-Brazzaville, Uganda, and Ethiopia during the period of forecast**.**

At 850Hpa level, seasonal wind convergences are expected to remain active in the region between Mali and Sudan through 24 to 120 hours. Local wind convergences are also expected to remain active over CAR, DRC Gabon, Cameroon, Congo-Brazzaville, and Ethiopia during the forecast period.

At 700hpa level, easterly flow with wind speed about 30kts is expected to propagate across the western part of the Gulf of Guinea countries. A feeble trough in easterly flow is expected to propagate across Mali and Senegal during the forecast period.

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

At 150hpa level, moderate wind (>30kts) is expected to prevail over Niger, Burkina-Faso, Guinea-Conakry, Mali, Benin, Togo, Nigeria, Chad, Cameroon, Sudan, CAR through 24hours to 120 hours, and then strong wind (>50kts) associated with the Tropical Easterly Jet (TEJ) is expected to prevail over Ethiopia and Somalia, portion of Niger, Chad, Mali, and Sudan through 24hours 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, DCR, Gabon, Cameroon, CAR, and Congo-Brazzaville 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 Mali, Sierra Leone, Liberia, Guinea-Conakry, portion of Ivory-Coast, northern Burkina-Faso, southern Niger, Ghana, Togo and Benin, Nigeria, Southern Chad and Sudan, Cameroon, Gabon, northern Congo-Brazzaville and DRC, , and western Kenya and Ethiopia, eastern Djibouti.

2.0. Previous and Current Day Weather Discussion over Africa

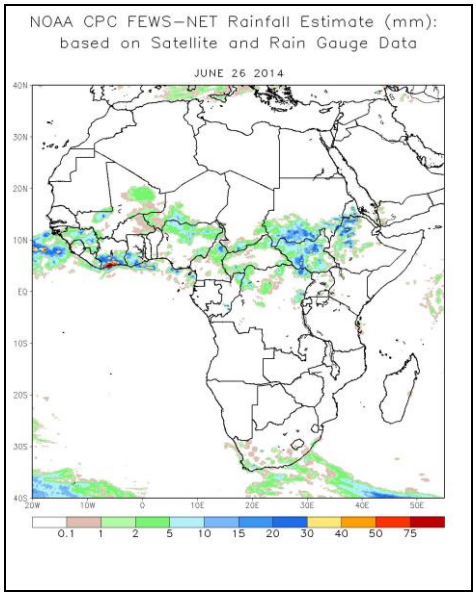
(June 26 2014 – June 27, 2014)

2.1. Weather assessment for the previous day (June 26, 2014)

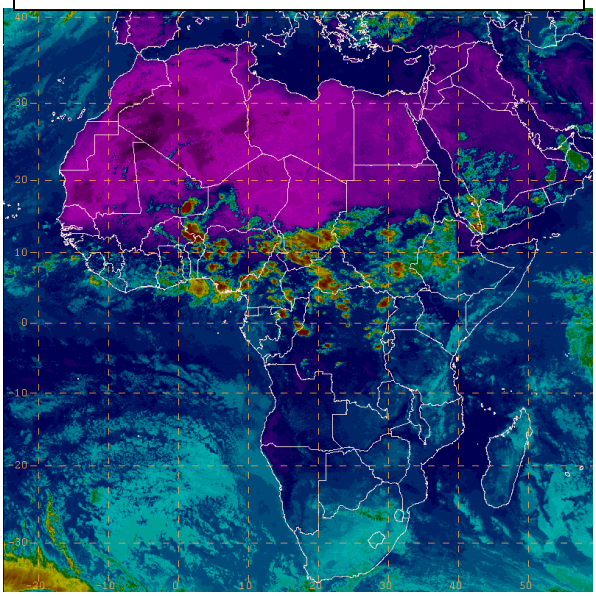
During the previous day, moderate to heavy rainfall was observed over Guinea-Conakry, local part of Mali and Niger, southwestern Cote d`Ivoire and Ghana, local part of Nigeria, Cameroon, CAR and Congo-Brazzaville, southern Chad and Sudan, northern DRC, western Ethiopia.

2.2. Weather assessment for the current day (June 27, 2014)

Intense clouds are observed over northeastern Mali, local part of Niger, Ghana, Benin, portion of Nigeria, Cameroon, Congo-Brazzaville, CAR, local part of DRC, southern of Chad and Sudan, western of Ethiopia.



IR Satellite Image (valid 1552 Z of June 27, 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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