

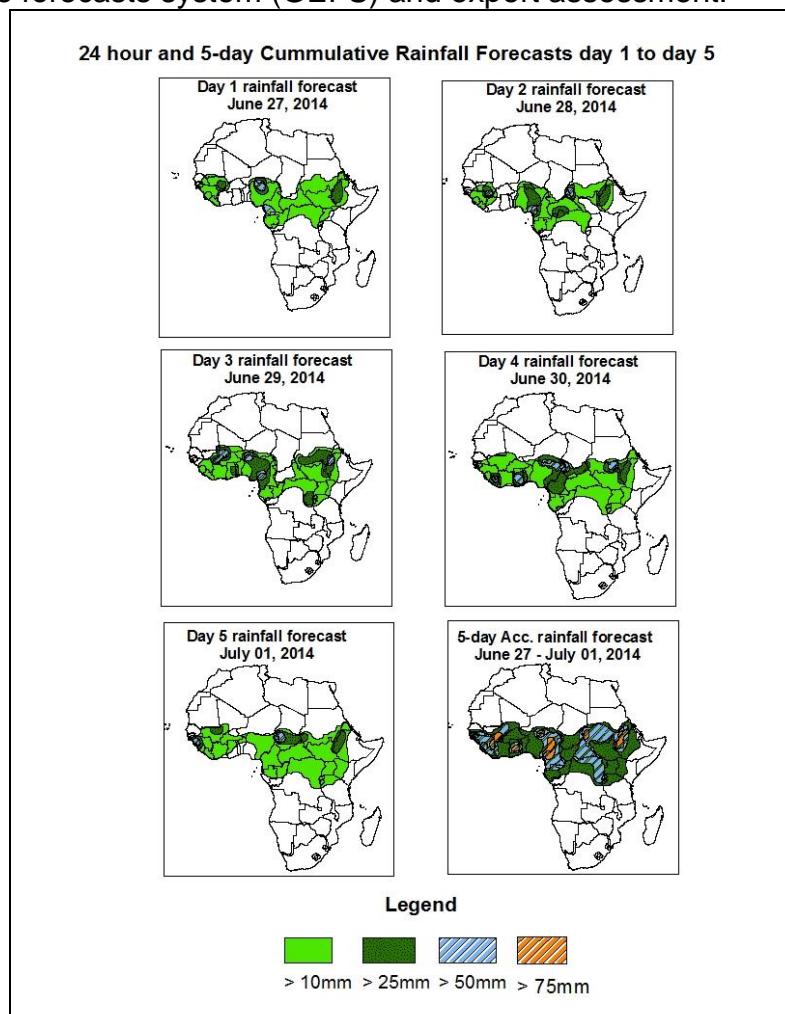


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of June 27 – 06Z of July 01, 2014. (Issued at 1600Z of June 26, 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, Ivory-Coast, northern Burkina-Faso, southern Niger, Ghana, Togo, Benin, portion of Nigeria, Southern Chad, Cameroon, portion of Gabon, northern Congo-Brazzaville and DRC, Southern Sudan, and western Kenya and Ethiopia, eastern Djibouti.

**Atmospheric Dust Forecasts, day 1 to day 3,
Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)**

**Day 1 Dust forecast
June 27, 2014**



**Day 2 Dust forecast
June 28, 2014**



**Day 3 Dust forecast
June 29, 2014**



Highlights

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

Legend



MDC, Vis. < 5km



HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of June 26, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify through 24 to 48 hours with its central value increasing from about 1028hpa in 24hours to 1030hpa in 48hours, and then it tends to weaken trough 72 to 120hours with its central value decreasing from about 1029hpa in 72hours to 1027hpa 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 72 hours with its central pressure value decreasing from about 1031hpa in 24 hours to 1025hpa in 72 hours, and then it is expected to maintain its central pressure value through about 1029hpa in 96 to 120hours according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to intensify through 24 to 72 hours with its central pressure value increasing from about 1026hpa in 24 hours to 1033hpa in 72 hours, and then it tends to weaken from about 96 to 120 hours with its central pressure value decreasing about 1030hpa in 96 hours to 1027hpa 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 expected to be as low as 1005hpa through 72hrs and 120hrs. The heat low across central Sahel is expected to slightly intensify from 24 to 48 hours with its central pressure value about 1011hpa from 24 to 1012hpa in 48hours, and then it tends to deepen through 72 to 120 hours with its central pressure value decreasing through 1011hpa in 72 hours to 1010hpa 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, Rwanda, Burundi 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 southern Mauritania, Senegal, Mali, Niger and Chad 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, Nigeria, Chad, Cameroon through 24hours to 120 hours, and then strong wind (>50kts) associated with the Tropical Easterly Jet (TEJ) is expected to prevail over Sudan, Ethiopia, Somalia and Djibouti 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, Ivory-Coast, northern Burkina-Faso, southern Niger, Ghana, Togo, Benin, portion of Nigeria, Southern Chad, Cameroon, portion of Gabon, northern Congo-Brazzaville and DRC, Southern Sudan, and western Kenya and Ethiopia, eastern Djibouti.

2.0. Previous and Current Day Weather Discussion over Africa

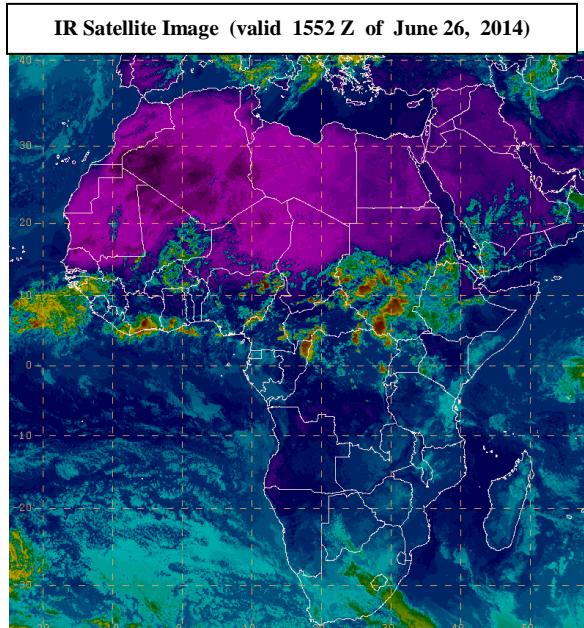
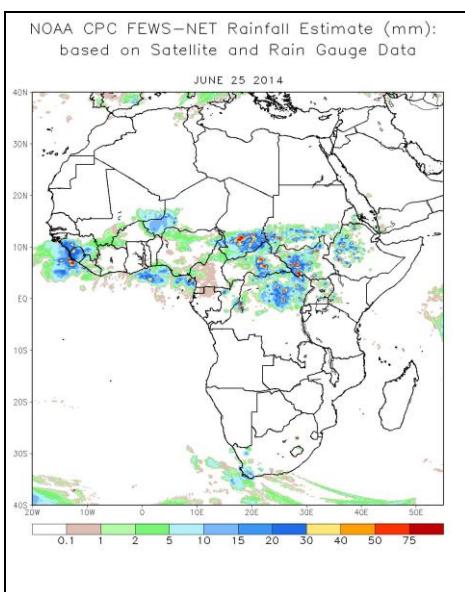
(June 25 2014 – June 26, 2014)

2.1. Weather assessment for the previous day (June 25, 2014)

During the previous day, moderate to heavy rainfall was observed over Guinea-Conakry, Sierra-Leone, local part of Mali, southwestern Burkina-Faso and Niger, local part of Nigeria, Cameroon, and Congo-Brazzaville, southern Chad and Sudan, northern DRC and Uganda, portion of CAR, western Kenya and Ethiopia.

2.2. Weather assessment for the current day (June 26, 2014)

Intense clouds are observed over local part of Guinea-Conakry, southern Ivory-Coast, Ghana, Chad and Sudan, local areas in Mali and Burkina-Faso, portion of Nigeria and Cameroon, northern DRC and Congo-Brazzaville, CAR, and western Ethiopia.



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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