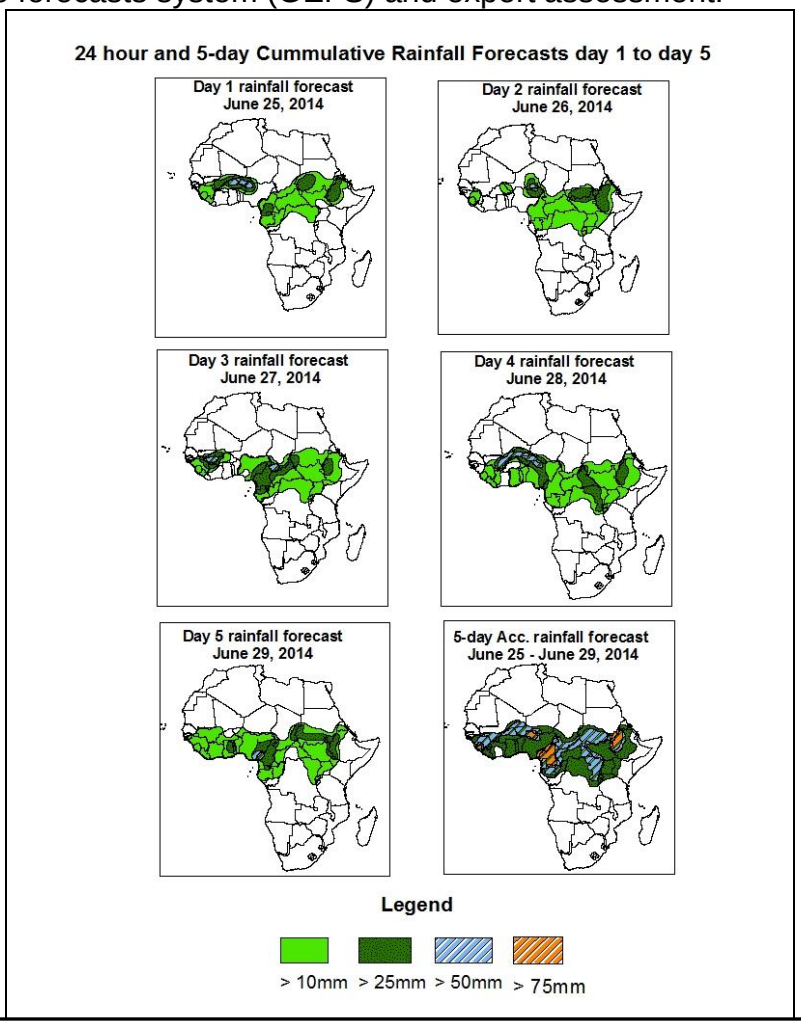
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of June 25 – 06Z of June 29, 2014. (Issued at 1600Z of June 24, 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.

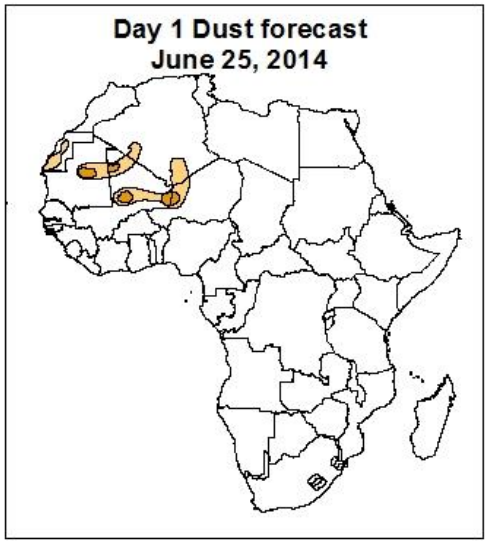


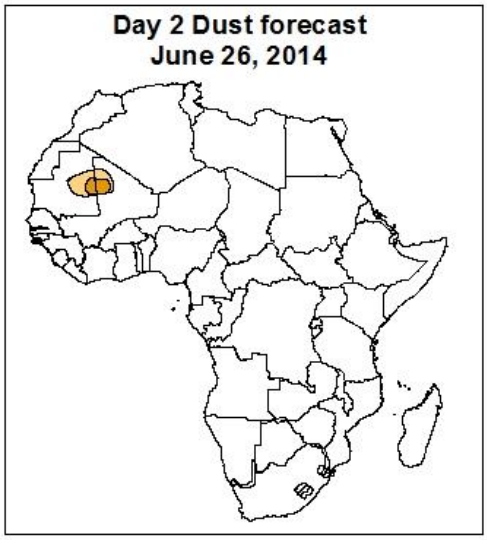
Summary

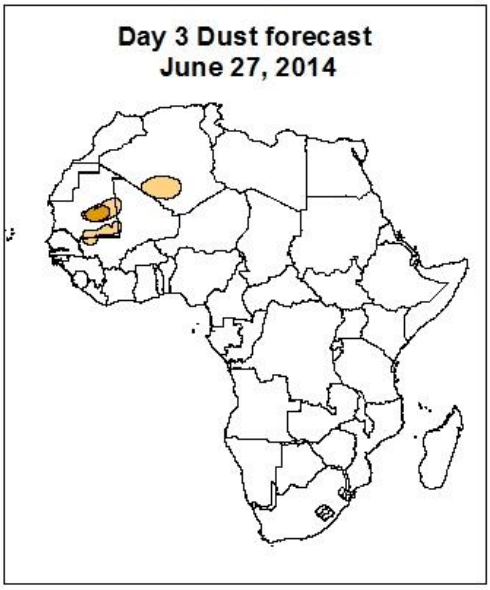
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Ethiopia, DCR, Gabon, Cameroon, CAR, and Congo-Brazzaville and the neighboring areas, and westward propagating convective systems across West Africa are expected to enhance rainfall in their respective regions**.** Thus, there is an increased chance for moderate to heavy rainfall over Guinea Conakry, Sierra Leone, Liberia, portion of Ivory-Coast, southern Mali, portion of Togo, Benin and Nigeria, Cameroon, Gabon, Congo-Brazzaville, northern DRC, northwestern Kenya Southern Sudan, 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 Western Sahara, Mauritania, Algeria, Mali and Niger.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of June 24, 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 from 96 to 120hours with its central value increasing from about 1030hpa in 96hours to 1031hpa in 120hours according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to slightly intensify through 24 to 72 hours with its central pressure value increasing from about 1030hpa in 24 hours to 1031hpa in 72 hours, then it is expected to weaken from 96 to 120 hours with its central pressure value decreasing through 1028hpa in 96 hours to 1026hpa in 120 hours 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 1026hpa in 24 hours to 1022hpa in 48 hours, and then it tends to intensify from about 72 to 120 hours with its central pressure value increasing about 1027hpa in 72 hours to 1033hpa in 120 hours according to the GFS model.

The heat low in the region between western Sahel and Chad is expected to deepen slightly from 24 to 120 hours with its central pressure decreasing from about 1006hpa in 24 hours to 1005hpa in 120 hours. The heat low across Sudan is expected to deepen through 96 to 120hours with its central pressure value about 1010hpa in 96 hours to 1009hpa in 120 hours. The heat low across central Sahel is expected to maintain its central pressure value about 1011hpa from 48 to 120 according to the GFS model.

At 925Hpa level, a zonal wind convergence is expected to prevail in the region between Senegal 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, CAR, 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 Guinea-Conakry and Sudan through 24 to 120 hours. Local wind convergences are also expected to remain active over CAR, DRC Gabon, Cameroon, Congo-Brazzaville, Uganda, Burundi 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, whereas northeasterly flow is expected to prevail over eastern Sahel.

At 500Hpa level, a zone of moderate easterly wind (30kts), associated with African easterly jet is expected prevail over Senegal, Gambia, Mali, Burkina-Faso, Niger, Togo, Benin, Ghana, 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, Chad, Guinea-Conakry, Mali, Ivory-Coast, Ghana, Togo, Benin and Nigeria through 24hours to 120 hours, and then strong wind (>50kts) associated with the Tropical Easterly Jet (TEJ) is expected to prevail over Sudan, Somalia, Ethiopia 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 Guinea Conakry, Sierra Leone, Liberia, portion of Ivory-Coast, southern Mali, portion of Togo, Benin and Nigeria, Cameroon, Gabon, Congo-Brazzaville, northern DRC, northwestern Kenya Southern Sudan, and western Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

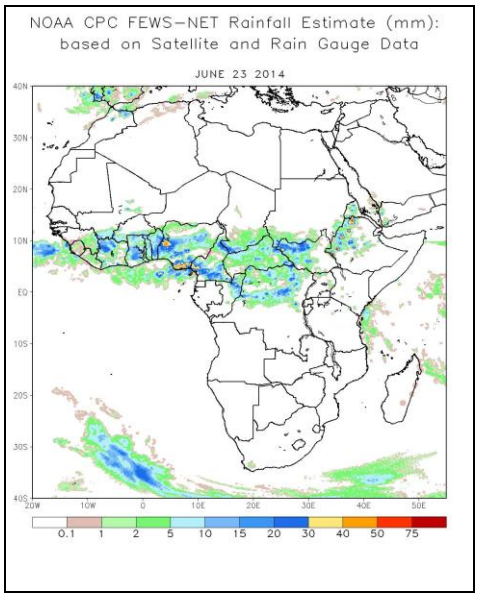
(June 23 2014 – June 24, 2014)

2.1. Weather assessment for the previous day (June 23, 2014)

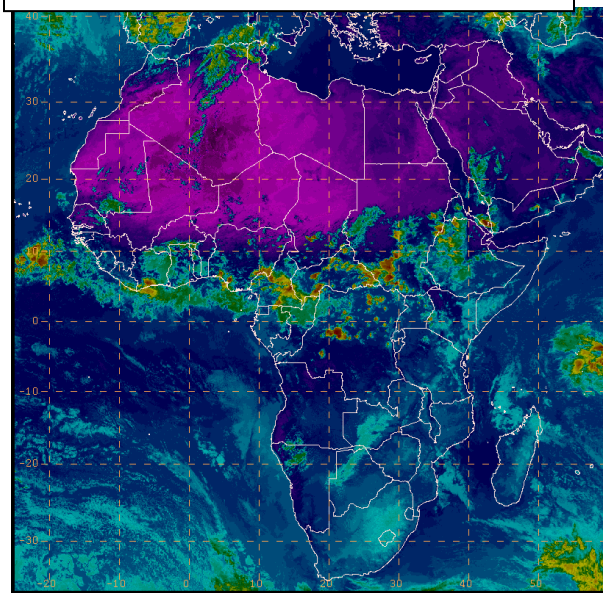
During the previous day, moderate to heavy rainfall was observed over southern of Mali , portion of Ivory-Coast, Ghana, Togo, Benin, western Burkina-Faso, portion of Nigeria, Cameroon, southern Chad, CAR, northern DRC and Congo-Brazzaville, southern Sudan, and western Ethiopia.

2.2. Weather assessment for the current day (June 24, 2014)

Intense clouds are observed over southern Ivory-Coast, local part of Nigeria, Cameroon, Portion of CAR, southern Sudan, local areas in DRC and western Ethiopia.



IR Satellite Image (valid 1600 Z of June 24, 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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