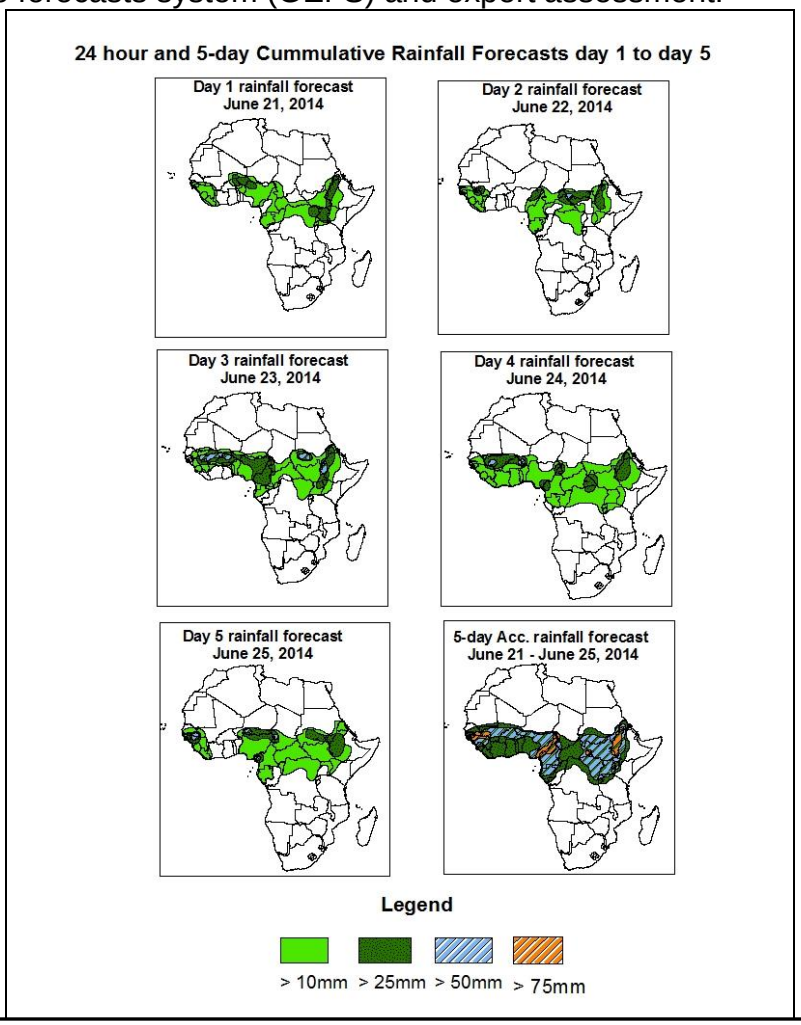
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of June 21 – 06Z of June 25, 2014. (Issued at 1600Z of June 20, 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.



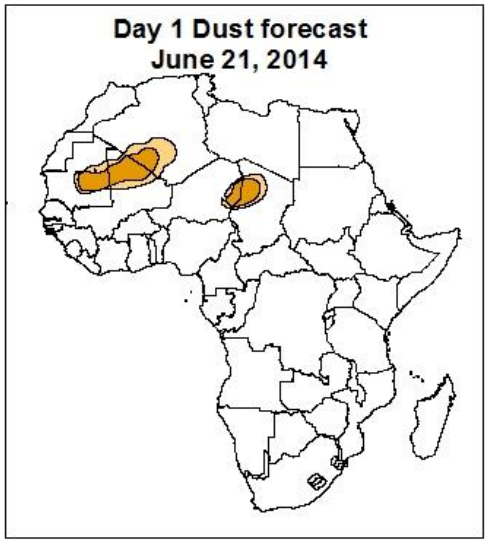
Summary

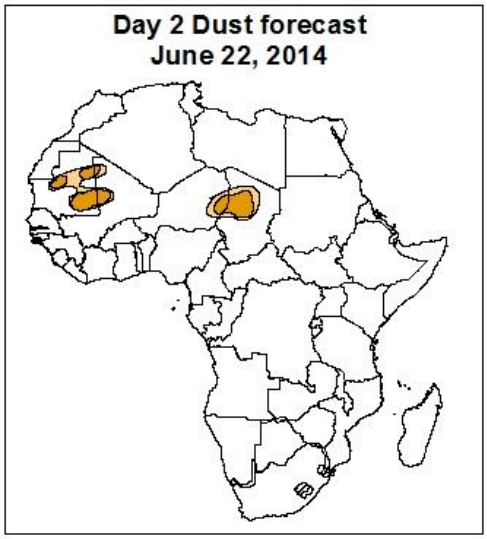
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Ethiopia, DCR, Gabon, Cameroon and Congo-Brazzaville and the neighboring areas, and westward propagating convective systems across West Africa are expected to enhance rainfall in their respective regions.

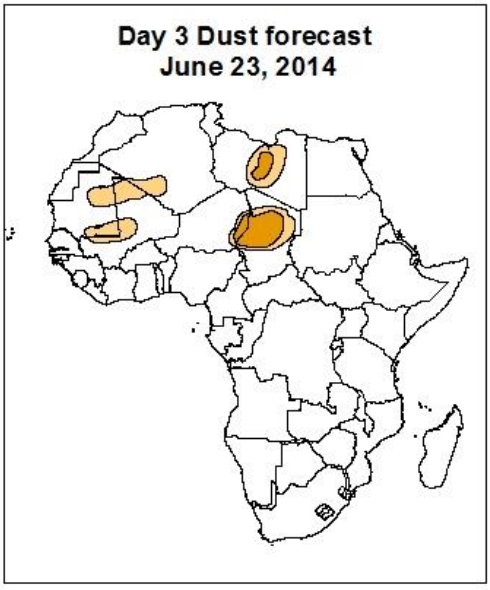
Thus, there is an increased chance for moderate to heavy rainfall over Guinea Conakry, Sierra Leone, Liberia, local part of Ivory-Coast, portion of Mali, local areas in Ghana, Togo and Benin, portion of Nigeria, Cameroon, southern Chad and Sudan, Gabon, Congo-Brazzaville, northern DRC, portion of CAR, Rwanda, Burundi, Uganda, Djibouti, and western Kenya and 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 portions of Mauritania, Mali, Algeria, Libya, Niger and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of June 20, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify through 24 to 96 hours with its central value increasing from about 1024hpa in 24hours to 1031hpa in 96hours, and then it tends to weaken from 96 to 120hours with its central value decreasing from about 1031hpa in 96hours to 1030hpa 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 1032hpa in 24 hours to 1023hpa in 48 hours, then it is expected to intensify from 72hours to 96 hours with its central pressure value increasing from about 1031hpa in 96 hours to 1033hpa in 96 hours, and then it tends to weaken from 96 to 120 hours with it central pressure value decreasing through 1033hpa in 96 hours to 1030hpa 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 120 hours with its central pressure value decreasing from about 1034hpa in 24 hours to 1025hpa in 120 hours according to the GFS model.

The heat low in the region between western Sahel region and Chad is expected to maintain its pressure value of 1006hpa from 24 to 48hours, and then it is expected to fill up through 72 to 96 hours with its central pressure value increasing from about 1008hpa in 72hours to 1010hpa in 96 hours, and then it slightly deepens with its central pressure value decreasing about 1010hpa in 96hours to 1006hpa in 120hours. The heat low across Sudan is expected to fill up through 24 to 48hours with its central pressure value about 1004hpa in 24 hours to 1006hpa in 48 hours, and then it maintains central pressure value of about 1004hpa from 72hours to 120hours 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, Congo-Brazzaville, Gabon Uganda, Rwanda, Burundi, Kenya 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, 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 and central Sahel.

At 500Hpa level, a zone of moderate easterly wind (30kts), associated with African easterly jet is expected prevail over Senegal, Gambia, Guinea-Conakry, Liberia, Sierra-Leone, Mali, Mauritania, Burkina-Faso, Ivory-Coast, Niger, Togo, Benin 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) associated with the Tropical Easterly Jet (TEJ) is expected to prevail over Chad, Cameroon, CAR, Mali, Guinea-Conakry, Burkina-Faso, Niger, Ivory-Coast, 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 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, local part of Ivory-Coast, portion of Mali, local areas in Ghana, Togo and Benin, portion of Nigeria, Cameroon, southern Chad and Sudan, Gabon,

Congo-Brazzaville, northern DRC, portion of CAR, Rwanda, Burundi, Uganda, Djibouti, and western Kenya and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

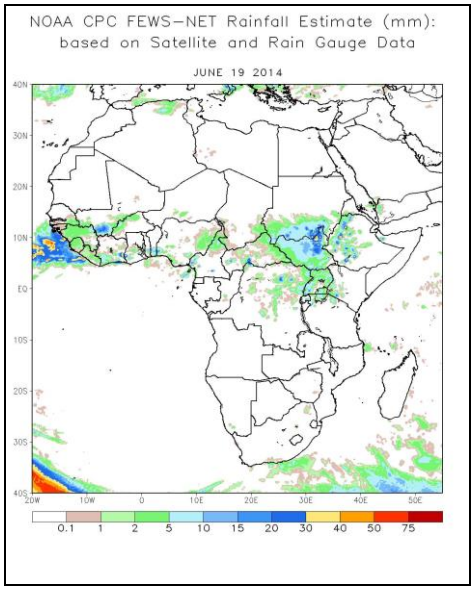
(June 19, 2014 – June 20, 2014)

2.1. Weather assessment for the previous day (June 19, 2014)

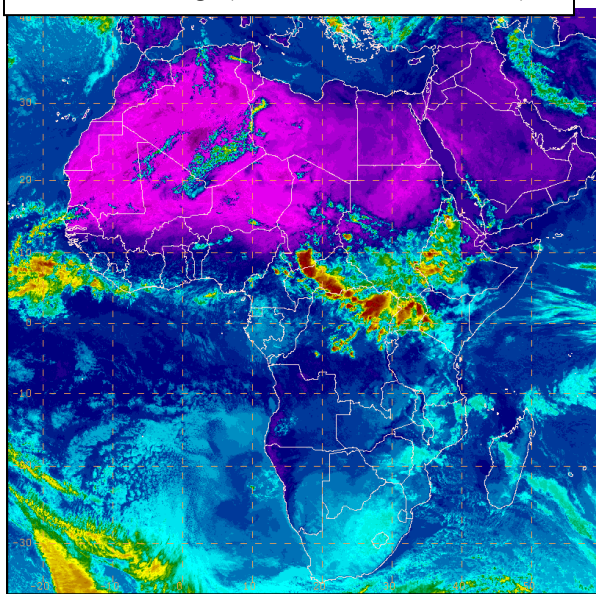
During the previous day, moderate to heavy rainfall was observed over southern Mali, northern Burkina-Faso, local part of Cote d'Ivoire, southern Ghana, Togo and Benin, local part of Nigeria and Cameroon, portion of CAR, southern Chad, portion DRC, south Sudan, Uganda, Rwanda, western Ethiopia, and Kenya.

2.2. Weather assessment for the current day (June 20, 2014)

Intense clouds are observed over southern Chad, central CAR, northern DCR, portion of Ethiopia, local part Sudan, Uganda, and western Kenya.



IR Satellite Image (valid 1552 Z of June 20, 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

Author: Brahima TIMBO (Mali, Centre de Prevision Meteorologique / CPC-African Desk); brahima.tambo@noaa.gov