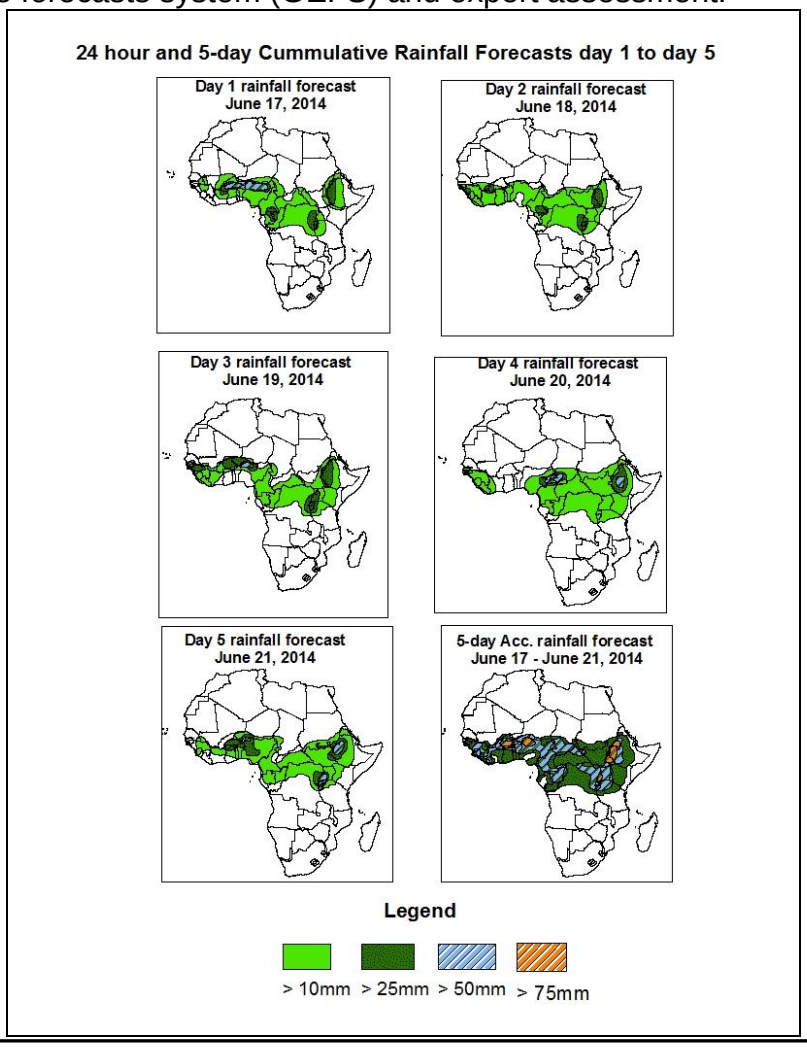
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of June 17 – 06Z of June 21, 2014. (Issued at 1600Z of June 16, 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.

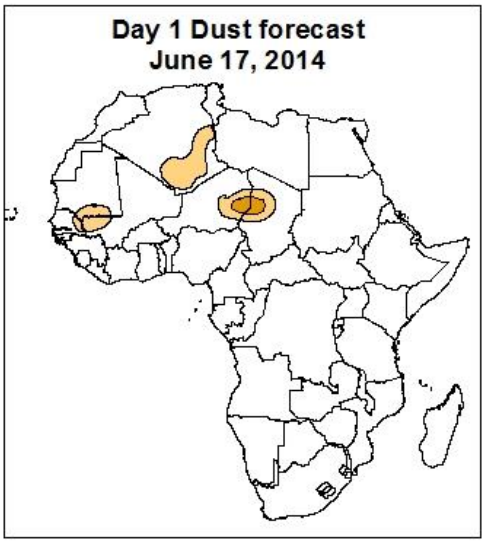


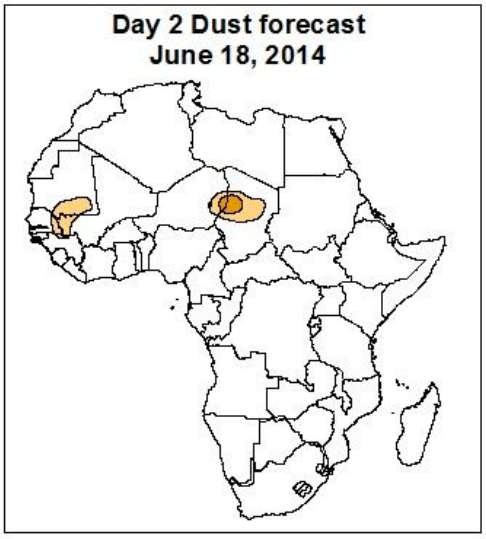
Summary

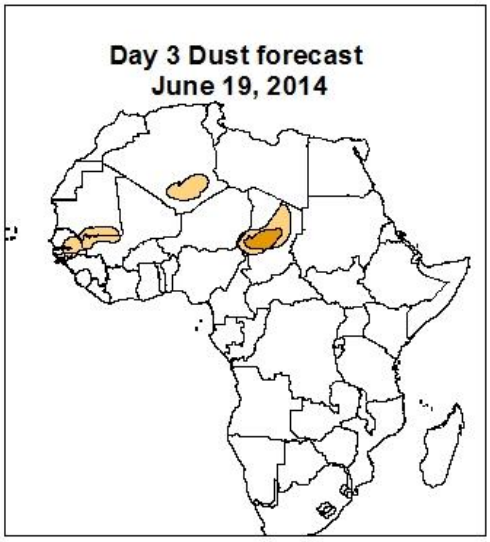
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over DCR and the neighboring areas, and westward propagating convective systems across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over portions of Guinea Conakry, Sierra Leone, Liberia, parts of Cote d'Ivoire, portions of Mali, Burkina Faso, northern Togo and Benin, northern Nigeria, southern Niger, southern Chad, Congo-Brazzaville, eastern Gabon, eastern DRC, Rwanda, Burundi, Uganda, portions of South Sudan and Ethiopia.

1.2. Atmospheric Dust Forecasts: Valid June 17 – June 21, 2014

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 southern Mauritania, Algeria, Niger and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of June 16, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken through 24 to 120 hours with its central value decreasing from about 1028hpa in 24hours to 1024hpa in 120hours according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify through 24 to 72 hours with its central pressure value increasing from about 1028hpa in 24 hours to 1035hpa in 72 hours, and expected to weaken from 96hours to 120hours with its central pressure value decreasing from about 1034hpa in 96 hours to 1028hpa 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 72 hours with its central pressure value decreasing from about 1025hpa in 24 hours to 1021hpa in 72hours, and then it is expected to intensify through 72 hours to 96 hours and expected to weaken from 96 hours to 120 hours with its central pressure value increasing from 1021hpa in 72 hours to 1035hpa in 96 hours, and then weakening from 96hours to 120hours with its central pressure value decreasing from about 1035hpa in 96hours to 1032hpa in 120hours according to the GFS model.

The heat low across the west Sahel region is expected to deepen from 24 to 120hours with its central pressure value decreasing from about 1009hpa to 1005hpa during the forecast period. The heat low across Chad is expected deepen through 24 to 120 hours with its central pressure value decreasing from 1006hpa in 24 hours to 1004hpa in 96 hours, and fill up trough 96hours to 120hours with its central pressure value increasing from about 1004hpa to 1005hpa in 120hours. The heat low across DRC is expected to deepen through 24 to 120 hours with its central pressure value decreasing from 1012hpa in 24 hours to 1010hpa in 120 hours, 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, Uganda, to Rwanda 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 48 hours, expected to shift towards Ghana and Sudan from 48hours to 72hours and then expected to shift back to the region between Mali and Sudan through 96 to 120 hours.. Wind convergences are also expected to remain active over CAR, Uganda, Tanzania and northern DRC during the forecast period.

At 700hpa level, easterly flow with wind speed ranging between 30 to 40knts 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 strong easterly wind (30kts), associated with African easterly jet is expected prevail over Guinea-Conakry, Senegal, Southern of Mali, Burkina-Faso, Niger and northern Nigeria, with the core of the wind propagating westward between central Sahel and western Sahel, through 24hours to 120 hours.

At 150hpa level, strong wind (>50kts) associated with the Tropical Easterly Jet (TEJ) is expected to prevail over northern Indian Ocean and the neighboring areas of Somalia and Ethiopia 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 DCR 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 portions of Guinea Conakry, Sierra Leone, Liberia, parts of Cote d'Ivoire, portions of Mali, Burkina Faso, northern Togo and Benin, northern Nigeria, southern Niger, southern Chad, Congo-Brazzaville, eastern Gabon, eastern DRC, Rwanda, Burundi, Uganda, portions of South Sudan and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

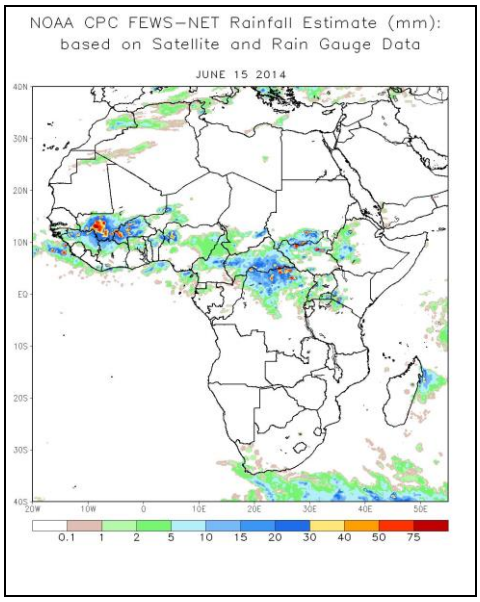
(June 15, 2014 – June 16, 2014)

2.1. Weather assessment for the previous day (June 15, 2014)

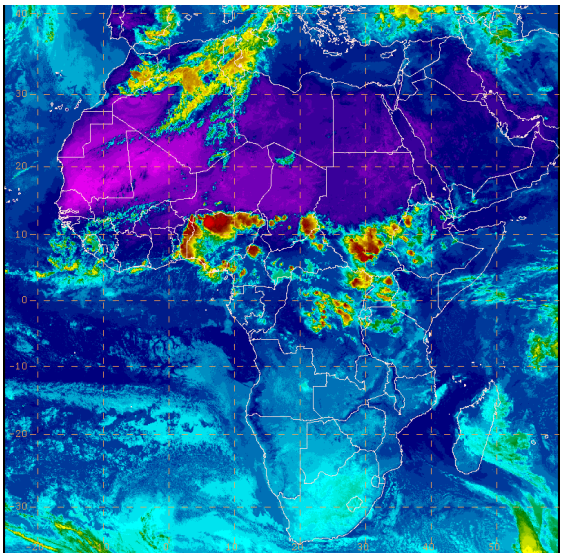
During the previous day, moderate to heavy rainfall was observed over southwestern Mali, Burkina-Faso, CAR, northern DRC, southern Sudan, western Ethiopia and Kenya

2.2. Weather assessment for the current day (June 16, 2014)

Intense clouds are observed over Benin, Nigeria, eastern Chad, southern Sudan, DRC, Uganda and Ethiopia.



IR Satellite Image (valid 1652 Z of June 11, 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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