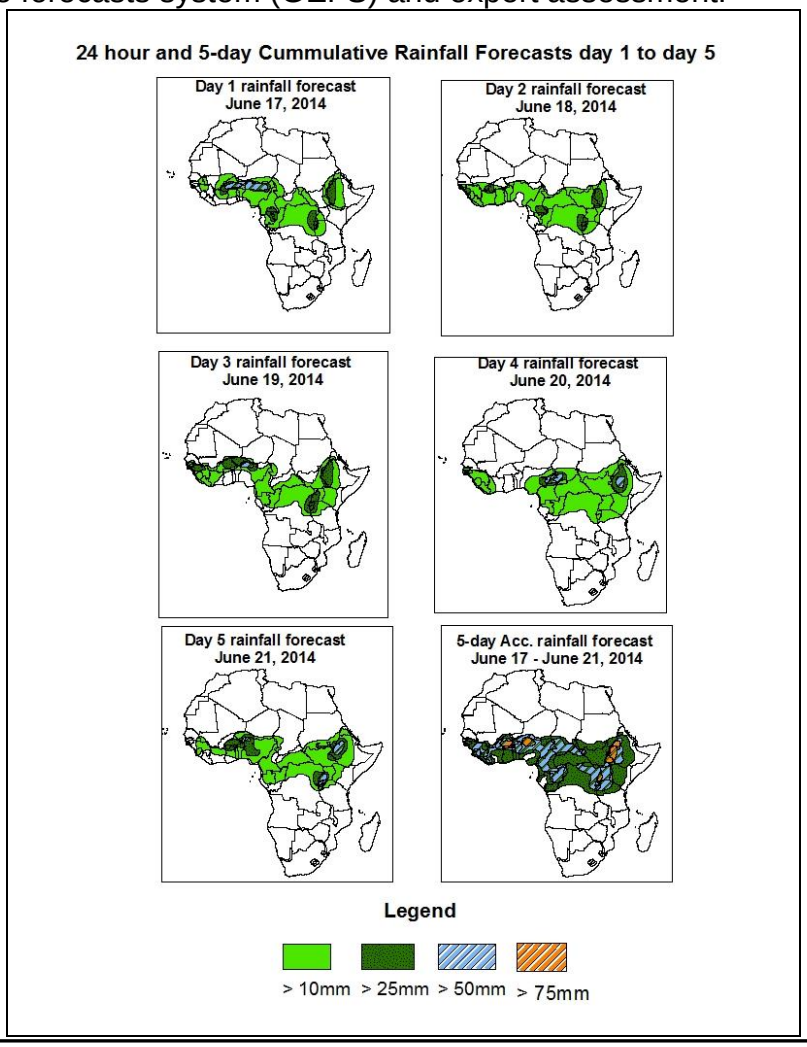
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of June 18 – 06Z of June 22, 2014. (Issued at 1600Z of June 17, 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.

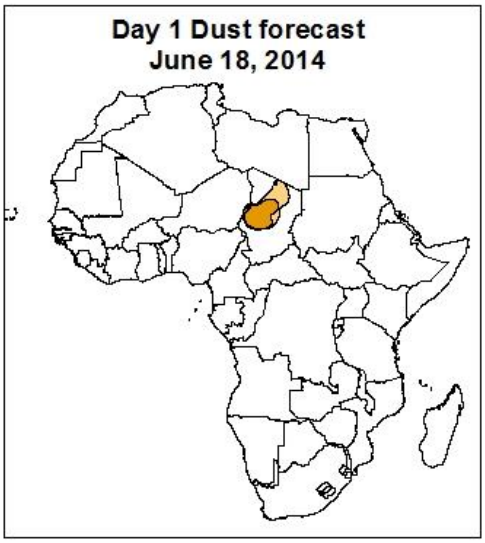


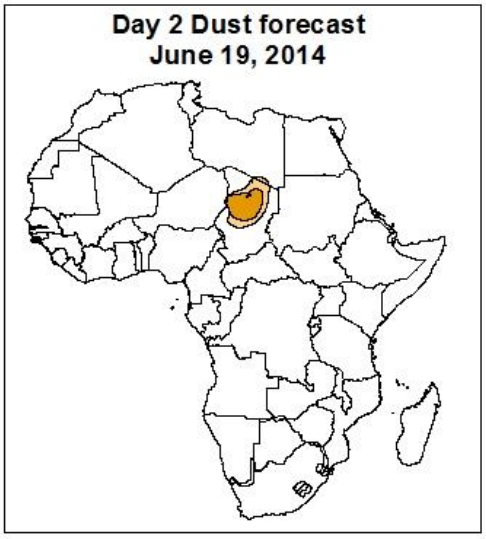
Summary

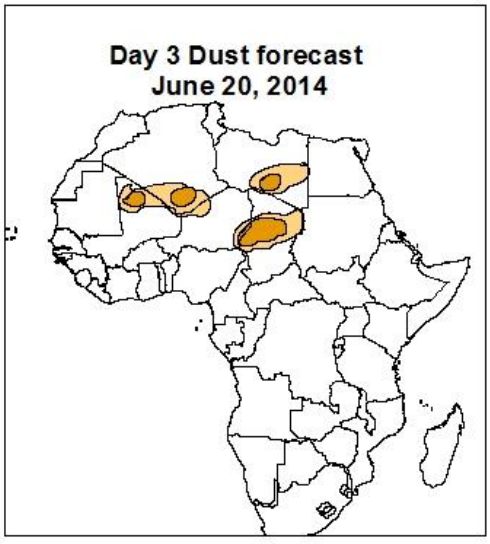
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Ethiopia, DCR, and Congo-Brazzaville the neighboring areas, and westward propagating convective systems across West Africa are expected to enhance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

1.2. Atmospheric Dust Forecasts: Valid June 18 – June 20, 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 Algeria and Libya, Niger, northern Mali, and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of June 17, 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 1027hpa in 24hours to 1023hpa 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 1031hpa in 24 hours to 1038hpa in 72 hours, and then expected to weaken from 96hours to 120hours with its central pressure value decreasing from about 1024hpa in 96 hours to 1023hpa 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 1024hpa in 24 hours to 1021hpa in 48hours, 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 1035hpa in 72 hours to 1037hpa in 96 hours, and then weakening from 96hours to 120hours with its central pressure value decreasing from about 1037hpa in 96hours to 1034hpa in 120hours according to the GFS model.

The heat low across the west Sahel region is expected to deepen from 24 to 96hours with its central pressure value decreasing from about 1008hpa in 24 hours to 1004hpa in 96hours, and then it is expected to fill up through 96 to 120 hours with its central pressure value increasing from 1004hpa in 96hours to 1005hpa in 120 hours. The heat low across Chad is expected to maintain its central pressure value about 1006hpa during the forecast period. The heat low across Sudan is expected to deepen through 24 to 72 hours with its central pressure value about 1005hpa in 24 hours to 1003hpa in 72 hours, and tends to fill up to a central pressure value of 1004hpa towards end of the forecast period 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, Rwanda 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. Wind convergences are also expected to remain active over CAR, Uganda, Tanzania and DRC and Ethiopia during the forecast period.

At 700hpa level, easterly flow with wind speed about 30knts 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 Senegal, Guinea-Conakry, Mali, Burkina-Faso, Niger, Nigeria, 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 Burkina-Faso, Togo, Benin, Nigeria, Cameroon Chad, Sudan 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 Ethiopia, DCR, and Congo-Brazzaville 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, Cote d'Ivoire, portions of Mali, Burkina Faso, Togo, northern Benin, Nigeria, southern Chad, Cameroon, Congo-Brazzaville, Gabon, northern DRC, Rwanda, Burundi, Uganda, portions of South Sudan, western Kenya and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

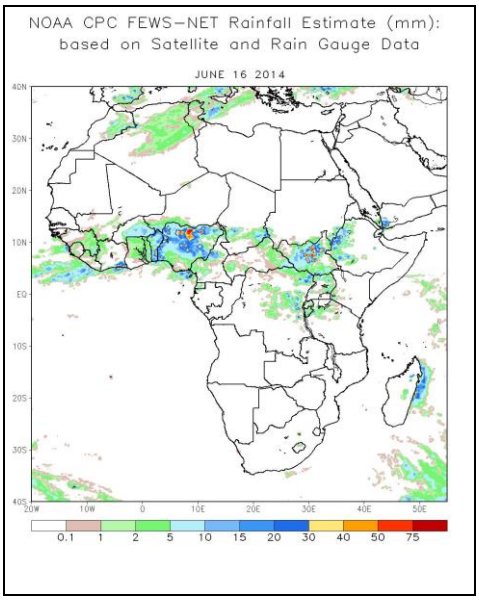
(June 16, 2014 – June 17, 2014)

2.1. Weather assessment for the previous day (June 16, 2014)

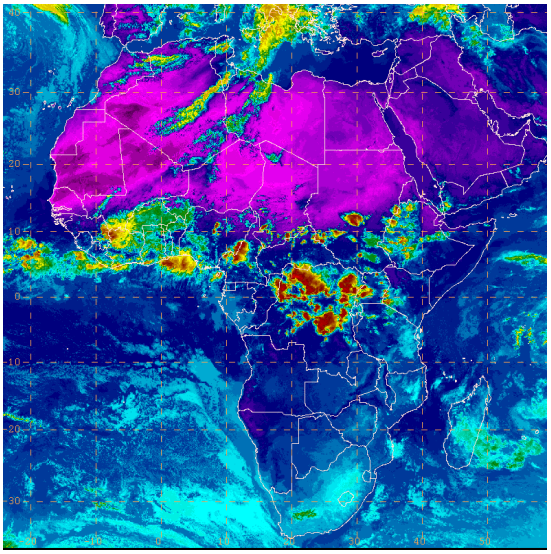
During the previous day, moderate to heavy rainfall was observed over southern Ivory-Coast, Eastern Benin, Nigeria, South Sudan, western Ethiopia, eastern DRC.

2.2. Weather assessment for the current day (June 17, 2014)

Intense clouds are observed over northern Guinea-Conakry and Ivory-Coast, southern Mali, , Ghana, Togo and Benin, local part of Nigeria and Chad, western Cameroon, portion of DRC, Kenya, Uganda, South-Sudan and western Ethiopia..



IR Satellite Image (valid 1622 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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