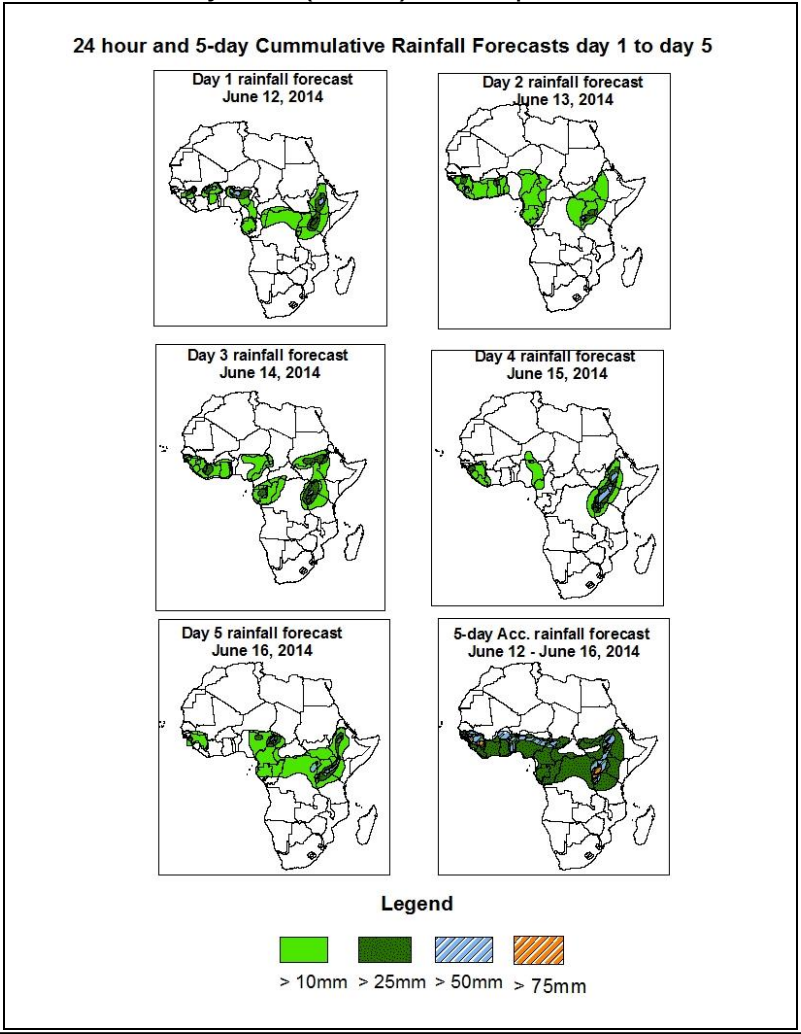
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of June 12 – 06Z of June 16, 2014. (Issued at 1600Z of June 11, 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.



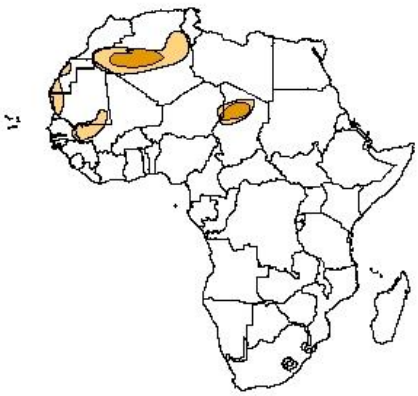
Summary

In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Uganda 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, parts of Cote d'Ivoire, northern Burkina Faso, , northern Nigeria, Cameroun, western Kenya, Uganda, and western Ethiopia.

1.2. Atmospheric Dust Forecasts: Valid June 12 – June 14, 2014

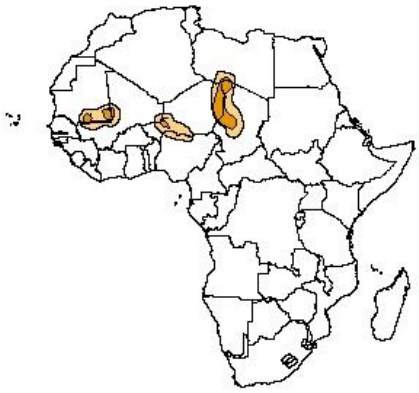
Atmospheric Dust Forecasts, day 1 to day 3,
Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)

Day 1 Dust forecast
June 12, 2014



Day 2 Dust forecast
June 13, 2014

Day 3 Dust forecast
June 14, 2014



Highlights

There is an increased chance for moderate to high dust concentration over Sahara, Mauritania, Algeria, Mali, Libya, Niger and Chad

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of June 11, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify gradually through 24 to 48 hours, and tends to weaken through 72 to 120 hours, with its central pressure value increasing from about 1025hpa in 24 hours to 1026hpa in 48hours and then decreasing to 1022hpa through 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 1024hpa in 24 hours to 1020hpa in 48 hours, and expected to intensify from 48hours to 72hours , and then to weaken through 72hours to 120 hours with its central pressure value decreasing from about 1024hpa in 24 hours to 1020hpa in 48 hours, and increasing from about 1020hpa in 48 hours to 1037hpa in 72 hours, and then decreasing from about 1037hpa in 72hours to 1027hpa 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 1031hpa in 24 hours to 1019hpa in 120hours according to the GFS model.

The heat low across the western Sahel region is expected to maintain an average central pressure value of 1006hpa during the forecast period. The heat low across Central Sahel is expected to deepen through 24 to 96 hours with its central pressure value decreasing from 1007hpa in 24 hours to 1004hpa in 96 hours, and tends 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 over Sudan is expected to maintain average central pressure value of 1005hpa from 24 hours to 72 hours, and then it tends to fill up from 72 to 96 hours, with its central pressure value increasing from about 1004hpa to 1006hpa.

At 925Hpa level, a zonal wind convergence is expected to prevail in the region between Senegal and Sudan through 24 to 120 hours. Strong dry northeasterly winds are expected to prevail over parts of Mauritania, Algeria, Chad, Libya, north of Sudan and

Egypt. Local wind convergences are also expected over Cameroon, DRC, Uganda, and Tanzania all the period of forecast**.**

At 850Hpa level, seasonal wind convergences are expected to remain active over in the region between Senegal and Sudan across the Sahel region through 24 to 120 hours. The convergence over western Africa is expected to weaken through 48 to 72 hours due to formation of broad anti-cyclonic circulation in the region. Wind convergences are also expected to remain active across South Chad DRC Tanzania and Uganda during the forecast period.

At 700hpa level, northeasterly flow is expected to prevail across the Sahel region, whereas feeble trough in the easterlies is expected to propagate across the Gulf of Guinea during the forecast period.

At 500Hpa level, a zone of strong easterly wind (25kts), associated with African easterly jet is expected prevail over portions of the Sahel region through 24hours to 96 hours.

At 150hpa level, strong wind (>60kts) associated with the Tropical Easterly Jet (TEJ) is expected to prevail over northern Indian Ocean and the neighboring areas of Somalia, Kenya, southern Sudan, and Ethiopia during the forecast period.

In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Uganda 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, parts of Cote d'Ivoire, northern Burkina Faso, , northern Nigeria, Cameroun, western Kenya, Uganda, and western Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

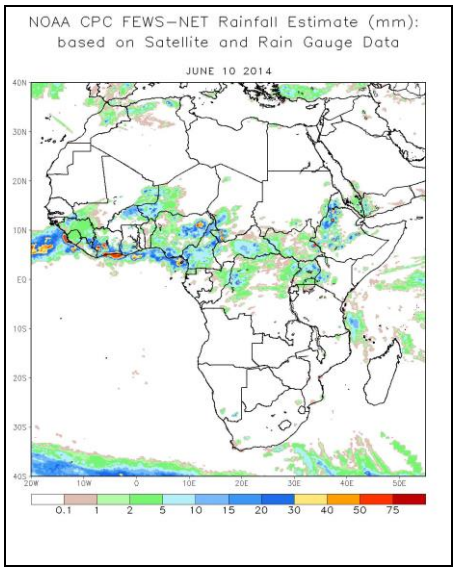
(June 10, 2014 – June 11, 2014)

2.1. Weather assessment for the previous day (June 10, 2014)

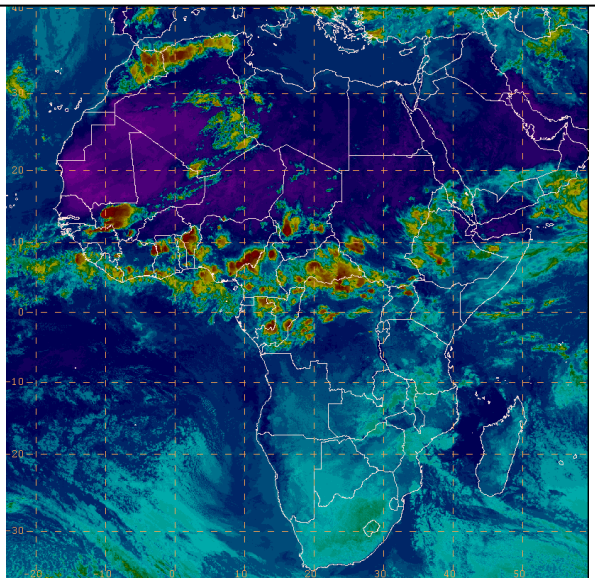
During the previous day, moderate to heavy rainfall was observed over central and western Niger, Cameroon; Congo-Brazzaville; southern of Guinea-Conakry, Liberia, Ivory coast, Ghana, local areas in Nigeria, Mali, South Sudan, western DRC western Ethiopia and Uganda.

2.2. Weather assessment for the current day (June 11, 2014)

Intense clouds are observed west of Mali, northern Ghana,Benin Cameroon; southern chad western DRC ; Congo-Brazzaville and western south Sudan.



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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