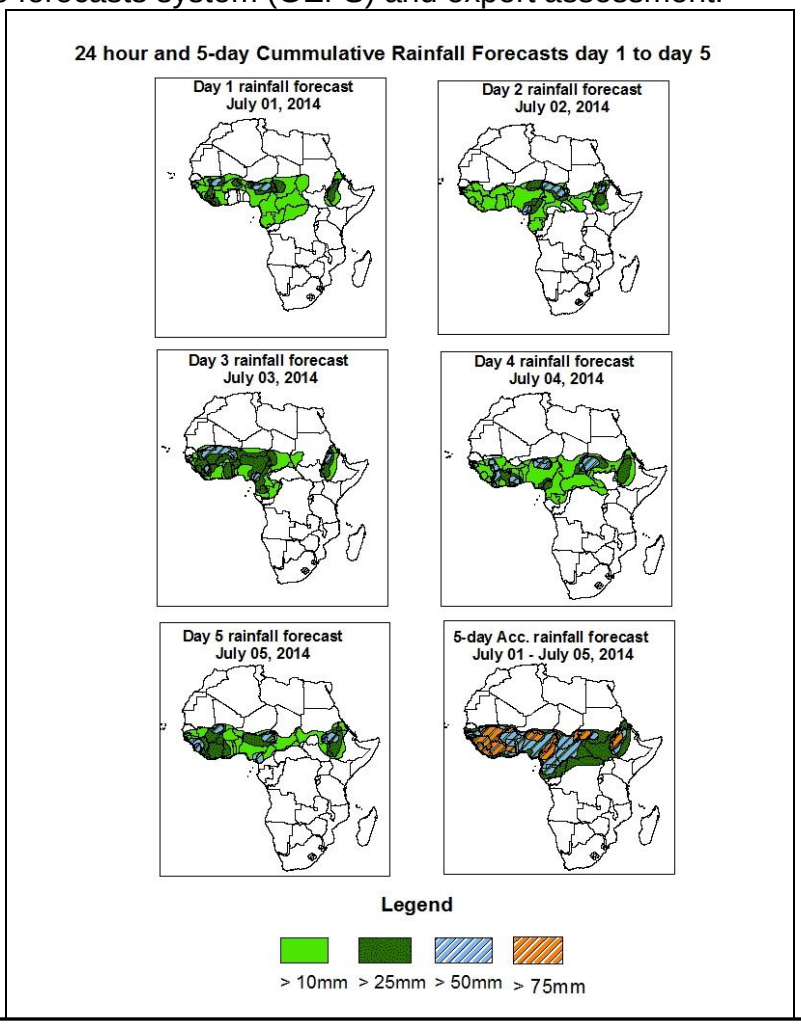
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of July 01 – 06Z of July 05, 2014. (Issued at 1600Z of June 30, 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 Mali, Sierra Leone, Liberia, Guinea-Conakry, Ivory-Coast, portion of Burkina-Faso, southern Niger, Ghana, Togo, Benin, Nigeria, Southern Chad, Sudan, Cameroon, Gabon, northern Congo-Brazzaville and DRC, Djibouti and western Ethiopia.

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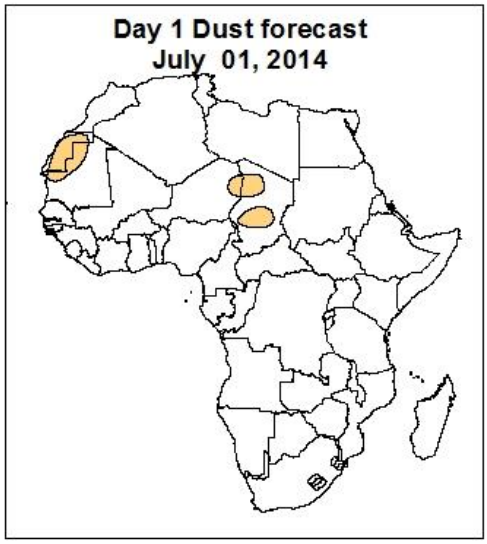
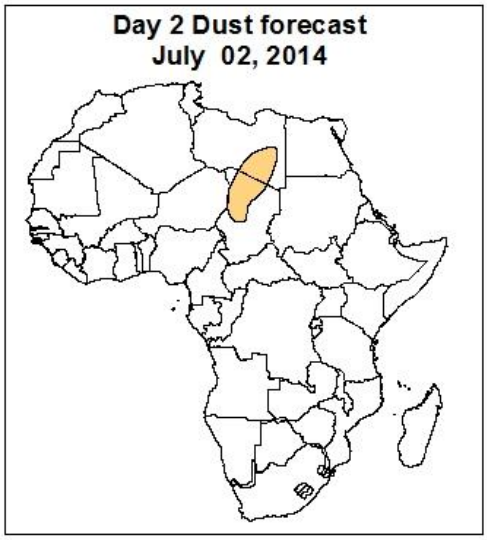
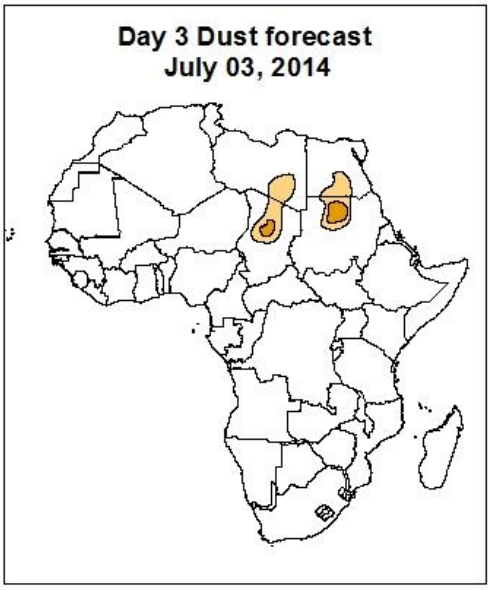
Atmospheric Dust Forecasts, day 1 to day 3,

Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)







Highlights

There is an increased chance for moderate to high dust concentration over Mauritania, Niger, Chad, Libya, northern Sudan and southern Egypt.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of June 30, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify through 24 to 72 hours with its central value increasing from about 1030hpa in 24hours to 1035hpa in 72hours, and then it tends to weaken trough 96 to 120hours with its central value decreasing from about 1033hpa 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 intensify through 24 to 96 hours with its central pressure value increasing from about 1026hpa in 24 hours to 1044hpa in 96 hours, then it is expected to weaken from 96 to 120hours with its central pressure value decreasing through about 1044hpa in 96 to 1040 in 120hours, 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 1028hpa in 24 hours to 1019hpa in 120 hours with its central pressure value decreasing about 1028hpa in 24 hours to 1019hpa in 120 hours according to the GFS model.

The central pressure associated with the heat low in the region between western Sahel and Chad is expected to vary in the range between 1006hpa to 1008hpa during the forecast period. The heat low over Sudan is expected to deepen from 24 to 120 hours with it central pressure decreasing about 1010hpa in 24 hours to 1003hpa in 120 hours. The heat low across central Sahel is expected to intensify from 24 to 48 hours with its central pressure value about 1011hpa from 24 to 1012hpa in 48hours, and then it tends to weaken through 72 to 120 hours with its central pressure value decreasing through 1011hpa in 72 hours to 1009hpa in 120hours according to the GFS model.

At 925Hpa level, a zonal wind convergence is expected to prevail in the region between Mauritania and Sudan through 24 to 120 hours. Dry northeasterly winds are expected to prevail over parts of Mauritania, Mali, Algeria, Chad, Libya and north of Sudan. Local wind convergences are also expected over DRC, Congo-Brazzaville, Gabon 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 Ethiopia during the forecast period, whereas the convergence is expected to remain active over DRC from 96 to 120 hours.

At 700hpa level, easterly flow with wind speed about 30kts is expected to propagate across the western and central Sahel during the forecast period.

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

2.0. Previous and Current Day Weather Discussion over Africa

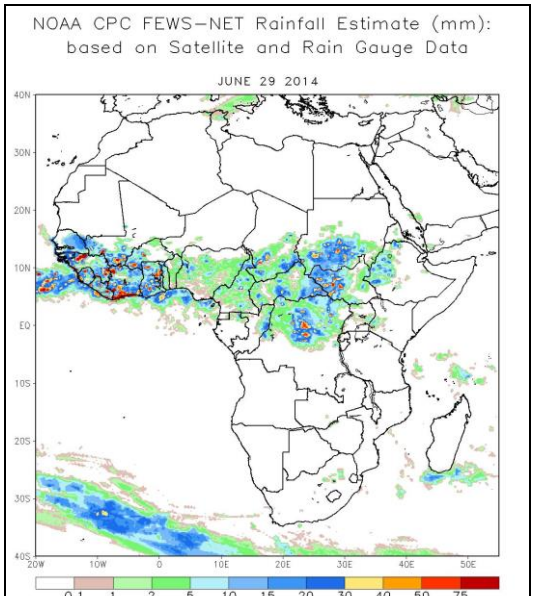
(June 29 2014 – June 30, 2014)

2.1. Weather assessment for the previous day (June 29, 2014)

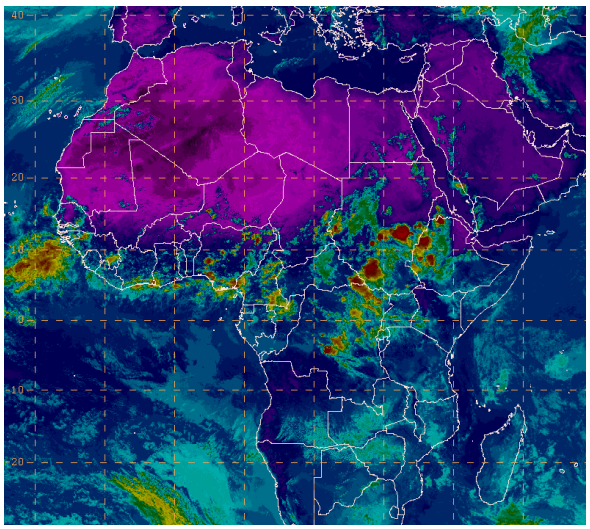
During the previous day, moderate to heavy rainfall was observed over Guinea-Conakry, Sierra-Leone, Liberia, local part of Mali, Cote d`Ivoire, Ghana, potion of Nigeria, Cameroon, CAR, northern Congo-Brazzaville and DRC, southern Chad and Sudan, western Ethiopia.

2.2. Weather assessment for the current day (June 30, 2014)

Intense clouds are observed over local part of Guinea-Conakry, southern Ivory-Coast and Ghana, local part of Niger, Nigeria, portion of Cameroon, DRC, local part of CAR and Chad, southern Sudan, western of Ethiopia and southern Djibouti.



IR Satellite Image (valid 1552 Z of June 30, 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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