

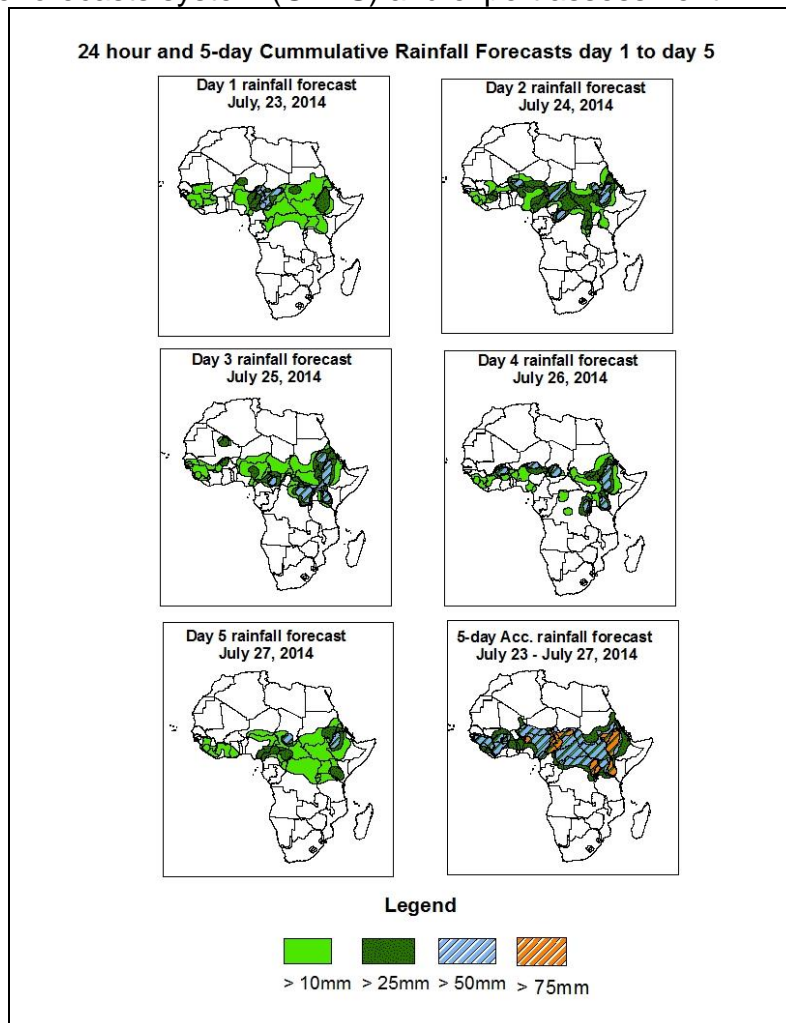


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid 06Z of July 23 – 06Z of July 27, 2014. (Issued at 1600Z of July 22, 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.

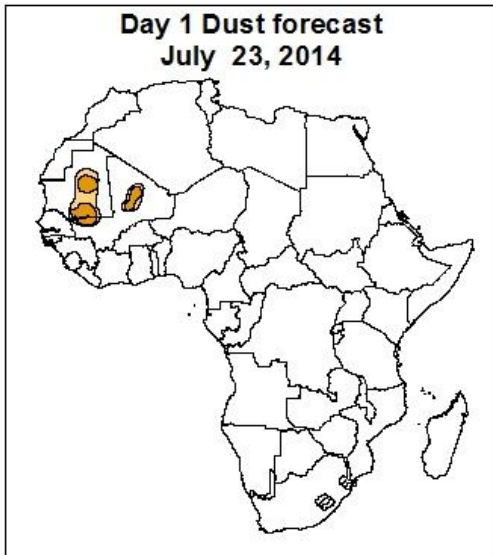


Summary

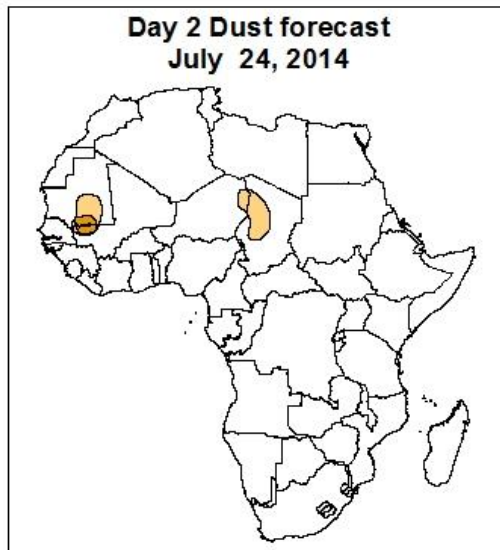
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the Sahel region, localized wind convergences over Ethiopia, DRC, Uganda, and the neighboring areas, and westward propagating convective systems across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over, Guinea-Conakry, Sierra Leone, western Ivory-Coast, southern Mali, Niger and Burkina-Faso, portion of Nigeria, Cameroon, CAR and Uganda, southern Chad, portion of Sudan, northern DRC, Eritrea, western Kenya and Ethiopia.

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

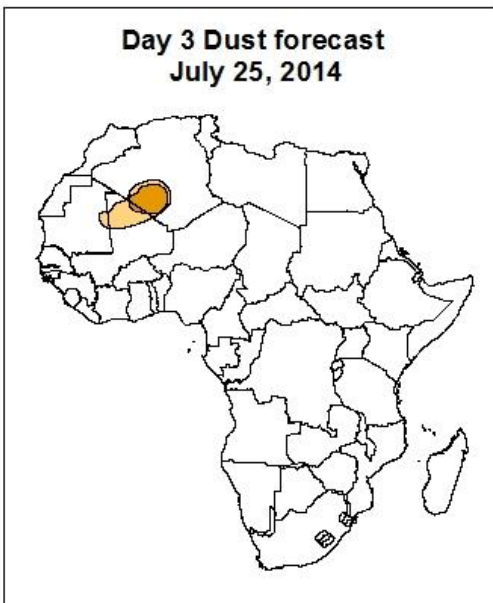
Day 1 Dust forecast
July 23, 2014



Day 2 Dust forecast
July 24, 2014



Day 3 Dust forecast
July 25, 2014



Highlights

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

Legend



MDC, Vis. < 5km



HDC, Vis. < 1km

1.3. Model Discussion: Valid from 00Z of July 22, 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 1025hpa 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 120hours with its central pressure value increasing from about 1033hpa in 24 hours to 1037hpa in 120 hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to intensify through 24 to 48 hours with its central pressure value increasing from about 1034hpa in 24 hours to 1036hpa in 48 hours, it is expected to maintain central pressure value of about 1036hpa from 48 to 96 hours, and then it is expected to weaken from 96 to 120 hours with its central pressure value decreasing from about 1036hpa in 96 hours to 1031hpa in 120 hours, according to the GFS model.

The central pressure value associated with the heat low in the region between western and central Sahel is expected to vary in the range between 1004hpa to 1005hpa from 24 to 120 hours. The heat low over Sudan is expected to deepen from 24 to 96 hours with its central pressure value decreasing from about 1005hpa in 24 hours to 1002hpa in 96hours, and then it is expected to fill up from 96 to 120 hours with it central pressure value increasing from about 1002hpa in 96 hours to 1004hpa in 120 hours . The heat low across northern DRC is expected to deepen slightly from 24 to 120 hours with its central pressure value decreasing about 1011hpa 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 Mauritania and Sudan through 24 to 120 hours. Dry northeasterly winds are expected to prevail over parts of Mauritania, Mali, Algeria, Chad, Libya and northern Sudan. Local wind convergences are also expected over DRC, Uganda, Tanzania and Ethiopia during the period of forecast.

At 850Hpa level, seasonal wind convergences are expected to remain active in the region between the northwestern Sahel and Sudan through 24 to 120 hours. Local wind

convergences are also expected to remain active over DRC, Uganda, Tanzania and Ethiopia during the forecast period.

At 700hpa level, an anticyclonic circulation is expected to prevail over much of West Africa, and this may reduce westward propagation convective systems across the region from 24 to 48 hours.

At 500Hpa level, a zone of moderate easterly wind (30kts), associated with African easterly jet is expected to prevail over Mali, Guinea-Conakry and Ivory-Coast, with the core of the jet propagating westward between central Sahel and western Sahel, through 24hours to 120 hours.

At 150hpa level, moderate wind (>30kts) is expected to prevail over western and central Sahel through 24hours to 120 hours, and strong wind (>50kts) associated with the Tropical Easterly Jet (TEJ) is expected to prevail over, Cameroon, CAR, Sudan, Ethiopia, Eritrea, and Somalia through 24 hours 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, DRC, 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, Guinea-Conakry, Sierra Leone, western Ivory-Coast, southern Mali, Niger and Burkina-Faso, portion of Nigeria, Cameroon, CAR and Uganda, southern Chad, portion of Sudan, northern DRC, Eritrea, western Kenya and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

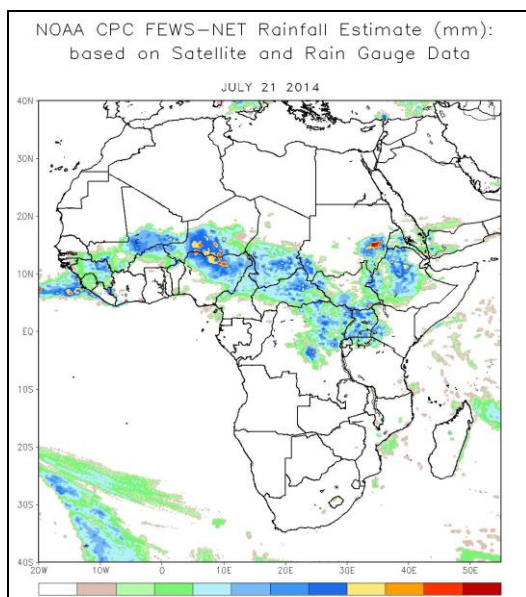
(July 21, 2014 – July 22, 2014)

2.1. Weather assessment for the previous day (July 21, 2014)

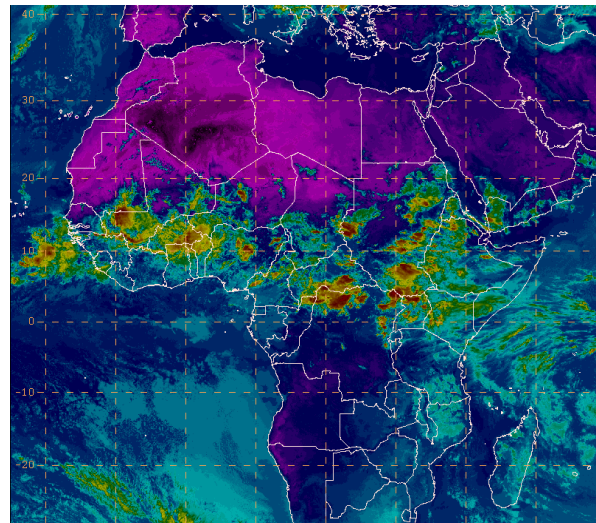
During the previous day, moderate to heavy rainfall was observed over, Guinea-Conakry, Sierra-Leone, portions of Mali and Niger, northern Nigeria and Cameroon, southern Chad, portion of CAR, local areas in Sudan and DRC, Uganda, western Kenya, portion of Ethiopia and Eritrea.

2.2. Weather assessment for the current day (July 22, 2014)

Intense clouds are observed southern Mauritania and Burkina-Faso, western Mali, local part of Niger, Nigeria, Cameroon, Chad and Sudan, northern DRC and Congo-Brazzaville, local part of Uganda, and western Ethiopia



IR Satellite Image (valid 1552 Z of July 22, 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