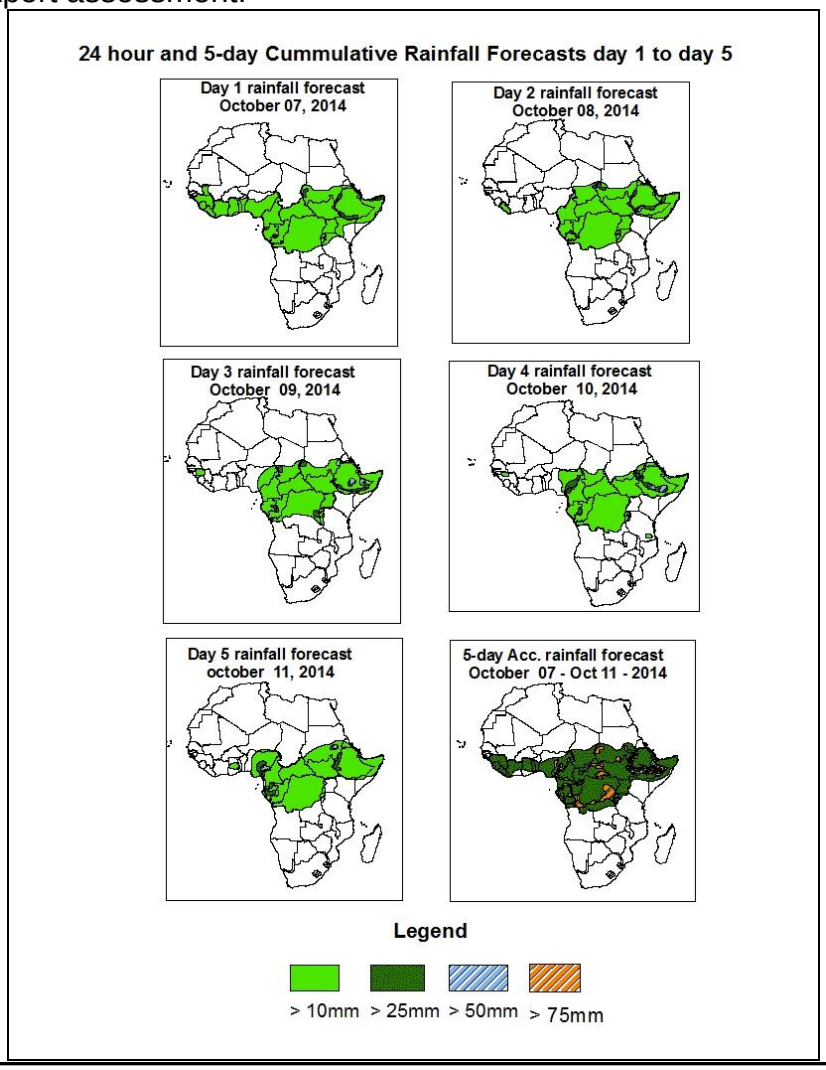
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of October 07 – 06Z of October 11, 2014. (Issued at 1800Z of October 06, 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 the NCEP global ensemble forecasts system (GEFS) and expert assessment.

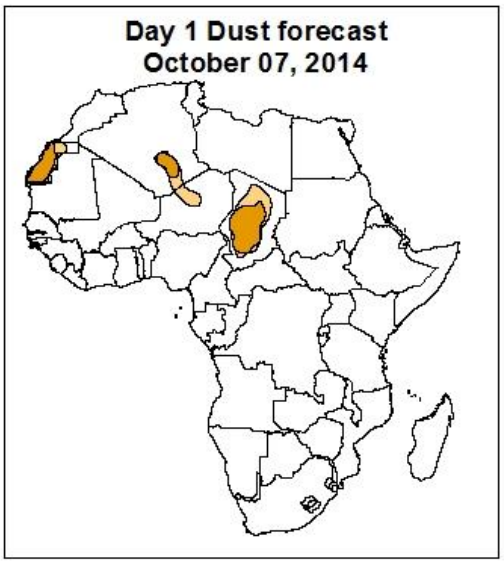


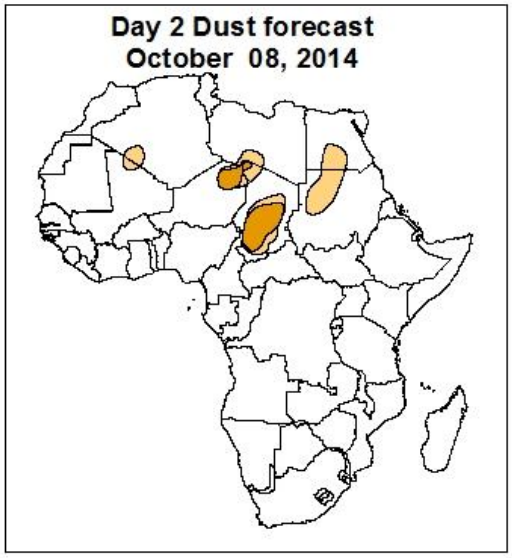
Summary

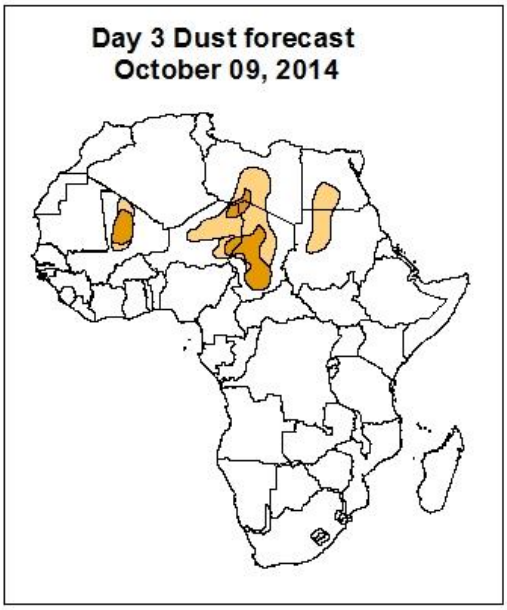
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC and Uganda and the neighboring areas, and eastward propagating trough across the Gulf of Guinea region are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Liberia, Cameroon, CAR, Congo Brazzaville, Gabon, Ethiopia, portions of Sudan, Nigeria and DRC, local areas in Ivory Coast, Guinea-Conakry, Benin, Ghana, Togo, Burundi, Rwanda, and Uganda, southern Chad.

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 Western Sahara, Algeria, Mali, Niger, Soudan and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of October 06, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify slightly from 24 to 48hours, with its central pressure value increasing from about 1025hpa in 24 hours to 1026hpa in 48hours, and it weakens from 48 to 96hours, with its central pressure value decreasing from about 1026hpa in 48 hours to 1023hpa in 96hours, and then it is expected to intensify from 96 to 120 hours, with its central pressure value increasing from about 1023hpa in 96 hours to 1026hpa in 120hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify from 24 to 48hours, with its central pressure value increasing from about 1037hpa in 24 hours to 1039hpa in 48hours, and then it is expected to weaken from 48 to 120hours, with its central pressure value decreasing from about 1039hpa in 48 hours to 1031hpa in 120hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken from 24 to 48hours, with its central pressure value decreasing from about 1027hpa in 24 hours to 1026hpa in 48hours, and it intensifies from 48 to 96hours, with its central pressure value increasing from about 1026hpa in 48 hours to 1029hpa in 96hours, and then it is expected to weaken from 96 to 120hours, with its central pressure value decreasing from about 1029hpa in 96 hours to 1028hpa in 120hours, 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 1006hpa and 1009hpa during the forecast period. The heat low over Sudan is expected to vary also in the range between 1006hpa and 1009hpa from 24 to 120 hours. The heat low across DRC is expected to vary in the range between 1008hpa and 1010hpa during the forecast period, 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 Western Sahara, Algeria, Libya, Mali, Sudan, Niger and Chad. Local wind convergences are also expected over DRC, Tanzania, Uganda, Burundi, Rwanda and Ethiopia during the forecast period**.**

At 850Hpa level, a cyclonic circulation with its associated trough is expected to propagate westwards between southern Guinea-Conakry and Sierra Leone through 24 to 48 hours. Another cyclonic circulation with its associated trough is expected to propagate between Sudan and Nigeria through 48 to 120hours. Local wind convergences are expected to remain active over DRC, Uganda, Tanzania, Rwanda, Burundi, Eritrea and Ethiopia during the forecast period.

At 700hpa level, a trough in the easterly flow is expected to propagate westwards between Guinea-Conakry and Sierra Leone through 24 to 48hours. Another trough in the easterlies is expected to propagate across Sudan and Nigeria through 48 to 120 hours.

In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC and Uganda and the neighboring areas, and eastward propagating trough across the Gulf of Guinea region are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Liberia, Cameroon, CAR, Congo Brazzaville, Gabon, Ethiopia, portions of Sudan, Nigeria and DRC, local areas in Ivory Coast, Guinea-Conakry, Benin, Ghana, Togo, Burundi, Rwanda, and Uganda, southern Chad.

2.0. Previous and Current Day Weather Discussion over Africa

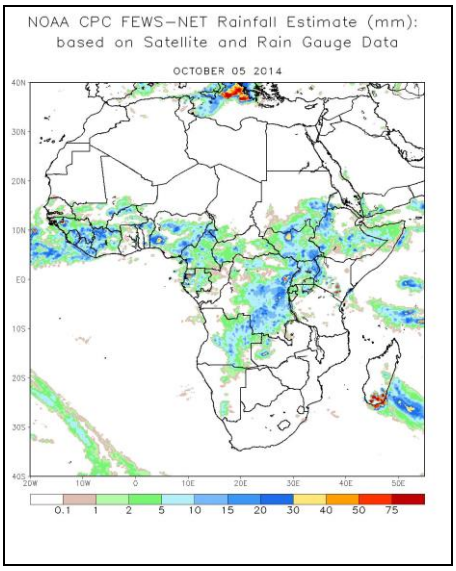
(October 05, 2014 – October 06, 2014)

2.1. Weather assessment for the previous day (October 05, 2014)

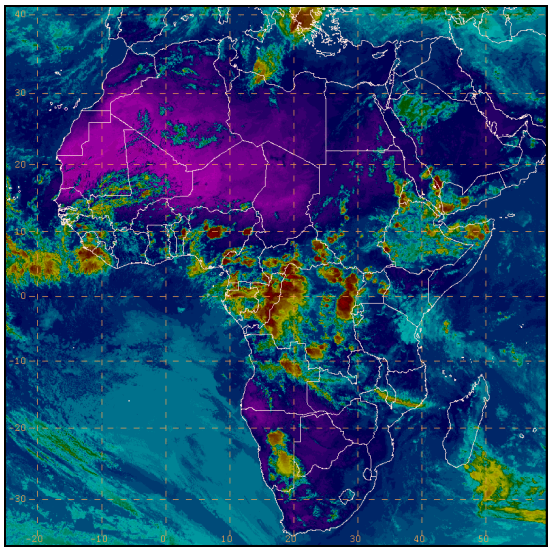
During the previous day, moderate to heavy rainfall was observed over Guinea-Conakry, Sierra Leone, Liberia, CAR, Nigeria, Cameroon, DRC, Gabon, Ivory Coast, Benin, Uganda, Burundi, Rwanda and Ethiopia, portions of Mali, Senegal, Benin, Burkina Faso and Sudan, local areas in Tanzania, Kenya, Ghana, Togo and Eritrea, southern Chad, Mauritania and Niger.

2.2. Weather assessment for the current day (October 06, 2014)

Intense clouds are observed over portions of DRC, Eritrea, Congo Brazzaville, Gabon, Liberia and Sierra Leone, local areas in Guinea-Conakry, Mali, Nigeria, Benin, CAR, Cameroon, Uganda, Sudan and Ethiopia,



IR Satellite Image (valid 1552 Z of October 06, 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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