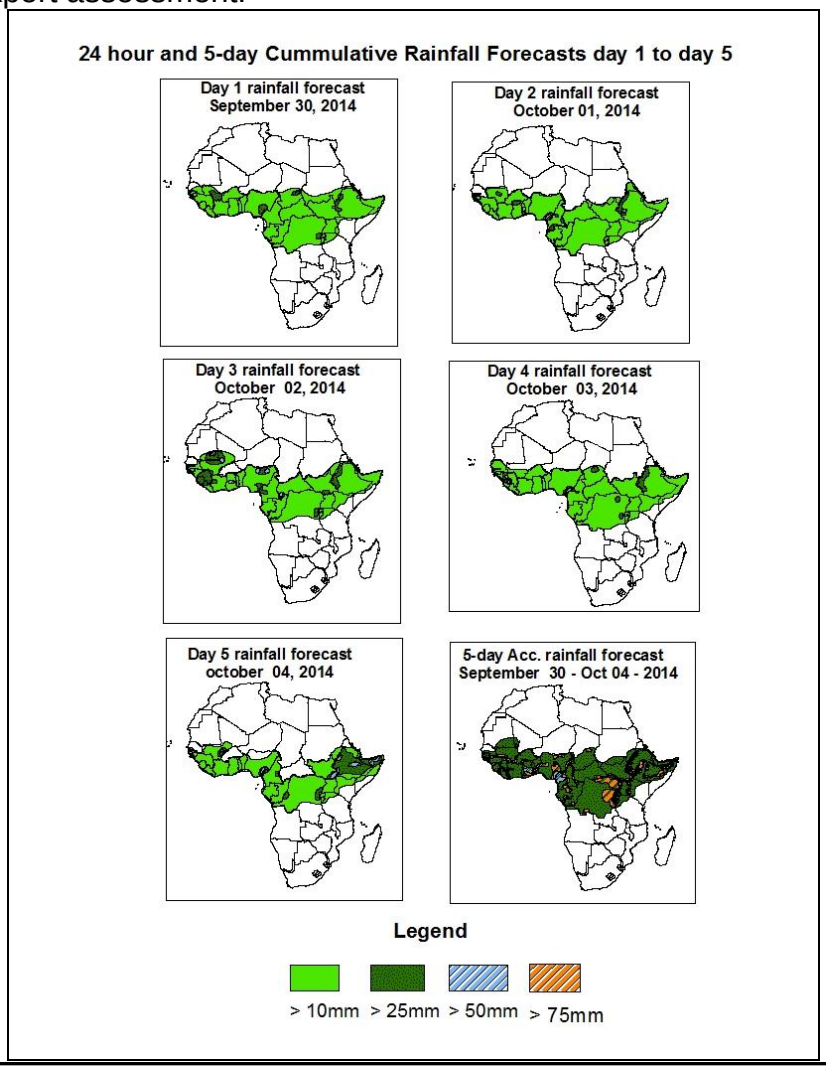
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of September 30 – 06Z of October 04, 2014. (Issued at 1800Z of September 29, 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.



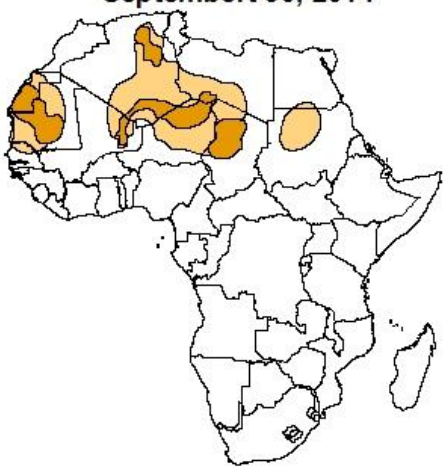
Summary

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 Guinea-Conakry, Liberia, Benin, Togo, Ghana, Ivory Coast, Sierra Leone, Cameroon, Nigeria, CAR, Congo Brazzaville, Gabon, Burundi, Rwanda, Ethiopia and Uganda, portions of Sudan, DRC, Burkina Faso and Mali, southeastern Mauritania and Chad, western Kenya, northern Tanzania and southern Senegal.

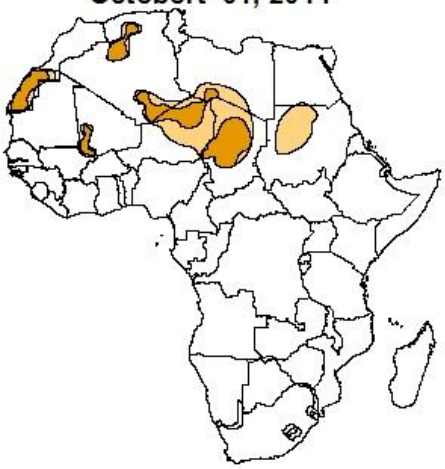
Atmospheric Dust Forecasts, day 1 to day 3,

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

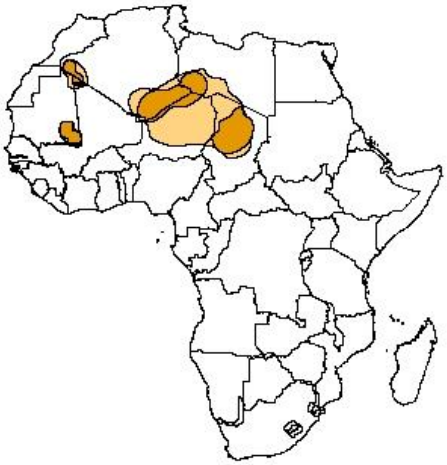
Day 1 Dust forecast
Septembert 30, 2014



Day 2 Dust forecast
Octobert 01, 2014



Day 3 Dust forecast
October 02, 2014



Highlights

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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of September 29, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify from 24 to 72 hours, with its central pressure value increasing from about 1026hpa in 24 hours to 1030hpa in 72hours, and then it is expected to weaken from 72 to 120hours, with its central pressure value decreasing from about 1030hpa in 72 hours to 1029hpa in 120hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken from 24 to 48hours, with its central pressure value decreasing from about 1035hpa in 24 hours to 1031hpa in 48hours, and then it is expected to intensify from 48 to 120 hours, with its central pressure value increasing from about 1031hpa in 48 hours to 1037hpa in 120hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken from 24 to 120hours, with its central pressure value decreasing from about 1035hpa in 24 hours to 1027hpa 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 1008hpa and 1009hpa during the forecast period. The heat low over Sudan is expected to vary in the range between 1007hpa and 1008hpa from 24 to 120 hours. The heat low across DRC is expected to vary in the range between 1009hpa 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, Mauritania, Mali, Niger and Chad. Local wind convergences are also expected over DRC, Tanzania, Uganda, Burundi and Ethiopia during the forecast period**.**

At 850Hpa level, a cyclonic circulation with its associated trough is expected to propagate westwards between Nigeria and southwestern Senegal through 24 to 120

hours. Local wind convergences are expected to remain active over DRC, Uganda, Tanzania, Burundi, Eritrea and Ethiopia during the forecast period.

At 700hpa level, a trough in the easterly flow is expected to propagate westwards between Nigeria and Senegal through 24 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 Guinea-Conakry, Liberia, Benin, Togo, Ghana, Ivory Coast, Sierra Leone, Cameroon, Nigeria, CAR, Congo Brazzaville, Gabon, Burundi, Rwanda, Ethiopia and Uganda, portions of Sudan, DRC, Burkina Faso and Mali, southeastern Mauritania and Chad, western Kenya, northern Tanzania and southern Senegal.

2.0. Previous and Current Day Weather Discussion over Africa

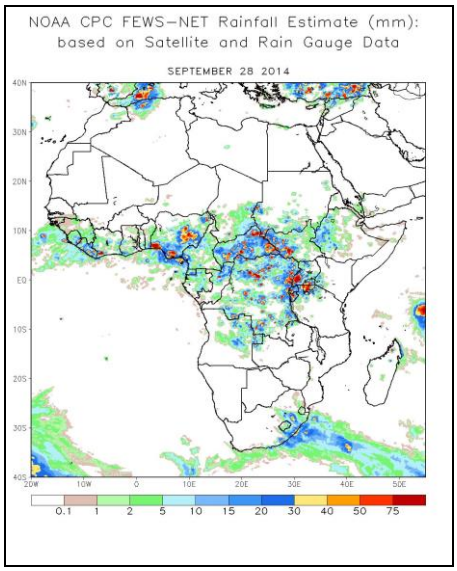
(September 28, 2014 – September 29, 2014)

2.1. Weather assessment for the previous day (September 28, 2014)

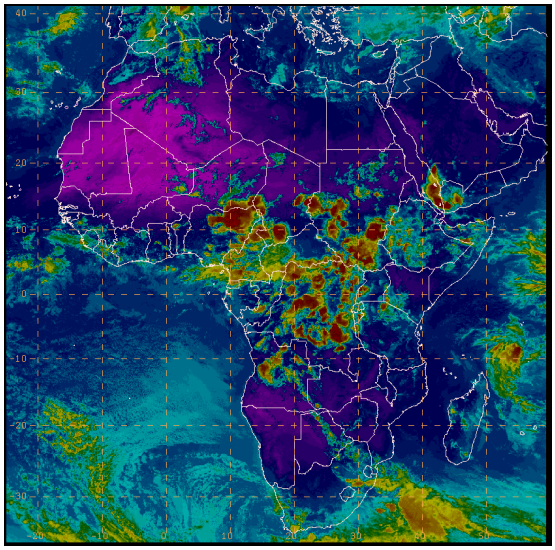
During the previous day, moderate to heavy rainfall was observed over Sierra Leone, CAR, Liberia, Cameroon, Uganda, DRC, Nigeria, Burundi, Rwanda, portions of Guinea-Conakry, Gabon, Congo Brazzaville, Chad, Ethiopia and Sudan, local areas in Benin, Togo, Ivory Coast, Mali, Ghana, Niger, Tanzania and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

2.2. Weather assessment for the current day (September 29, 2014)

Intense clouds are observed over portions of Nigeria, Sudan, local areas in Ethiopia, DRC, Cameroon, Uganda, CAR, Chad, Congo Brazzaville, Niger and Niger, northern Tanzania and Benin, western Kenya.



IR Satellite Image (valid 1600 Z of September 29, 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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