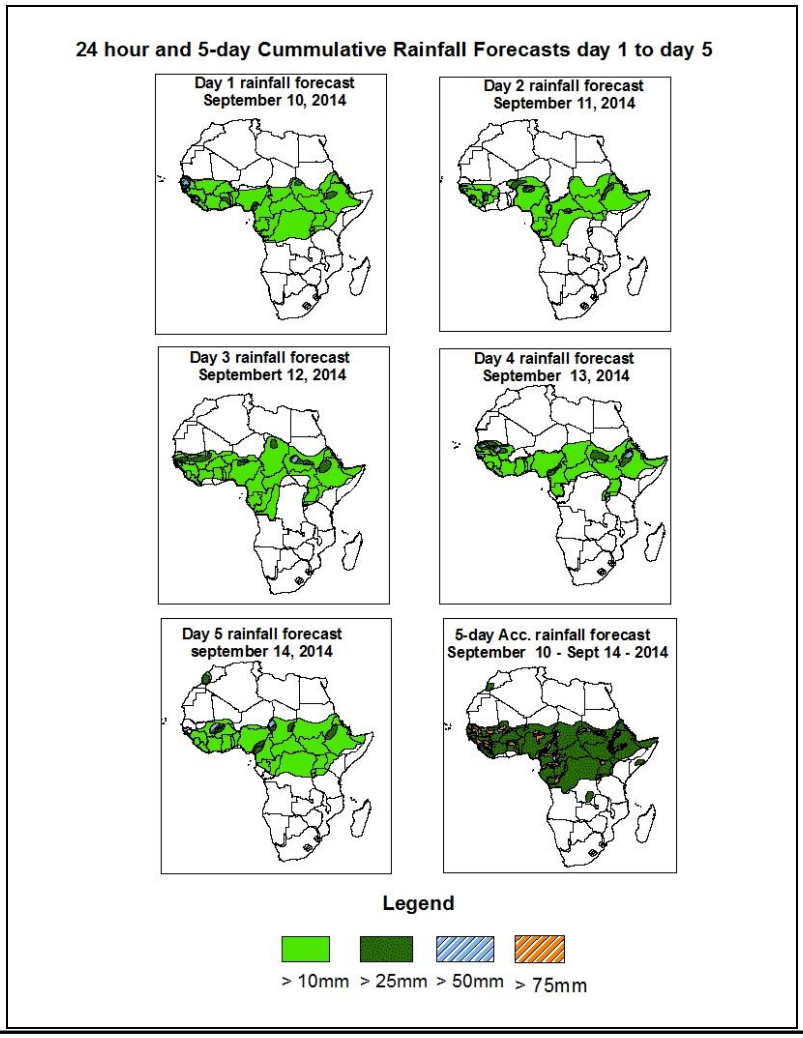
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of September 10 – 06Z of September 14, 2014. (Issued at 1800Z of September 09, 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.



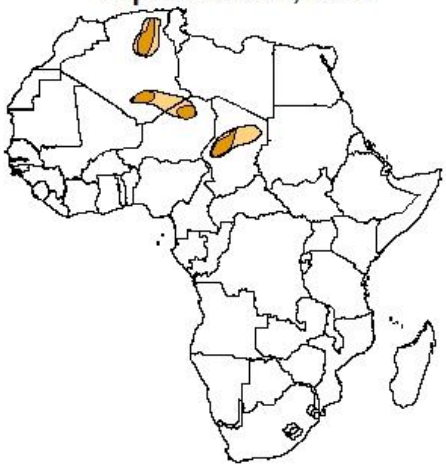
Summary

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 active easterly wave activity across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over local areas in Uganda, Guinea-Conakry, Senegal, Sierra Leone, Liberia, Nigeria, Gabon, Cameroon, Congo Brazzaville, CAR, Benin, Togo and Eritrea, portions of DRC, Ghana, Ivory Coast, Chad, Mali, Sudan, Ethiopia, southeastern Niger and southern Mauritania.

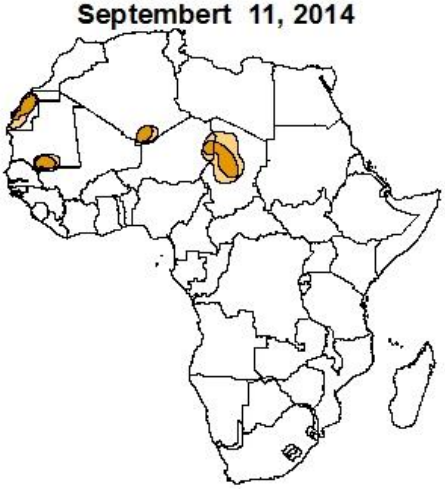
Atmospheric Dust Forecasts, day 1 to day 3,

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

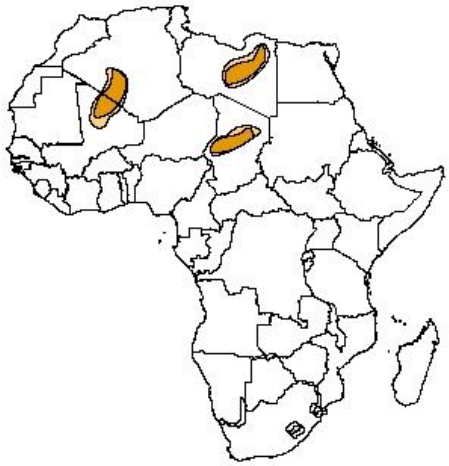
Day 1 Dust forecast
Septembert 10, 2014



Day 2 Dust forecast
Septembert 11, 2014



Day 3 Dust forecast
September 12, 2014



Highlights

There is an increased chance for moderate to high dust concentration over Western Sahara, Libya, near Mali-Algeria border and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of September 09, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken from 24 to 96hours with its central pressure value decreasing from about 1032hpa in 24 hours to 1027hpa in 96hours, and then it is expected to intensify from 96hours to 120 hours, with its central pressure value increasing from about 1025hpa in 96hours to 1030hpa in 120 hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken from 24 to 96 hours, with its central pressure value decreasing from about 1031hpa in 24 hours to 1024hpa in 96hours, and then it is expected to intensify from 96hours to 120 hours, with its central pressure value increasing from about 1024hpa in 96hours to 1028hpa 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 1023hpa in 24 hours to 1021hpa in 48hours, and it intensify from 48hours to 96 hours, with its central pressure value increasing from about 1021hpa in 48hours to 1025hpa in 96 hours, and then it is expected to weaken slightly from 96 to 120 hours, with its central pressure value decreasing from about 1025hpa in 96 hours to 1024hpa 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 1008hpa during the forecast period. The heat low over Sudan is expected to vary in the range between 1007hpa and 1009hpa from 24 to 120 hours. The heat low across DRC is expected to vary slightly 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, Libya, border Algeria-Mali and Chad. Local wind convergences are also expected over DRC, Tanzania, Rwanda, Uganda, Burundi and Ethiopia during the forecast period**.**

At 850Hpa level, cyclonic circulation is expected to propagate westwards between Nigeria and Guinea Conakry through 24 to 120 hours. Local wind convergences are expected to remain active over DRC, Uganda, Rwanda, Eritrea and Ethiopia during the forecast period.

At 700hpa level, a weak trough in the easterly flow is expected to propagate westwards between Nigeria and Senegal through 24 to 120 hours.

At 500Hpa level, a zone of moderate wind (>30kts), associated with African easterly jet is expected to propagate across Niger, Burkina, Mali, Mauritania 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 active easterly wave activity across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over local areas in Uganda, Guinea-Conakry, Senegal, Sierra Leone, Liberia, Nigeria, Gabon, Cameroon, Congo Brazzaville, CAR, Benin, Togo and Eritrea, portions of DRC, Ghana, Ivory Coast, Chad, Mali, Sudan, Ethiopia, southeastern Niger and southern Mauritania.

2.0. Previous and Current Day Weather Discussion over Africa

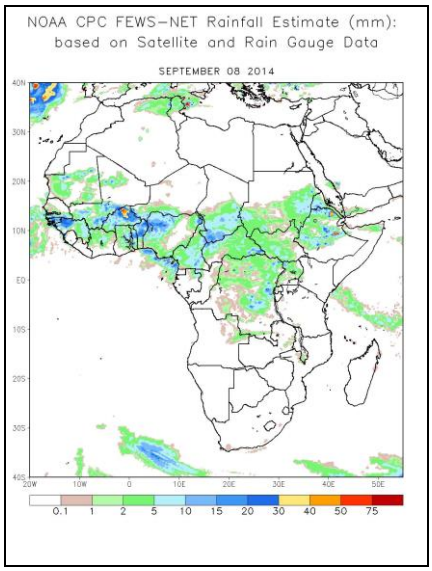
(September 08, 2014 – September 09, 2014)

2.1. Weather assessment for the previous day (September 08, 2014)

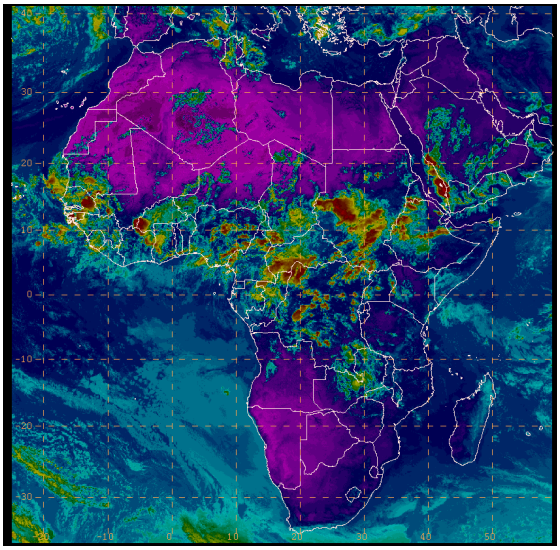
During the previous day, moderate to heavy rainfall was observed over local areas in Mauritania, Burkina Faso, Cameroon, CAR, Eritrea, Guinea-Conakry, Togo and Benin, portions of Mali, Senegal, Ivory Coast, Ghana, Nigeria, Sudan, Chad, DRC, Uganda, Ethiopia, southeastern Niger and Chad, northern Gabon and Congo Brazzaville.

2.2. Weather assessment for the current day (September 09, 2014)

Intense clouds are observed over portions of CAR and DRC, local areas in Senegal, Nigeria, DRC, Uganda, Ghana and CAR, southern Mauritania, Chad, Eritrea, Burkina Faso Togo and Mali, northern Ivory Coast, Cameroon, Congo Brazzaville, western Senegal, Guinea-Conakry and Ethiopia, portions of Sudan.



IR Satellite Image (valid 1500 Z of September 09, 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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