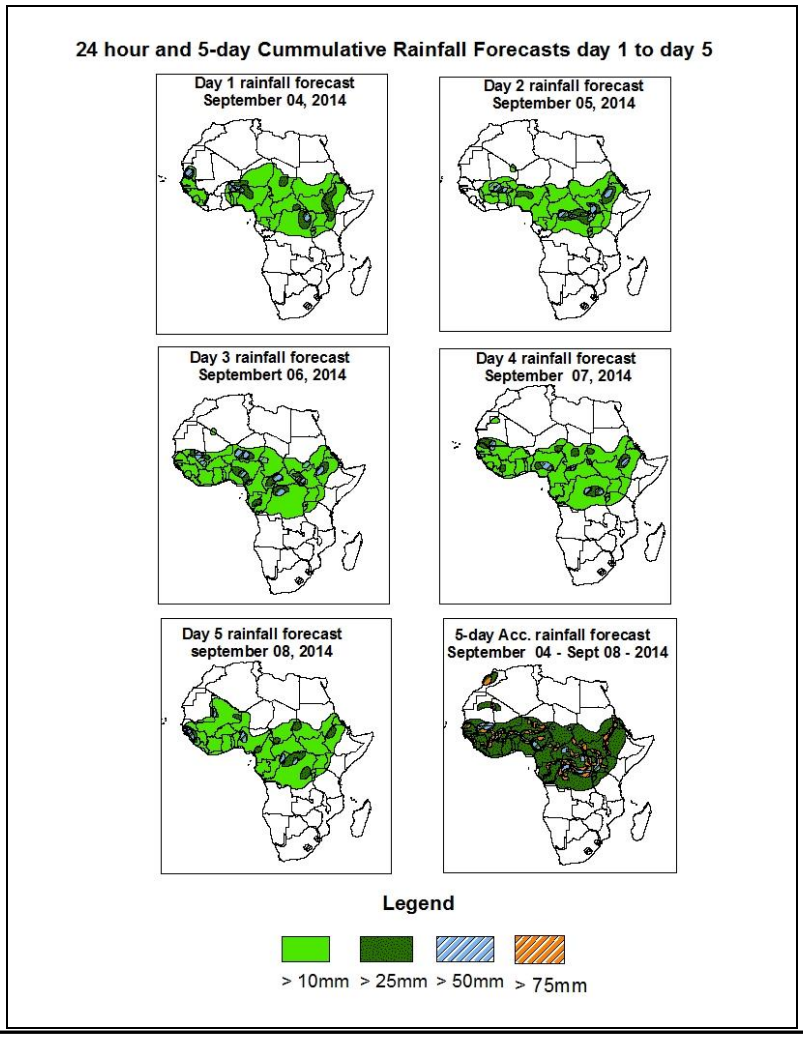
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of September 04 – 06Z of September 08, 2014. (Issued at 1800Z of September 03, 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.

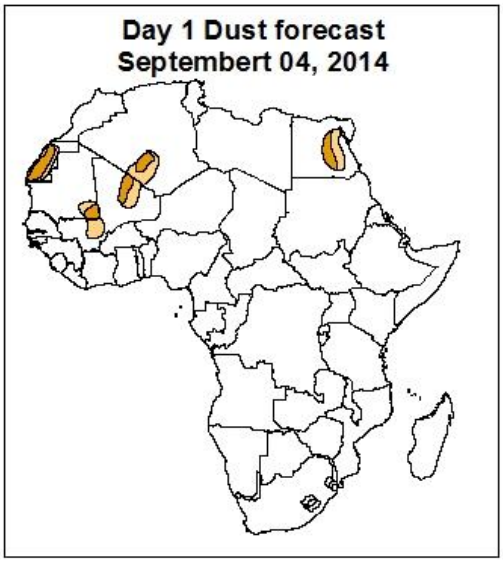


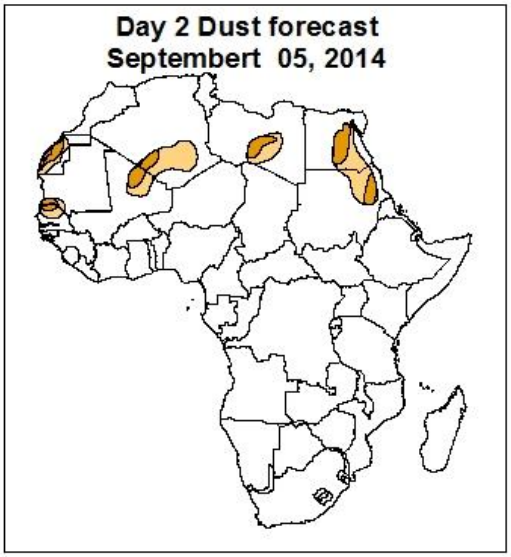
Summary

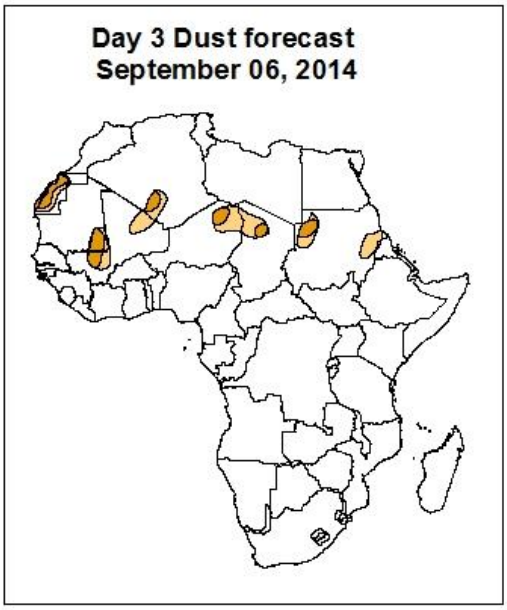
In the next five days, the monsoon flow from the Atlantic Ocean with its associated convergence across the southern Sahel, localized wind convergences over Ethiopia, DRC, and Tanzania and the neighboring areas, and active easterly wave activity across West Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over local areas in Mauritania and Tanzania, Guinea-Conakry, Sierra Leone, Liberia, Nigeria, Burkina Faso, Benin, Togo, CAR, Congo Brazzaville, Uganda, and Eritrea, portions of DRC, Gabon, Ghana, Ivory Coast, Senegal, Chad, Mali, Niger, Sudan, and Cameroon, western Kenya and Ethiopia.

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, southern Algeria and Libya, Egypt, near Mauritania-Mali border and northern Sudan.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of September 03, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify slightly from 24hours to 48 hours, with its central pressure value increasing from about 1024hpa in 24hours to 1025hpa in 48 hours, and it weakens from 48 to 96 hours, with its central pressure value decreasing from about 1025hpa in 48 hours to 1021hpa in 96hours, and then it is expected to intensify from 96hours to 120 hours, with its central pressure value increasing from about 1021hpa in 96hours to 1024hpa in 120 hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify from 24hours to 48 hours, with its central pressure value increasing from about 1022hpa in 24hours to 1038hpa in 48 hours, and then it is expected to weaken from 48 to 120 hours, with its central pressure value decreasing from about 1038hpa 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 intensify from 24hours to 72 hours, with its central pressure value increasing from about 1033hpa in 24hours to 1036hpa in 48 hours, and it maintains its central pressure value of about 1036hpa through 48hours to 72 hours, and then it is expected to weaken from 72 to 120 hours with its central pressure value decreasing from about 1036hpa in 72 hours to 1025hpa 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 1005hpa and 1007hpa during the forecast period. The heat low over Sudan is expected to vary in the range between 1004hpa and 1007hpa 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, southern Algeria and Libya, Egypt and Sudan. Local wind convergences are also expected over DRC, Tanzania, Burundi, Rwanda, Uganda, Kenya and Ethiopia during the forecast period**.**

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

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

At 500Hpa level, a zone of moderate wind (>30kts), associated with African easterly jet is expected to propagate across Nigeria, Niger, 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 Tanzania 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 Mauritania and Tanzania, Guinea-Conakry, Sierra Leone, Liberia, Nigeria, Burkina Faso, Benin, Togo, CAR, Congo Brazzaville, Uganda, and Eritrea, portions of DRC, Gabon, Ghana, Ivory Coast, Senegal, Chad, Mali, Niger, Sudan, and Cameroon, western Kenya and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

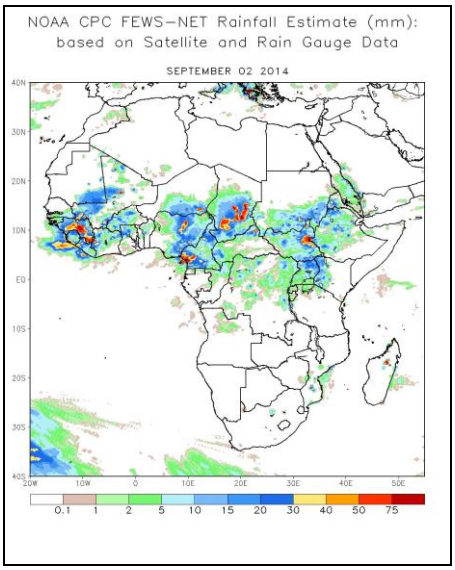
(September 02, 2014 – September 03, 2014)

2.1. Weather assessment for the previous day (September 02, 2014)

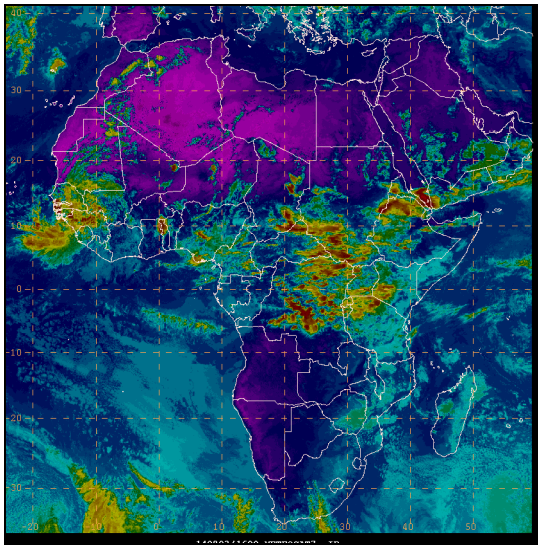
During the previous day, moderate to heavy rainfall was observed over portions of Senegal, Ivory Coast, Ghana, Nigeria, Congo Brazzaville, Chad, Sudan and Ethiopia, Guinea-Conakry, Liberia, Sierra Leon, Burkina Faso, Cameroon, CAR, Uganda and Eritrea, local areas in Mali, Mauritania and DRC, western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

2.2. Weather assessment for the current day (September 03, 2014)

Intense clouds are observed over portions of Guinea Conakry, Senegal, DRC, Sudan and Ethiopia, northern Togo, Tanzania and CAR, local areas in Nigeria, Mali, Cameroon, Uganda and Burundi, eastern Chad, western Kenya and Eritrea.



IR Satellite Image (valid 1600 Z of September 03, 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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