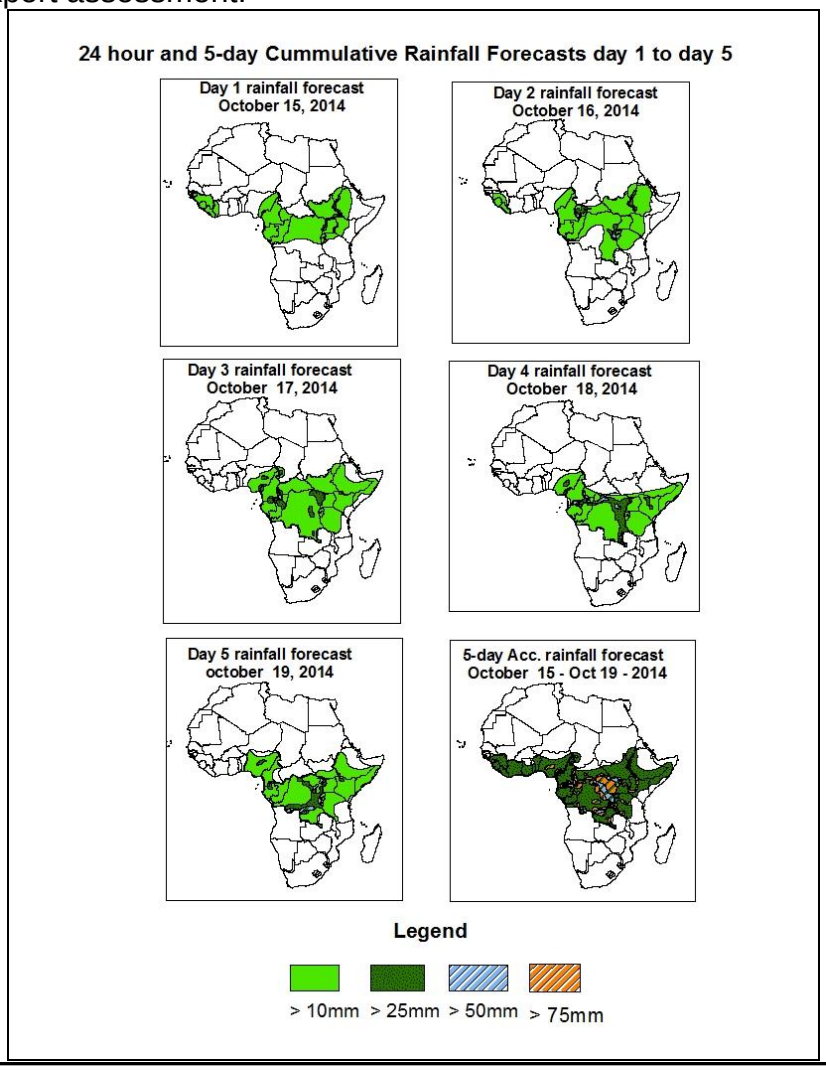
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of October 15 – 06Z of October 19, 2014. (Issued at 1800Z of October 14, 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.

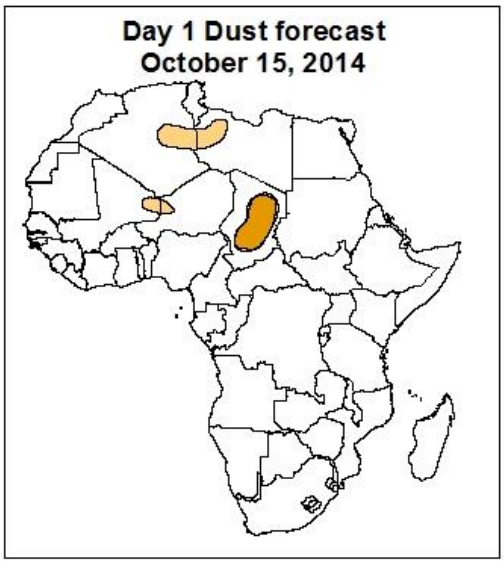


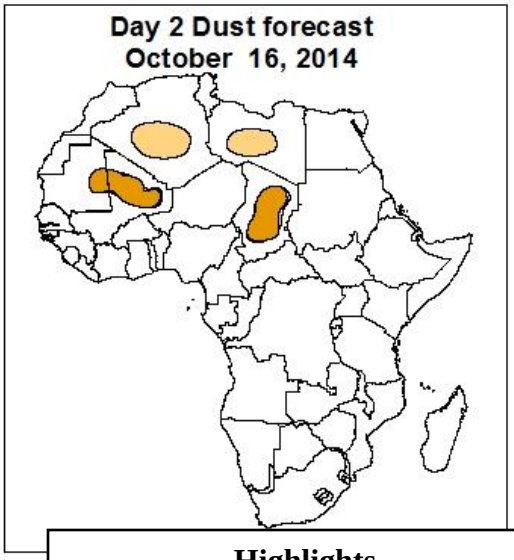
Summary

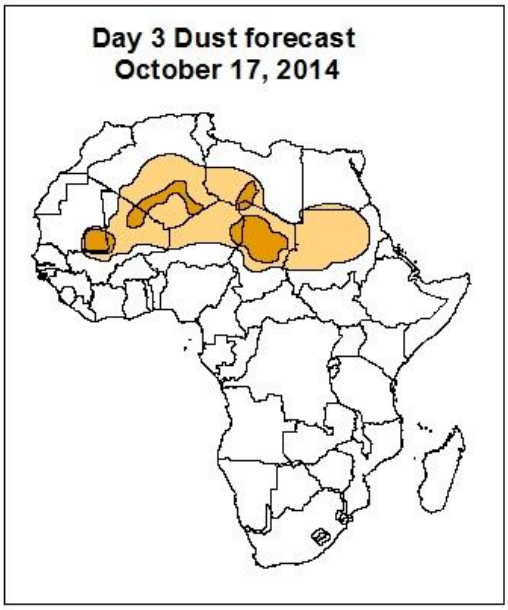
In the next five days, local wind convergences near the Ethiopia-Sudan, active meridional wind convergence near the Lake Victoria region, and westward propagating cyclonic circulation across equatorial Africa region are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over southern Cameroon, Congo-Brazzaville, Gabon, many parts of DRC, Rwanda, Burundi, Uganda, western Tanzania, western Kenya, eastern Sudan and western 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 Algeria, Libya, Mauritania, Mali, Niger, Sudan and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of October 14, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken gradually through 24 to 120hours, with its central pressure value decreasing from 1017hpa to 1024hpa, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to intensify through 24 to 72 hours while shifting eastwards. Its central pressure value is expected to increase from 1025hpa in 24 hours to 1032hpa in 72 hours, before it moves to southwest Indian Ocean to become the Mascarene high pressure system in 96hours. A new high pressure system is expected to build over Southeast Atlantic Ocean, with its central pressure value increasing from 1027hpa to 1029hpa through 96 to 120 hours, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken while shifting eastwards, with its central pressure value expected to decrease from 1029hpa to 1022hpa through 24 to 72 hours, before it is replaced by a high pressure system that shifts from the Atlantic Ocean. The new Mascarene high pressure system is expected to weaken slightly, with its central pressure value decreasing from 1033hpa to 1032hpa through 96 to 120 hours, according to the GFS model.

A broad region of low pressure system, with central pressure value of about 1007hpa, is expected to form across southern Africa, and expected to shift eastwards into Southwest Atlantic Ocean through 48 to 96 hours.

At 925Hpa level, a zonal wind convergence is expected to prevail in the region between Senegal and Chad through 24 to 120 hours. Local wind convergences are expected to prevail near the Sudan-Ethiopia border and the Lake Victoria region during the forecast period**.**

At 850Hpa level, seasonal wind convergences are expected to prevail near the Ethiopia-Sudan border, and the Lake Victoria region, extending into Zambia. A cyclonic circulation is expected to propagate westwards between Chad and southern Cameroon through 24 to 72 hours.

At 700hpa level, northeasterly flow is expected to prevail over much of West Africa, whereas a cyclonic circulation is expected to shift westwards between Chad and Gabon through 24 to 120 hours. A feeble cyclonic circulation and its associated trough are expected to prevail across the Horn of Africa during the forecast period.

In the next five days, local wind convergences near the Ethiopia-Sudan, active meridional wind convergence near the Lake Victoria region, and westward propagating cyclonic circulation across equatorial Africa region are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over southern Cameroon, Congo-Brazzaville, Gabon, many parts of DRC, Rwanda, Burundi, Uganda, western Tanzania, western Kenya, eastern Sudan and western Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

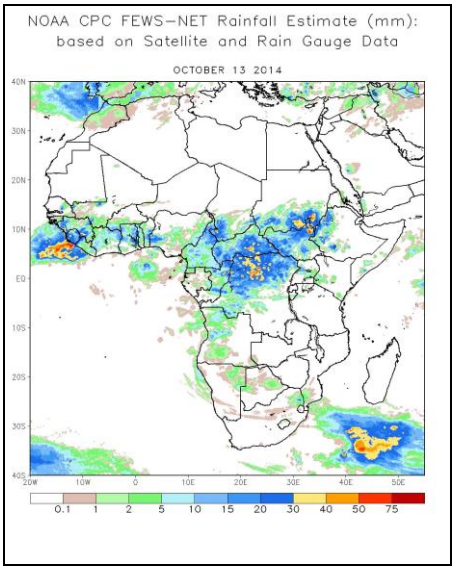
(October 13, 2014 – October 14, 2014)

2.1. Weather assessment for the previous day (October 13, 2014)

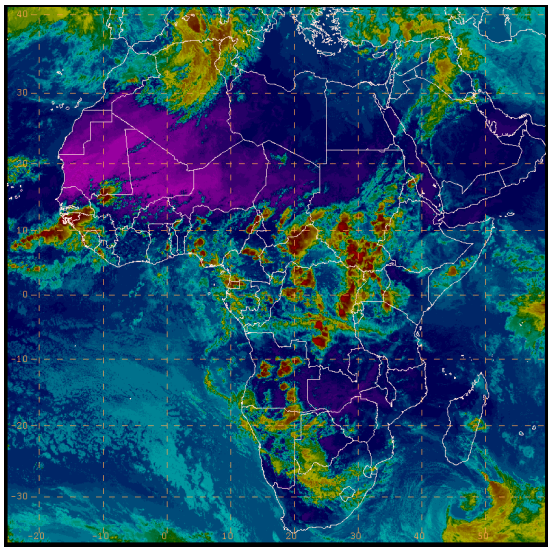
During the previous day, moderate to heavy rainfall was observed over Guinea-Conakry, Liberia, Sierra Leone, Togo, Cameroon, CAR, portions of Mali, Ivory Coast, Ghana, Benin, Nigeria, Burkina-Faso, DRC, Uganda, Gabon, Congo Brazzaville, Sudan and Ethiopia, local areas in Senegal, southern Chad, Burundi,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

2.2. Weather assessment for the current day (October 14, 2014)

Intense clouds are observed over portions of Guinea-Conakry and Sudan, local areas in Uganda, Nigeria, Cameroon, CAR and Congo Brazzaville, southern Chad, Mauritania and Senegal, western Liberia, Sierra Leone, Kenya and Ethiopia, northern Tanzania and Eritrea, northeastern Gabon and Benin and eastern Ghana.



IR Satellite Image (valid 1622 Z of October 14, 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: Kouakou YA (Cote d'Ivoire, Service National de la Meteorologique / CPC-African Desk); kouakou.ya@noaa.gov