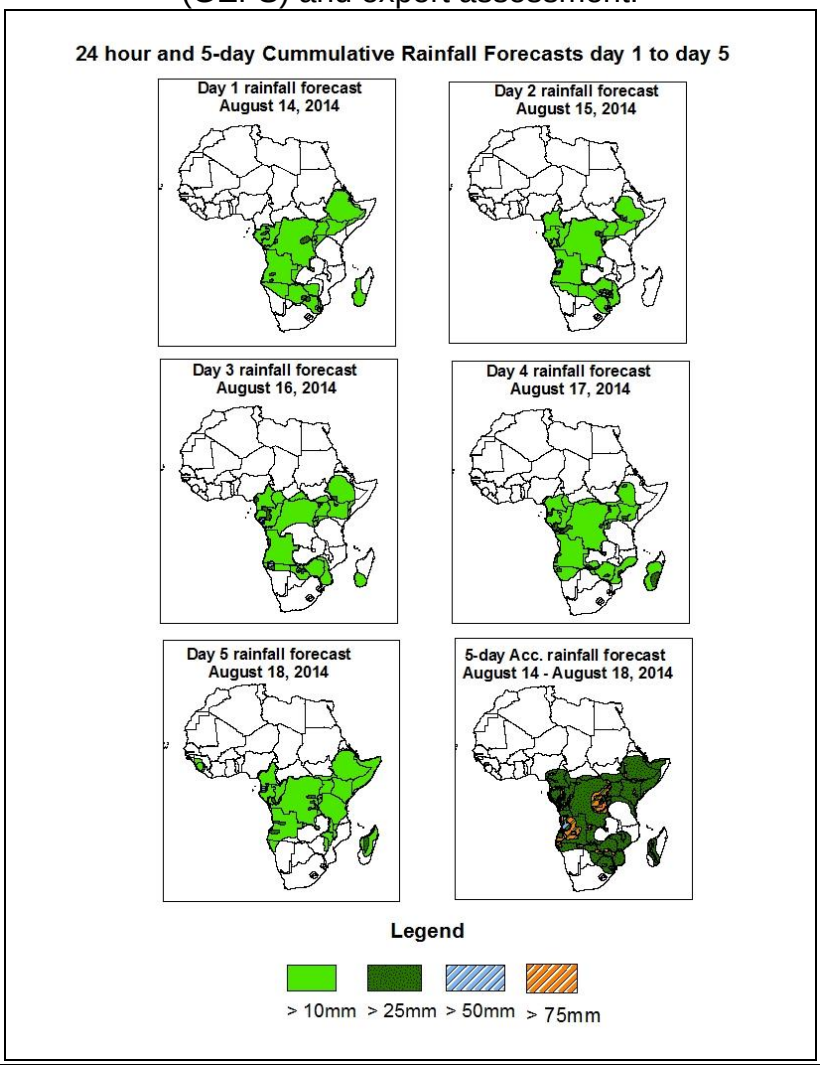
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of November 14 – 06Z of November 18, 2014. (Issued at 1800Z of November 13, 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

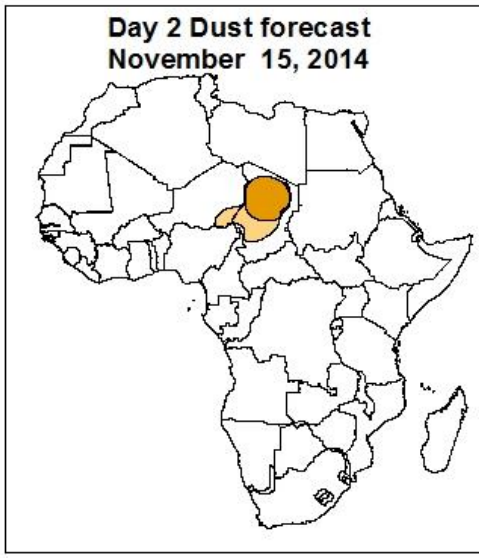
In the next five days, lower-level wind convergence over Gabon and the neighboring areas, seasonal wind convergences over the Lake Victoria region and Angola, and eastward propagating frontal system across Southern Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Gabon, Congo-Brazzaville, Equatorial Guinea, Angola, DRC, Zimbabwe, the Lake Victoria region, and local areas in southern Ethiopia and central Kenya.

Atmospheric Dust Forecasts, day 1 to day 3,

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

Day 1 Dust forecast
November 14, 2014

Day 2 Dust forecast
November 15, 2014



Day 3 Dust forecast
November 16, 2014

Highlights

There is an increased chance for moderate to high dust concentration over Niger and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of November 13, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to strengthen with its central pressure value increasing from 1022hpa to 1029hpa, through 24 to 120 hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken slightly with its central pressure value decreasing from 1036hpa to 1031hpa, through 48 to 12096 hours, according to the GFS model.
The Mascarene high pressure system over the southwestern Indian Ocean is expected to weaken with its central pressure value increasing from 1032hpa to 1024hpa, through 24 to 120 hours, according to the GFS model.

At 925Hpa level, dry northeasterly to easterly wind (>25kts) is expected to prevail across portions of Mali, Chad, Niger and parts of Sudan during the forecast period.

At 850Hpa level, seasonal wind convergences are expected to remain active across Lake Victoria region, Gabon, Congo, DRC, Angola and portions of Zambia, Botswana and northern Namibia.

At 700hpa level, a lower level cyclonic circulation is expected to form and propagate westwards between Northwest DRC and Gabon across Congo Brazzaville during the forecast period.
At 500hpa level, a trough associated with mid-latitude frontal system is expected to propagate across southern Africa through 24 to 96 hours.

In the next five days, lower-level wind convergence over Gabon and the neighboring areas, seasonal wind convergences over the Lake Victoria region and Angola, and eastward propagating frontal system across Southern Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Gabon, Congo-Brazzaville, Equatorial Guinea, Angola, DRC, Zimbabwe, the Lake Victoria region, and local areas in southern Ethiopia and central Kenya.

2.0. Previous and Current Day Weather Discussion over Africa

(November 12, 2014 – November 13, 2014)

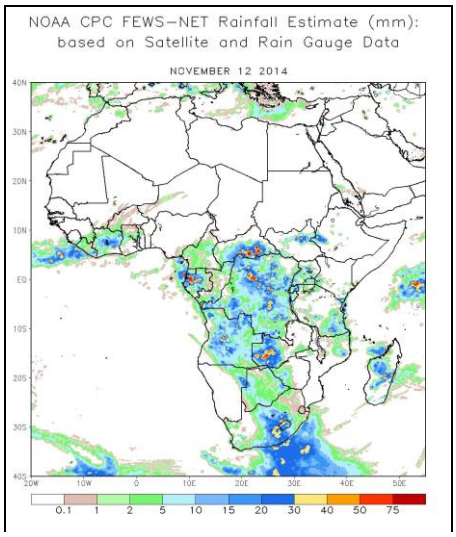
2.1. Weather assessment for the previous day (November 12, 2014)

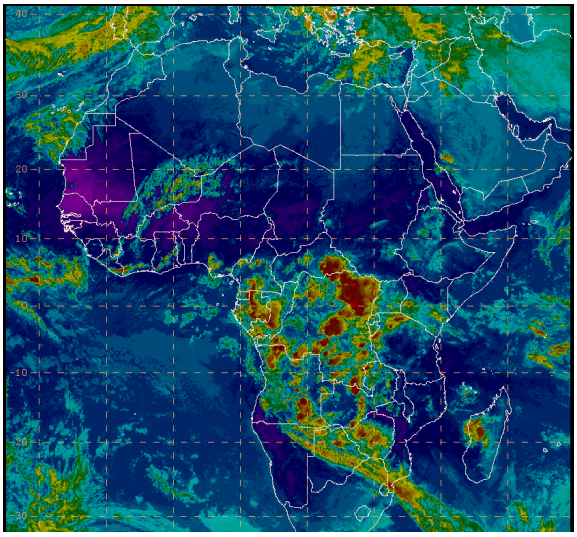
During the previous day, moderate to heavy rainfall was observed over Gabon, Angola, DRC, Congo-Brazzaville, Botswana, Ivory Coast, Liberia, South Africa, Uganda, Burundi and Rwanda portions of Cameroon, Madagascar, CAR, Ghana, Zambia and Zimbabwe, local areas in Tanzania, Ethiopia, Kenya, South Sudan and Burkina Faso, northeastern Namibia, northern Mozambique and Togo, southern Sierra Leone and Guinea Conakry.

2.2. Weather assessment for the current day (November 13, 2014)

Intense clouds are observed over portions of Gabon, local areas in DRC, Cameroon, Congo-Brazzaville, Angola, Zambia, Botswana, Zimbabwe and Madagascar, northern Tanzania, southwestern Ivory Coast.

IR Satellite Image (valid 1722 Z of November 13, 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