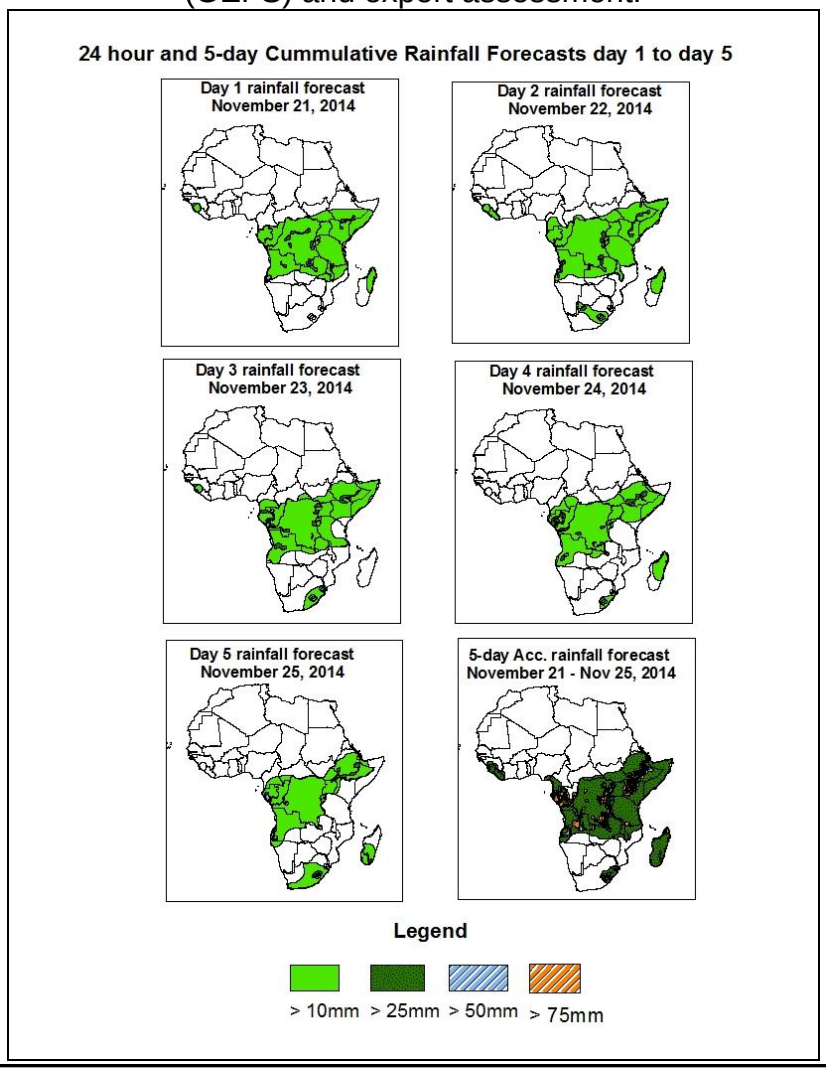
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of November 21 – 06Z of November 25, 2014. (Issued at 1800Z of November 20, 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.

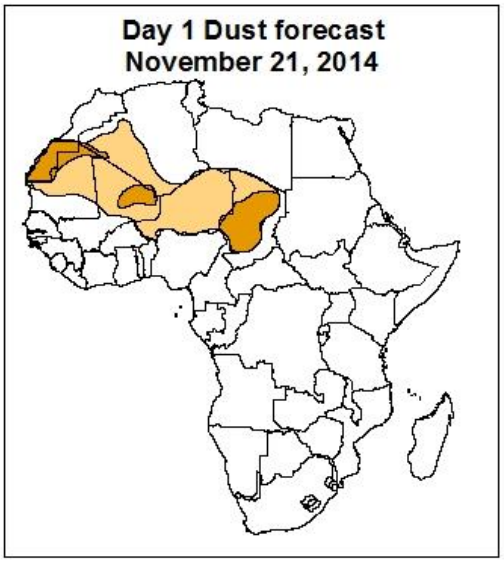


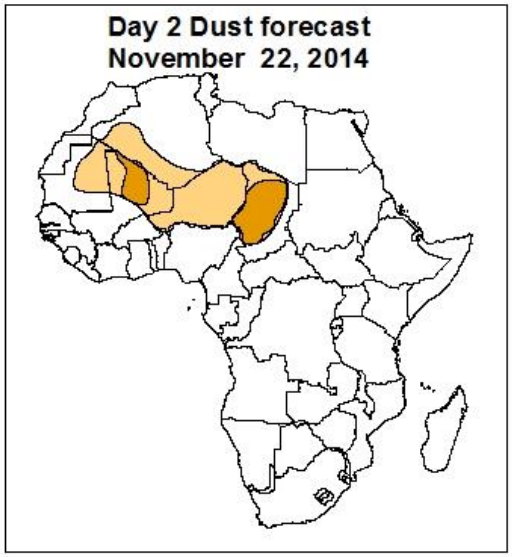
Summary

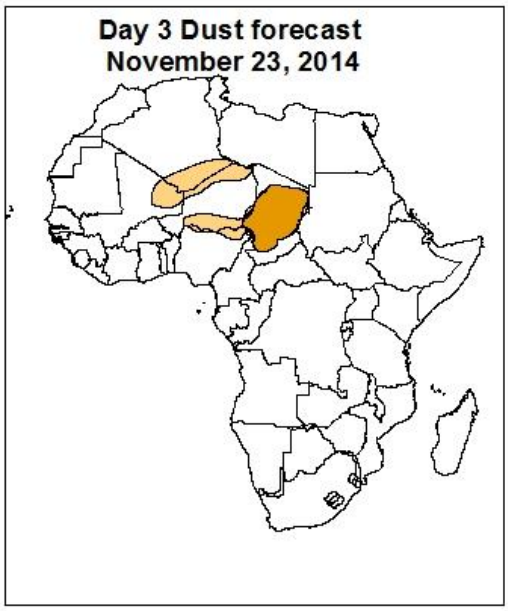
In the next five days, lower-level wind convergence over Gabon, Congo-Brazzaville and the neighboring areas, seasonal wind convergences over the Lake Victoria region, southern Ethiopia and Angola are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Gabon, Kenya, Congo-Brazzaville, Equatorial Guinea, DRC, the Lake Victoria region, portions of Madagascar, Angola and Ethiopia, local areas in southern Somalia and South Africa

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, northern Mali, Niger and Chad.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 00Z of November 20, 2014

The Azores high pressure system over the Northeast Atlantic Ocean is expected to vary through 24 to 96 hours, with its central pressure value of about 1026 to 1027hpa, and then it is expected to strengthen through 96 to 120 hours, with its central pressure value increase from 1027hpa to 1031hpa, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken gradually with its central pressure value decreasing from 1026hpa to 1022hpa, through 24 to 72hours, and then it is expected to strengthen slightly through 72 to 120 hours, with its central pressure value increase from 1022hpa to 1023hpa, according to the GFS model.

The Mascarene high pressure system over the southwestern Indian Ocean is expected to vary through 24 to 120 hours, with its central pressure value of about 1025 to 1026hpa, according to the GFS model.

The East African ridge is expected to weaken gradually, with eastward shift of the Mascarene high pressure system.

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

At 850Hpa level, a seasonal meridional wind convergence is expected to remain active across eastern DRC and the neighboring areas. Lower-level wind convergence is also expected to prevail over southern Ethiopia, Gabon, Congo, southern DRC, Angola and portions of Zambia, Botswana and northern Namibia.

At 500hpa level, a trough associated with mid-latitude frontal system is expected to propagate across southern Africa (with its northern extent reaching the latitudes of Zambia) through 24 to 96hours; whereas a trough associated with mid-latitude frontal system is expected to prevail over Northeast Africa during the forecast period.

In the next five days, lower-level wind convergence over Gabon, Congo-Brazzaville and the neighboring areas, seasonal wind convergences over the Lake Victoria region, southern Ethiopia and Angola are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over Gabon, Kenya, Congo-Brazzaville, Equatorial Guinea, DRC, the Lake Victoria region, portions of Madagascar, Angola and Ethiopia, local areas in southern Somalia, South Africa and Malawi.

2.0. Previous and Current Day Weather Discussion over Africa

(November 19, 2014 – November 20, 2014)

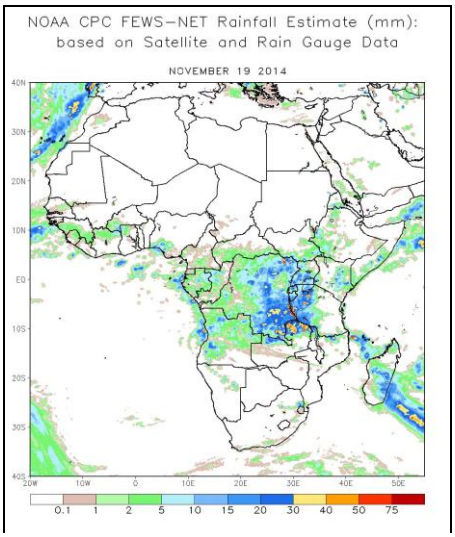
2.1. Weather assessment for the previous day (November 19, 2014)

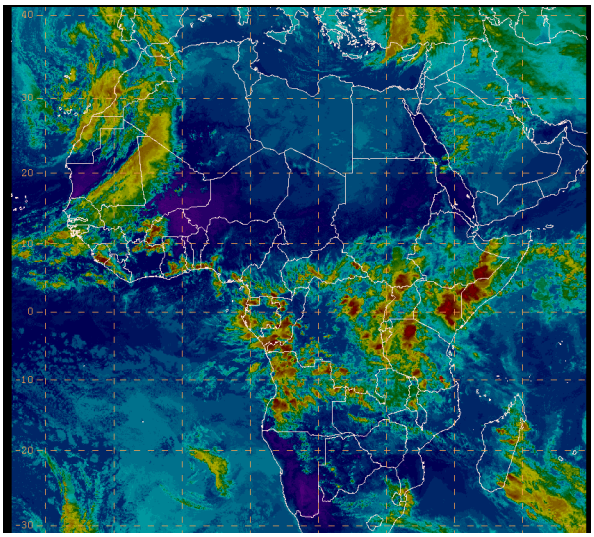
During the previous day, moderate to heavy rainfall was observed over DRC, Congo-Brazzaville, Gabon, Uganda, Burundi and Rwanda, portions of Sierra Leone, Guinea-Conakry, Cameroon, Tanzania, Kenya, Madagascar, CAR and south Sudan, local areas in Ivory Coast, Ghana, Zambia, South Africa, Mozambique and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

2.2. Weather assessment for the current day (November 20, 2014)

Intense clouds are observed over local areas in Gabon, Congo-Brazzaville, DRC, Angola, Tanzania, Kenya, Ethiopia, Malawi, Uganda and south Sudan, southern Cameroon, Nigeria, Ghana, Benin and Togo, northern Ivory Coast, western Burkina Faso and Sierra Leone,

IR Satellite Image (valid 1722 Z of November 20, 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