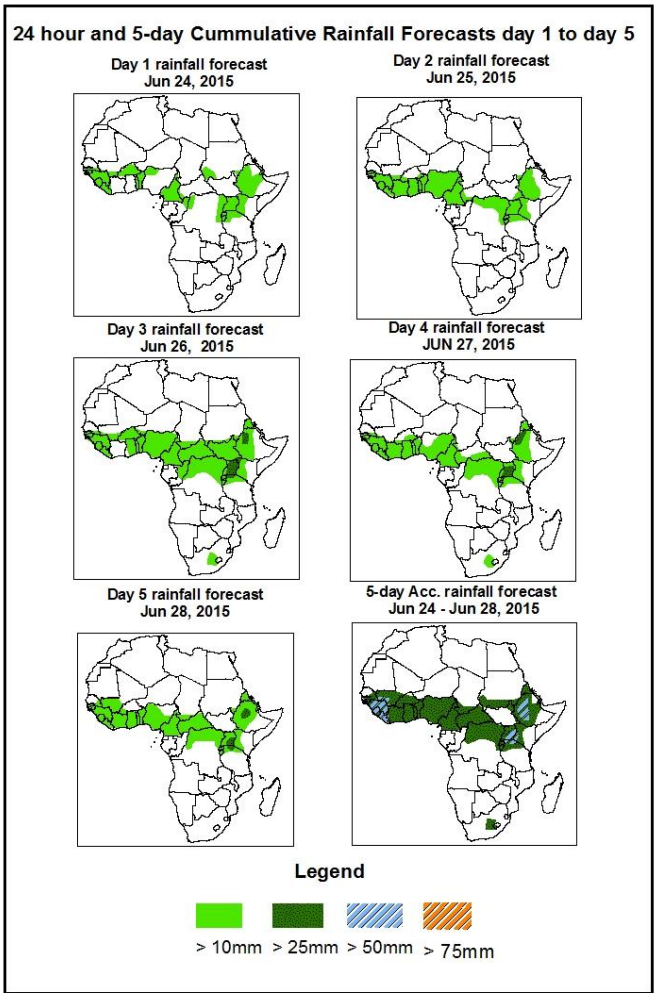
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of June 24 – 06Z of June 28, 2015. (Issued at 1600Z of June 23, 2015)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of high probability of precipitation (POP), based on the NCEP/GFS and the NCEP global ensemble forecasts system (GEFS) and expert assessment.



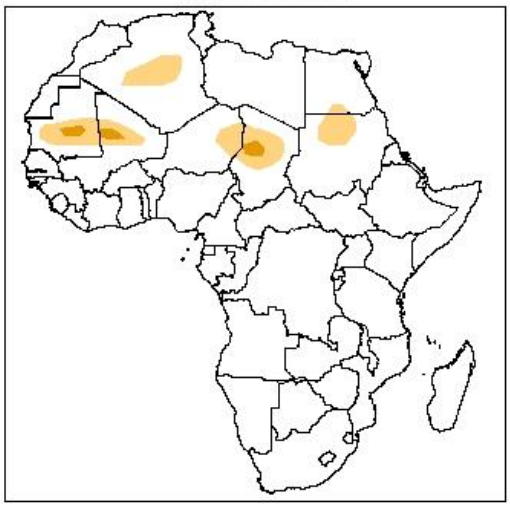
Summary

In the next five days, the monsoon flow from the Atlantic Ocean and its associated convergence across West and Central Africa, combined with westward propagating convective systems across the central Africa, southern Sahel, and the Gulf of Guinea countries, and active lower level wind convergences across northern DRC and parts of the Greater Horn of Africa are expected to enhance rainfall in their respective regions. Thus, There is an increased a chance for heavy rainfall over Liberia, Sierra Leon, Guinea, Cameroon, DRC, Uganda, Kenya, and Ethiopia.

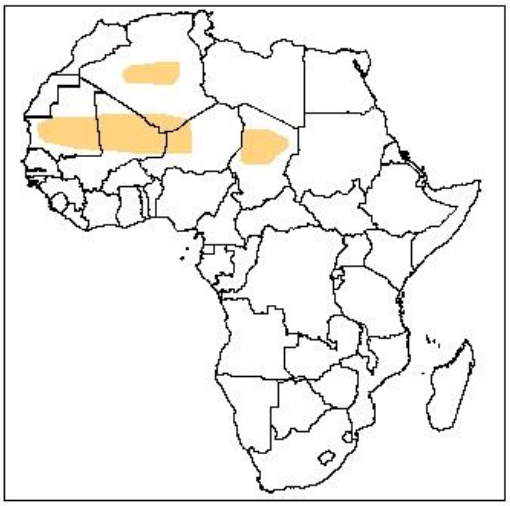
Atmospheric Dust Forecasts, day 1 to day 3,

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

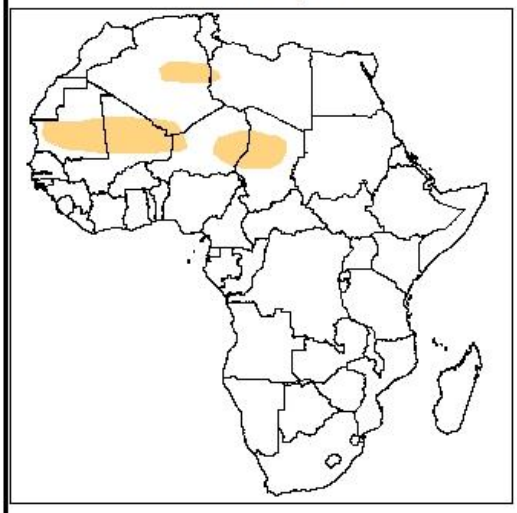
Day 1 Dust forecast
Jun 24, 2015



Day 2 Dust forecast
Jun 25, 2015



Day 3 Dust forecast
Jun 26, 2015



Highlights

There is an increased chance for moderate to high dust concentration over some parts of the Sahel and North African countries with highest dust concentrations over some parts of Chad, and Mali.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion, Valid: June 24 – June 28, 2015

The Azores high pressure system over Northeast Atlantic Ocean is expected to maintain an average central pressure value of 1026hpa during the forecast period.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to relax gradually, with its central pressure value decreasing from 1038hpa to 1034hpa through 48 to 120 hours.

The Mascarene high pressure system the Southwest Indian Ocean is expected to relax, with its central pressure value decreasing to 1035hpa to 1032hpa through 24 to 120 hours, according to the GFS model.

The heat low in across Mali and the neighboring places is expected to propagate westwards into coastal Senegal through 24 to 48 hours, while maintaining central pressure value of 1007hpa.

The northern limit of the 1020hpa isobar associated with the East African ridge is expected to extend northwards up to the latitudes of Kenya during the forecast period.

At 925Hpa level, the monsoon flow from the Atlantic Ocean is expected to prevail across much of the Gulf of Guinea countries, and the neighboring areas of the Southern Sahel and Central African countries. A cyclonic circulation is expected to propagate westwards in the region between northern Mali and Senegal through 24 to 48 hours.

At 850Hpa level, east-west oriented wind convergence is expected to remain active across Guinea, Burkina Faso, northern Nigeria, northern Cameroon, CAR and Sudan, with a cyclonic circulation propagating westwards between northern Niger and Senegal through 24 to 48 hours. Wind convergences are expected to remain active across northern and eastern DRC, the Lake Victoria region, South Sudan Republic and portions of Ethiopia during the forecast period. On the other hand, strong lower level

wind associated with the Somali Jet is expected to remain along the East Africa coast and the neighboring areas of northwestern Indian Ocean and the Arabian Sea.

At 700hpa level, northeasterly to easterly flow is expected to prevail across the Gulf of Guinea and Central Africa countries, with a zone of strong wind (>30knts) propagating in the region between Benin and Guinea through 24 to 48 hours.

At 500Hpa level, a zone of strong easterly flow (>30kts) is expected to prevail in the region between southern Mali and northern Niger through 24 to 72 hours.

At 150hpa level, a zone strong easterly winds (>70knts) is expected to prevail in the region between northern Cameroon and Somali, across CAR, South Sudan and southern Ethiopia, during the forecast period.

In the next five days, the monsoon flow from the Atlantic Ocean and its associated convergence across West and Central Africa, combined with westward propagating convective systems across the central Africa, southern Sahel, and the Gulf of Guinea countries, and active lower level wind convergences across northern DRC and parts of the Greater Horn of Africa are expected to enhance rainfall in their respective regions. Thus, There is an increased a chance for heavy rainfall over Liberia, Sierra Leon, Guinea, Cameroon, DRC, Uganda, Kenya, and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

(22 – 23, June 2015)

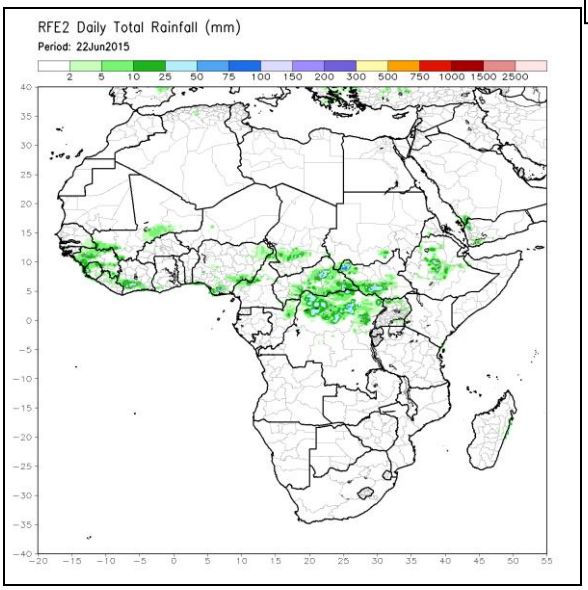
2.1. Weather assessment for the previous day (June 22, 2015)

Moderate to heavy rainfall were observed across Ghana, CAR, DRC, CAR, DRC, South Sudan, Uganda, and Ethiopia.

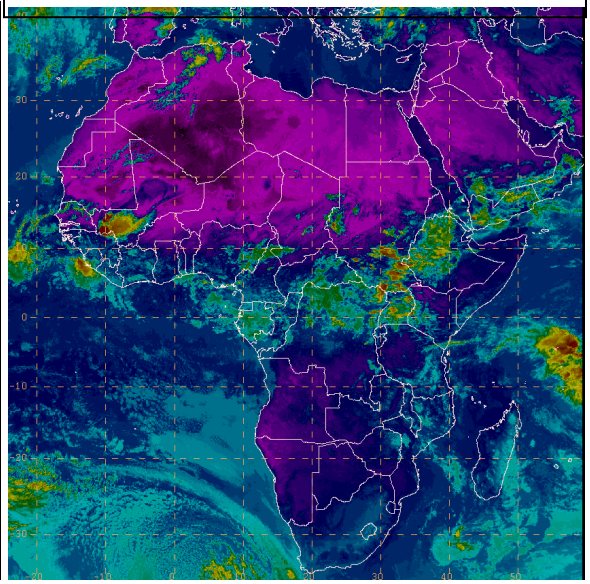
2.2. Weather assessment for the current day (June 23, 2015)

Intense convective deep clouds are observed over Mali, CAR, DRC, South Sudan, Uganda, and Ethiopia.

NOAA CPC FEWS-NET Rainfall Estimate (mm)



IR Satellite Image (valid 1430Z of Jun 23, 2015)



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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