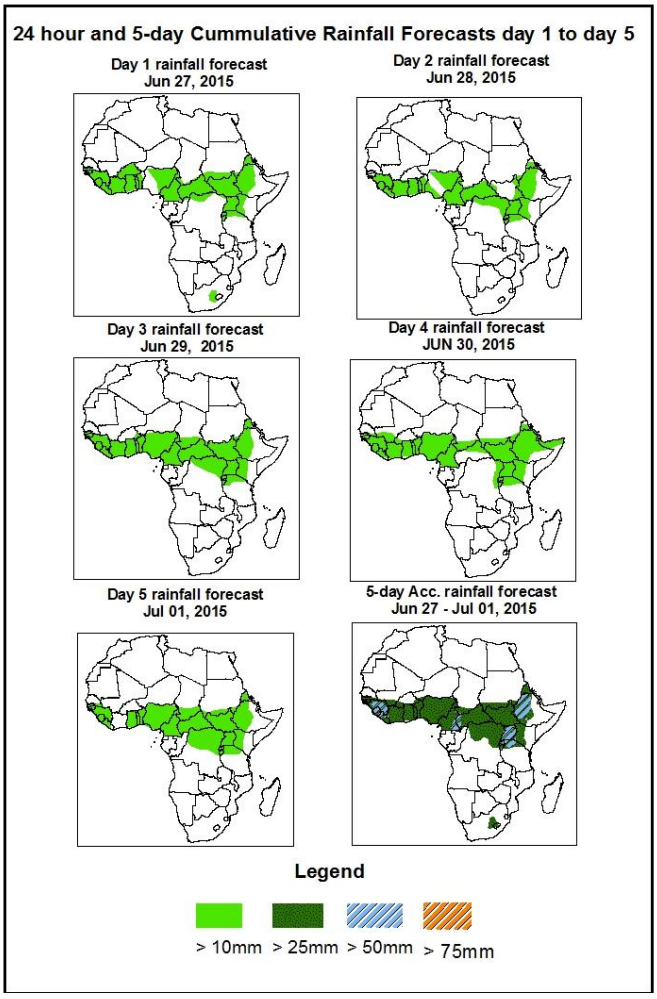
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of June 27 – 06Z of June 31, 2015. (Issued at 1500Z of June 26, 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.



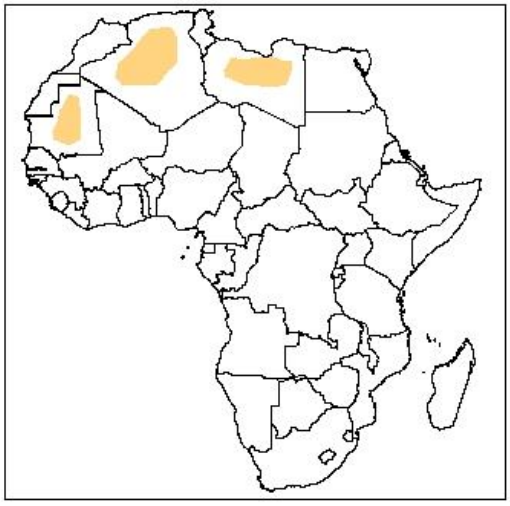
Summary

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 Conakry, Cameroon, Kenya, Uganda, Southern Sudan, South Sudan, and Ethiopia.

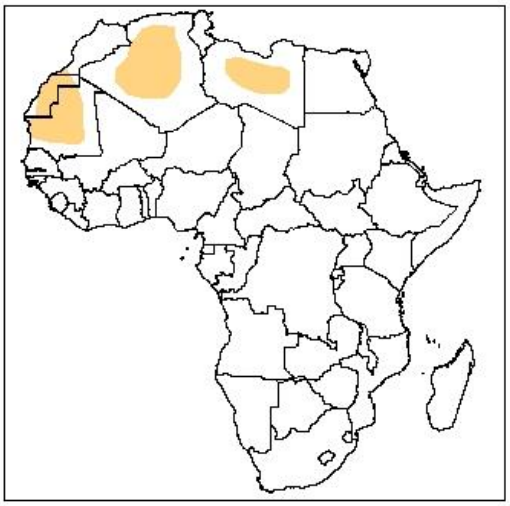
Atmospheric Dust Forecasts, day 1 to day 3,

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

Day 1 Dust forecast
Jun 27, 2015



Day 2 Dust forecast
Jun 28, 2015



Day 3 Dust forecast
Jun 29, 2015

Highlights

There is an increased chance for moderate to high dust concentration over some parts of the Sahel and North African countries.

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion, Valid: June 27 – June 31, 2015

The Azores high pressure system over Northeast Atlantic Ocean is expected to intensify while retreating westwards. Its central pressure value is expected to increase from about 1027hpa in 24 hours to 1030hpa in 96 hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to relax gradually, with its central pressure value decreasing from 1040hpa to 1033hpa through 24 to 72 hours. It is expected to intensify towards end of the forecast period, with its central pressure value increasing to 1036hpa.

The Mascarene high pressure system the Southwest Indian Ocean is expected maintain an average central pressure value of 1031hpaduring the forecast period, according to the GFS model.

The heat low near the Mali/Mauritania border is expected to propagate westwards to 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 southern Mauritania through 24 to 48 hours.

At 850Hpa level, east-west oriented wind convergence is expected to remain active across the Sahel region, with a cyclonic circulation propagating westwards between northern Mali and southern Mauritania 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 western 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, easterly flow is expected to prevail across the Gulf of Guinea and Central Africa countries.

At 500Hpa level, a zone of strong easterly flow (>30kts) is expected to prevail across the western end of West Africa through 24 to 48 hours.

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 Conakry, Cameroon, Kenya, Uganda, Southern Sudan, South Sudan, and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

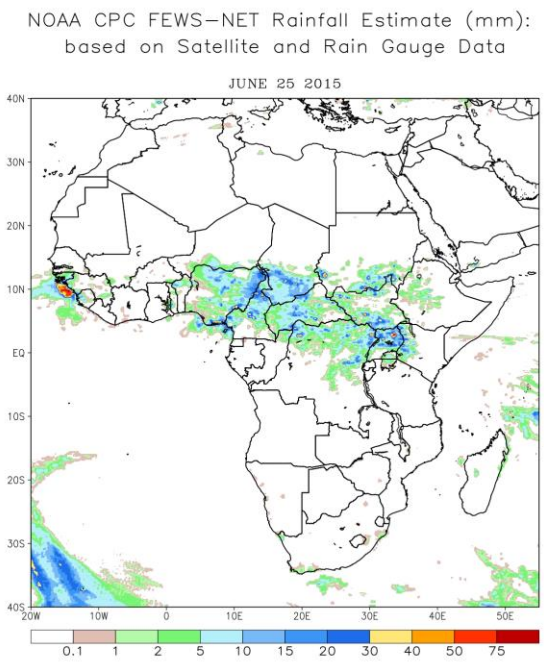
(25 – 26, June 2015)

2.1. Weather assessment for the previous day (June 25, 2015)

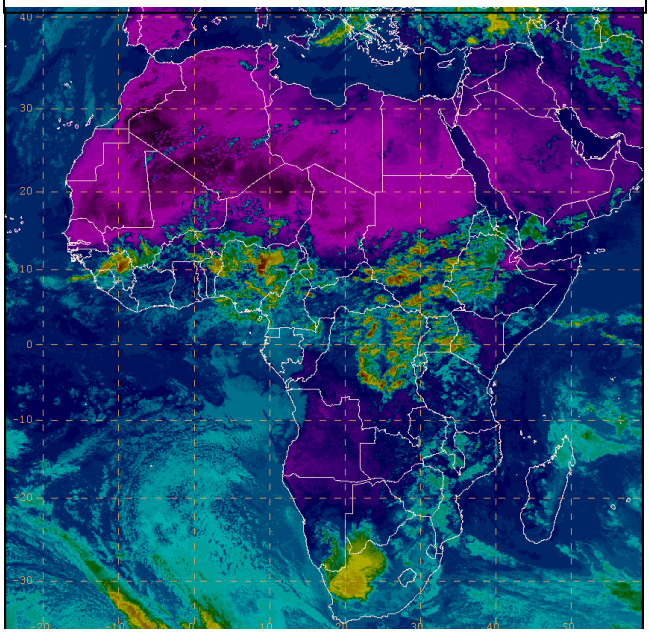
Moderate to heavy rainfall were observed across Nigeria, Cameroon, CAR, Southern Chad, Southern Sudan, South Sudan, Uganda, and Kenya.

2.2. Weather assessment for the current day (June 26, 2015)

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



IR Satellite Image (valid 1430Z of Jun 26, 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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