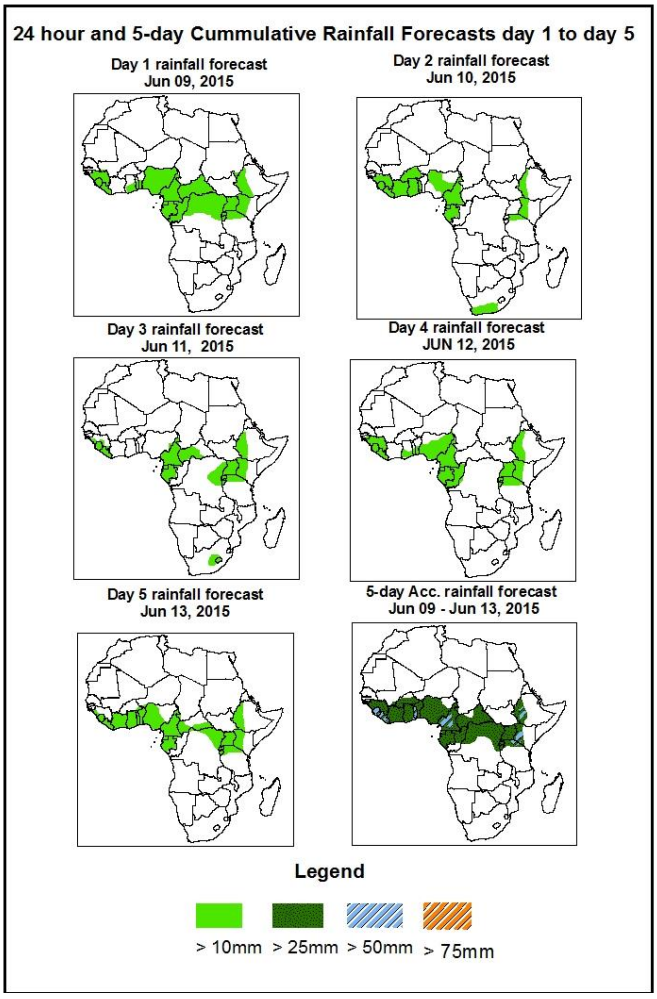
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of Jun 09 – 06Z of Jun 13, 2015. (Issued at 1600Z of Jun 09, 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.



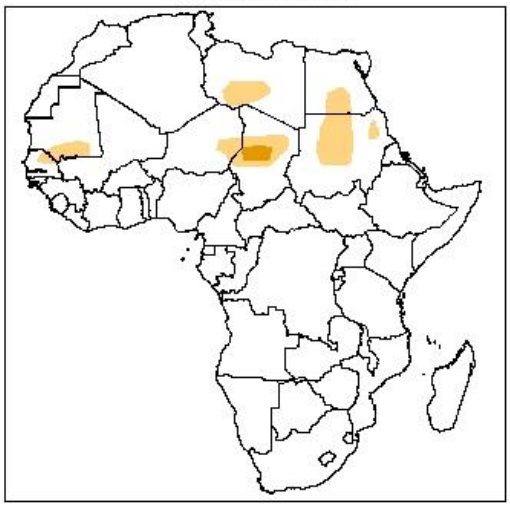
Summary

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 Gulf of Guinea countries, and active CAB near the Lake Victoria region and lower level wind convergences across 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,, Nigeria, Cameroon, Rwanda, Burundi, Ivory Coast, Uganda, and Ethiopia

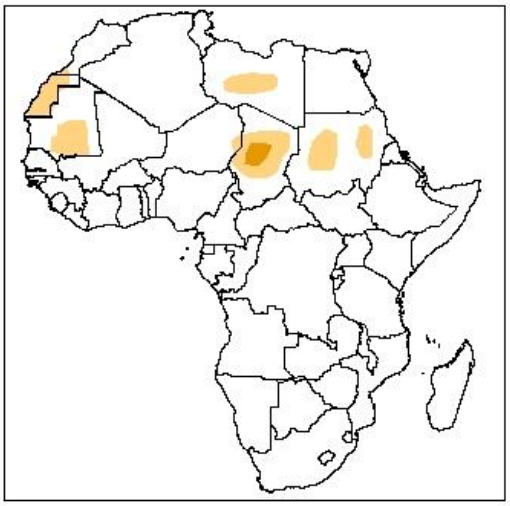
Atmospheric Dust Forecasts, day 1 to day 3,

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

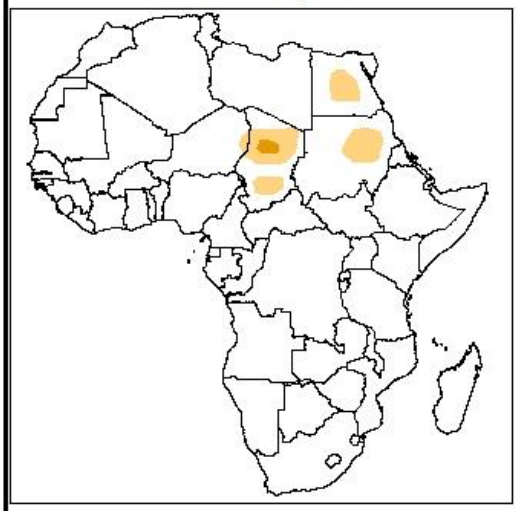
Day 1 Dust forecast
Jun 09, 2015



Day 2 Dust forecast
Jun 09, 2015



Day 3 Dust forecast
Jun 10, 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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion, Valid: June 9 – June 13, 2015

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to relax gradually while shifting eastwards. Its central pressure value is expected to decrease from about 1025hpa to 1022hpa through 24 to 120 hours, according to the GFS model.

The Mascarene high pressure system in the Southwest Indian Ocean is expected to relax gradually, with its central pressure value decreasing from about 1033hpa in 24 hours to about 1024hpa in 120 hours, according to the GFS model.

The heat lows in the region between Mali and Sudan across the Sahel region are expected to maintain average central pressure values, ranging between 1006hpa to 1008hpa during the forecast period.

The northern limit of the 1016hpa isobar associated with the East African ridge is expected to remain across southern Ethiopia through 24 to 72 hours, and is expected to retreat southwards towards end of the forecast period.

At 925Hpa level, the monsoon flow from the Atlantic Ocean is expected to prevail across the central and eastern parts of the Gulf of Guinea countries, and the neighboring areas of the Southern Sahel and Central African countries. On the other hand, dry northeasterly wind (>20kts) is expected to prevail across Algeria, Egypt, and northern Sudan. An east-west oriented wind convergence is expected to remain active in the region between Senegal and Sudan, with a feeble cyclonic circulation is expected to propagate westwards across Niger, Mali and Senegal during the forecast period.

At 850Hpa level, east-west oriented wind convergence is expected to remain active across Guinea, Burkina Faso, northern Nigeria, northern Cameroon, CAR and Sudan. Wind convergence associated with the Congo Air Boundary (CAB) is also expected to remain active near the Lake Victoria region, extending northwards to South Sudan Republic. Localized wind convergences are expected to prevail across 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. A broad zone of strong wind (>30kts) is expected to propagate westwards in the region between Nigeria and Guinea Conakry through 24 to 120 hours.

At 500Hpa level, a zone of strong easterly flow (>50kts) is expected to prevail in the region between southern Mali and western Sudan through 72 to 120 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 CAB near the Lake Victoria region and lower level wind convergences across 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, Ghana, Nigeria, Cameroon, Uganda, and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

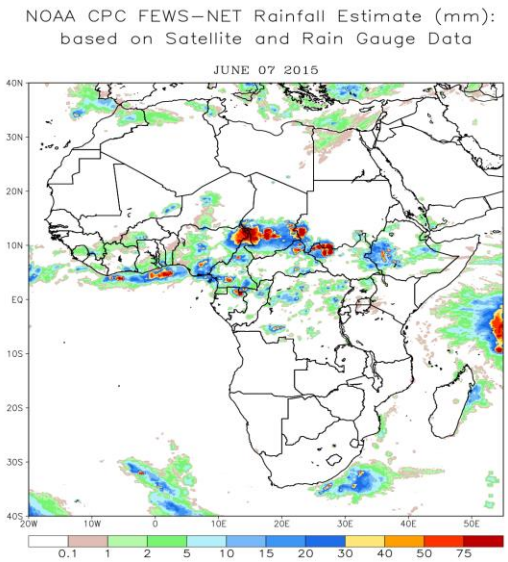
(7 – 8, Jun 2015)

2.1. Weather assessment for the previous day (June 7, 2015)

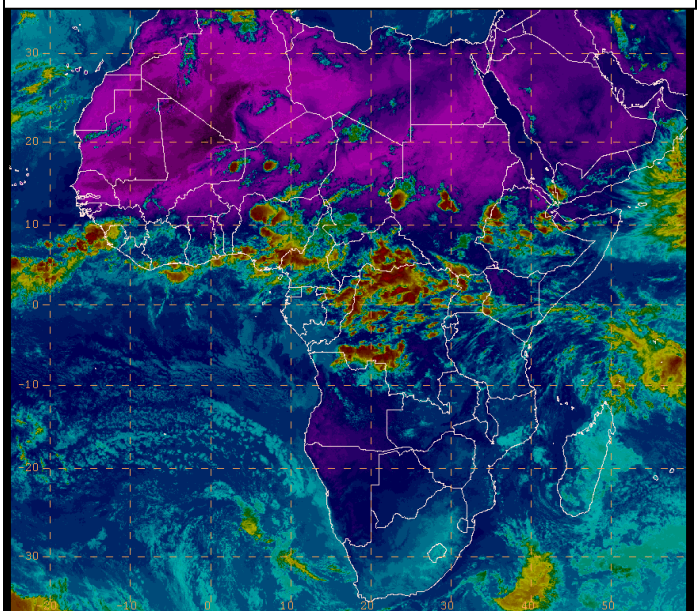
Moderate to heavy rainfall were observed across Nigeria, Cameroon, Gabon, Southern Chad, DRC, Southern Sudan, South Sudan, and Ethiopia

2.2. Weather assessment for the current day (Jun 8, 2015)

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



IR Satellite Image (valid 1430Z of Jun 8, 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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