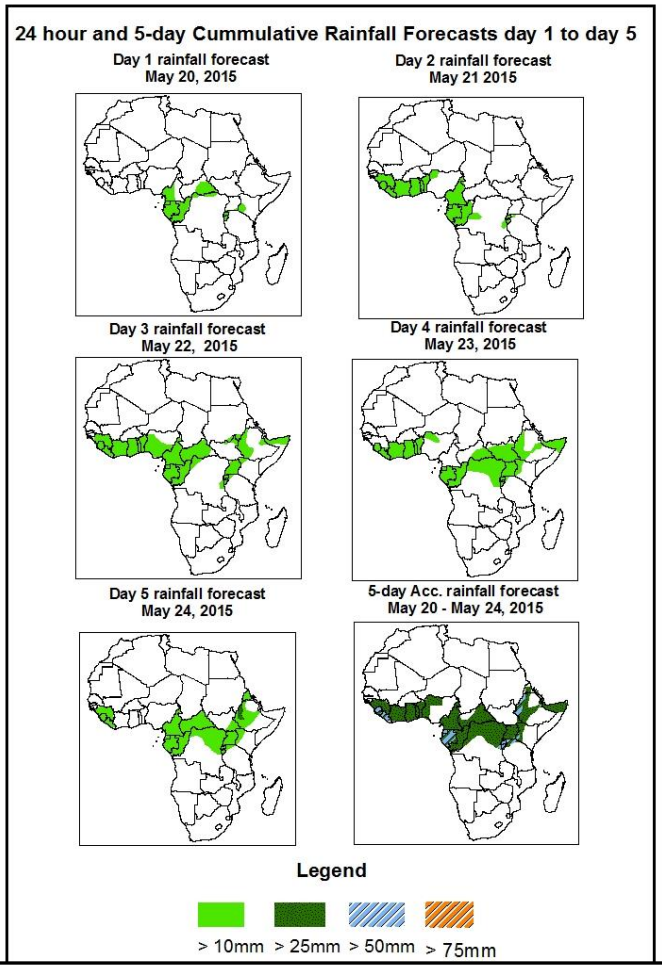
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall Forecast: Valid 06Z of May 20 – 06Z of May 24, 2015. (Issued at 1530Z of May 19, 2015)

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.



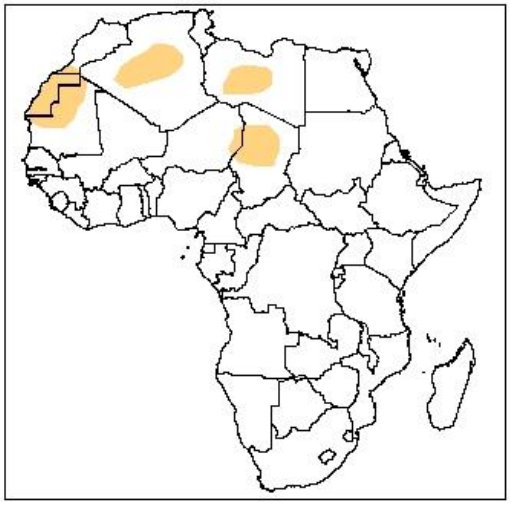
Summary

In the next five days, lower-level wind convergence over Mali, Nigeria, Southern Chad, Cameroon, Sudan and Ethiopia, is expected to enhance rainfall in these regions. There is an increased a chance for heavy rainfall over Sierra Leon, Liberia, Rwanda, Gabon, Burundi and Ethiopia.

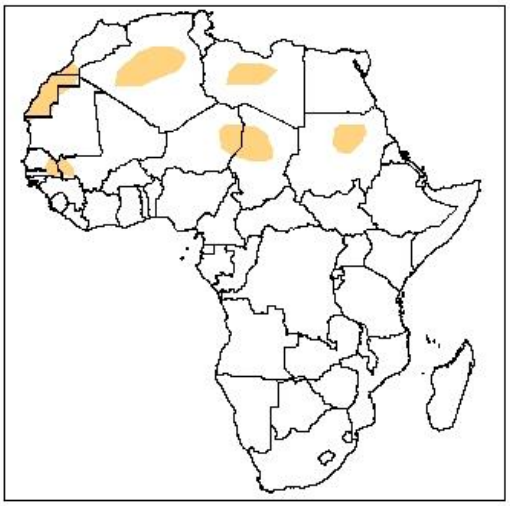
Atmospheric Dust Forecasts, day 1 to day 3,

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

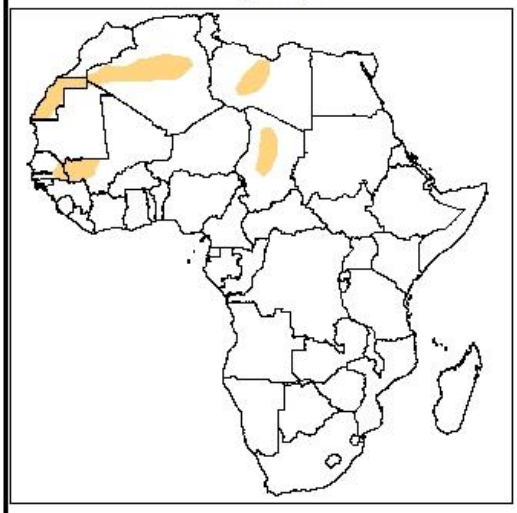
Day 1 Dust forecast
May 20, 2015



Day 2 Dust forecast
May 21, 2015



Day 3 Dust forecast
May 22, 2015



Highlights

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

Legend

MDC, Vis. < 5km

HDC, Vis. < 1km

1.2. Model Discussion: Valid from 06Z of May 20, 2015

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify from a central pressure value of 1031hpa in 24hours to1033hpa in 120hours, according to the GFS model.

The central pressure value of the Mascarene high pressure system over the Southwestern Indian Ocean is expected to intensify from central pressure value of 1033hpa to 1035hpa in 96hours, according to the GFS model.

The St Helena high pressure system over the Southeast Atlantic Ocean is expected to weaken from a central pressure value of 1027hpa in 24hours to 1025hpa in120 hours, according to the GFS model.

At 925Hpa level, easterly and north-easterly wind (>20kts) is expected to prevail across much of the African countries through 24 to 120 hours while the intensity of the wind tends to weaken across the North, central, Northeastern regions of Africa, while remaining moderately strong across Northwestern Africa towards end of the forecast period, according to the GFS model.

At 850Hpa level, Easterly and North-Easterly wind over North and West African countries, Easterly and South Easterly wind over East, Central and southern African countries, is expected to prevail across in these Region, While wind convergence is expected to remain active in Mali, Nigeria, Cameroon, Southern Chad, Sudan and Ethiopia during the forecast period, according to the GFS model.

At 700hpa level, a trough associated with mid-latitude frontal system is expected to prevail across North and Northeast African countries. Easterly wind over west, East and Central African countries, Southeasterly winds over Southern African countries, is expected to prevail across in these Regions, during the forecast period, according to the GFS model.

At 500Hpa level, a trough associated with mid-latitude frontal system is expected to pre vail across North and Northeast African countries. Easterly wind is expected to prevail across West, Central, and East African countries. While Southeasterly wind over Southern African countries, is expected to prevail across in these regions, during the forecast period, according to the GFS model.

In the next five days, lower-level wind convergence over Mali, Nigeria, Southern Chad, Cameroon, Sudan, and Ethiopia, is expected to enhance rainfall in these regions. There is an increased a chance for heavy rainfall over Sierra Leon, Liberia, Rwanda, Gabon, Burundi and Ethiopia.

2.0. Previous and Current Day Weather Discussion over Africa

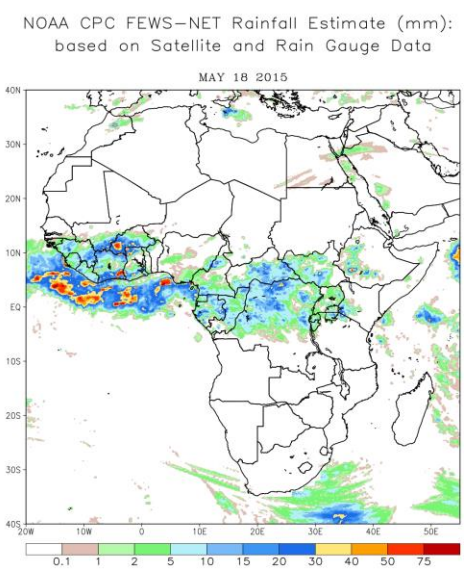
(May 18, 2015 – May 19, 2015)

2.1. Weather assessment for the previous day (May 18, 2015)

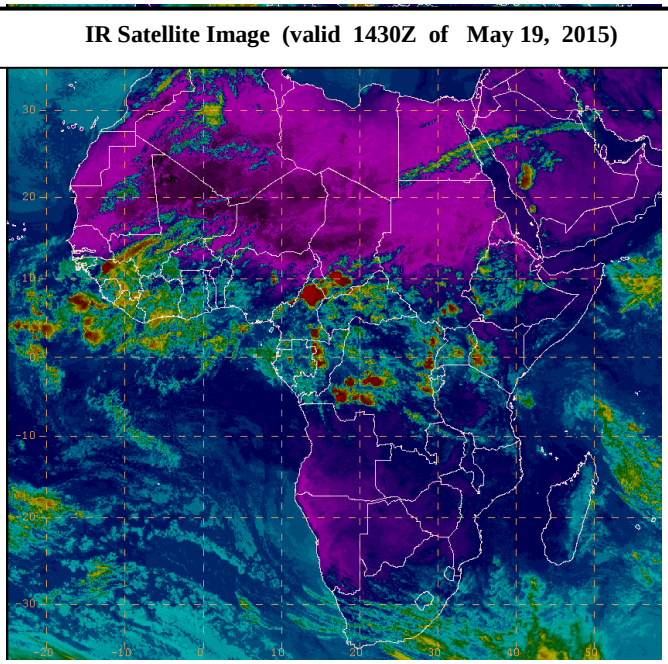
Moderate to heavy rainfall were observed across Guinea, Burkina Faso, Ivory Coast, Gabon, CAR, DRC, South Sudan and Ethiopia.

2.2. Weather assessment for the current day (May 19, 2015)

Intense convective deep clouds are observed over Mali, Southern Chad, Liberia, Ivory Coast, Nigeria, Congo Brazzaville, CAR, DRC, Kenya, Uganda, South Sudan and Ethiopia.



IR Satellite Image (valid 1430Z of May 19, 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

Author: Admassu Kassa (Ethiopia National Meteorological Agency / CPC-African Desk); admassu.dewol@noaa.gov