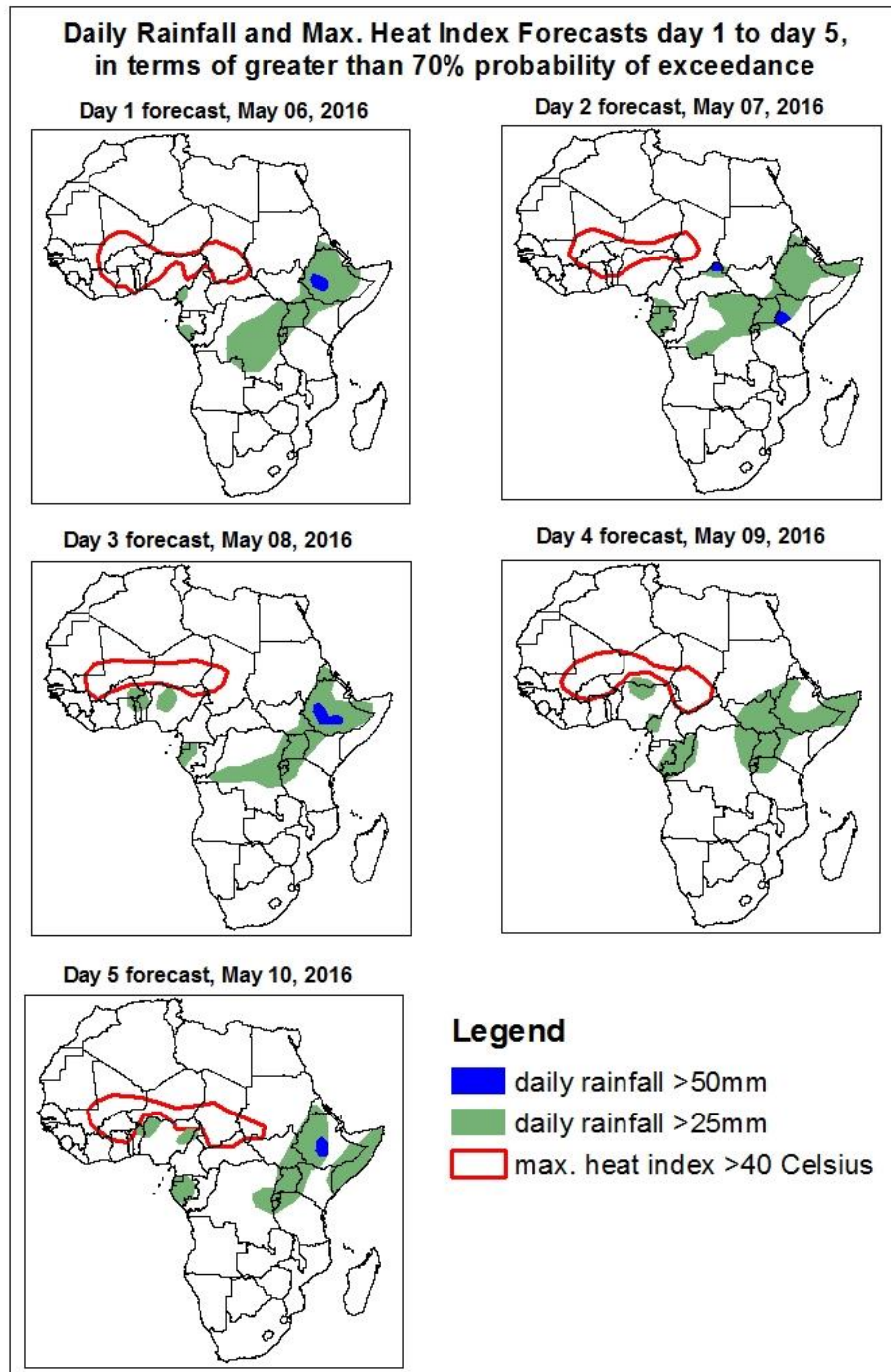


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

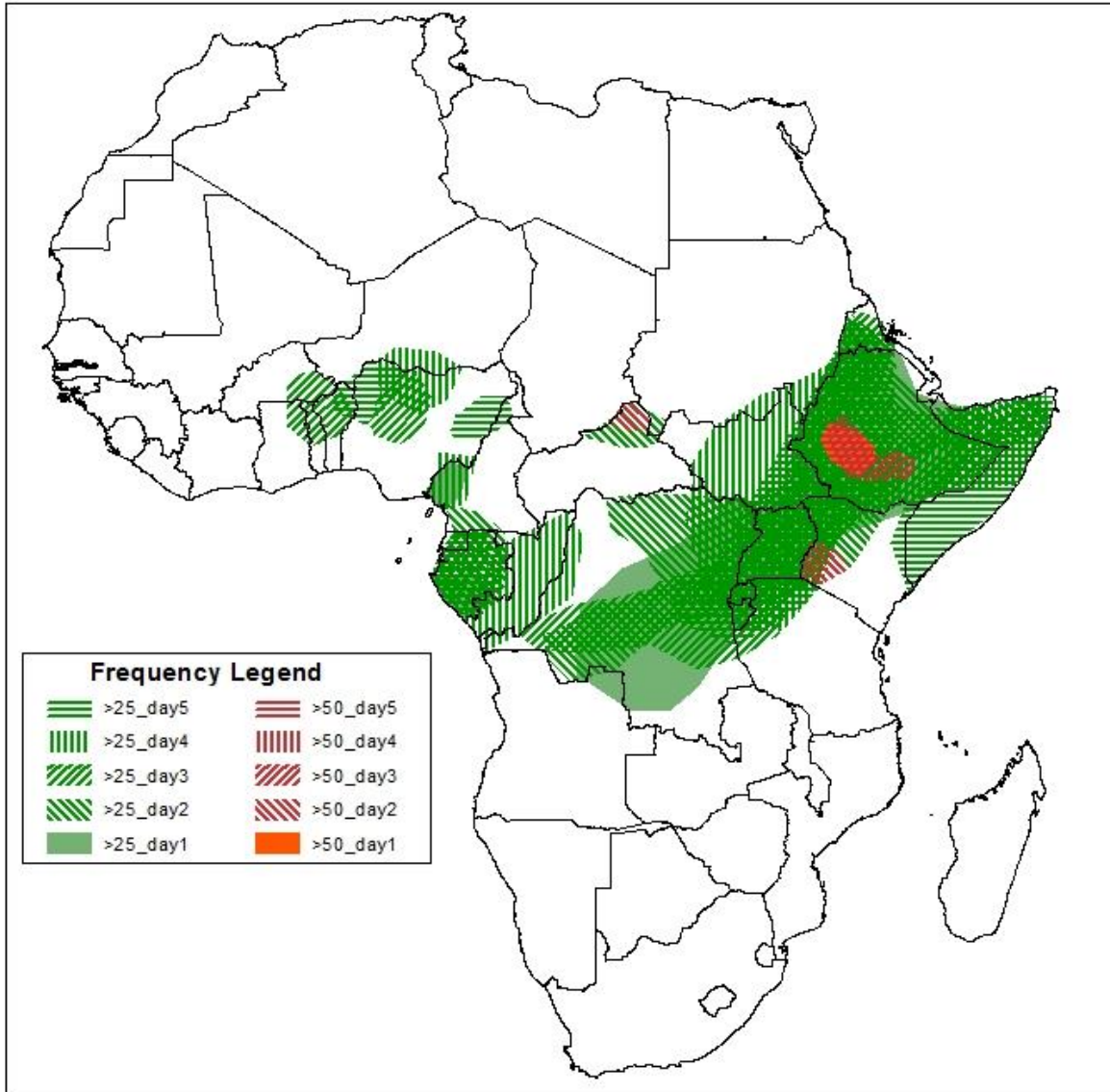
## 1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on May 05, 2016)

### 1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: May 06– May 10, 2016)

The forecasts are expressed in terms of high probability of precipitation (POP) and high probability of maximum heat index, based on the NCEP/GFS, ECMWF and the NCEP Global Ensemble Forecasts System (GEFS) and expert assessment.



## Five Days Rainfall Forecast Summary May 06 -May 10, 2016

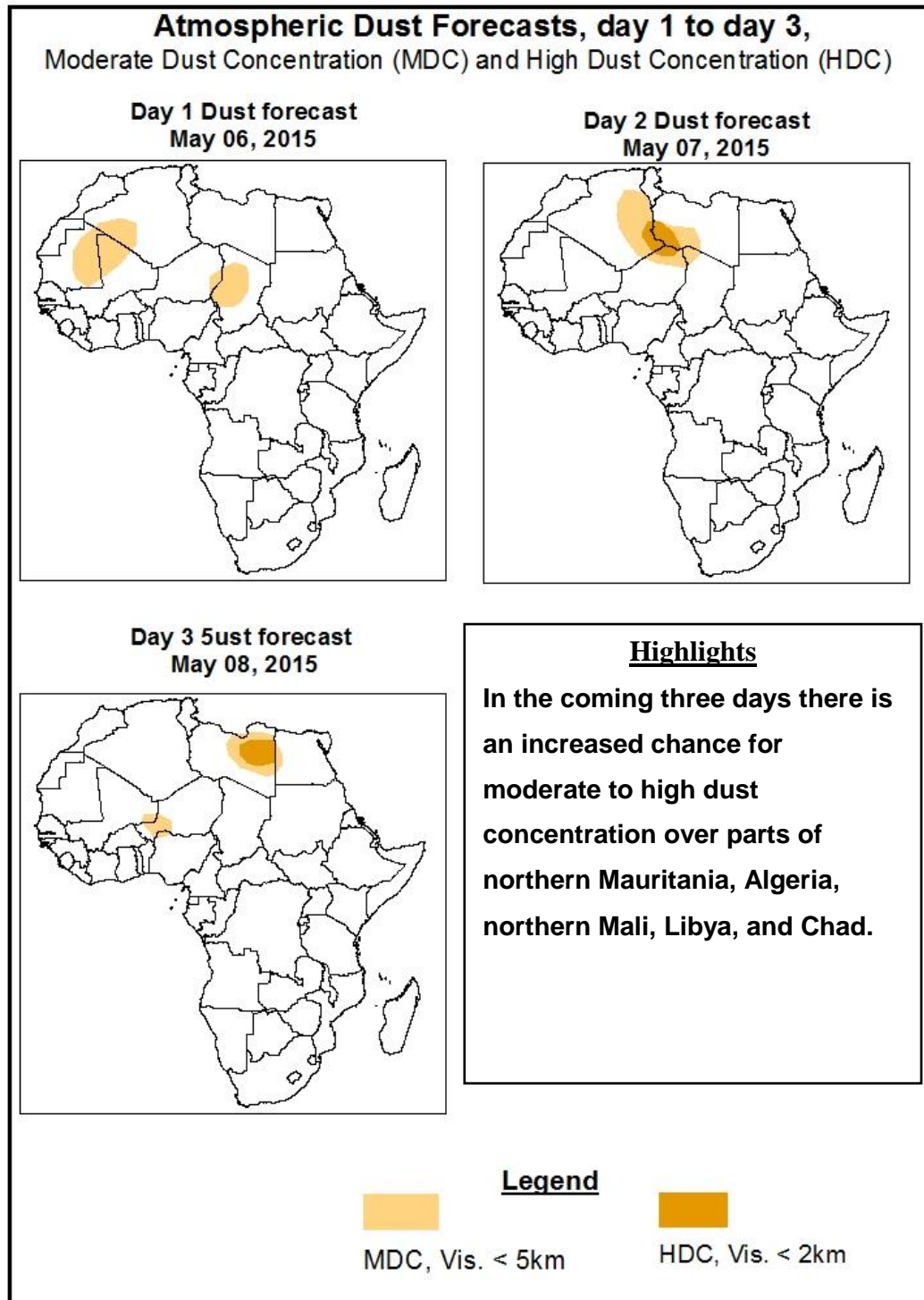


### **Highlights**

In the coming five days, interactions between mid-latitude and tropical systems across Eritrea and Ethiopia, monsoon flow and its associated lower-level convergence across the equatorial Africa region, and active meridional wind convergences near the Lake Victoria region are expected to enhance rainfall in their respective areas. Therefore, there is an increased chance for two or more days of moderate to heavy rainfall over much of Eritrea and Ethiopia, eastern South Sudan, parts of Kenya, Somalia, portions of DRC and Tanzania, Uganda, Rwanda, and much of Gabon, portions of Nigeria, and western Cameroon.

## 1.2. Atmospheric Dust Concentration Forecasts (valid: May 06 – May 08, 2016)

The forecasts are expressed in terms of high probability of dust concentration, based on the Navy Aerosol Analysis and Prediction System, NCEP/GFS lower-level wind forecasts and expert assessment.



### **1.3. Model Discussion, Valid: May 06 – May 10, 2016**

The Azores high pressure system over the Northeast Atlantic Ocean is expected to weaken gradually, with its central pressure value decreasing from about 1030hPa to 1024hPa during the forecast period.

The St. Helena High pressure system over the Southeast Atlantic Ocean is expected to intensify gradually with its central pressure value increasing from about 1023hPa to 1027hPa during the forecast period.

The Mascarene high pressure system over the Southwest Indian Ocean is expected to weaken slightly with its central pressure value decreasing from about 1039hPa to 1034hPa during the forecast period.

The heat lows across the Sahel region and Sudan are expected to maintain an average central pressure value of 1007hPa during the forecast period.

At 925hPa level, dry northeasterly to easterly flow is expected to prevail across northern Africa and parts of the Sahel countries, whereas moist southwesterly monsoon flow is expected to prevail across the Gulf Guinea countries during the forecast period.

At 850hPa level, a cyclonic circulation is expected to propagate westwards between central Chad and northeastern Nigeria through 24 to 72 hours. Zonal wind convergence is expected to prevail across the western Sahel. Monsoon flow from the Atlantic Ocean with its associated convergence across the eastern parts of the Gulf of Guinea region is expected to enhance rainfall in the area, whereas monsoon flow from the western Indian Ocean with its associated convergence across East Africa is expected to sustain moderate to heavy rainfall in the region. Meridional wind convergence near the Lake Victoria region is also expected to maintain seasonal rainfall in the region.

At 500hPa level, a trough in mid-latitude westerly flow is expected to prevail across the eastern Mediterranean Sea, with the southern extent of the westerly trough reaching the latitudes of Eritrea and Ethiopia during the forecast period.

In the coming five days, interactions between mid-latitude and tropical systems across Eritrea and Ethiopia, monsoon flow and its associated lower-level convergence across the equatorial Africa region, and active meridional wind convergences near the Lake Victoria region are expected to enhance rainfall in their respective areas. Therefore, there is an increased chance for two or more days of moderate to heavy rainfall over much of Eritrea and Ethiopia, eastern South Sudan, parts of Kenya, Somalia, portions of DRC and Tanzania, Uganda, Rwanda, and much of Gabon, portions of Nigeria, and western Cameroon.

There is also an increased chance for maximum heat index values to exceed 40°C portions of Mali, Burkina Faso, Ghana, Togo, Nigeria, Niger, Chad, and parts of CAR.

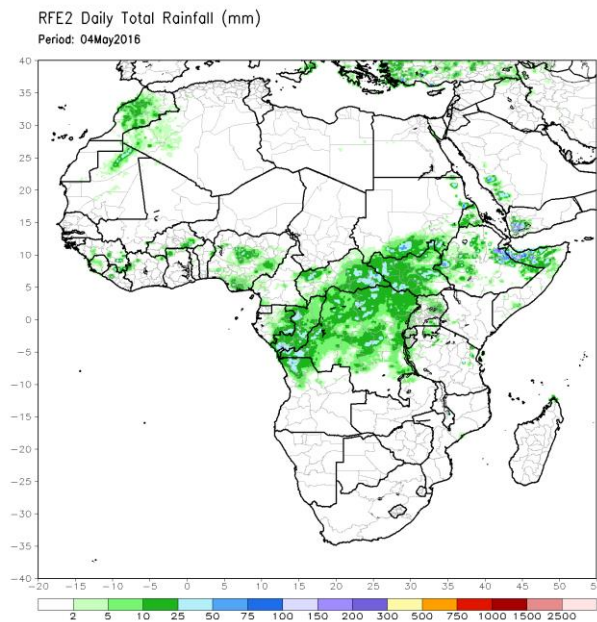
## 2.0. Previous and Current Day Weather over Africa

### 2.1. Weather assessment for the previous day (May 04, 2016)

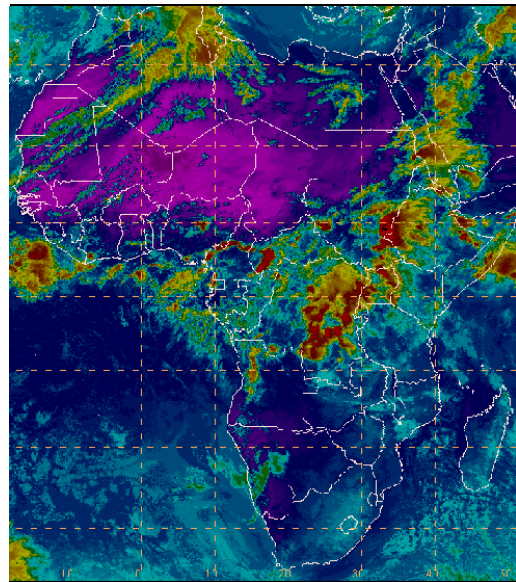
Moderate to locally heavy rainfall was observed over portions of local areas in Gulf of Guinea, Central Africa countries and Greater Horn of Africa.

### 2.2. Weather assessment for the current day (May 05, 2016)

Intense convective clouds are observed across portions CAR, DRC, Uganda, south Sudan, Ethiopia and northern Angola.



IR Satellite Image (valid 1604z May 05, 2016)



*Previous day rainfall condition over Africa (Left) based on the NCEP CPCE/RFE and current day cloud cover (right) based on IR Satellite image*

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