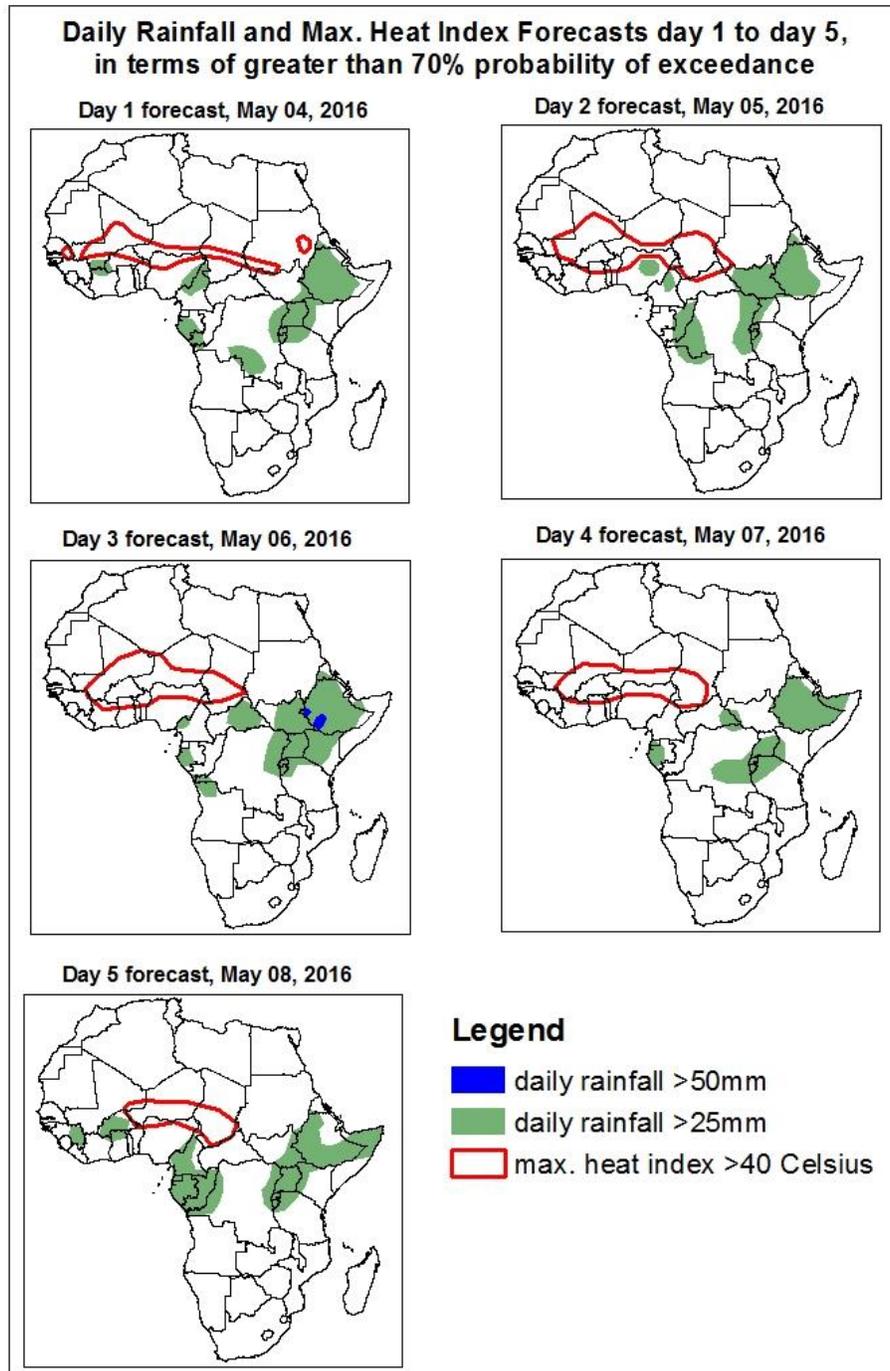


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

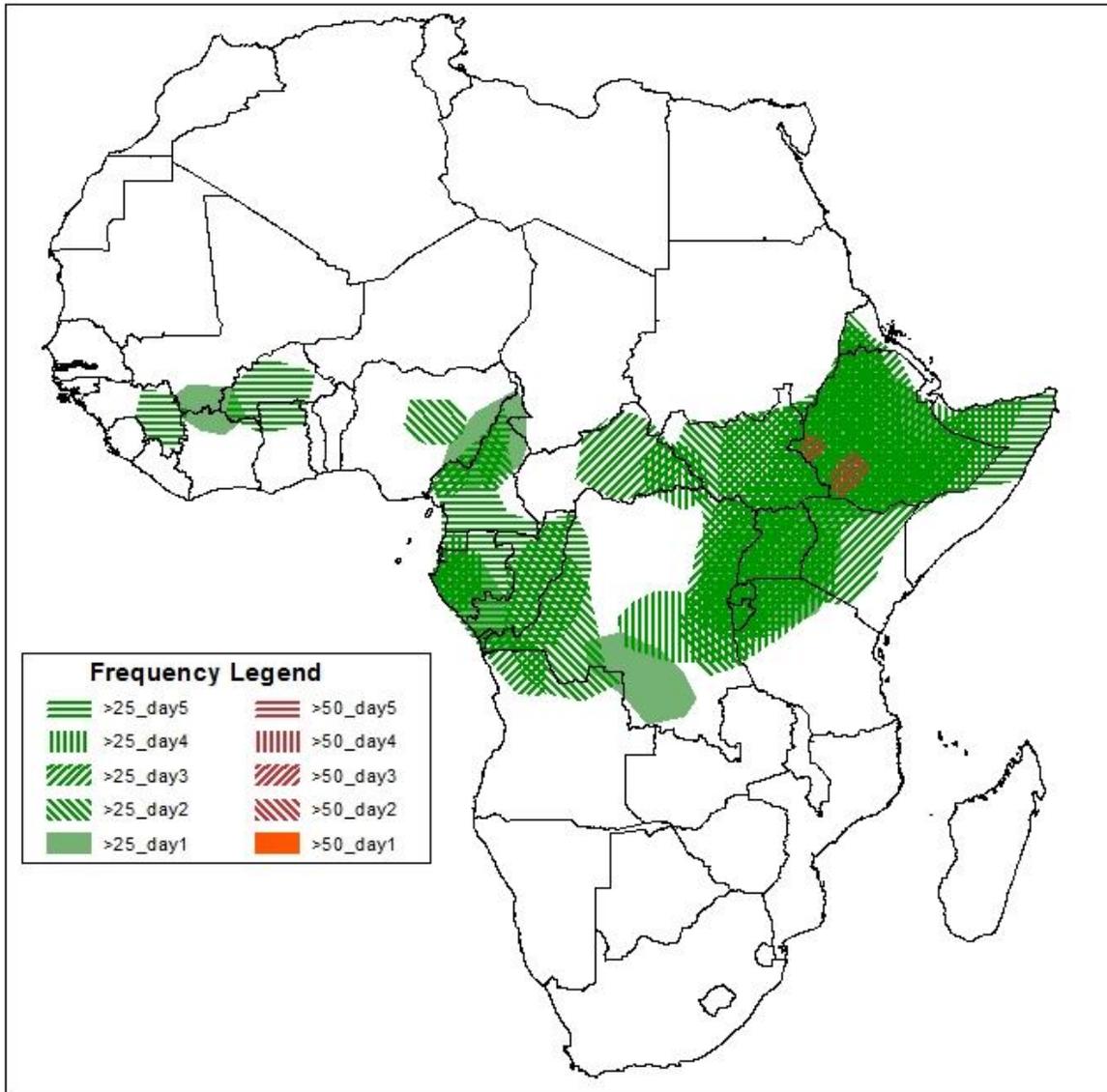
## 1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on May 03, 2016)

### 1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: May 04– May 08, 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 04 -May 08, 2016

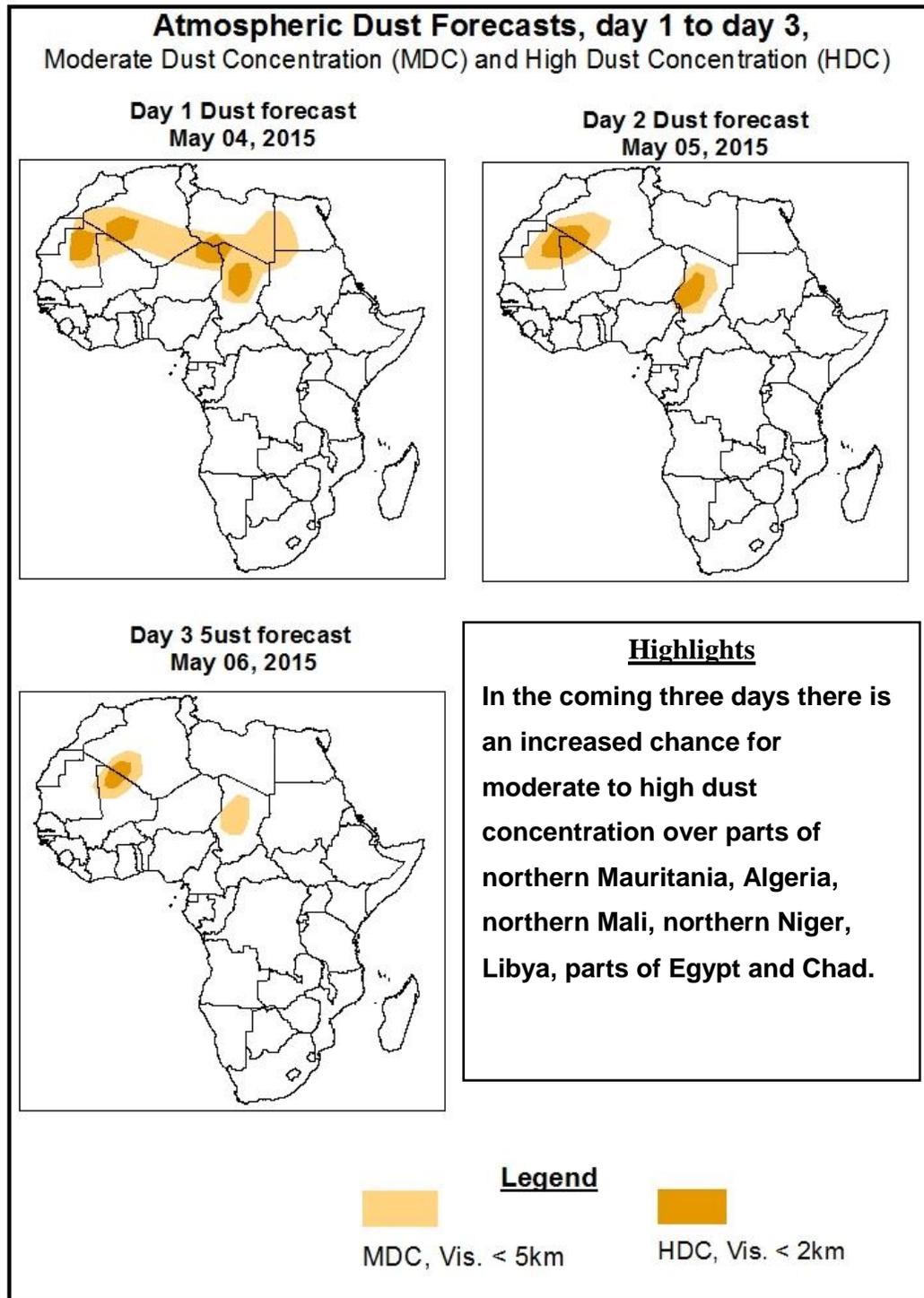


### **Highlights**

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, South Sudan, Kenya, Somalia, portions of DRC and Tanzania, Uganda, Rwanda, and much of Gabon, Congo and northern Angola.

## 1.2. Atmospheric Dust Concentration Forecasts (valid: May 04 – May 06, 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 04 – May 08, 2016***

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify gradually, with its central pressure value increasing from about 1026hPa to 1029hPa during the forecast period.

The St. Helena High pressure system over the Southeast Atlantic Ocean is expected to intensify while shifting eastwards, with its central pressure value increasing from about 1026hPa to 10386hPa through 24 to 120 hours.

The Mascarene high pressure system over the Southwest Indian Ocean is expected to weaken, with its central pressure value decreasing from about 1027hPa to 1021hPa during the forecast period.

The heat lows over the western and central Sahel are expected to maintain average central pressure value of 1006hPa, whereas the heat low over Sudan is expected to fill up slightly 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 western Sudan and western Chad while weakening 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 towards end of 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, South Sudan, Kenya, Somalia, portions of DRC and Tanzania, Uganda, Rwanda, and much of Gabon, Congo and northern Angola.

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, CAR and parts of eastern Sudan South Sudan Republic.

## 2.0. Previous and Current Day Weather over Africa

### 2.1. Weather assessment for the previous day (May 02, 2016)

Moderate to locally heavy rainfall was observed over portions of Southern Mali, Burkina Faso, Liberia, Ivory Coast, Cameroon, Gabon, DRC, Uganda, Ethiopia, local areas in Somalia and Tanzania.

### 2.2. Weather assessment for the current day (May 03, 2016)

Intense convective clouds are observed across portions Ghana, Nigeria, Southern Chad, Cameroon, Central Africa countries, and Greater Horn of Africa region.

