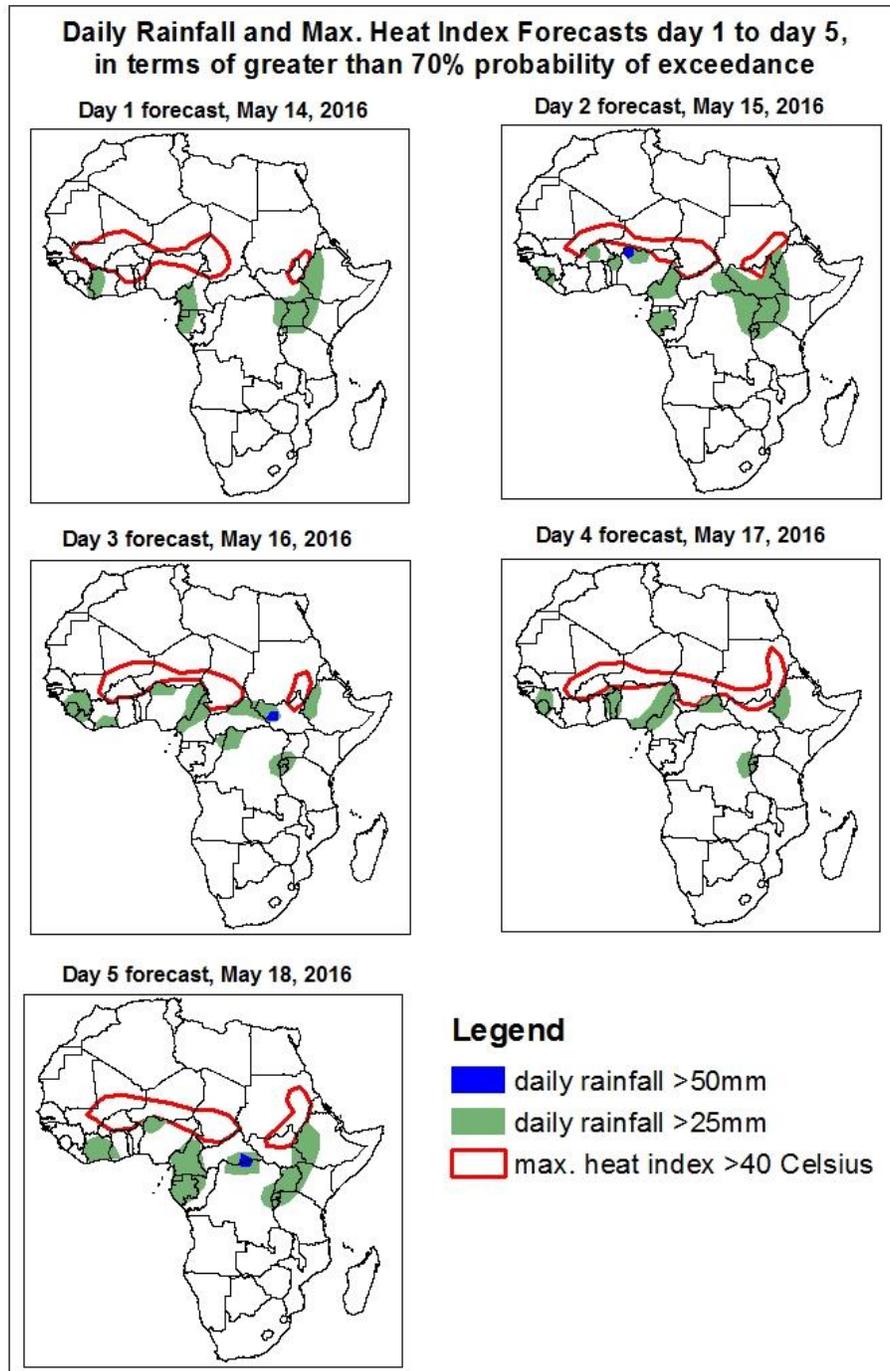


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

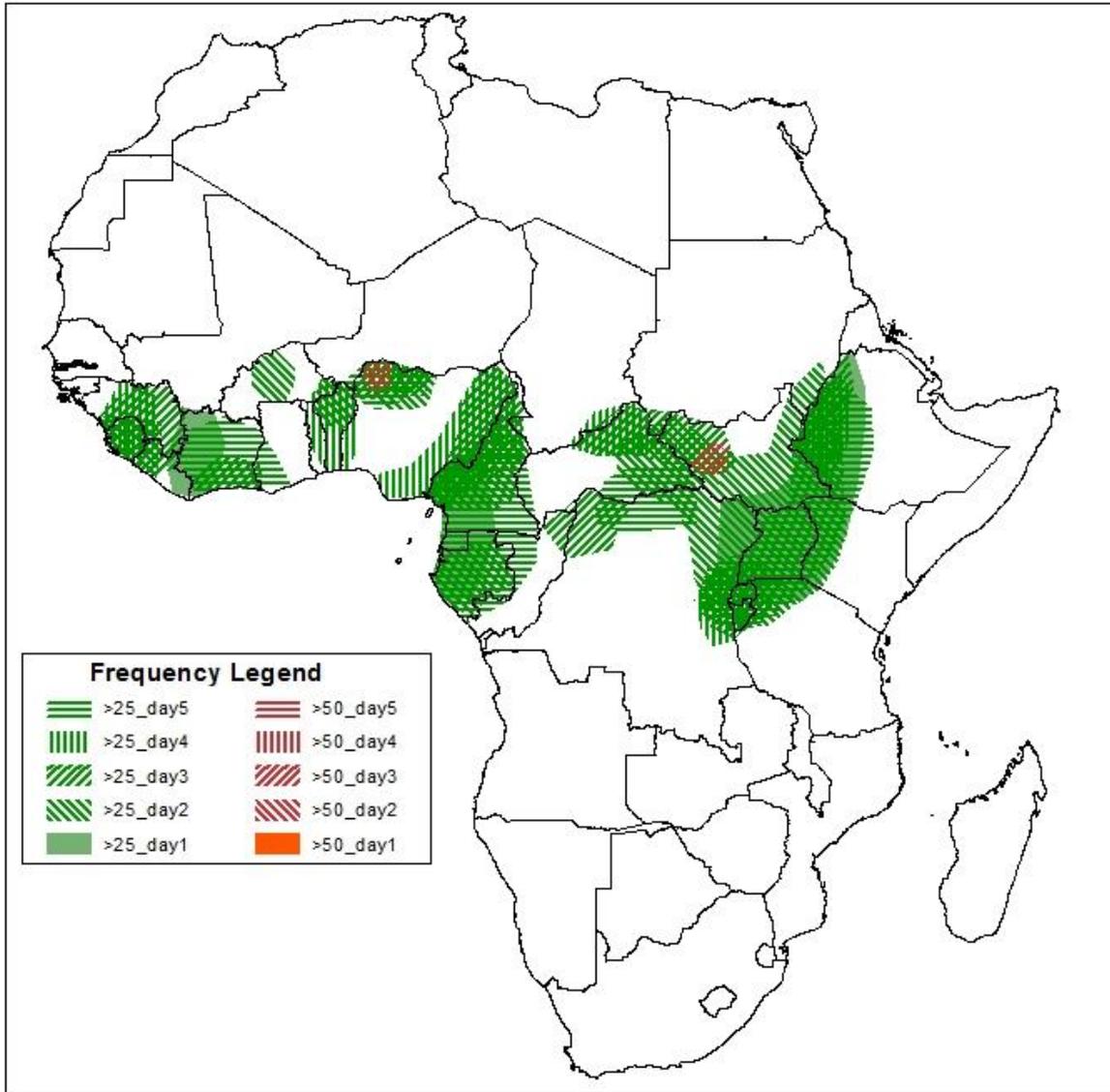
## 1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on May 13, 2016)

### 1.1. Daily Rainfall and Maximum Heat Index Forecasts (valid: May 14– May 18, 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 14 - May 18, 2016

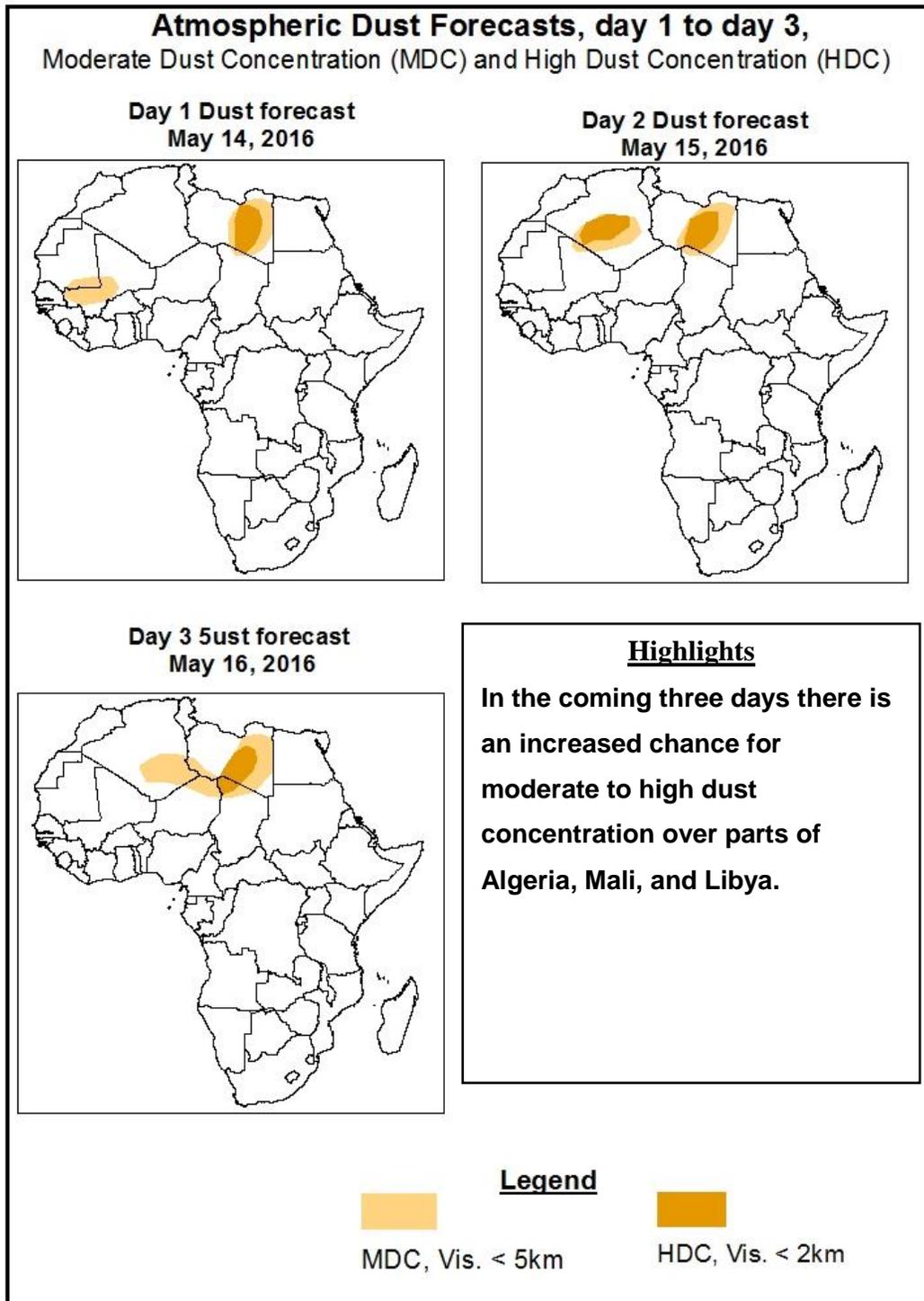


### **Highlights**

In the coming five days, monsoon flow from the Atlantic Ocean with its associated lower level convergence is expected to enhance rainfall across portions of West Africa. Local wind convergences across central Africa, western Ethiopia, 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 portions of Sierra Leone, eastern Guinea, western Liberia, parts of Burkina Faso, Cote D'Ivoire, Benin, northern Nigeria, Cameroon, Gabon, northeastern DRC, eastern CAR, Rwanda, Uganda, portions of northern Tanzania, western Kenya, eastern South Sudan, and western Ethiopia.

**1.2. Atmospheric Dust Concentration Forecasts (valid: May 14 – May 16, 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 14 – May 18, 2016**

The Azores high pressure system over the Northeast Atlantic Ocean is expected to intensify gradually with its central pressure value increasing from about 1024hPa to 1031hPa during the forecast period.

The St. Helena High pressure system over the Southeast Atlantic Ocean is expected to an average central pressure value of 1021hPa during the forecast period.

The Mascarene high pressure system over the Southwest Indian Ocean is expected to weaken while shifting eastwards with its central pressure value decreasing from about 1031hPa to 1021hPa through 24 to 72 hours.

Central pressure values associated with heat lows across the Sahel and Sudan are expected to remain in the range between 1006hpa to 1008hpa during the forecast period.

At 925HPa level, strong dry northeasterly to easterly flow is expected to prevail across Algeria, Libya, and Chad. On the other hand, moist southwesterly monsoon flow is expected to prevail across the Gulf Guinea countries during the forecast period.

At 850hPa level, anti-cyclonic ridge is expected to prevail across the western end of West Africa during the first half of the forecast period. A zonal wind convergence is expected to prevail in the region between Niger and Sudan across the Sahel region. A broad area of southeasterly flow is expected to prevail across eastern and central Africa. Meridional wind convergence near the Lake Victoria region is also expected to maintain seasonal rainfall in the region.

At 700hPa level, a broad area of anti-cyclonic ridge is expected to prevail in the region between Senegal and Libya, across southern Mali, Burkina Faso, southern Algeria and Niger, during the first half of the forecast period, and gradually weakening towards end of the forecast period. Northeasterly flow is expected to prevail across eastern Gulf of Guinea, central Sahel and central Africa regions during the forecast period.

At 500hPa level, a cyclonic trough across Northeast Africa and the neighboring areas of Red Sea is expected to weaken through 24 to 72 hours, and will be replaced by a broad area of anti-cyclonic ridge.

In the coming five days, monsoon flow from the Atlantic Ocean with its associated lower level convergence is expected to enhance rainfall across portions of West Africa. Local wind convergences across central Africa, western Ethiopia, 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 portions of Sierra Leone, eastern Guinea, western Liberia, parts of Burkina Faso, Cote D'Ivoire, Benin, northern Nigeria, Cameroon, Gabon, northeastern DRC, eastern CAR, Rwanda, Uganda, portions of northern Tanzania, western Kenya, eastern South Sudan, and western Ethiopia.

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

## 2.0. Previous and Current Day Weather over Africa

### 2.1. Weather assessment for the previous day (May 12, 2016)

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

### 2.2. Weather assessment for the current day (May 13, 2016)

Intense convective clouds are observed across southern and Central Nigeria, Western Cameroon, local areas of Central Africa countries, south Sudan and Great Horn of Africa.

