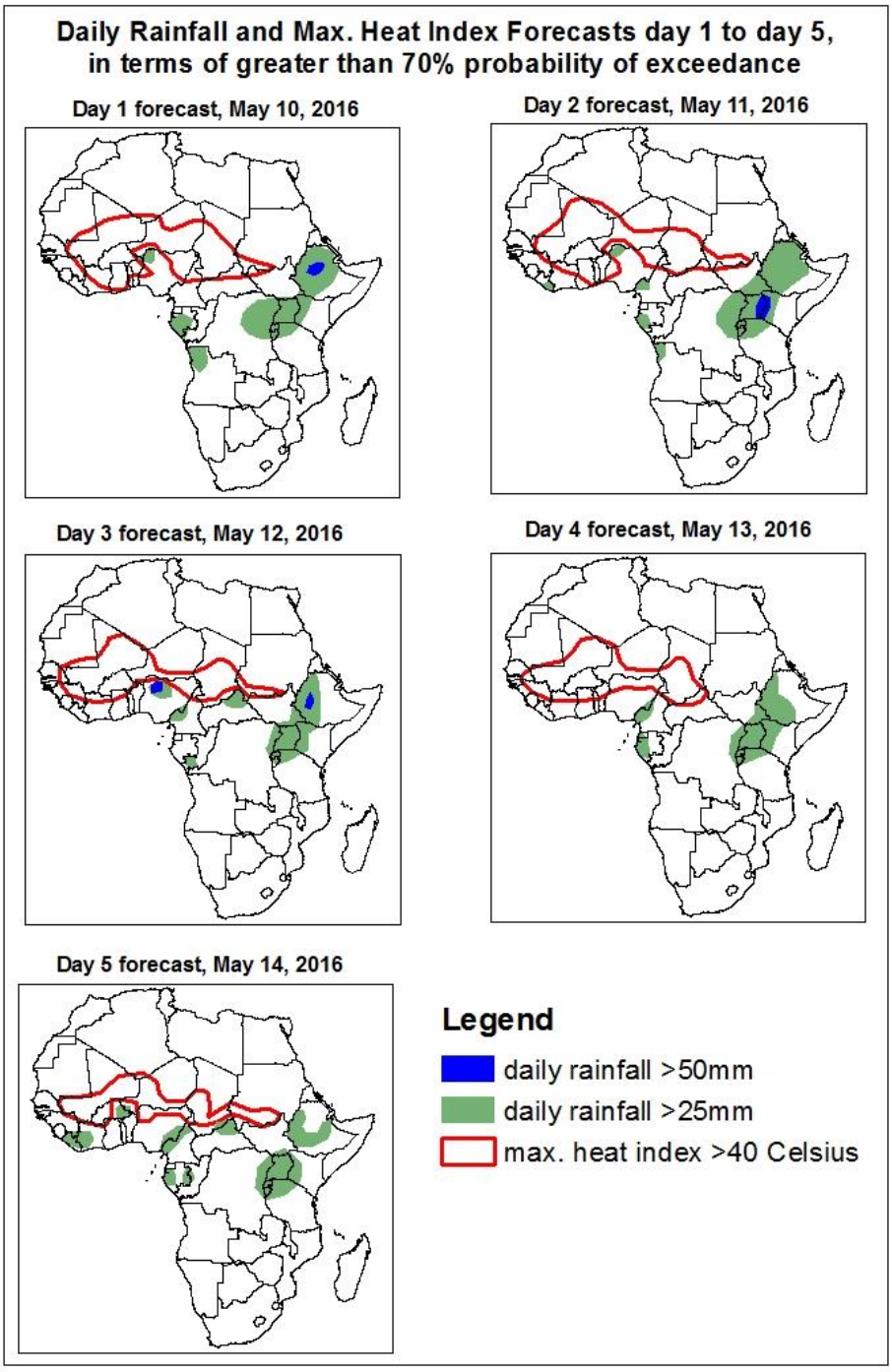
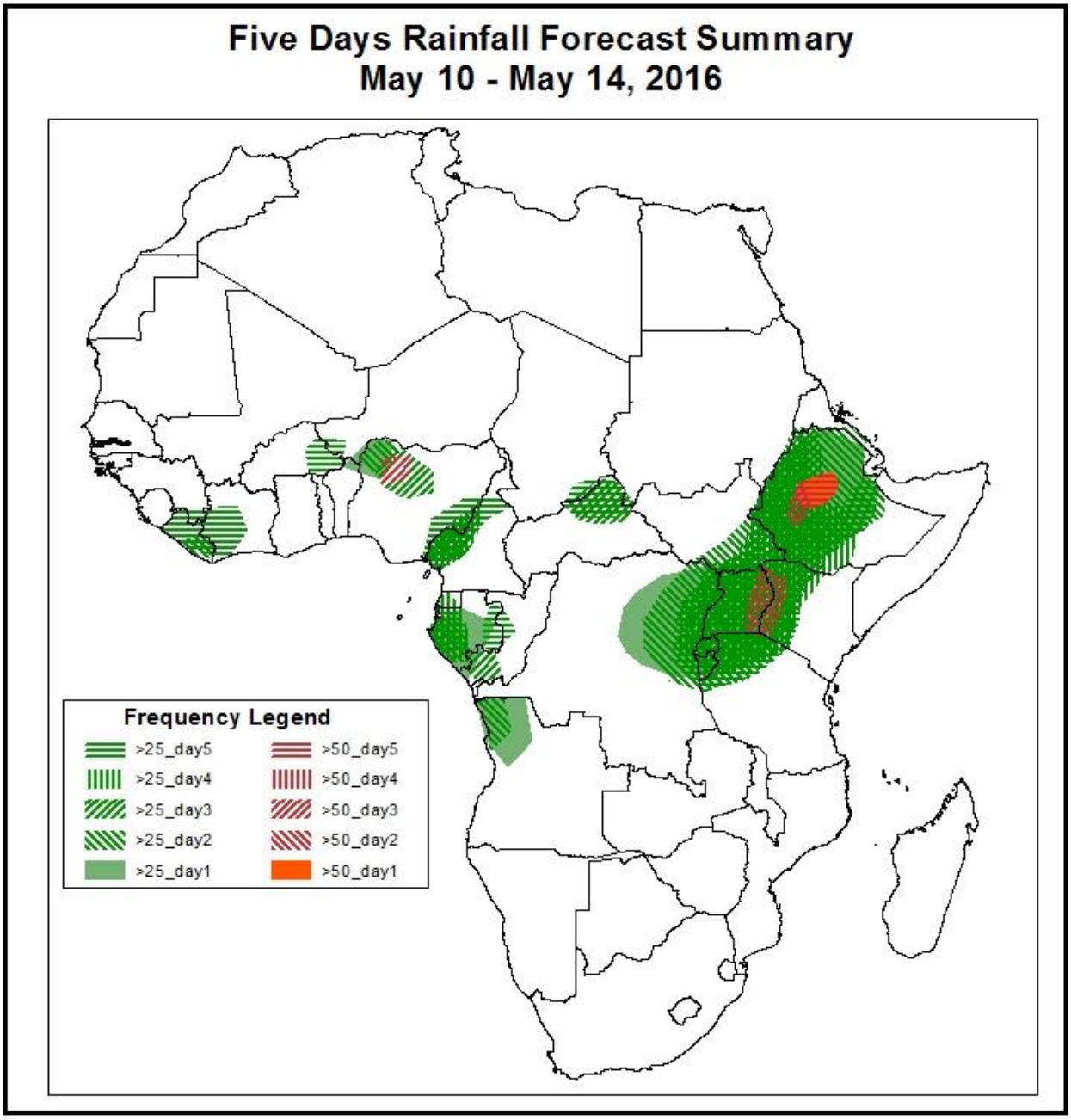
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on May 09, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: May 10– May 14, 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.



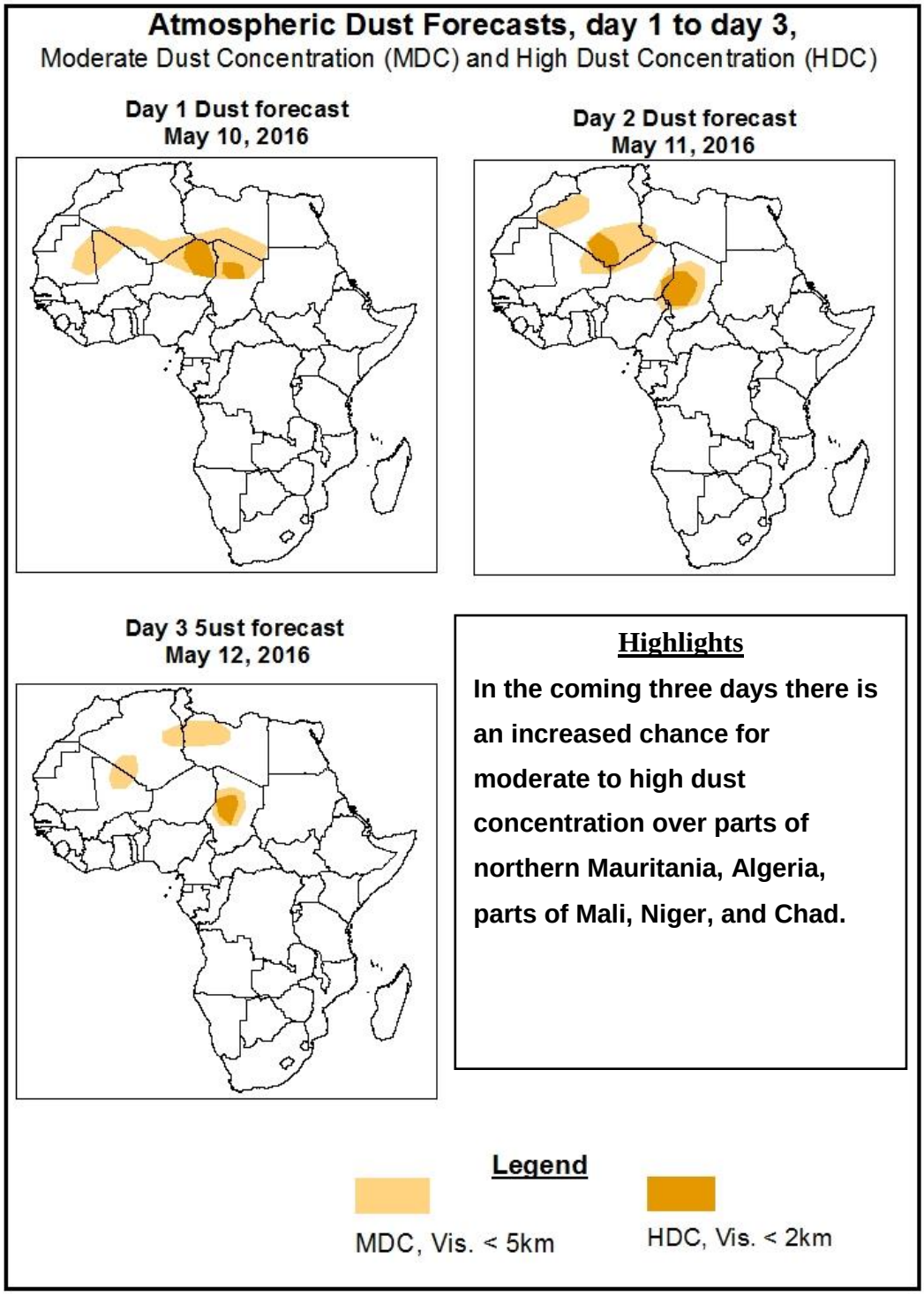


Highlights

In the coming five days, interactions between mid-latitude and tropical systems across Eritrea and Ethiopia, localized wind convergences across parts of western and central Africa,, 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 Nigeria, Gabon, northwestern Angola, eastern DRC, Rwanda, Burundi, Uganda, northwestern Tanzania, western Kenya, eastern South Sudan, and many parts of Ethiopia.

1.2. Atmospheric Dust Concentration Forecasts *(valid: May 10 – May 12, 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 10 – May 14, 2016

The Azores high pressure system over the Northeast Atlantic Ocean is expected to maintain an average central pressure value of 1024hPa during the forecast period.

The St. Helena High pressure system over the Southeast Atlantic Ocean is expected to weaken gradually while shifting eastwards, with its central pressure value decreasing from about 1027hPa to 1022hPa during the forecast period..

The Mascarene high pressure system over the Southwest Indian Ocean is expected to weaken with its central pressure value decreasing from about 1033hPa to 1031hPa 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 western and central Sahel countries, whereas moist southwesterly monsoon flow is expected to prevail across the Gulf Guinea countries during the forecast period.

At 850hPa level, a zonal wind convergence is expected to prevail across in the region between northeastern Mali and Sudan across the Sahel region. A broad area of southeasterly flow is expected to prevail across eastern and central Africa, with stronger wind prevailing across costal East Africa. 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 Red Sea, with the southern extent of the westerly trough reaching the latitudes of Eritrea and Ethiopia during the forecast period.

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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 Nigeria, Gabon, northwestern Angola, eastern DRC, Rwanda, Burundi, Uganda, northwestern Tanzania, western Kenya, eastern South Sudan, and many parts of Ethiopia.

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

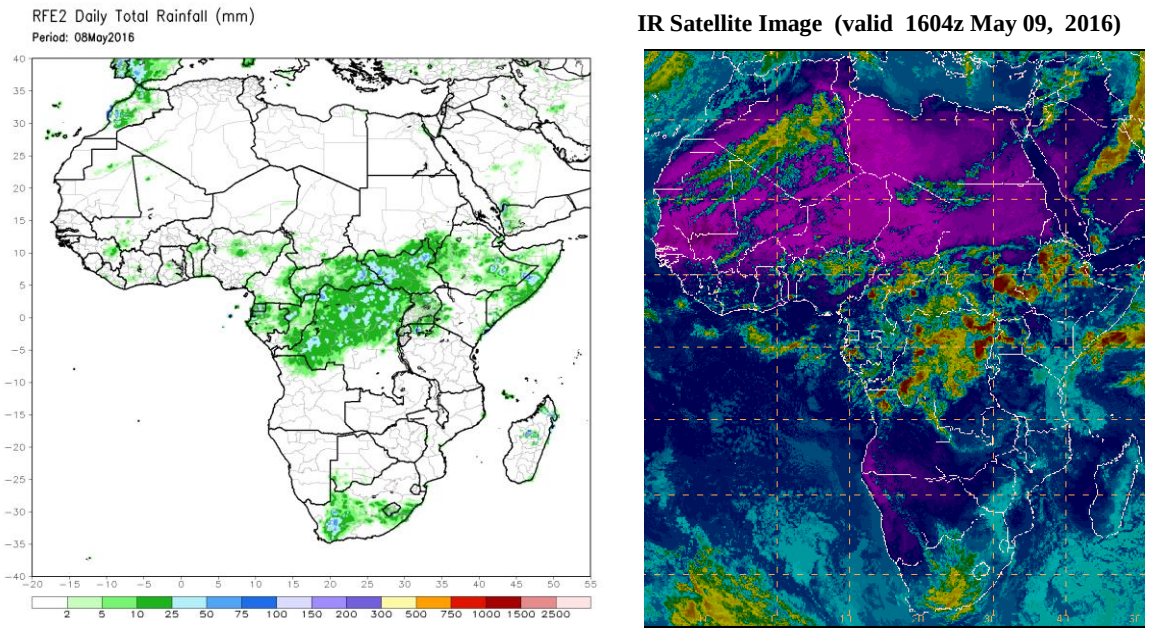
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (May 08, 2016)

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

2.2. Weather assessment for the current day (May 09, 2016**)**

Intense convective clouds are observed across Central Africa countries and Greater Horn of Africa.



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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