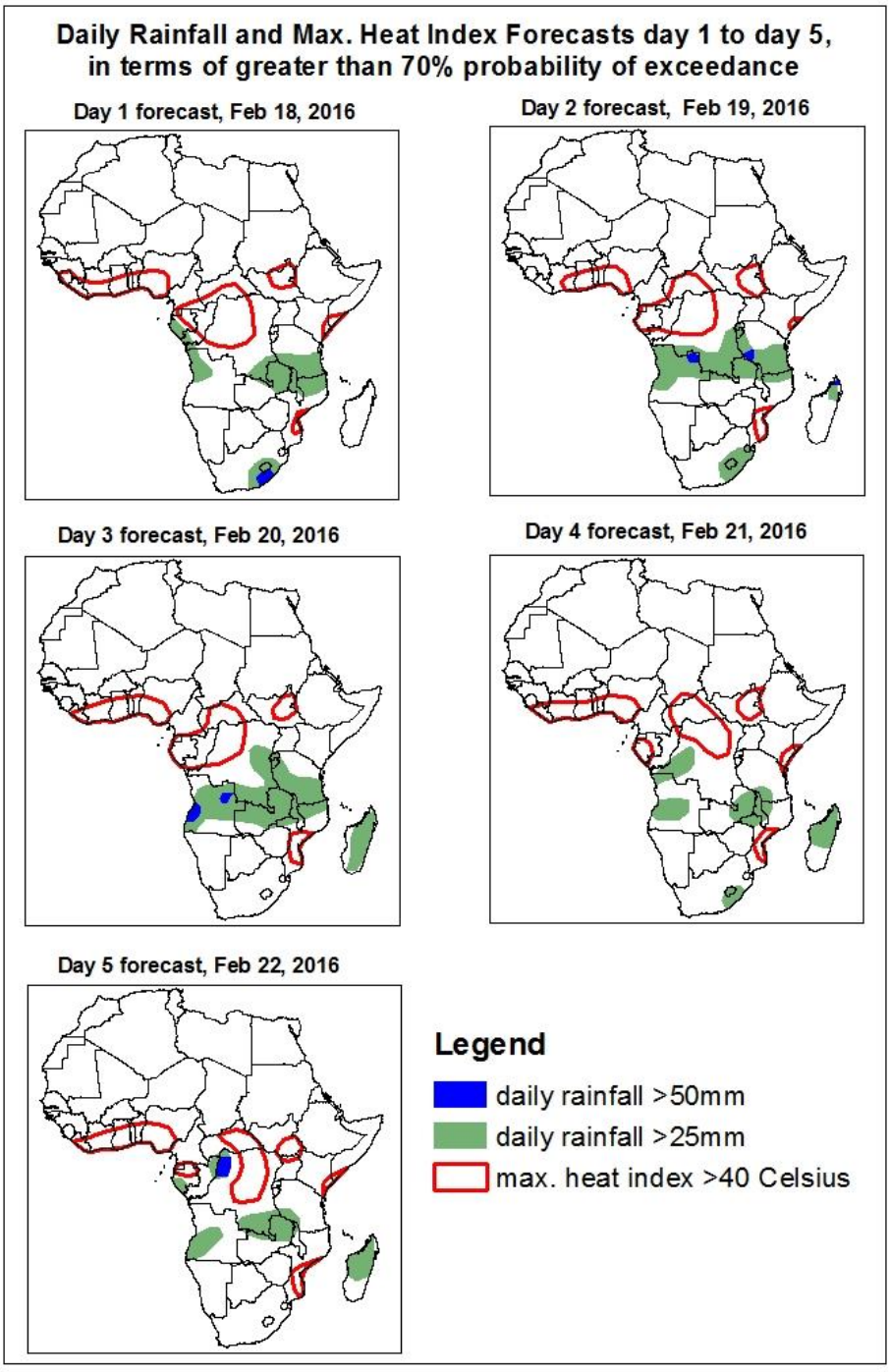
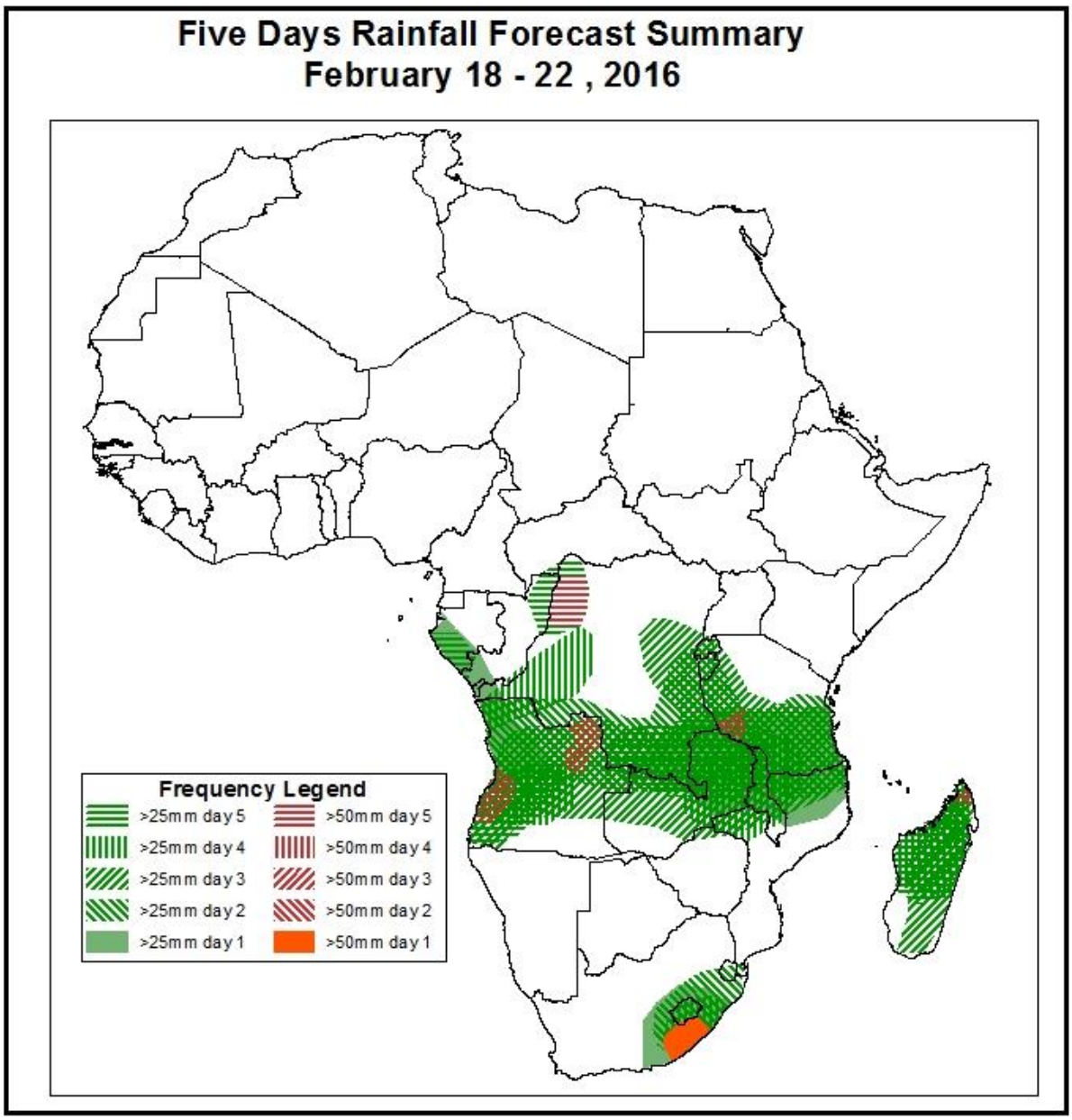
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on February 17, 2016)

1.1. Daily Rainfall and Maximum Heat Index Forecasts (*valid: Feb 18 – Feb 22, 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.



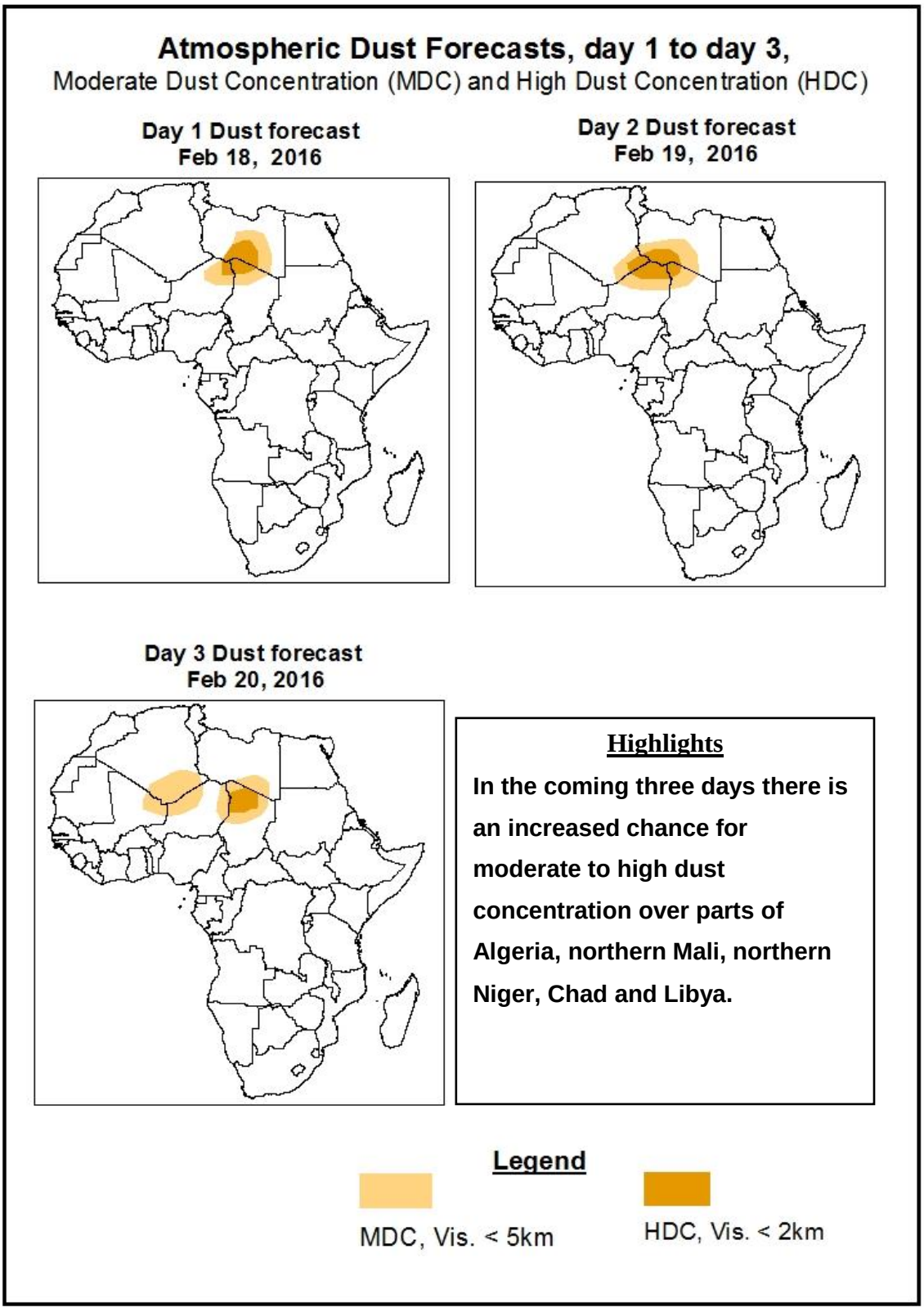


Highlights

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over portions of Angola and DRC, Rwanda, Burundi, portions of Tanzania, northern Mozambique, portions of Zambia, eastern South Africa, Lesotho, Swaziland and Madagascar.

1.2. Atmospheric Dust Concentration Forecasts *(valid: Feb 18 – Feb 20, 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: Feb 18 – Feb 22, 2016

The Azores high pressure system over Northeast Atlantic Ocean is expected to weaken gradually, with its central pressure value decreasing from about 1048 hPa in 24 hours to 1038 hPa in 120 hours.

The central pressure value associated with the St. Helena high pressure system is expected to decrease from 1035 hPa to 1024 hPa through 24 to 120 hours.

The Mascarene high pressure system over Southwest Indian Ocean is expected to strengthen slightly while shifting eastwards, with its central pressure value increasing from 1025 hPa in 24 hours to 1027 hPa in 96 hours.

At 925 hPa level, strong dry northeasterly to easterly flow is expected to prevail across many places in the Sahel countries and Northeast Africa, which may lead to increase in atmospheric dust concentration in some areas.

At 850 hPa level, southeasterly to easterly flow from the Indian Ocean, with its associated convergence across the northern portions of Southeastern Africa is expected to enhance rainfall in the region. Seasonal wind convergences are expected to remain active across DRC and the neighboring areas of the Lake Victoria region during the forecast period. Cyclonic circulation over parts of Angola is also expected to enhance rainfall in the region. Interactions between mid-latitude and tropical system across South Africa is expected to enhance rainfall across th eastern parts of South Africa, Lesotho and Swaziland.

At 500 hPa level, a trough associated with mid-latitude frontal system is expected to deepen across eastern Mediterranean Sea, with the southern extent of the trough extending into the latitudes of Ethiopia. This system may lead to increased cloudiness and rainfall over Ethiopia towards end of the forecast period

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over portions of Angola and DRC, Rwanda, Burundi, portions of Tanzania,

northern Mozambique, portions of Zambia, eastern South Africa, Lesotho, Swaziland and Madagascar.

There is also an increased chance for maximum heat index values to exceed 40^{o}C along the Gulf of Guinea coast, parts of northern DRC, western CAR, portions of South Sudan Republic and portions of costal East Africa.

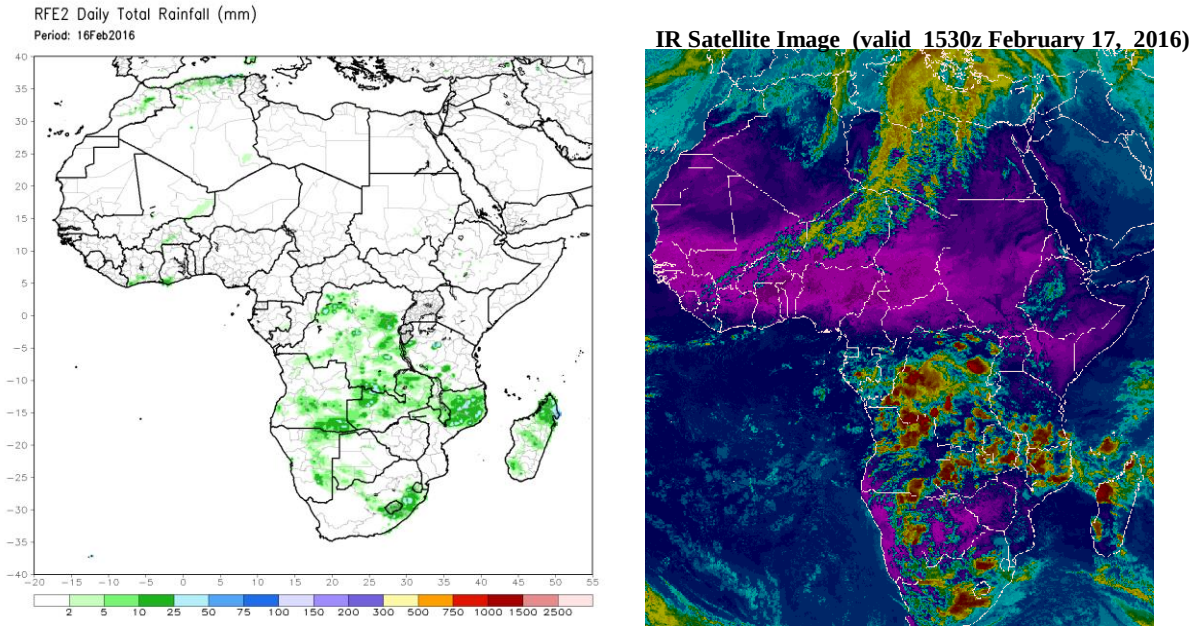
2.0. Previous and Current Day Weather over Africa

2.1. Weather assessment for the previous day (February 16, 2016)

Moderate to locally heavy rainfall was observed over portions of DRC, Zambia, portions of South Africa, and Madagascar.

2.2. Weather assessment for the current day (February 17, 2015**)**

Intense convective clouds are observed across western DRC, portions of Zambia, southern Tanzania, South Africa and western Madagascar.



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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