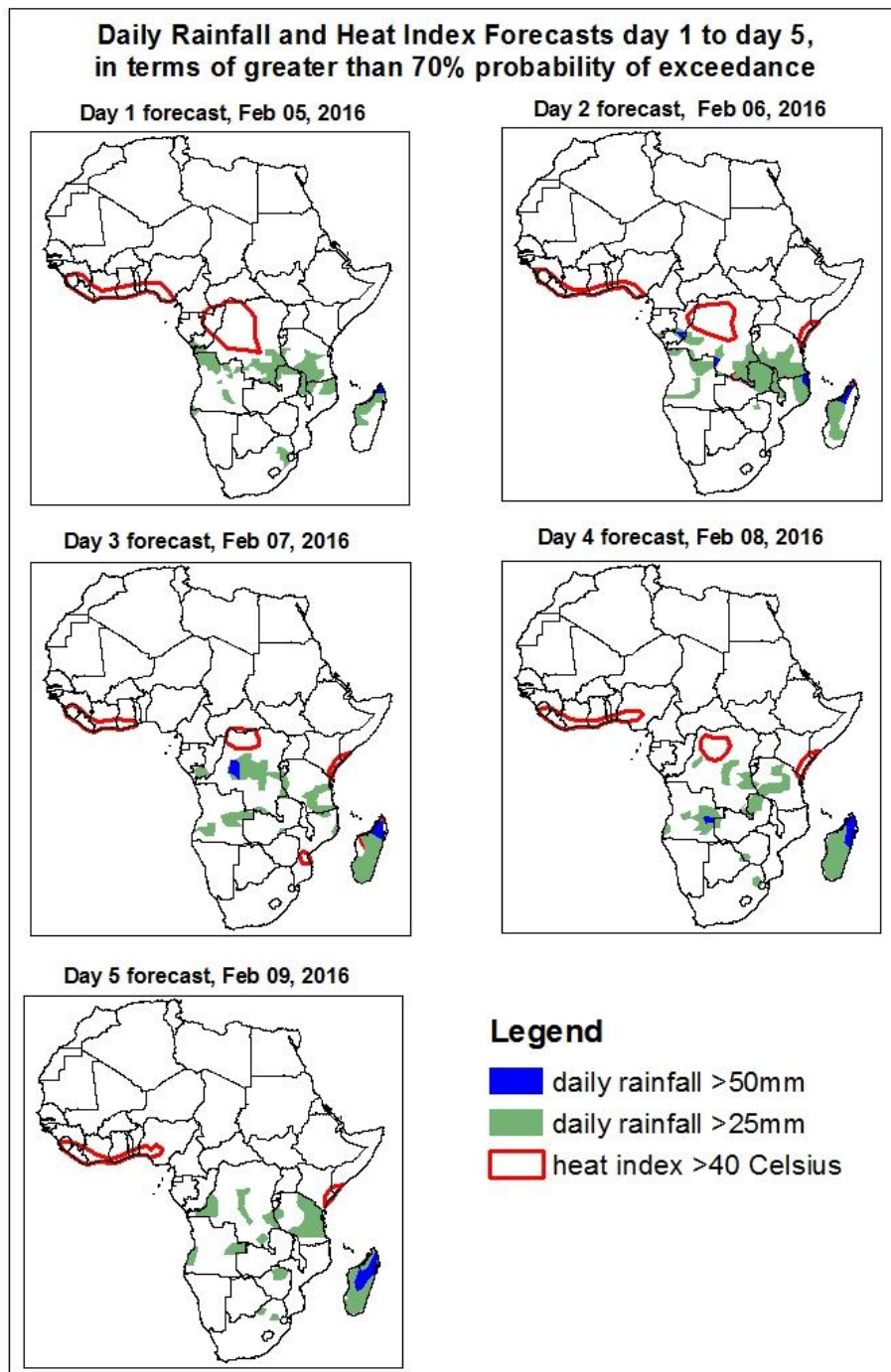


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

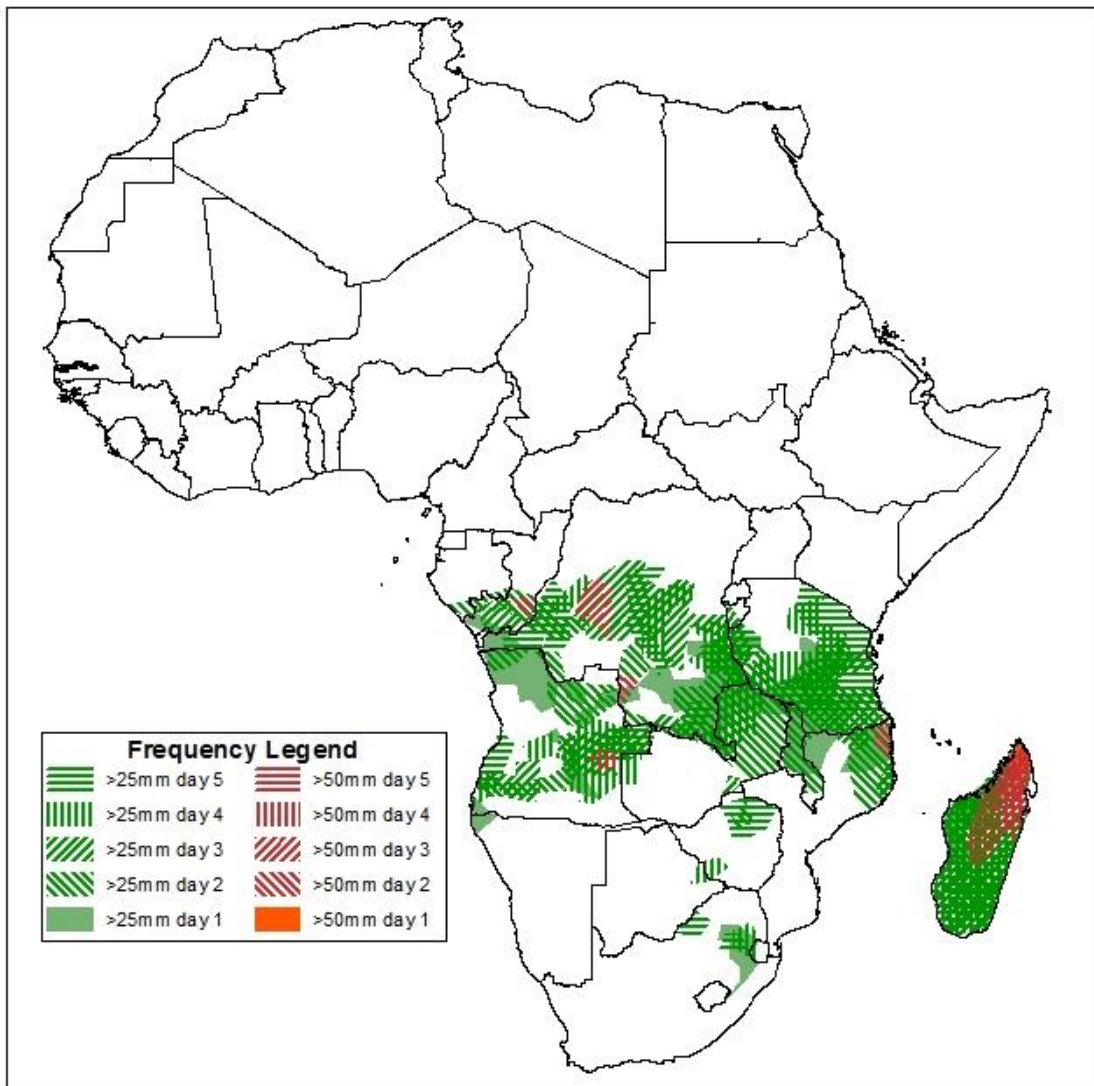
## 1. Rainfall, Heat Index and Dust Concentration Forecasts, (Issued on February 04, 2016)

### 1.1. Daily Rainfall and Heat Index Forecasts (valid: Feb 05 – Feb 09, 2016)

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



## Five Days Rainfall Forecast Summary February 05 - 09 , 2016

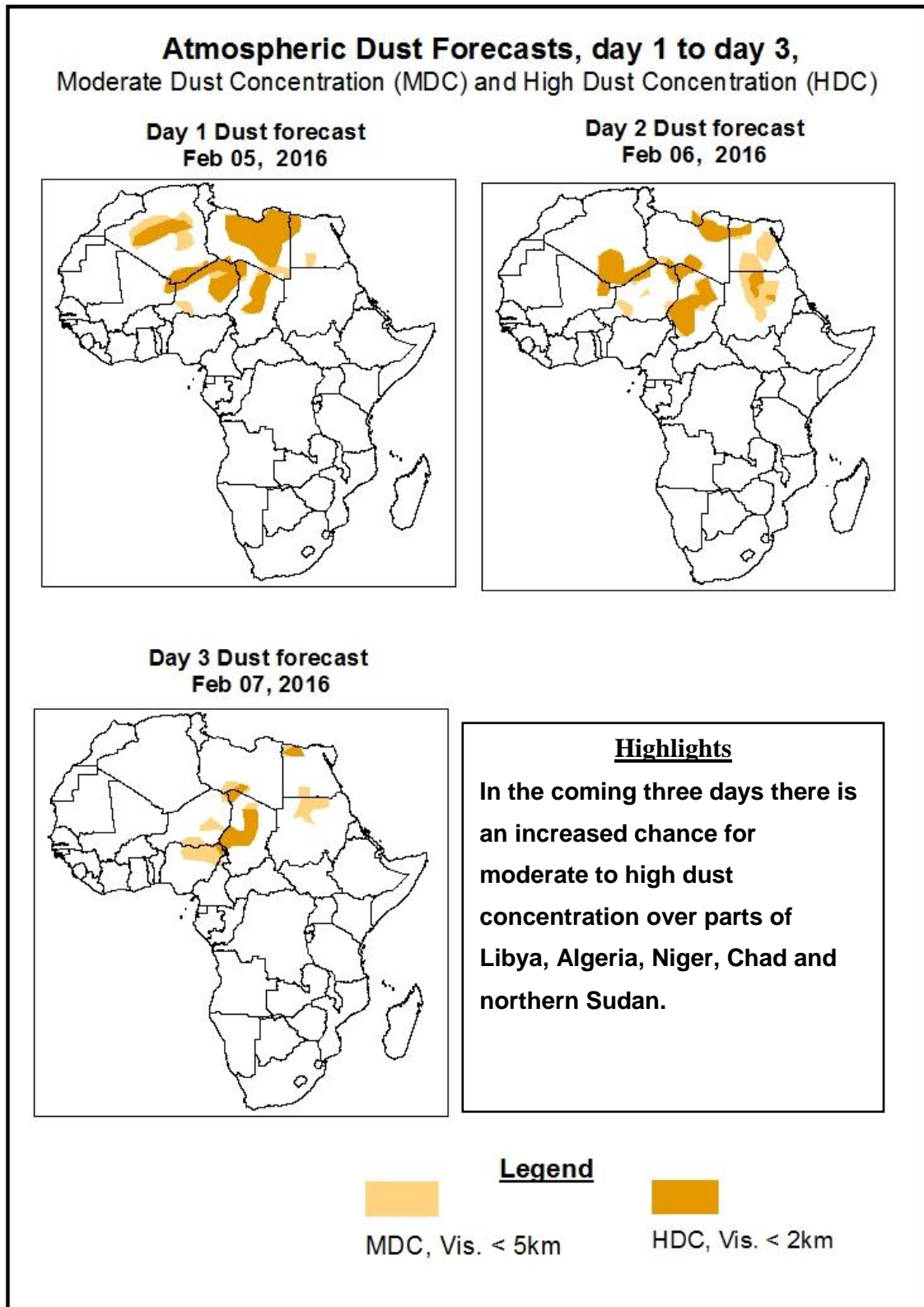


### Highlights

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over many places in Madagascar, eastern Angola eastern Zambia, central DRC, southern Tanzania, Malawi and northern Mozambique with high probability of heavy rainfall over northern Madagascar and central DRC.

**1.2. Atmospheric Dust Concentration Forecasts (valid: Feb 05 – Feb 07, 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 05 – Feb 09, 2016**

Azores high pressure system is expected to weaken in to 1032Hpa in 24 hours' time from its central value of 1039Hpa and attain this value for about 24 hours. This high pressure system is also expected to weaken further in to 1029Hpa and in to 1027Hpa in 96 and 120 hours' time respectively. The relative stability of this high pressure system is expected to increase the chance for dust concentration over parts of Libya, Algeria, Niger, Chad and northern Sudan with high probability of visibility less than 2kilometers over Chad and Libya.

The Arabian high pressure system is expected to attain its central value of 1031Hpa for the first 24 hours and weaken in to 1023Hpa in 48 hours' time. This high pressure system is also expected to intensify in to 1024Hpa, in to 1025Hpa and in to 1027Hpa in 72, 96 and 120 hours' time respectively. Interaction of subtropical low pressure systems are accounted as major factors to weaken this high pressure system and to pull up the ITCZ north word.

The Mascarene high pressure system over Southwest Indian Ocean is expected to attain the central value of 1028Hpa for about 24 hours and intensify in to 1032Hpa and in to 1036hpa in 48 and 72 hours' time respectively. This system is also expected to weaken in to 1031hpa by the end of the forecast period.

St Helena high pressure system is expected to attain the central value of 1023Hpa for about 24 hours and weaken in to 1021Hpa in 48 hours' time. This high pressure system is also expected to intensify in to 1025Hpa and in to 1031Hpa in 72 and 96 hours' time.

Both Mascarene and St Helena high pressure systems are expected to approach the coastal areas of South Africa and hence cumulative moisture supposed to incur in to South Africa is expected to decrease from the climatically normal.

In the coming five days, there is an increased chance for two or more days of moderate to heavy rainfall over many places in Madagascar, eastern Angola eastern Zambia, central DRC, southern Tanzania, Malawi and northern Mozambique with high probability of heavy rainfall over northern Madagascar and central DRC. There is an increased chance for heat index values to exceed 40°C along the Gulf of Guinea coast, northern DRC and coastal East Africa.

## 2.0. Previous and Current Day Weather over Africa

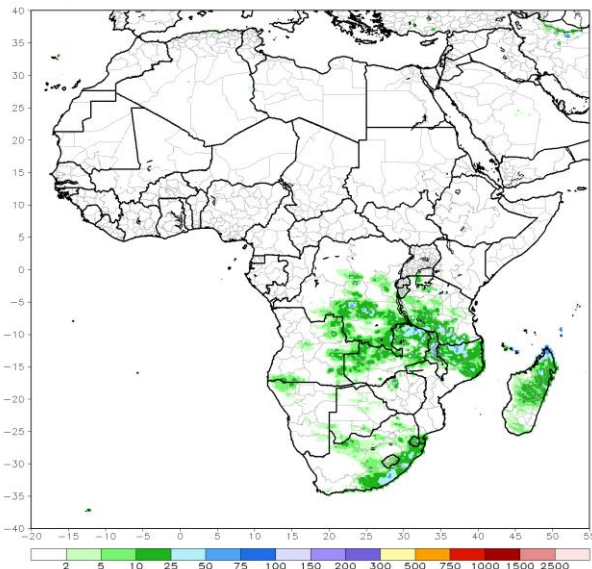
### 2.1. Weather assessment for the previous day (February 03, 2016)

Moderate to heavy rainfall was observed over central DRC, southern Tanzania, northern Mozambique, eastern Zambia, northern Malawi northern Madagascar and south eastern South Africa.

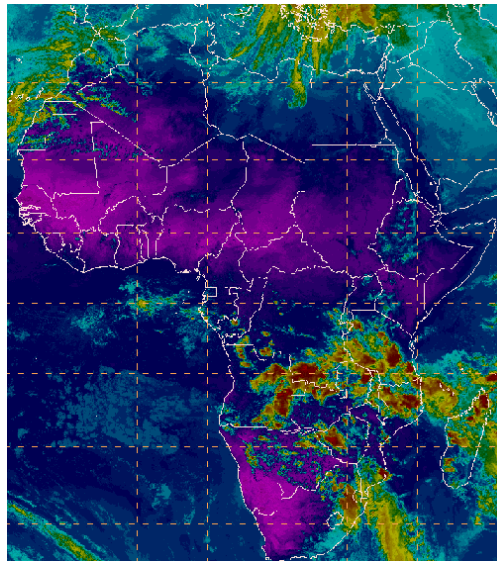
### 2.2. Weather assessment for the current day (February 04, 2015)

Intense convective clouds are observed across south eastern South Africa, southern Tanzania, southern DRC, eastern Zambia, Malawi, eastern Angola, northern Mozambique and northern Madagascar.

RFE2 Daily Total Rainfall (mm)  
Period: 03Feb2016



IR Satellite Image (valid 1430z February 04, 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*

**Author: Zerihun Hailemariam** (Ethiopian National Meteorological Agency) / CPC-African Desk); zerihun.tessema@noaa.gov