

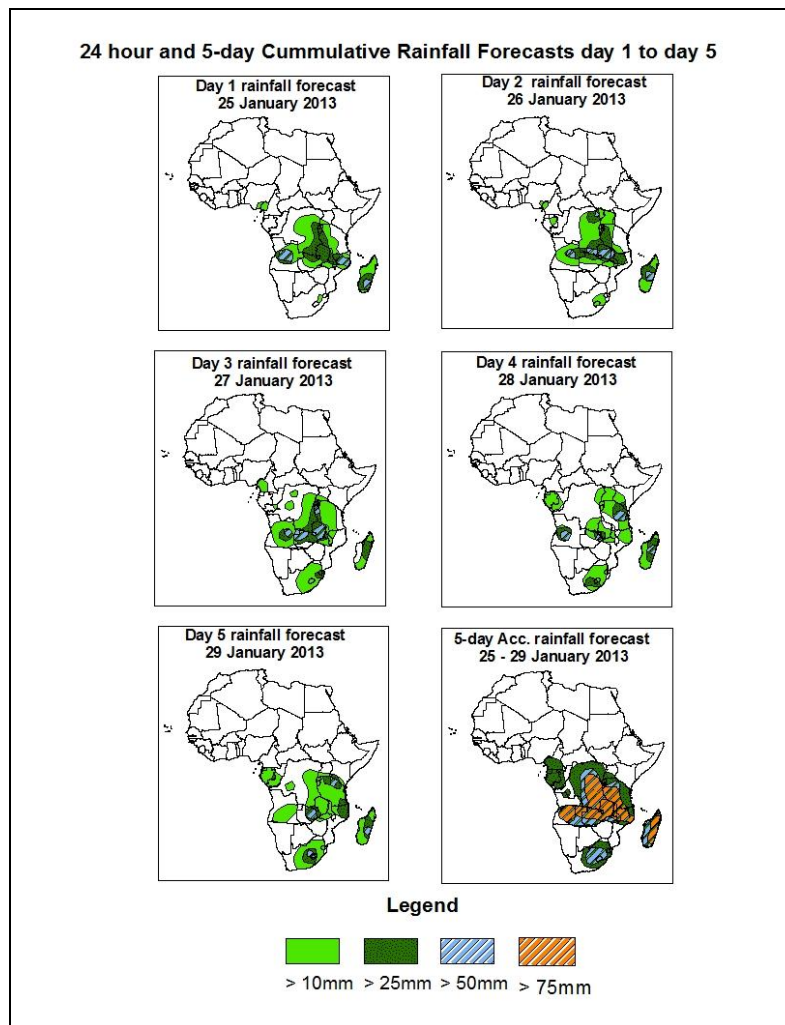


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 25 January – 06Z of 29 January 2013. (Issued at 16:30Z of 24 January 2013)

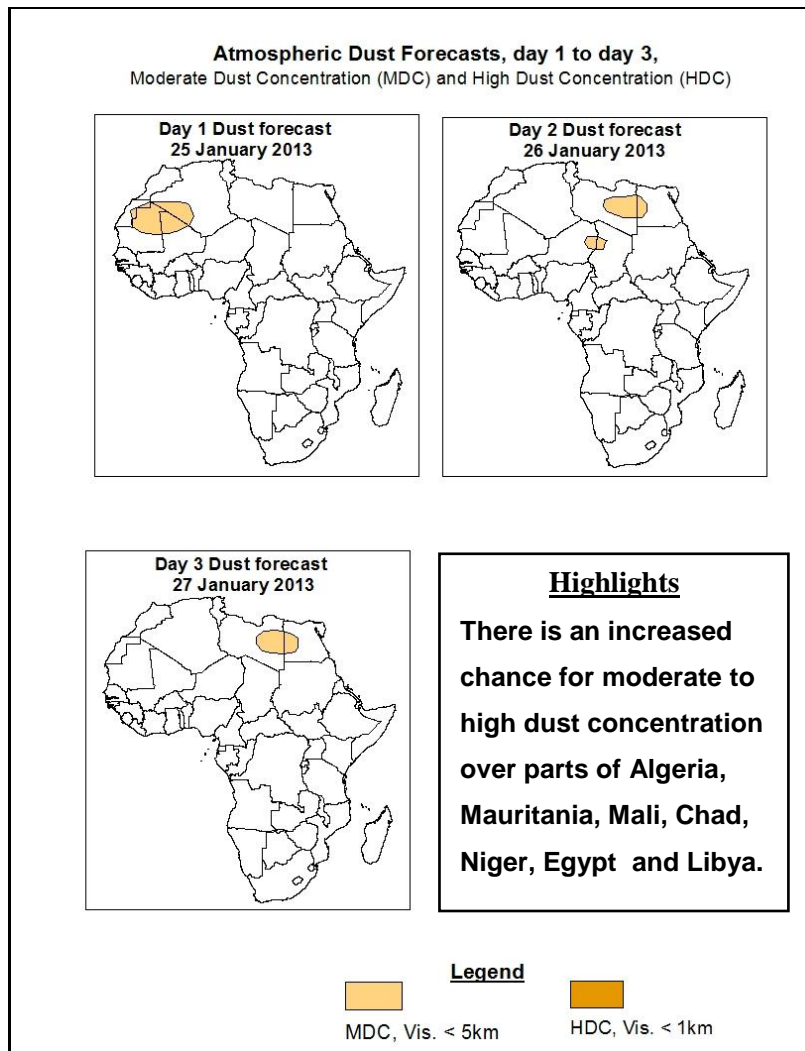
### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### Summary

In the next five days, moderate low level convergence over Angola, DRC, Zambia, Malawi, Kenya, Mozambique and Tanzania, and a low system over Mozambique Channel are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over local areas over parts of Angola, northern region of Mozambique, parts of DRC, Tanzania, Zambia, Malawi and Madagascar.



## 1.2. Model Discussion: Valid from 00Z of 24 January 2013

*Model comparison (Valid from 00Z; 24 January 2013) shows all the three models are in general agreement in terms of depicting eastward movement of the Mascarene and St Helena high pressure systems during the forecast period. However, the models show slight differences in terms of central pressure values.*

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to heighten slightly through 24 to 96 hours. The central pressure value is expected to increase from about 1022hpa to 1026hpa, according to the GFS and the ECMWF models, and from about 1022hpa to 1027hpa according to the UKMET model.

The Mascarene high pressure system over southwestern Indian Ocean is also expected to swing slightly, while shifting eastwards with its central pressure value varying from

about 1026hpa to 1030hpa, according to the GFS model, from about 1019hpa to 1030hpa according to ECMWF and from about 1016hpa to 1030hpa according to the UKMET model.

The seasonal lows across DRC, South Sudan and the neighboring areas is expected to swing slightly, with the central pressure values varying from about 1004hpa to 1008hpa according to the GFS model and from about 1004hpa to 1006hpa according to the UKMET model. According to the ECMWF the central pressure values of the previously mentioned lows will remain constant with central pressure value of about 1006hpa throughout the forecast period. A low system over Mozambique Channel is expected to prevail throughout the forecast period; the central pressure value is expected to deepen slightly from about 1003hpa to 999hpa according to the GFS model. According to the ECMWF and the UKMET models, the previously mentioned low will swing from about 1006hpa to 1008hpa and from about 1003hpa to 1007hpa, respectively.

At the 850hpa level, the seasonal lower level wind convergence near the CAB region is expected to remain with moderate to poor convergence conditions through 24 to 96 hours. Moderate low level convergence is expected to prevail active over parts of Angola, DRC, Zambia, Malawi, Kenya, Mozambique and Tanzania throughout the forecast period.

At 500hpa, an eastward propagation is expected to dominate the flow over northern countries of Africa and Mediterranean Sea through 24 to 72 hours. A trough in the mid-latitude westerly is expected to dominate the flow over the previously mentioned area towards end of the forecast period. An eastward flow over South Africa and the neighboring countries is expected to prevail active through 24 to 120 hours.

At 200hpa, the northern hemisphere sub-tropical westerly jet is expected to remain active through the forecast period; the core wind speed occasionally will exceed 130kts over northern countries of Africa and Mediterranean Sea.

In the next five days, moderate low level convergence over Angola, DRC, Zambia, Malawi, Kenya, Mozambique and Tanzania, and a low system over Mozambique Channel are expected to enhance rainfall in their respective regions. Thus, there is an

increased chance for moderate to heavy rainfall over local areas over parts of Angola, northern region of Mozambique, parts of DRC, Tanzania, Zambia, Malawi and Madagascar.

## 2.0. Previous and Current Day Weather Discussion over Africa

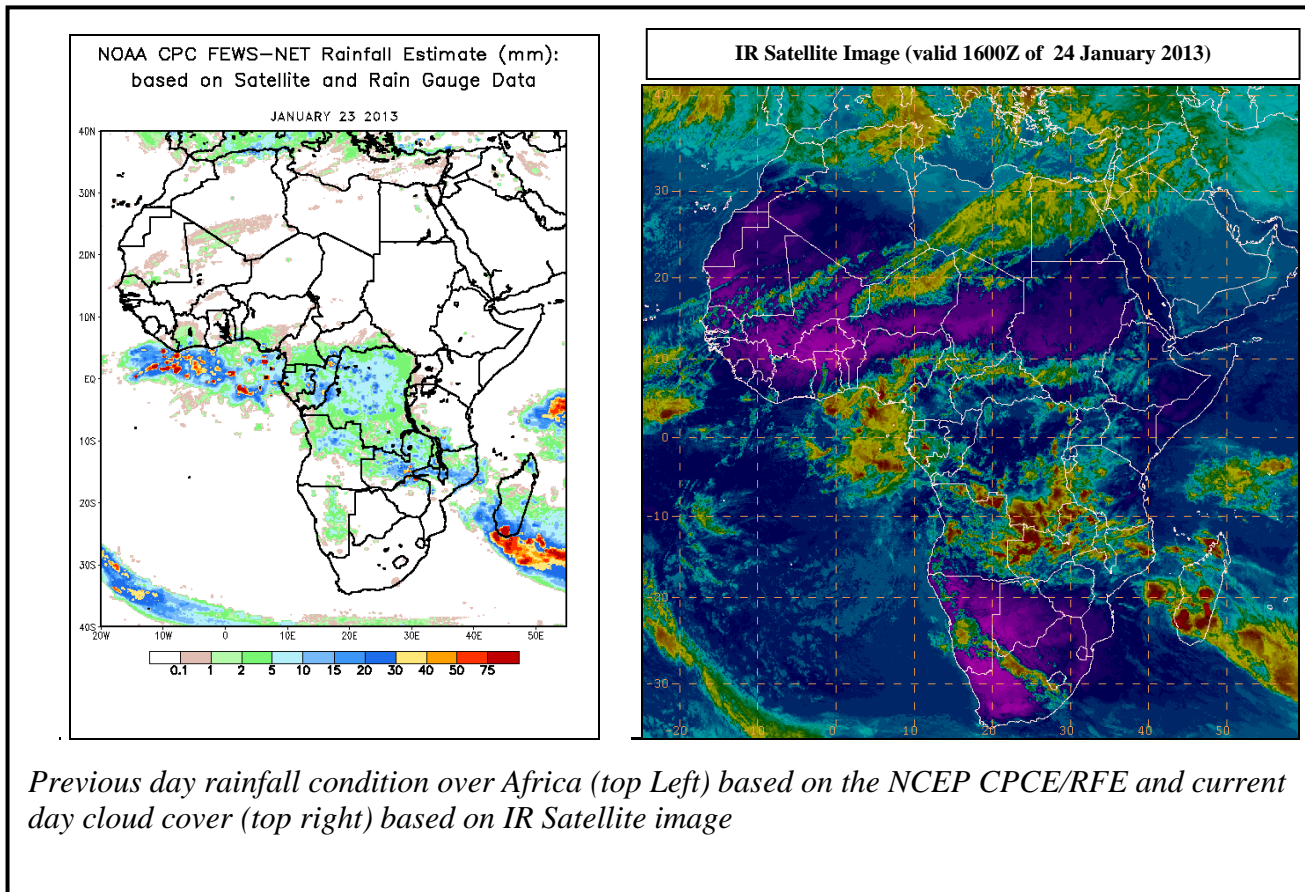
(23 January 2013 – 24 January 2013)

### 2.1. Weather assessment for the previous day (23 January 2013)

During the previous day, moderate to locally heavy rainfall was observed over parts of Madagascar, Zambia, DRC, Congo and Gabon.

### 2.2. Weather assessment for the current day (24 January 2013)

Intense clouds are observed over DRC, Zambia, Angola, northern region of Mozambique and Madagascar.



**Author:** Lameque Matimbe, (Mozambique National institute of Meteorology / CPC-African Desk); [lameque.matimbe@noaa.gov](mailto:lameque.matimbe@noaa.gov)