

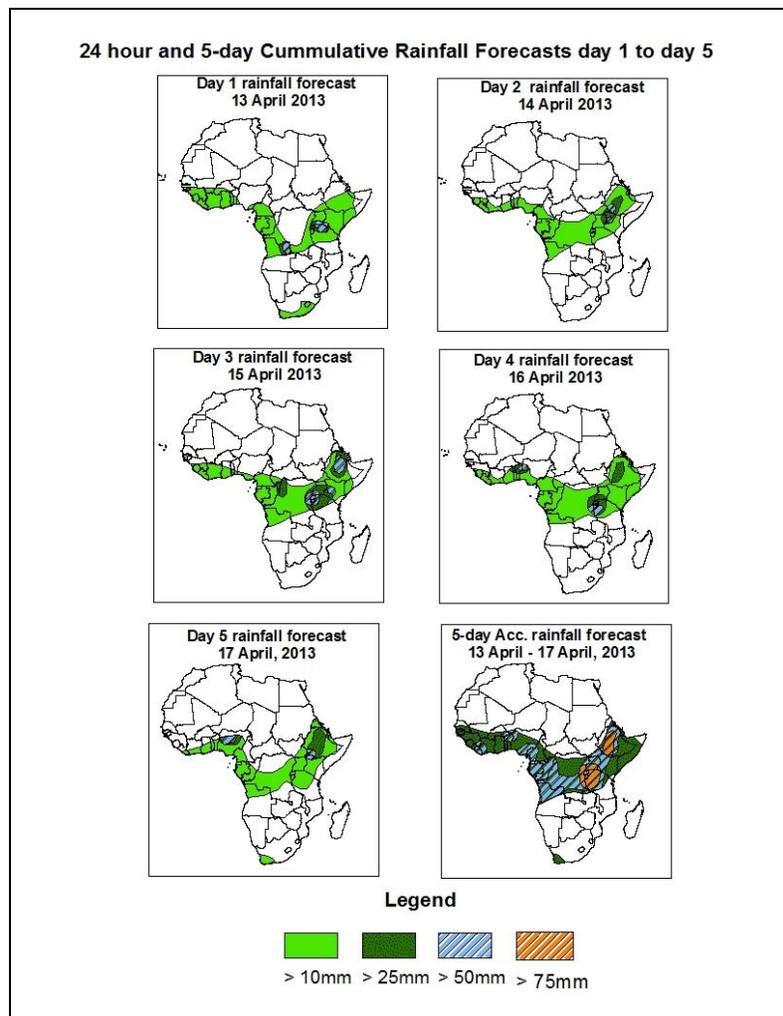


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 13 April – 06Z of 17 April, 2013. (Issued at 16:00Z of 12 April 2013)

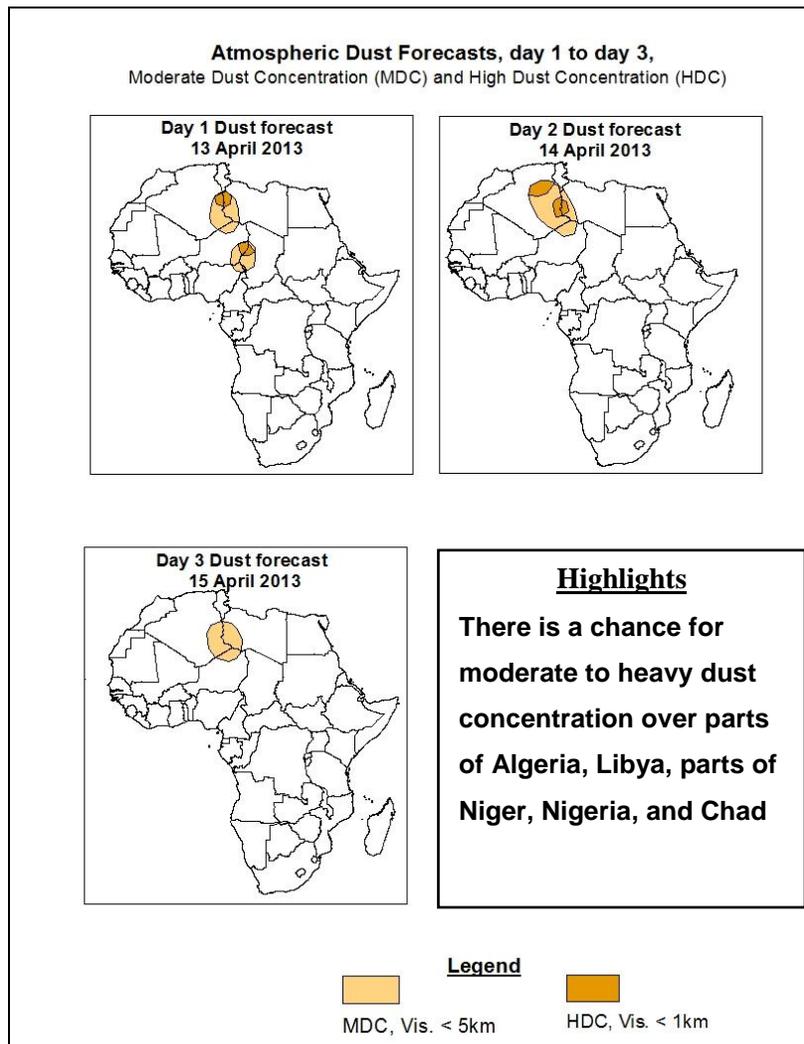
### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, active seasonal convergence near the Congo Air Boundary (CAB) region, easterly winds from the Arabian Sea and their associated convergence over the highlands of Ethiopia, and onshore winds from the Atlantic Ocean and their associated convergence are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over local areas in the Gulf of Guinea and western Equatorial Africa, northwestern Angola, eastern DRC, Rwanda, Burundi, Uganda, Tanzania, Kenya and many parts of Ethiopia.*



## 1.2. Model Discussion: Valid from 00Z of 12 April 2013

*Model comparison (Valid from 00Z; 12 April, 2013) shows all the three models are in general agreement in terms of depicting positions of the southern hemisphere subtropical highs. But, they showed significant differences in depicting intensity of tropical cyclone Imelda over southern Indian Ocean.*

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to remain weak while shifting eastwards and become a high pressure system over Southwest Indian Ocean (Mascarene). Its central pressure value is expected to remain below 1024hpa during the forecast period according to the GFS, the ECMWF and the UKMET models.

The newly formed Mascarene high pressure system over southwestern Indian Ocean is also expected to remain weak during the forecast period. It is expected to assume a central pressure value of 1019hpa to 1025hpa according to the GFS model, 1021hpa to 1023hpa according to the ECMWF model and 1022hpa to 1024hpa according to the UKMET model.

The seasonal lows across South Sudan and the neighboring areas are expected to deepen slightly during the forecast period. The lowest central pressure values associated with lows is expected to decrease from about 1005hpa to 1002hpa according to the GFS model, from about 1008hpa to 1004hpa according to the ECMWF model, and from about 1006hpa to 1003hpa according to the UKMET model.

A low pressure system associated with tropical cyclone Imelda over southern Indian Ocean is expected to weaken gradually during the forecast period.

At the 850hpa level, lower level wind convergences near the Congo boundary region is expected to remain more or less active near the Lake Victoria region. The southerly flow across East Africa and its associated convergence over the Horn of Africa is expected to weaken slightly during the forecast period. On the other hand, easterly winds from the Arabian Sea and their associated convergence over Ethiopia are expected to enhance rainfall over the highlands of Ethiopia. Onshore winds from the Atlantic Ocean and their associated convergences are expected to enhance rainfall occasionally over portions of the Gulf of Guinea and across western parts of Equatorial Africa regions through 24 to 120 hours.

At 500hpa, a trough in mid-latitude westerly flow is expected to deepen gradually over eastern Mediterranean Sea and the neighboring areas, with westerly winds reaching the 10°N latitude across Sudan. A mid-latitude trough is expected to propagate across southern African countries through 24 to 48hours.

At 200hpa, wind speed associated with the northern hemisphere sub-tropical westerly jet is expected to remain below 130knts across northern Africa and the neighboring areas during the forecast period.

In the next five days, active seasonal convergence near the Congo Air Boundary (CAB) region, easterly winds from the Arabian Sea and their associated convergence over the highlands of Ethiopia, and onshore winds from the Atlantic Ocean and their associated convergence are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over local areas in the Gulf of Guinea and western Equatorial Africa, northwestern Angola, eastern DRC, Rwanda, Burundi, Uganda, Tanzania, Kenya and many parts of Ethiopia.

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

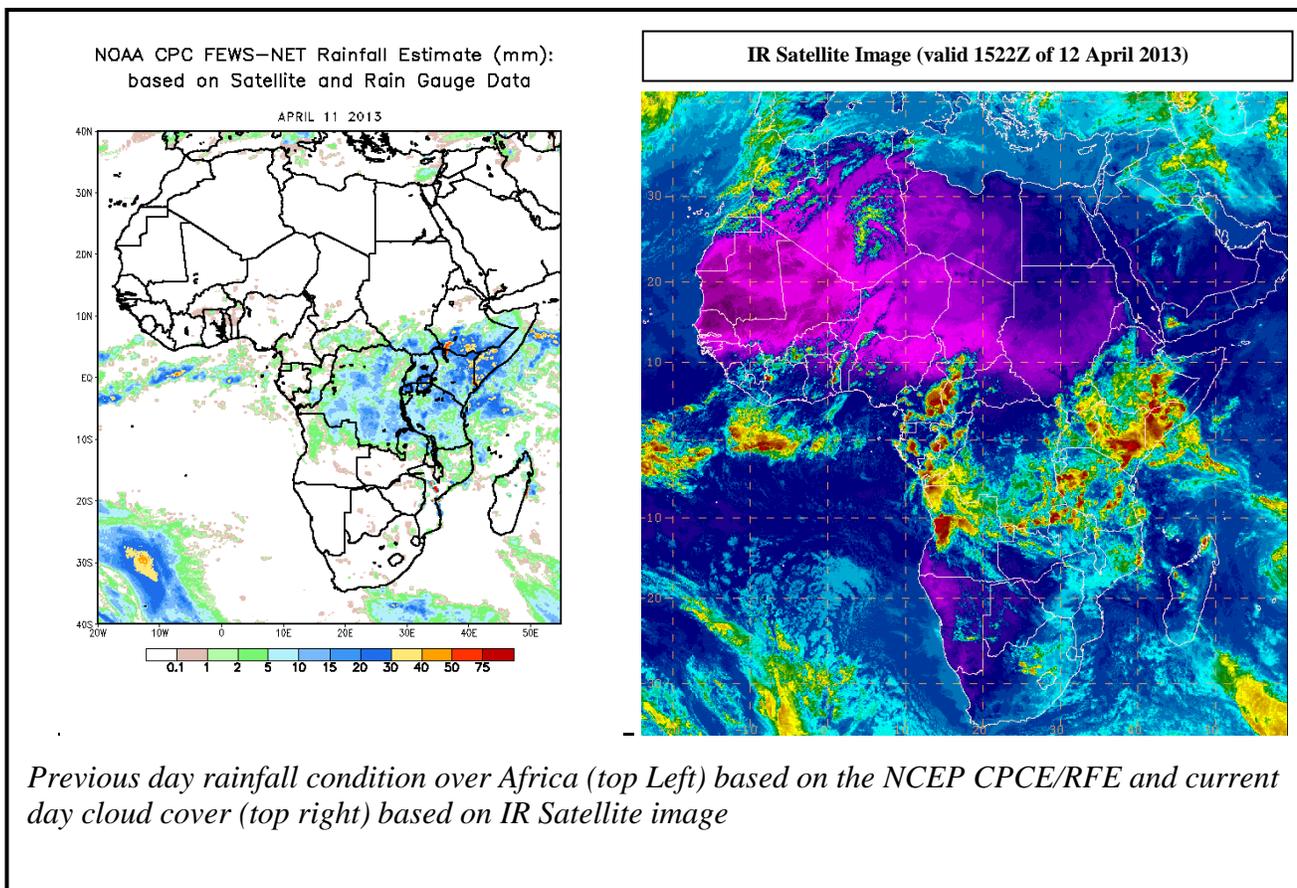
(11 April 2013 – 12 April 2013)

### 2.1. Weather assessment for the previous day (11 April 2013)

During the previous day, moderate to localized heavy rainfall was observed over parts of DRC, southern Sudan, Tanzania, Burundi, Rwanda, Kenya, Uganda, Ethiopia and Somali.

### 2.2. Weather assessment for the current day (12 April, 2013)

Intense patches of clouds are observed over parts of northern Angola, northern Zambia, DRC, Southern Sudan, the East and Horn of African regions.



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