

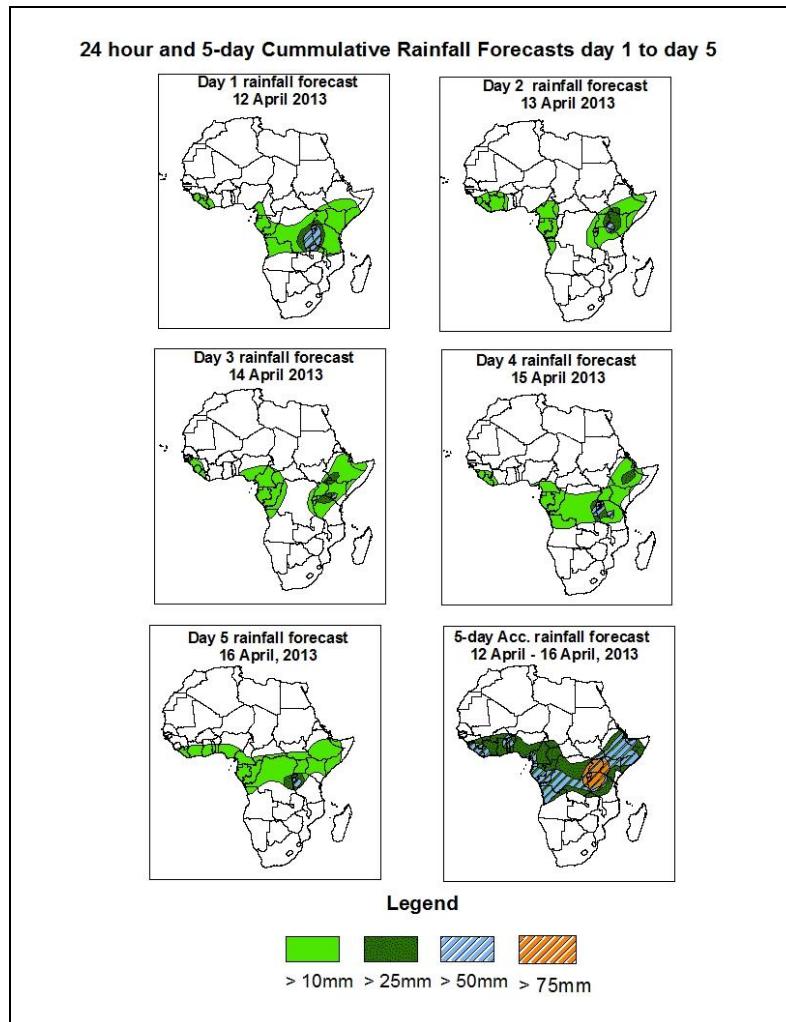


## NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

### 1.0. Rainfall Forecast: Valid 06Z of 12 April – 06Z of 16 April, 2013. (Issued at 17:30Z of 11 April 2013)

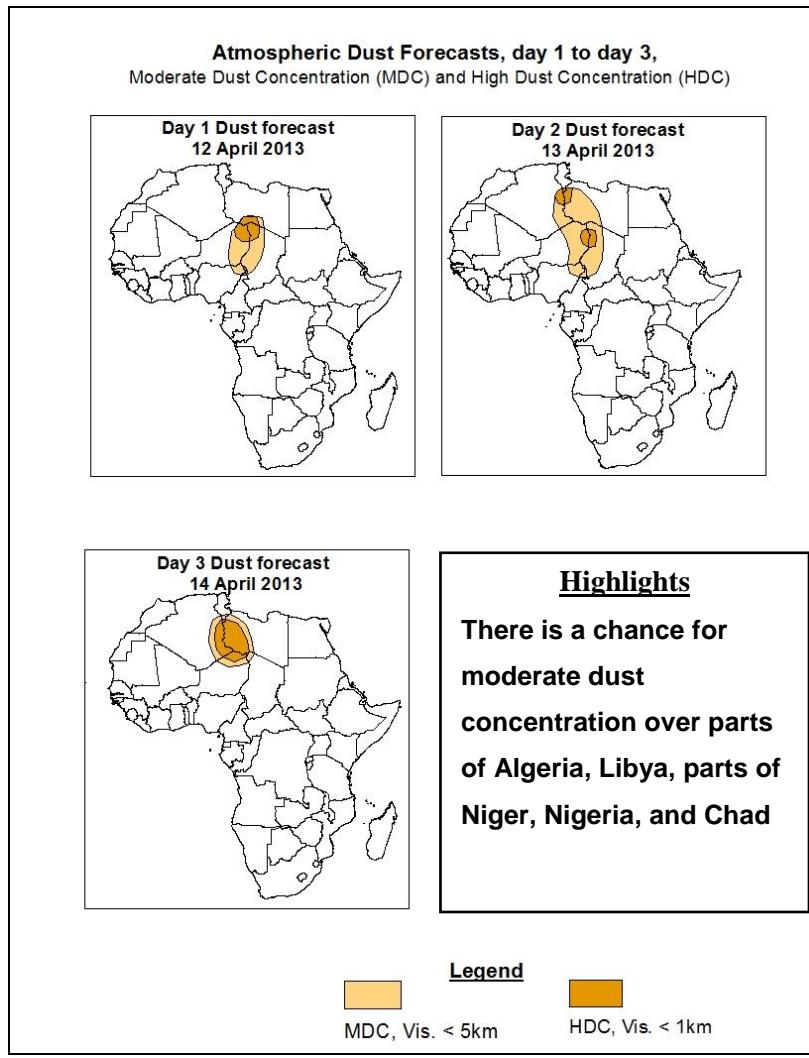
#### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, southerly winds across East Africa and their associated convergence over the Horn of Africa, 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, southern Ethiopia and southern Somalia.



## 1.2. Model Discussion: Valid from 00Z of 11 April 2013

*Model comparison (Valid from 00Z; 11 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 formation tropical cyclone Imelda over southern Indian Ocean.*

The St. Helena High Pressure System over southeast Atlantic Ocean is expected to weaken gradually while shifting eastwards and become a high pressure system over Southwest Indian Ocean (Mascarene) towards end of the forecast period. Its central pressure value is expected to decrease from about 1030hpa in 24 hours to 1022hpa in 72 hours according to the GFS model, is expected to change from 1020hpa to 1017hpa according to the ECMWF model and from 1030hpa to 1022hpa according to the UKMET model.

The Mascarene high pressure system over southwestern Indian Ocean is expected to shift eastwards across southern Indian Ocean and will be replaced by a newly formed high pressure system towards end of the forecast period. Its central pressure value is expected to remain about 1024hpa through 24 to 72 hours according to the GFS and ECMWF models, and about 1023hpa according to the UKMET model.

The seasonal lows across South Sudan and the neighboring areas are expected to remain weak throughout the forecast period, generally maintaining central pressure values of about 1005hpa to 1006hpa according to the GFS, about 1006hpa to 1008hpa according to the ECMWF and about 1004hpa to 1007hpa according to the UKMET model.

A very deep low pressure system associated with tropical cyclone Imelda over southern Indian Ocean is expected to move southwestwards while gradually weakening, but will remain east of Madagascar. Its central pressure value is expected to increase from 976hpa to 981 according to the GFS model. Its central pressure values is expected to increase from about 998hpa in 24 hours to 1002hpa in 72 hours according to the ECMWF model, and from about 998hpa to 995hpa according to the UKMET model.

At the 850hpa level, lower level wind convergences near the Congo boundary region is expected to remain active near the Lake Victoria region slightly shifting eastwards through 24 to 72 hours. The southerly flow across East Africa and its associated convergence over the Horn of Africa is expected to remain active through 24 to 120 hours. 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 through 72 hours. 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.

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

(10 April 2013 – 11 April 2013)

### 2.1. Weather assessment for the previous day (10 April 2013)

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

### 2.2. Weather assessment for the current day (11 April, 2013)

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

