

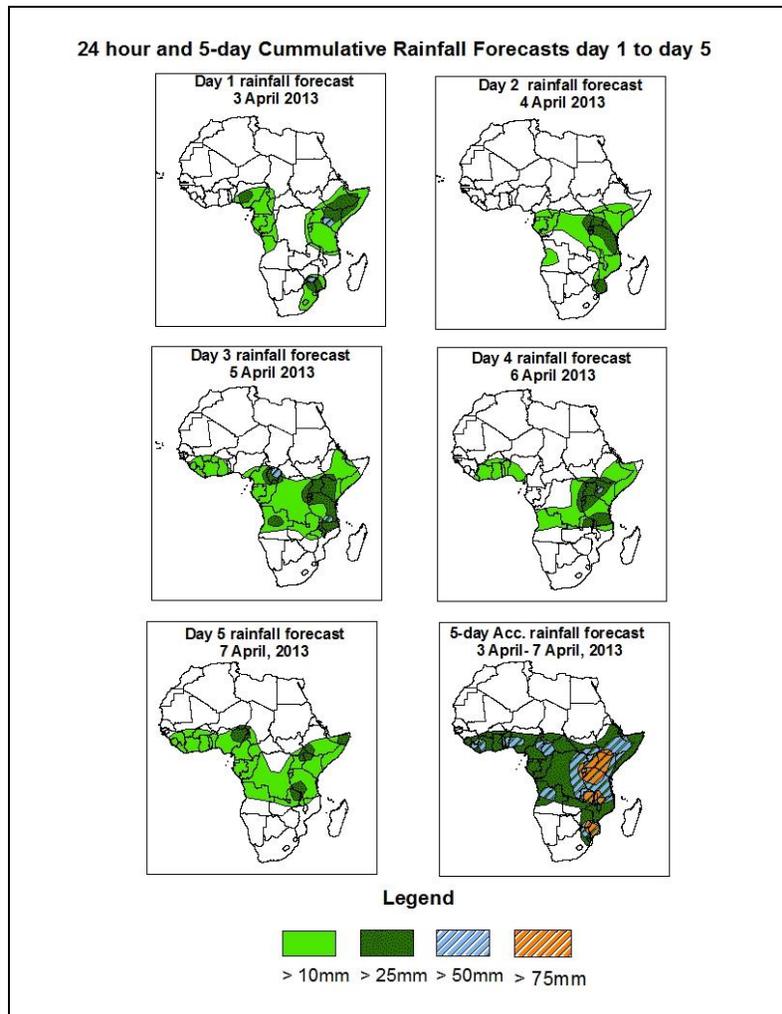


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 3 April – 06Z of 7 April, 2013. (Issued at 16:00Z of 2 April 2013)

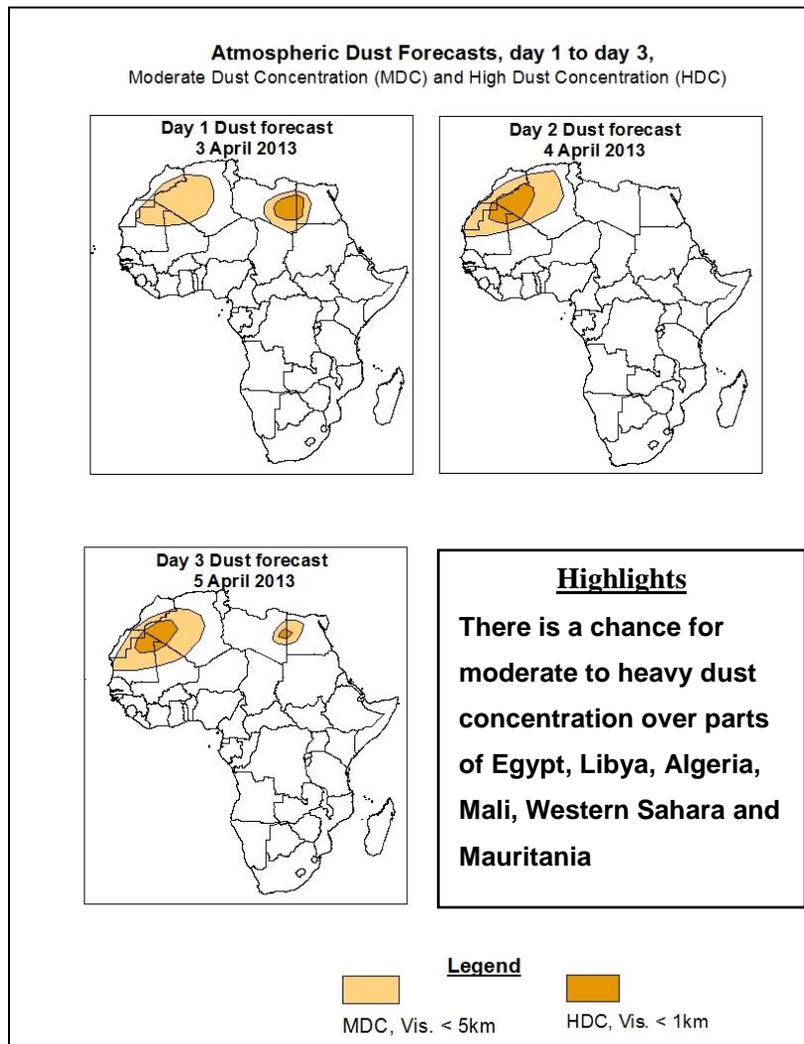
### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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 in the Congo Air Boundary (CAB) region, and interaction between mid-latitude and tropical system across southern Africa are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over parts of Kenya, Uganda, Rwanda, Burundi, eastern DRC, Tanzania, and parts of southern Mozambique.*



## 1.2. Model Discussion: Valid from 00Z of 2 April 2013

*Model comparison (Valid from 00Z; 2 April, 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.*

In the next five days the St. Helena High Pressure System over southeast Atlantic Ocean is expected to shift eastwards across southern Africa through 24 to 72 hours. Its central pressure value is expected to decrease from about 1028hpa in 24 hours to 1024hpa in 72 hours according to the GFS model, is expected to change from 1028hpa to 1023hpa according to the ECMWF model and from 1029hpa to 1023hpa according to the UKMET model.

The Mascarene high pressure system over southwestern Indian Ocean is expected intensify slightly through 24 to 72 hours, while shifting eastwards across southern Indian Ocean. Its central pressure value is expected to increase from about 1022hpa in 24 hours to about 1024hpa in 72 hours according to the GFS, ECMWF and UKMET models.

The seasonal lows across South Sudan and the neighboring areas is expected to remain moderate throughout the forecast period, with the central pressure values generally maintaining about 1002hpa to 1003hpa according to the GFS, about 1005hpa according to the ECMWF and about 1004hpa to 1005hpa according to the UKMET model in total agreement with all the three models.

At the 850hpa level, the seasonal wind convergence associated with the West African Monsoon flow is expected to remain active across the central and eastern parts of the Gulf of Guinea countries during the forecast period. Southeasterly flow is expected to prevail across southeastern and eastern African region through 24 hours. The flow tends to become easterly and its associated seasonal convergence is expected to remain active near the Congo boundary region, to include South Sudan, parts of Ethiopia, eastern DRC, Uganda, Tanzania and Kenya through 48 to 96 hours. Localized wind convergences are also expected to enhance rainfall occasionally over Angola.

At 500hpa, a trough in mid-latitude westerly flow is expected to prevail over Northeast Africa, to include Sudan and northern Ethiopia through 24 hours. With eastward propagation of the trough, the flow over this region is expected to be replaced by an anti-cyclonic flow and its associated ridge. A deep mid-latitude trough is expected to propagate across southern African countries through 24 to 96 hours, and is expected to induce a closed cyclonic circulation off the coast of Mozambique towards end of the forecast period.

At 200hpa, the northern hemisphere sub-tropical westerly jet is expected to remain active through 24 hours with the core wind speed exceeding 150kts over Northwest Africa. The jet is expected to weaken gradually through 48 to 120 hours.

In the next five days, active seasonal convergence in the Congo Air Boundary (CAB) region, and interaction between mid-latitude and tropical system across southern Africa are expected to enhance rainfall in their respective regions. Hence, there is an increased chance for heavy rainfall over parts of Kenya, Uganda, Rwanda, Burundi, eastern DRC, Tanzania, and parts of southern Mozambique.

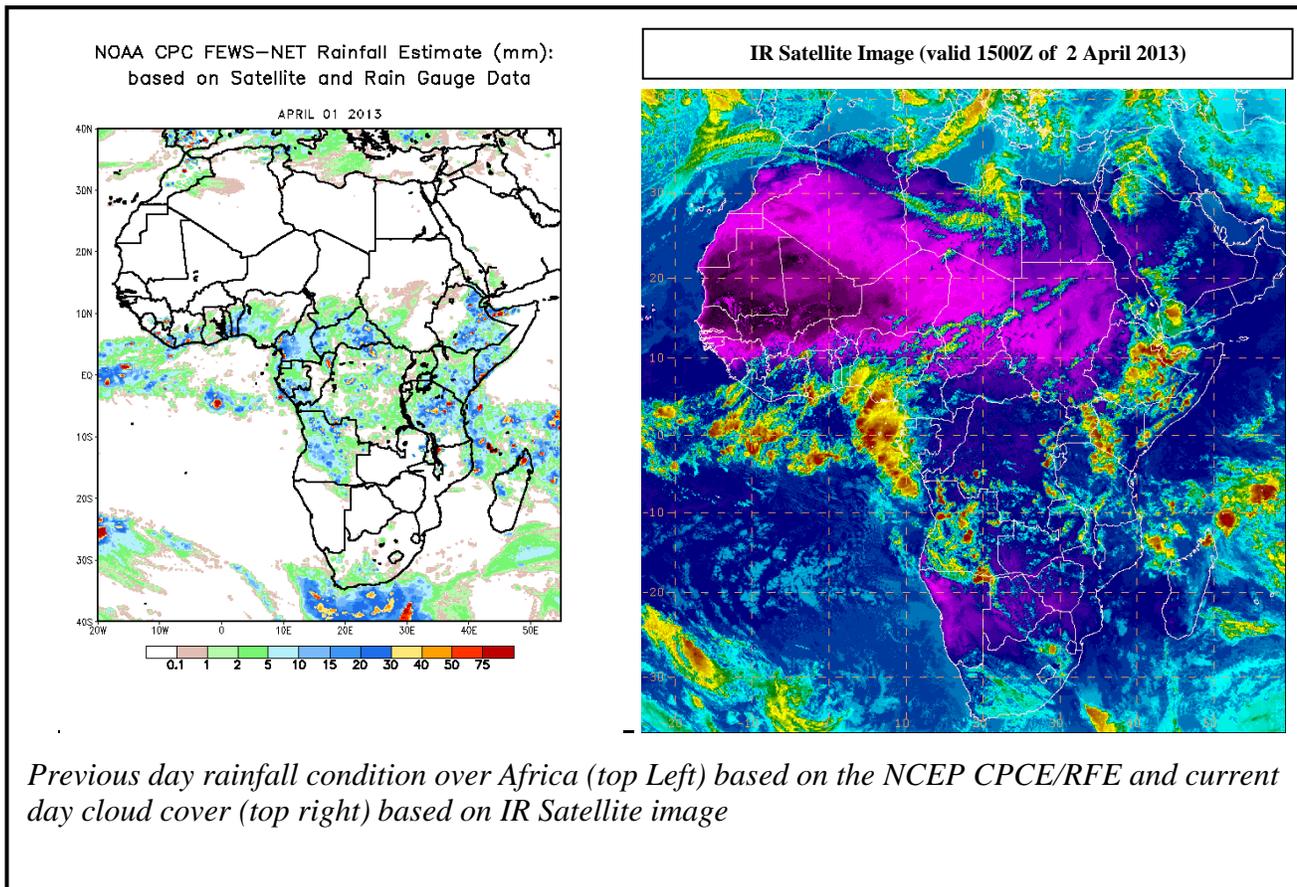
## 2.0. Previous and Current Day Weather Discussion over Africa (1 April 2013 – 2 April 2013)

### 2.1. Weather assessment for the previous day (31 March 2013)

During the previous day, moderate to localized heavy rainfall was observed over parts of Gulf of Guinea region, Cameroon, CAR, DRC, Angola, the East African Region, Ethiopia and Somali.

### 2.2. Weather assessment for the current day (1 April, 2013)

Intense patches of clouds are observed over parts of Cameroon, CAR, DRC, Angola, East African region, Somali and Ethiopia.



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