

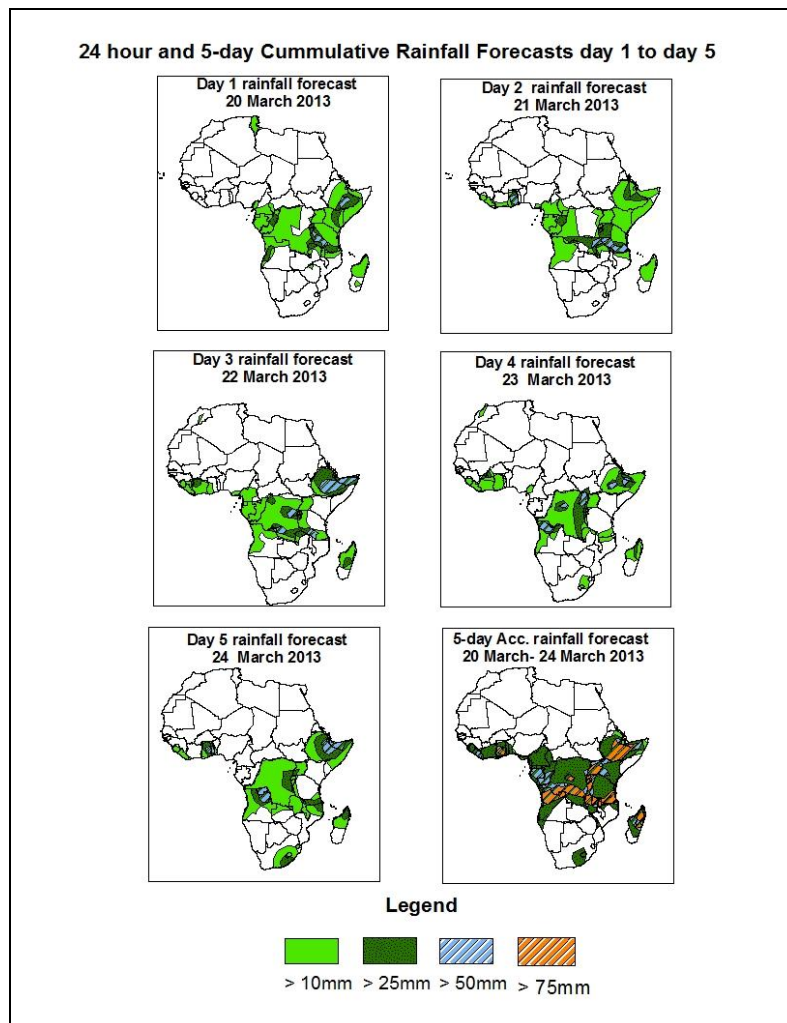


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 20 March – 06Z of 24 March 2013. (Issued at 17:30Z of 19 March 2013)

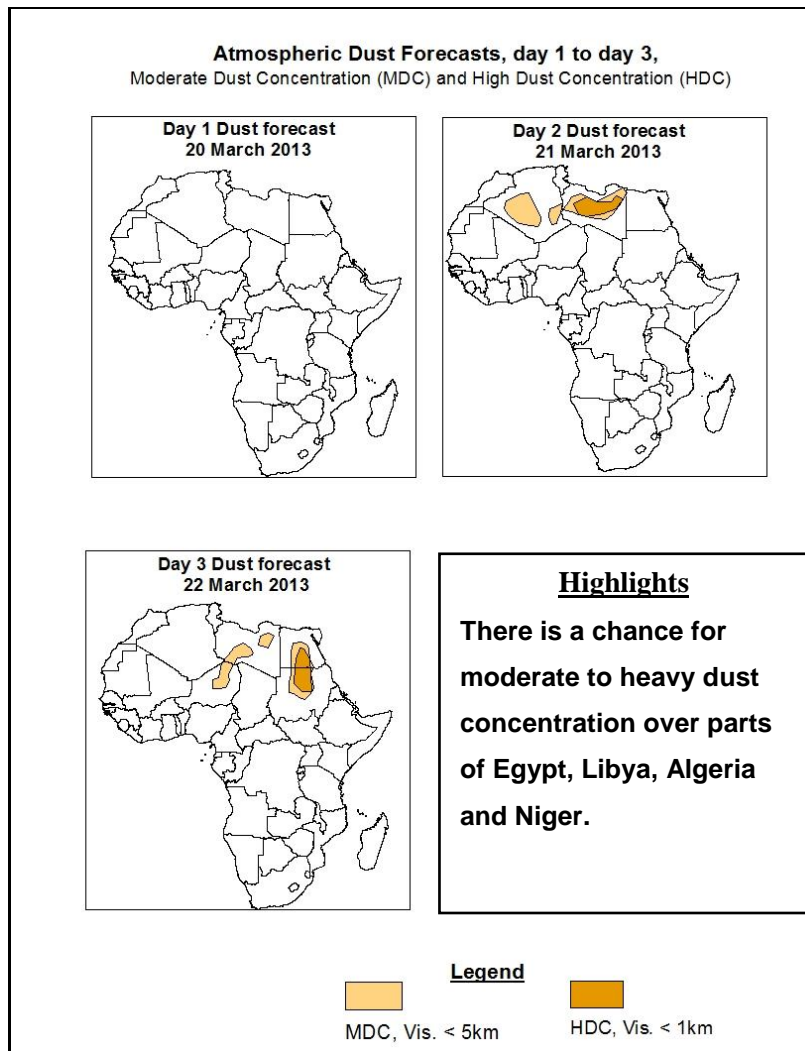
### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, the interactions between mid-latitude and tropical weather systems across Northeast Africa are expected to continue enhance rainfall over parts of Ethiopia. Offshore winds from the Atlantic and Indian Oceans and their associated convergence are also expected to maintain moderate to heavy rainfall over parts of Central and East Africa regions. Therefore, there is an increased chance for moderate to heavy rainfall over parts of the Gulf of Guinea Region, Ethiopia, East African region, DRC, northern parts of Angola, and Madagascar.



## 1.2. Model Discussion: Valid from 00Z of 19 March 2013

*Model comparison (Valid from 00Z; 19 March 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 slightly intensify throughout the forecast period. The central pressure value is expected to increase from about 1022hpa to 1034hpa according to GFS model, about 1022hpa to 1035hpa according to ECMW and UKMET models).

The Mascarene high pressure system over southwestern Indian Ocean also is expected to weaken throughout the forecasting period while shifting smoothly eastwards.

Its central pressure value is expected to decrease from about 1027hpa to 1021hpa, according to the GFS model, from about 1027hpa to 1019hpa according to ECMWF model and from about 1027hpa to 1020hpa according to UKMET model.

The seasonal lows across DRC, South Sudan and the neighboring areas is expected to remain nearly moderate throughout the forecast period, with the central pressure values generally maintaining about 1006hpa to 1002hpa according to the GFS, about 1005hpa to 1002hpa according to the ECMWF and about 1005hpa to 1003hpa according to the UKMET model in total agreement with all the three models.

At the 850hpa level, there is an interaction between mid-latitudes and tropical weather systems across Northeast Africa. The interaction between offshore winds from the Atlantic and Indian Oceans and their associated convergence are also expected to be maintained during the forecast period.

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

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 African countries, and the Mediterranean Sea.

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

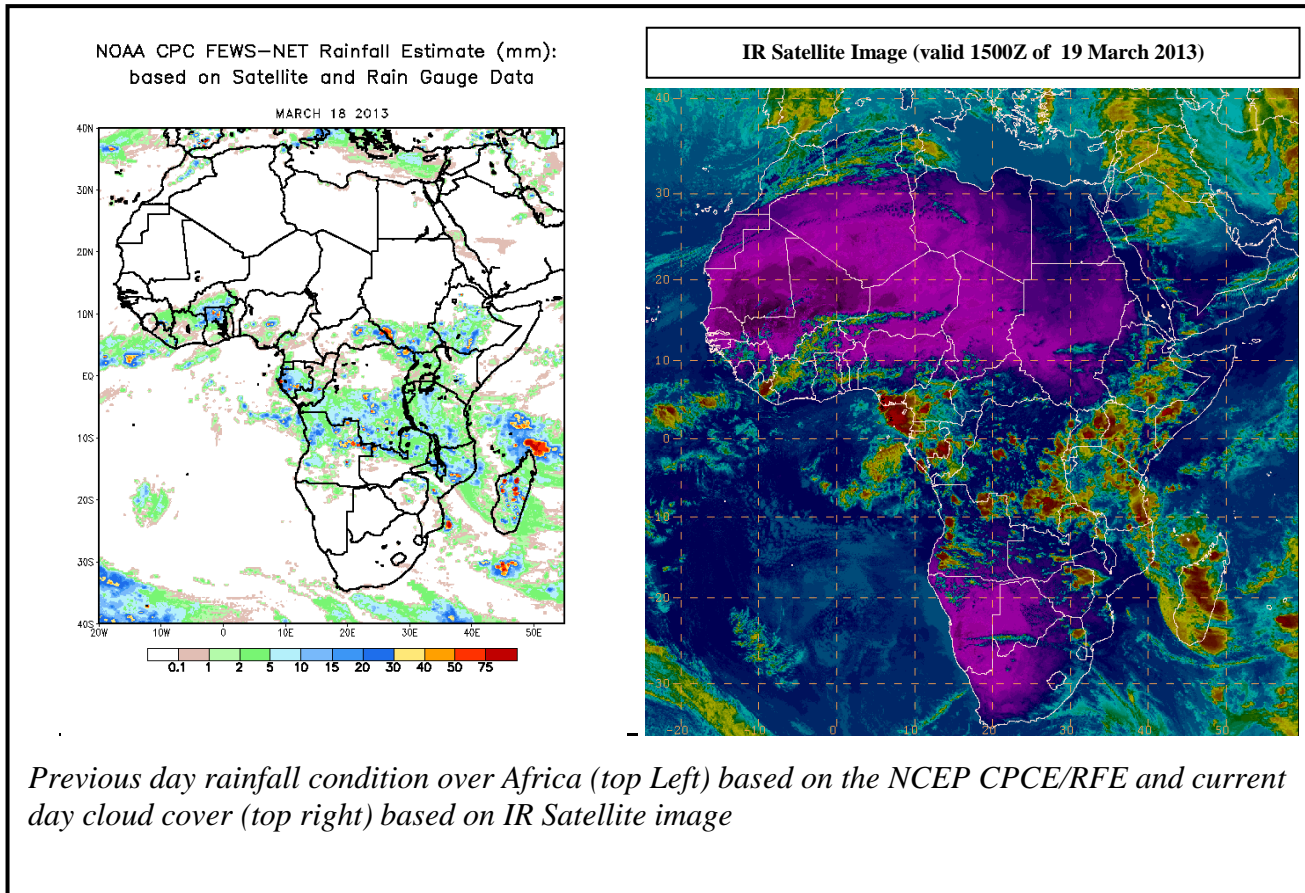
(18 March 2013 – 19 March 2013)

### 2.1. Weather assessment for the previous day (18 March 2013)

During the previous day, moderate to localized heavy rainfall was observed over parts of Ghana, Gabon, DRC, Angola, Zambia, Mozambique, Tanzania, Southern Sudan, Ethiopia and Madagascar.

### 2.2. Weather assessment for the current day (19 March 2013)

Intense patches of clouds are observed over parts of Gabon, Cameroon, DRC, Angola, East African Countries, Somali, Ethiopia and Madagascar.



*Previous day rainfall condition over Africa (top Left) based on the NCEP CPCE/RFE and current day cloud cover (top right) based on IR Satellite image*

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