

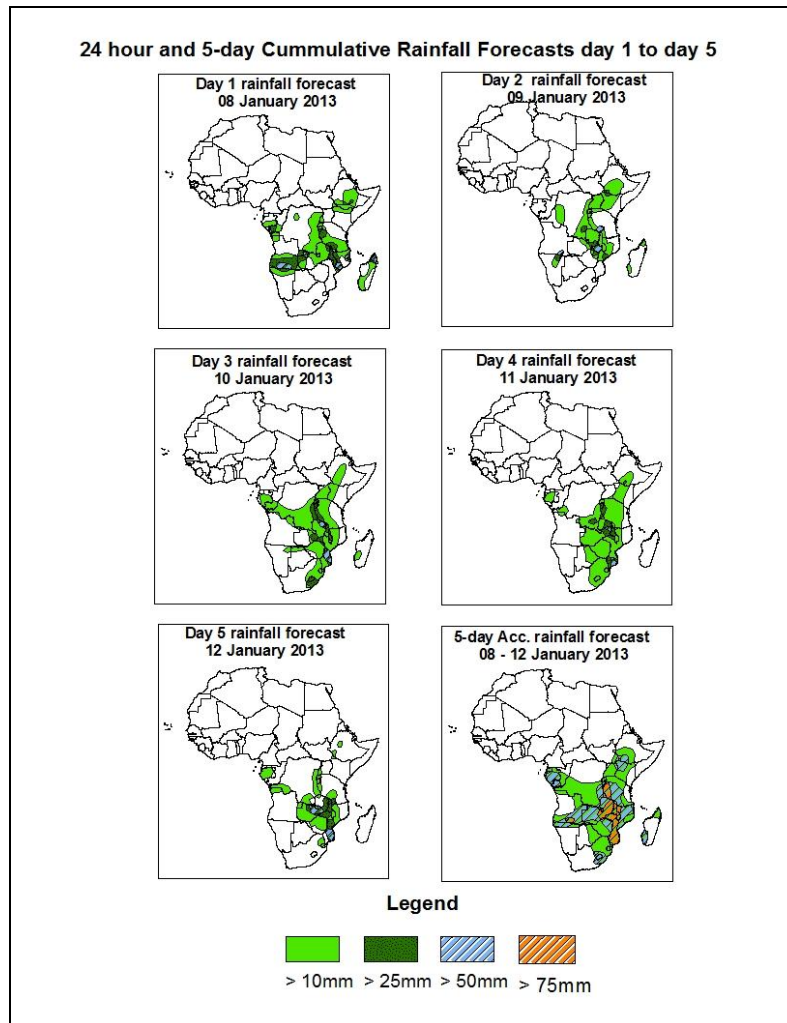


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 08 January – 06Z of 12 January 2013. (Issued at 16:30Z of 07 January 2013)

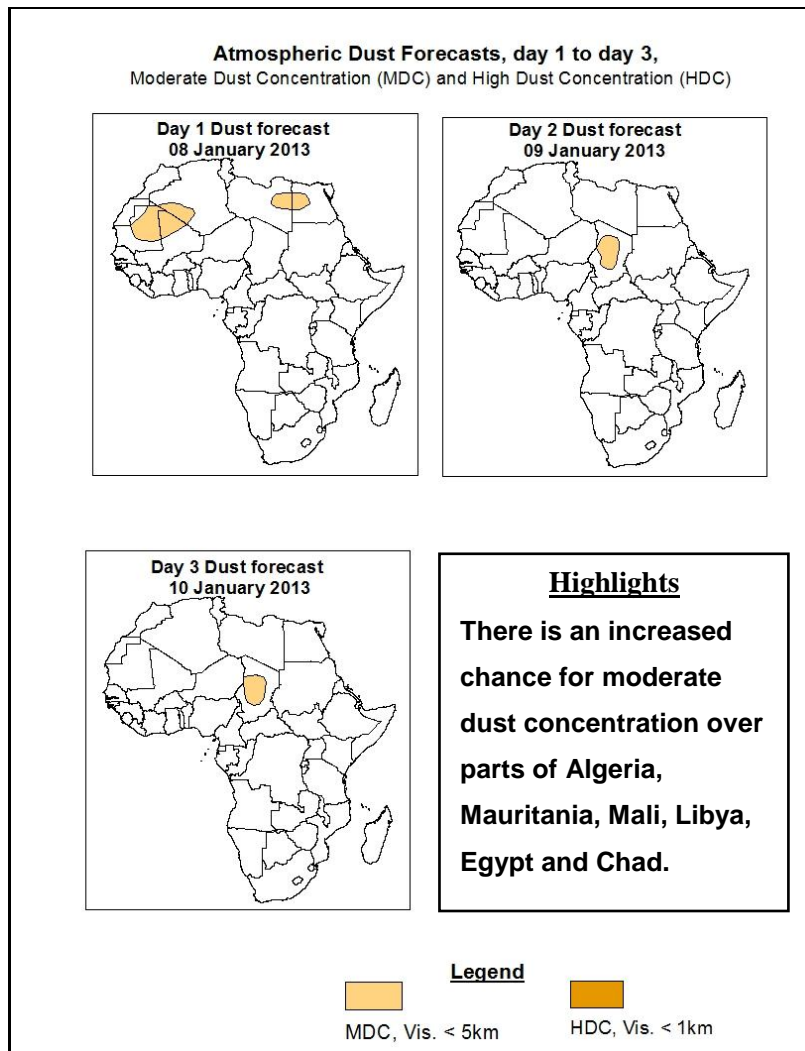
### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, a north-south oriented convergence line in the region between Ethiopia and central Mozambique; localized wind convergences over southern region of Angola, northern Namibia and western region of Zambia, a coastal low over eastern region of South Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for moderate to heavy rainfall over local areas over southern region of Angola, northern region of Namibia, central region of Zambia, most of Malawi, central and southern regions of Mozambique, western region of Tanzania, scattered regions of DRC, Kenya and Somalia.



## 1.2. Model Discussion: Valid from 00Z of 07 January 2013

*Model comparison (Valid from 00Z; 07 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.*

In the coming five days the St. Helena high pressure system over southeast Atlantic Ocean is expected to persist with high pressure values swinging between 1028hpa to 1032hpa according to the GFS, in agreement with the three models (GFS, ECMWF and UKMET), and within 48 hours the pressure value will tend to increase from 1030hpa to 1032hpa and will tend to decrease gradually in the remaining period of the forecast period.

The Mascarene high pressure system, over southwestern Indian Ocean, is expected to increase gradually with its central pressure value throughout the forecast period from about 1024hpa to 1029hpa according to the GFS, from about 1023hpa to 1029hpa according to the ECMWF model and from about 1024hpa to 1030hpa according to the UKMET model.

The seasonal lows across Equatorial and Central Africa countries are expected to reveal less activity in terms of their central pressure values. The pressure of the previously mentioned lows will remain higher than 1010hpa in total accordance with the three models (GFS, ECMWF and the UKMET models). A coastal low system is expected to dominate local circulation over eastern region of South Africa through 48 to 120 hours. The minimum central pressure value will be of about 1004hpa according to the GFS model, of about 1006hpa according to the UKMET model and about 1005hpa according to the UKMET model.

At the 850hpa level, the seasonal lower level wind convergence near the Congo Air Boundary (CAB) region is expected to prevail with moderate to poor convergence conditions throughout the forecast period. In contrast to the previously mentioned region, a north-south oriented convergence line in the region between Ethiopia and central Mozambique is expected to dominate the weather conditions over southern region of Ethiopia, Uganda Kenya, western region of Tanzania, eastern Zambia, central and southern regions of Mozambique in the end of the forecast period. Localized wind convergences are also expected to dominate the flow over southern region of Angola, northern Namibia and western region of Zambia through 24 hours.

At 500hpa, a trough in the mid-latitude westerly is expected dominate the flow over northern countries of Africa and Mediterranean Sea throughout the forecast period. A cut- of- low is expected to form over central region of South Africa through 24 to 48 hours.

At 200hpa, the northern hemisphere sub-tropical westerly jet is expected to remain strong across Northeast Africa, with the core wind speed occasionally exceeding 130kts during the first half of the forecast period, and tends to weaken towards end of the forecast period.

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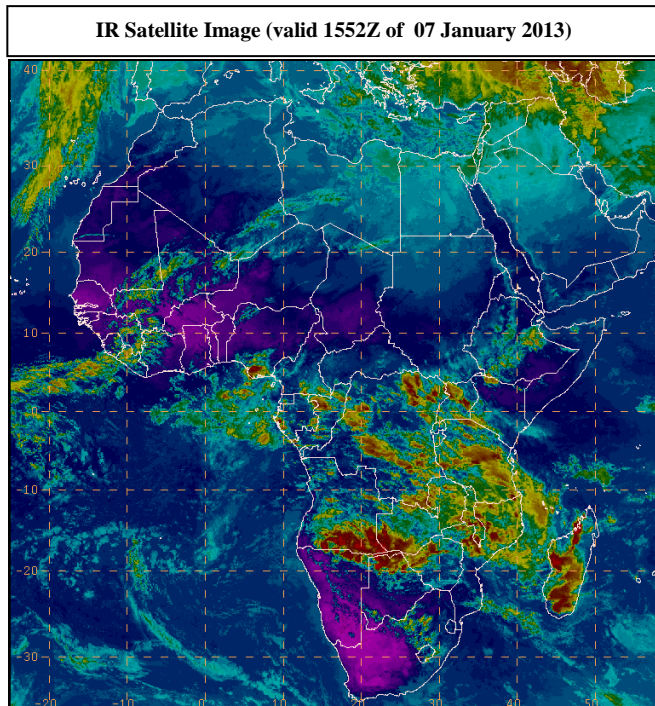
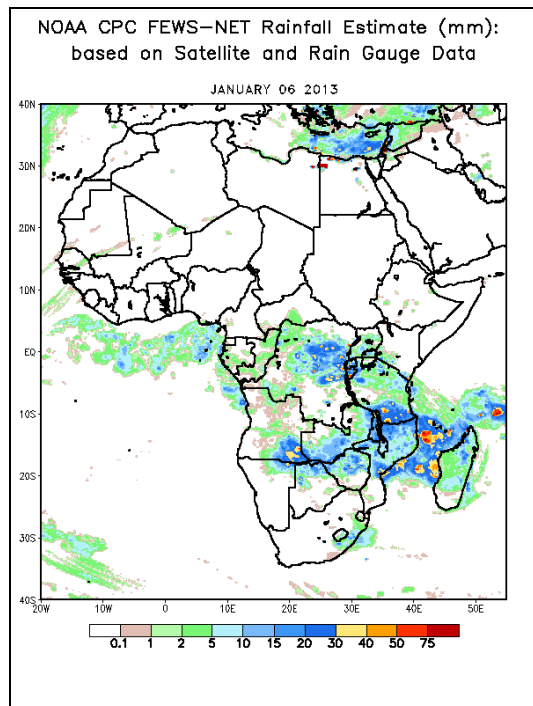
## 2.0. Previous and Current Day Weather Discussion over Africa (06 January 2013 – 07 January 2013)

### 2.1. Weather assessment for the previous day (06 January 2013)

During the previous day, moderate to locally heavy rainfall was observed over parts of DRC, southern region of Angola, southern region of Tanzania and parts of central Mozambique.

### 2.2. Weather assessment for the current day (07 January 2013)

Intense clouds are observed over parts of Angola, Zambia, Zimbabwe, Botswana, Mozambique, Tanzania, Uganda, Congo 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*