

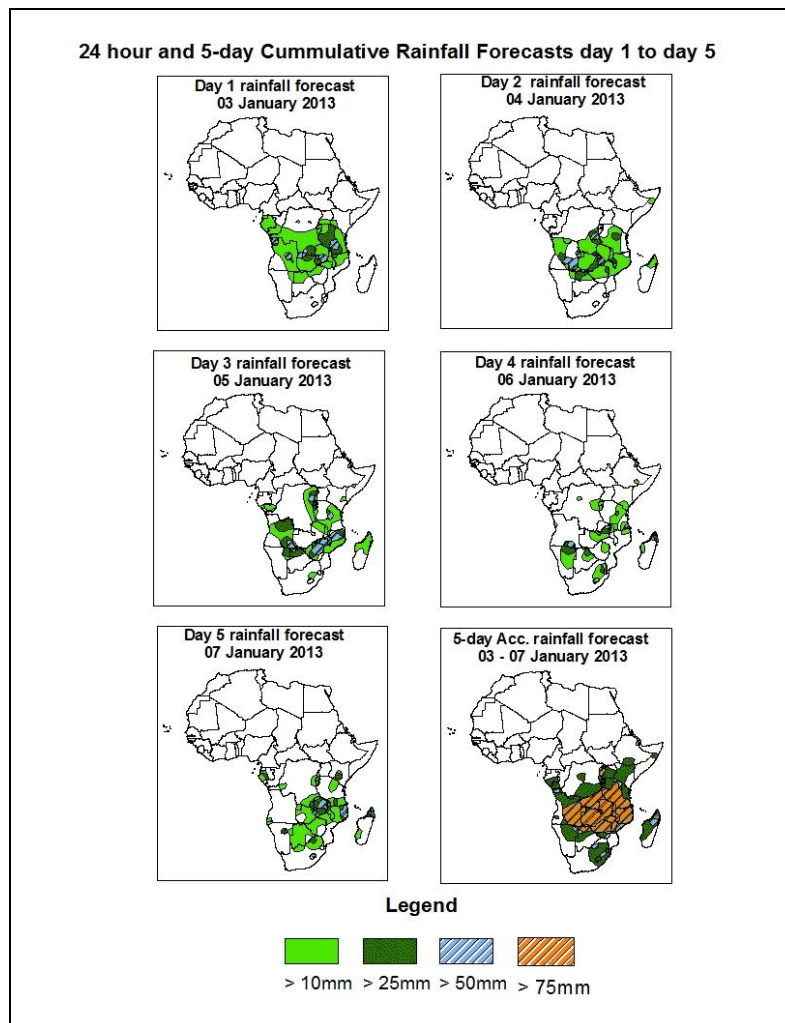


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 03 January – 06Z of 07 January 2013. (Issued at 17:00Z of 02 January 2013)

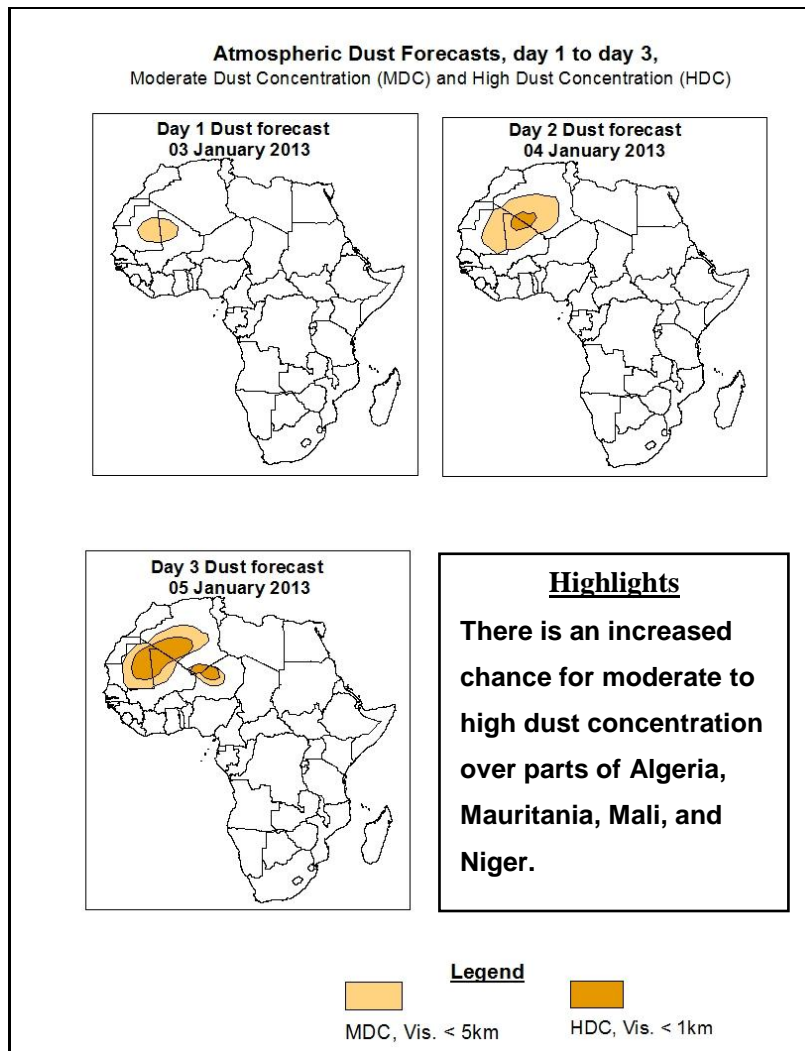
### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, lower level wind convergences across portions of central and southern regions of Angola, parts of Botswana and Namibia, most of Zambia, parts of Zimbabwe, localized wind convergences over parts of Kenya, Uganda, Tanzania and central region of Mozambique, a low system over Mozambique Channel are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over local areas in Angola, Zambia, Zimbabwe, Tanzania, Botswana and Namibia, central and northern region of Mozambique.



## 1.2. Model Discussion: Valid from 00Z of 02 January 2013

*Model comparison (Valid from 00Z; 02 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.*

The St. Helena High pressure system over southeast Atlantic Ocean is expected to increase its central pressure value through 24 to 96 hours from about 1024hpa to 1027hpa according to the GFS and UKMET models and from about 1023hpa to 1027hpa according to the ECMWF .

The Mascarene high pressure system over southwestern Indian Ocean is also expected to increase slightly its central pressure value through 24 to 96 hours from about

1024hpa to 1025hpa according to the GFS model, from about 1024hpa to 1026hpa according to the ECMWF model and from about 1025hpa to 1026hpa according to the UKMET model.

The seasonal lows across DRC, South Sudan and the neighboring areas is expected to maintain central pressure value of about 1008hpa according to the GFS and UKMET models, tending to deepening slightly from about 1008hpa to 1007hpa according to the ECMWF model. A low system is expected to prevail over Mozambique Channel throughout the forecast period with its central pressure value varying from about 1006hpa to 1003hpa according to the GFS model, from about 1008hpa to 1006hpa according to the UKMET model. According to the ECMET this low system across Mozambique Channel will remain with its central value of about 1008hpa throughout the forecast period.

At the 850hpa level, the seasonal lower level wind convergence near the CAB region is expected to prevail with poor convergence conditions throughout the forecast period. In contrast to the CAB conditions, lower level wind convergences are expected to remain active through 24 to 72 hours across portions of central and southern regions of Angola, parts of Botswana and Namibia, most of Zambia, parts of Zimbabwe, while localized wind convergences are expected to dominate the flow over parts of Kenya, Uganda, Tanzania and the central region of Mozambique. An eastward propagating trough is expected to dominate the flow across northern region of South Africa.

At 500hpa, a trough in the mid-latitude westerly is expected to 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 towards end of the forecast period.

At 200mb, strong winds associated with Sub-Tropical westerly Jet are expected to dominate the flow over northern Africa and the Mediterranean Sea, during the forecast period. The intensity of the jet is expected to exceed 150kts over Algeria, Libya and Egypt throughout the forecasting period.

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

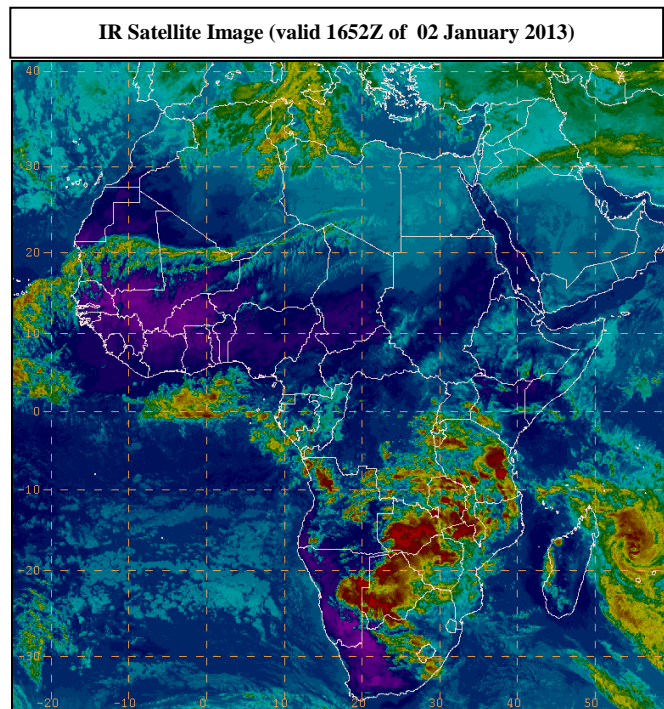
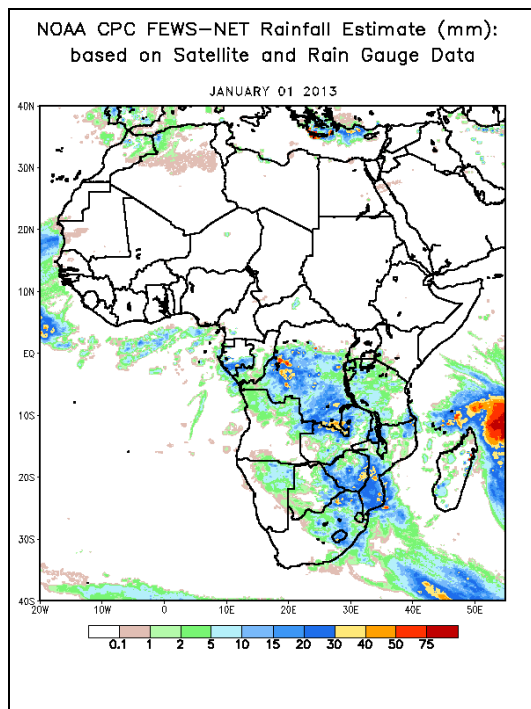
(01 January 2013 – 02 January 2013)

### 2.1. Weather assessment for the previous day (01 January 2013)

During the previous day, moderate to locally heavy rainfall was observed over parts of DRC, Gabon, Zambia, Zimbabwe, southern region of Mozambique, and eastern region of South Africa.

### 2.2. Weather assessment for the current day (02 January 2013)

Intense clouds are observed over most of Zambia and Botswana, parts of Namibia, Zimbabwe, Mozambique, Tanzania, DRC and Angola.



*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*