

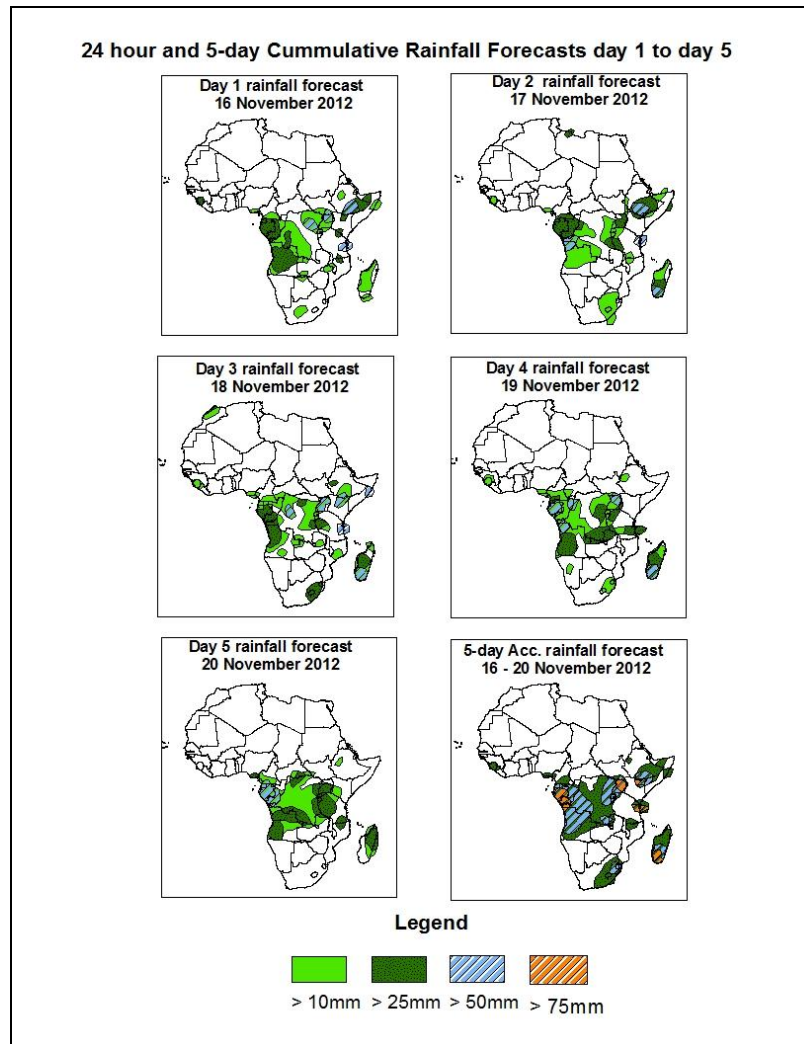


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 16 November – 06Z of 20 November 2012. (Issued at 15:30Z of 15 November 2012)

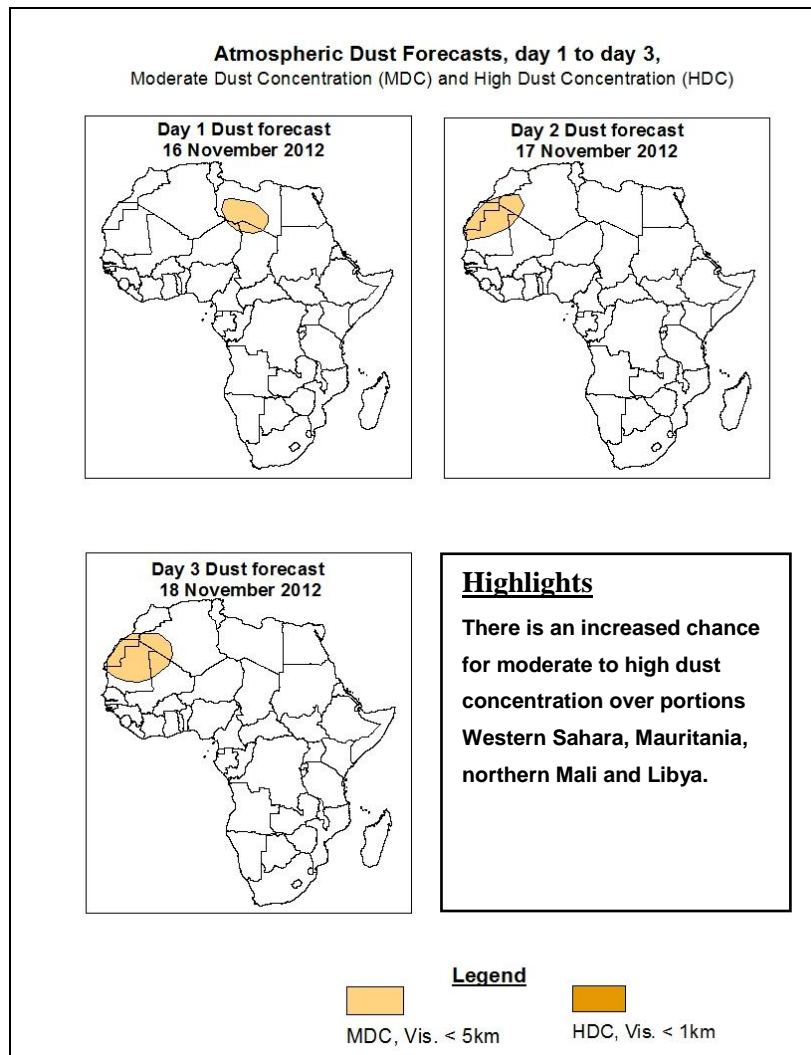
### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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, moist easterlies and their associated convergence the Horn of Africa, active seasonal wind convergence in the Congo Basin, a lower level wind convergence across western parts of Equatorial Africa, including Angola, and eastward propagating trough near Madagascar are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over Gabon, Congo, Equatorial Guinea, western Angola, eastern DRC, Uganda, western Tanzania, local areas in Kenya and southern Ethiopia, northern Mozambique and Madagascar.



## 1.2. Model Discussion: Valid from 00Z of 15 November 2012

*Model comparison (Valid from 00Z; 15 November 2012) shows all the three models are in general agreement in terms of depicting eastward shift of the southern hemisphere high pressure systems (St. Helena and Mascarene). However, the models show differences in terms of central pressure values.*

The St. Helena High pressure system over southeast Atlantic Ocean is expected to maintain mean seas level pressure value of 1021hpa through 24 to 72 hours according to the ECMWF and GFS models, while its central pressure is expected to decrease slightly from about 1022hpa to 1020hpa through 24 to 96 hours according to the UKMET model. This high pressure system is expected to shift towards Southwest Indian Ocean to become the Mascarene high pressure system towards end of the forecast period.

The Mascarene high pressure system over southwestern Indian Ocean is expected to weaken slightly through 24 to 72 hours, with its central pressure value decreasing from about 1024hpa to 1021hpa according to the ECMWF and the GFS models, and from about 1023 to 1021hpa according to the and UKMET model. This high pressure system is expected to shift eastwards while giving way to newly formed high pressure system..

The seasonal lows across the southern African countries are expected to deepen slightly during the forecast period, with the central pressure value decreasing from about 1010hpa to 1008hpa according to the ECMWF model, from 1009hpa to 1006hpa according to the GFS model, and from 1010hpa to 1007hpa according to the UKMET model.

At the 850hpa level, a lower level easterly flow from the Indian Ocean and its associated convergence is expected to dominate the flow across the Horn of Africa. A northeast-southwest oriented lower level wind convergence between Uganda and Angola is expected to shift slightly to the west while strengthening through 24 to 120 hours. Wind convergences are also expected to remain active across western Equatorial Africa including western Angola. A lower level cyclonic circulation flow is expected to dominate the flow over Southeast Africa, the Mozambique Channel and Madagascar.

At 500hpa, a trough in the mid-latitude westerlies is expected to propagate across the Mediterranean Sea and the neighboring areas of North Africa during the forecast period. A trough associated with mid-latitude frontal system is expected to remain deep over Mozambique Channel and Madagascar during the forecast period.

At 200hpa, the northern hemisphere sub-tropical westerly jet is expected to remain strong North Africa, with the core wind speed exceeding 1200kts over North central Africa towards end of the forecast period.

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Congo, Equatorial Guinea, western Angola, eastern DRC, Uganda, western Tanzania, local areas in Kenya and southern Ethiopia, northern Mozambique and Madagascar.

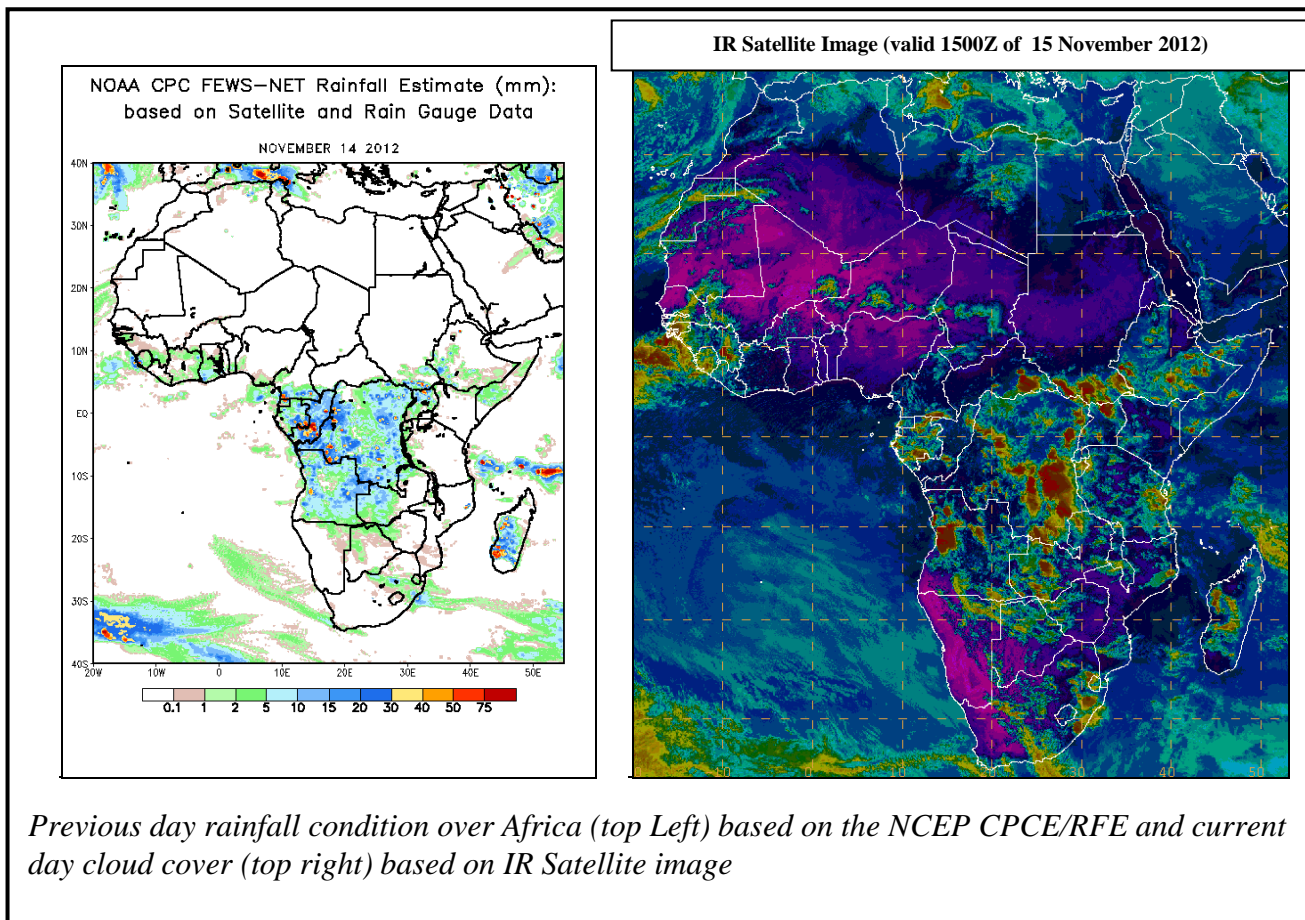
## 2.0. Previous and Current Day Weather Discussion over Africa (14 November 2012 – 15 November 2012)

### 2.1. Weather assessment for the previous day (14 November 2012)

During the previous day, moderate to locally heavy rainfall was observed over parts of Cameroon, Gabon, CAR, Congo, DRC and eastern South Africa.

### 2.2. Weather assessment for the current day (15 November 2012)

Intense clouds are observed across the Gulf of Guinea countries, many parts of Central African region, portions of the Horn of Africa and Southeast Africa.



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