

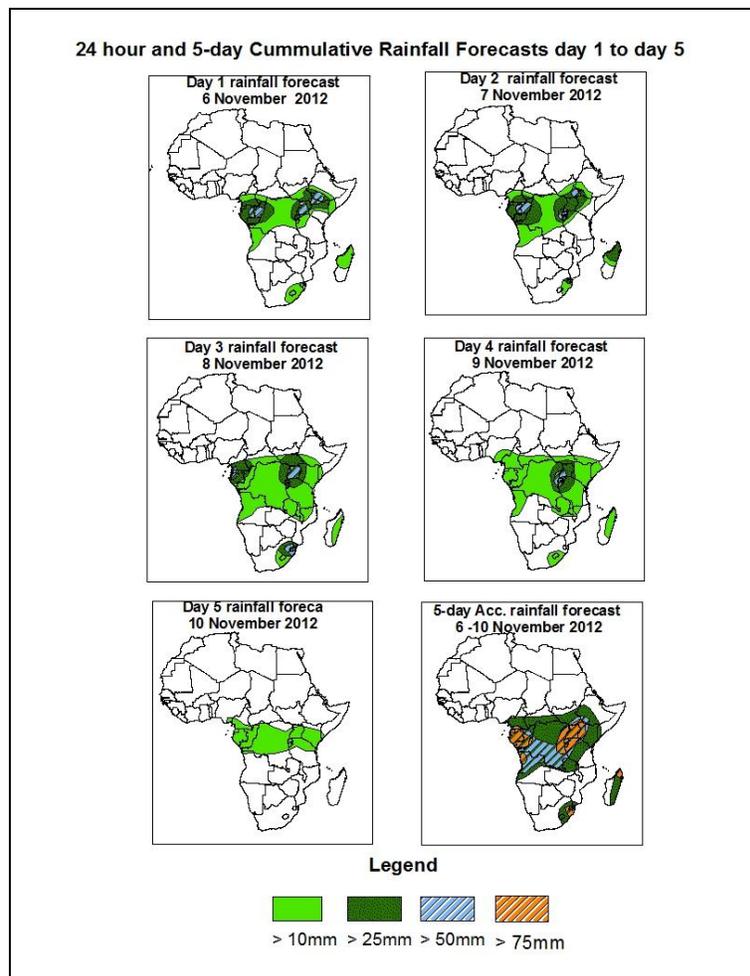


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1.0. Rainfall Forecast: Valid 06Z of 06 November – 06Z of 10 November 2012. (Issued at 19:00Z of 05 November 2012)

### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

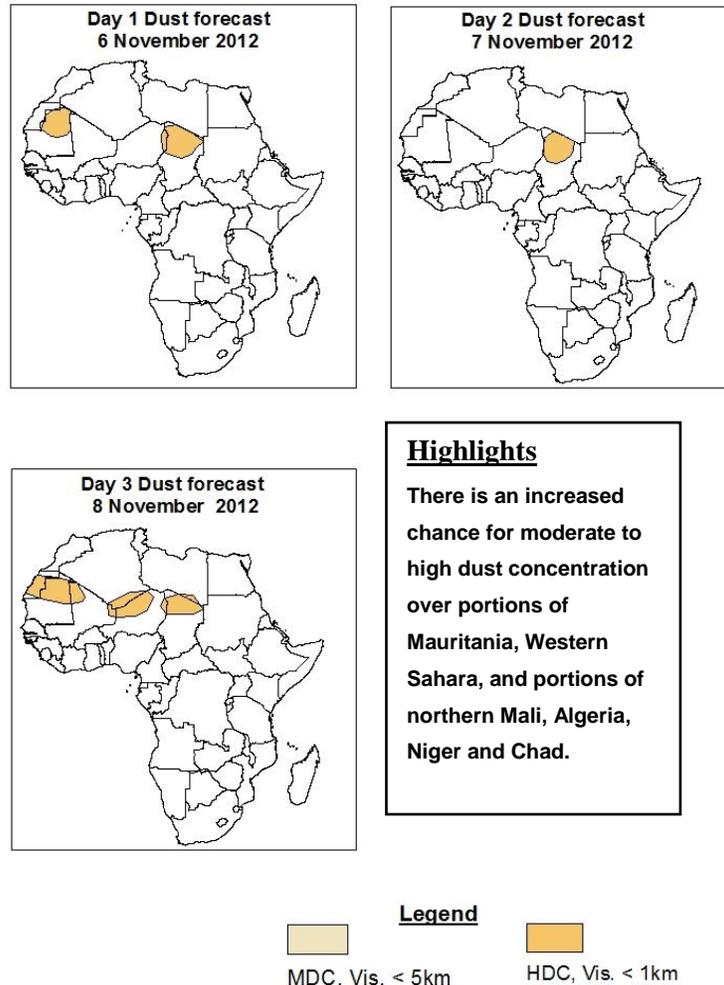
The forecasts are expressed in terms of 75% probability of precipitation (POP) exceeded, based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



### Summary

In the next five days, seasonal low level wind convergences in the Congo Air Boundary (CAB) region, a deep lower level cyclonic shear across western parts of Equatorial Africa, localized wind convergences over Angola, and interaction between mid-latitude and tropical systems across Southeast Africa are expected to enhance rainfall in their respective regions. Thus, there is an increased chance for heavy rainfall over southern Cameroon, Gabon, Equatorial Africa, western Angola, eastern DRC, Uganda, Rwanda, Burundi, western and northern Kenya, western Tanzania, portions of Ethiopia, Malawi, eastern South Africa and local areas in Madagascar.

**Atmospheric Dust Forecasts, day 1 to day 3,**  
Moderate Dust Concentration (MDC) and High Dust Concentration (HDC)



## 1.2. Model Discussion: Valid from 00Z of 05 November 2012

*Model comparison (Valid from 00Z; 05 November 2012) shows all the three models are in general agreement in terms of depicting the eastward movement 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 strengthen with its central pressure value increasing from about 1022hpa to 1028hpa through 24 to 72 hours, and it tends to move towards Southwest Indian Ocean to become the Mascarene high pressure system according to the ECMWF and the GFS models, and it tends to maintain central pressure value of about 1024hpa through 24 to 72 hours

The Mascarene high pressure system over southwestern Indian Ocean is expected to strengthen gradually with its central pressure value increasing from 1025hpa to 1028hpa through 24 to 72 hours, while shifting eastwards and its position is expected to be taken by a new high pressure system that comes from the Atlantic Ocean through 96 to 120 hours according to the ECMWF and GFS models. Similarly, the central pressure values tend to increase from 1025hpa in 72 hours to 1028hpa in 72 hours according to the UKMET model and its position is expected to be taken by a new high pressure system that comes from the Atlantic Ocean during the second half of the forecast period.

The seasonal lows across the southern African countries are expected to deepen gradually with their central pressure value decreasing from about 1010hpa to about 1004hpa according the ECMWF model, from 1009hpa to 1005hpa according to the UKMET model, and fro 1009hpa to 1003hpa according to the GFS model through 24 to 120 hours.

At the 850hpa level, the seasonal lower level wind convergence is expected to remain active in the region between Southwest Ethiopia and western Tanzania, across Uganda and western Kenya as well as eastern DRC through 24 to 96 hours, and the convergence tends to weaken slightly towards end of the forecast period. A deep lower level cyclonic shear is expected to dominate the flow near Congo and Gabon through 24 to 72 hours, and it tends to move westward into the Atlantic Ocean towards end of the forecast period. Localized wind convergences are also expected to dominate the flow over Angola and Namibia during the forecast period. A mid-latitude frontal system is expected to interact with tropical systems across Southeast Africa including Madagascar.

At 500hpa, a trough in the mid-latitude westerlies is expected to remain deep across Egypt through 24 to 120hours. A trough associated with mid-latitude frontal system is also expected to propagate across the Mozambique Channel and Madagascar during the forecast period.

At 200hpa, the northern hemisphere sub-tropical westerly jet is expected to remain weak within the extent of the African domain, while a core of strong wind, associated

with the southern hemisphere sub-tropical westerly jet is expected to propagate across the southern tip of South Africa during the forecast period.

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

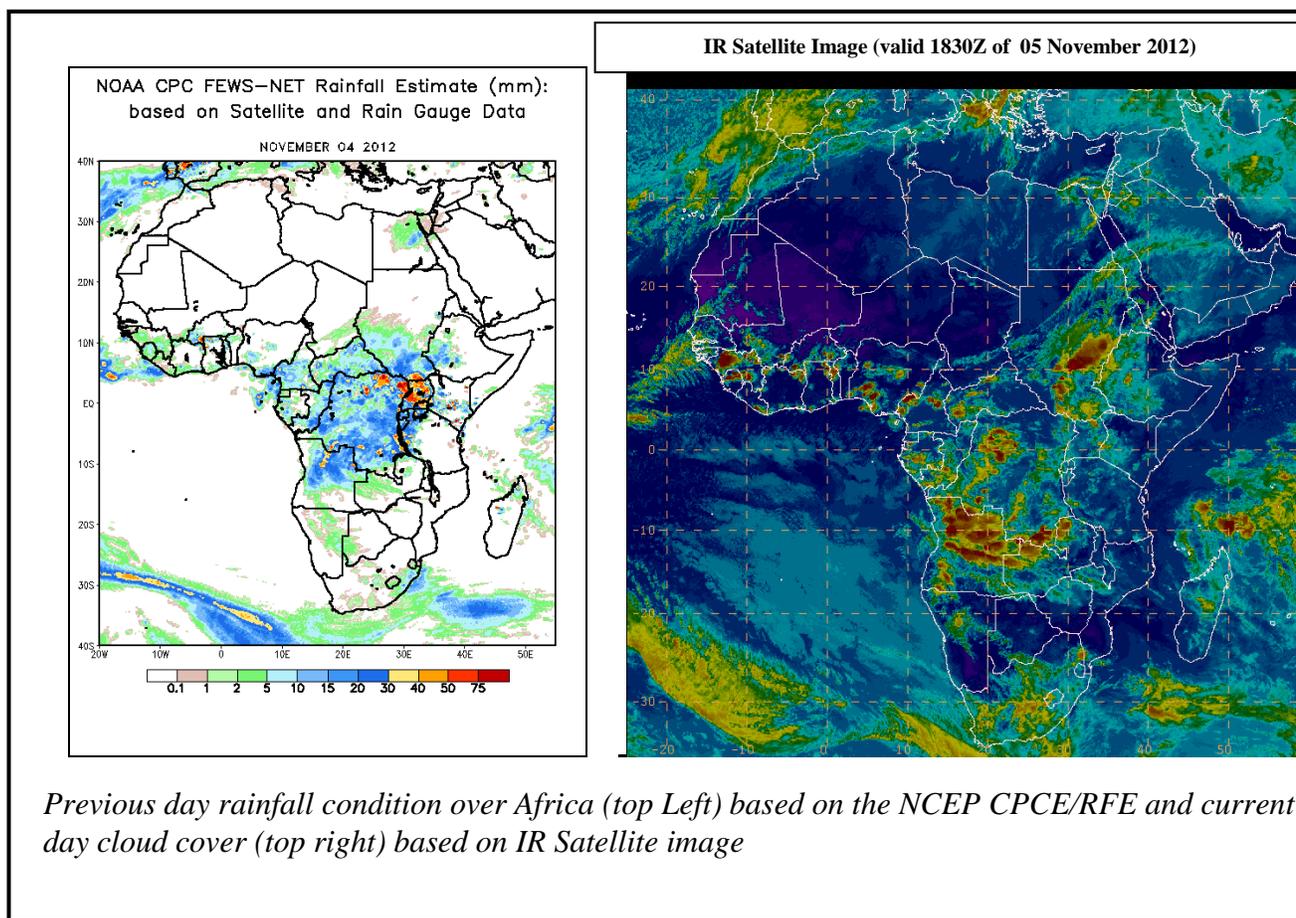
(04 November 2012 – 05 November 2012)

### 2.1. Weather assessment for the previous day (04 November 2012)

During the previous day, moderate to locally heavy rainfall was observed over Burkina Faso, Ghana, DRC, Angola, much of Uganda, Kenya and Tanzania.

### 2.2. Weather assessment for the current day (05 November 2012)

Intense clouds are observed across the Gulf of Guinea countries, Sudan South Sudan, CAR, DRC, Gabon, Angola and northern Zambia.



**Author:** Izuchukwu Ebenebe, (Nigeria Meteorological Agency / CPC-African Desk); [izu.ebenebe@noaa.gov](mailto:izu.ebenebe@noaa.gov)