

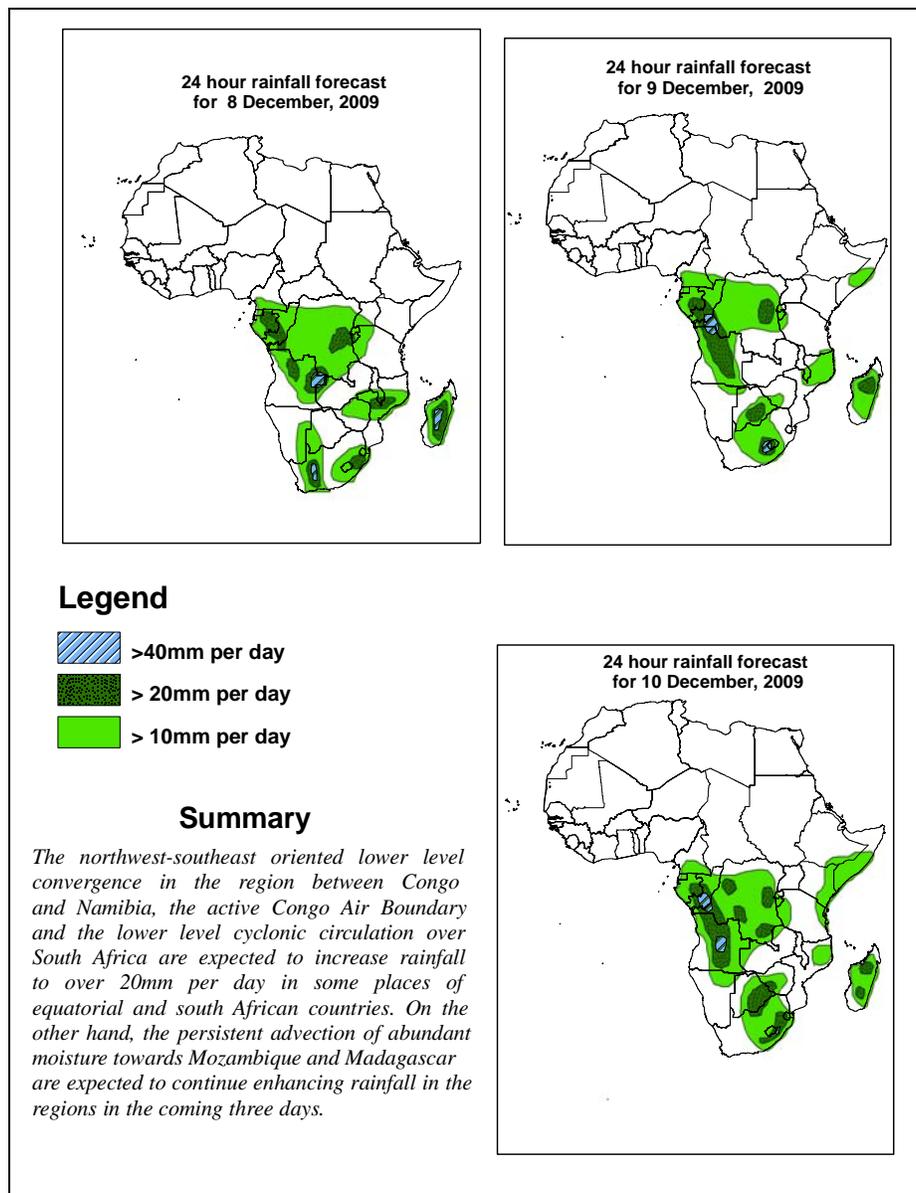


## NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

### 1.0. Rainfall Forecast: Valid, 06Z of 8 December – 06Z of 10 December 2009, (Issued at 14:00EST of 7 December 2009)

#### 1.1. Twenty Four Hour Cumulative Rainfall Forecasts

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



## **1.2. Models Comparison and Discussion - Valid from 00Z of 7 December 2009**

In their 24hr to 72hr forecasts, the GFS, ECMWF and UK Met Office models indicate persistent low tropospheric easterly flow across East African countries a northwest-southeast oriented lower level convergence in the region between Congo and Namibia. Moreover, due to the lower tropospheric convergence and confluence zone towards the central and eastern parts of equatorial Africa, the Congo Air Boundary (CAB) is expected to expand and become more and more active over the western parts of equatorial Africa during the period of 24 to 72 hrs.

On the other hand, a lower tropospheric cyclonic circulation is expected to move eastwards across South Africa between 24 to 72 hrs, while the easterly winds over southwest Indian Ocean are expected to continue advecting moisture to Madagascar and adjacent areas.

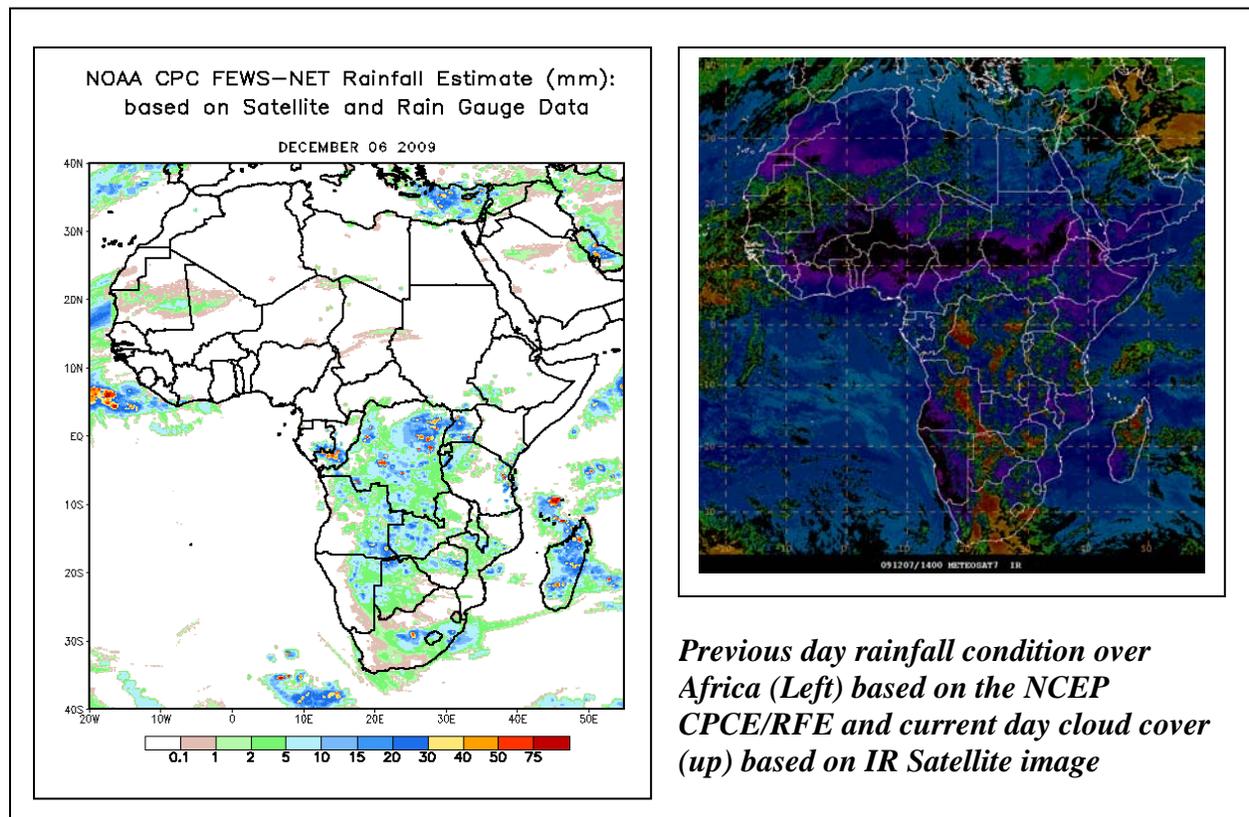
All the three models indicated persistent zonal easterly at 500mb level to dominate the flow over much of equatorial Africa, while, mid-tropospheric cyclonic circulation is expected to pass through eastern Mediterranean Sea while weakening through 24 to 48 hrs. On the other hand, the core of the maximum wind speed (in excess of 130knts) at 200mb level is expected in the region between Mauritania and Egypt through 24 to 48 hrs, while all the models are expecting relatively weak subtropical westerly jet over southern Hemisphere. However, all the models are in agreement in enhancing the subtropical westerly jet in the northern hemisphere after 72hrs.

In general, the northwest-southeast oriented lower level convergence in the region between Congo and Namibia, the active Congo Air Boundary and the lower level cyclonic circulation over South Africa are expected to increase rainfall to over 20mm per day in some places of equatorial and south African countries. On the other hand, the persistent advection of abundant moisture towards Mozambique and Madagascar are expected to continue enhancing rainfall in the regions in the coming three days.

## 2. Previous and Current Day Weather Discussion over Africa (6 – 7 December to 2009)

**2.1. Weather assessment for the previous day (6 December 2009):** During the previous day, moderate to heavy rainfall events were observed over parts of southern Congo, DR Congo, eastern Kenya, eastern Angola, Zambia, Zimbabwe, South Africa, central Mozambique and Madagascar

**2.2. Weather assessment for the current day (7 December 2009):** Intense clouds are observed over parts of DR Congo, eastern Kenya, northeastern Angola, Botswana, Zimbabwe, South Africa and Madagascar.



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**Disclaimer:** This bulletin is for training purposes only and should be used as guidance. NOAA does not make forecasts for areas outside of the United State.