

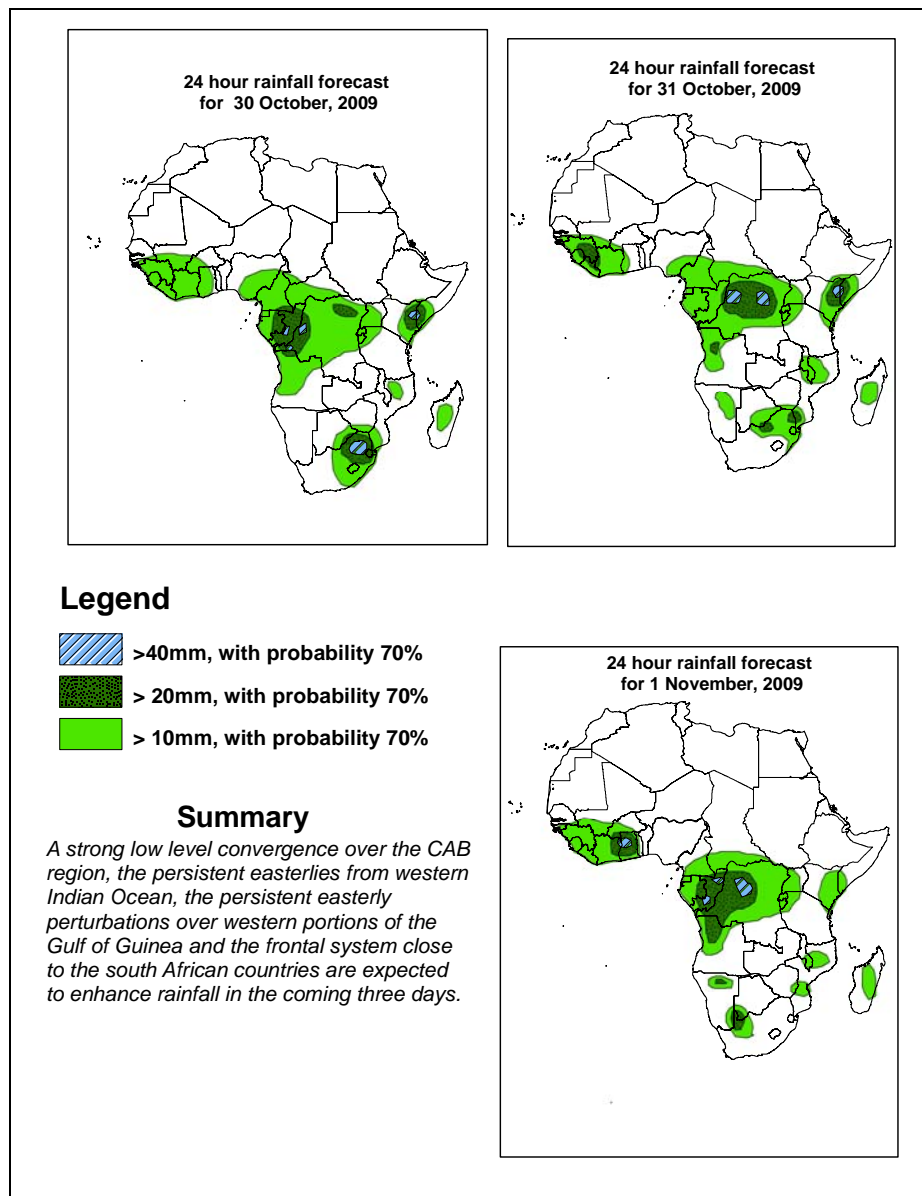


# NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

## 1. Forecast Discussion: Valid, 06Z of 30 October – 06Z of 1 November 2009, (Issued at 14:00EST of 29 October 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. Model discussion**

*Model comparison (Valid from 00Z; 29, OCTOBER, 2009): all the three models are in general agreement especially with respect to the positioning of large scale features, however, the UK model tends to give lower values than both the GFS and ECMWF models especially in the Equatorial region (10°S and 10°N).*

## **1.3. Flow at 850hPa**

**T+24h:** Easterly perturbations are expected to dominate the flow over western portions of the Gulf of Guinea region, while the convergence associated with the CAB is expected to enhance rainfall over the central and western parts of equatorial Africa. Besides, the easterly flow from western India Ocean is expected to continue transporting moisture to the coastal regions of East African countries. On the other hand, a mid-latitude westerly trough is expected to dominate the flow over Mozambique Channel and the adjacent areas of Southern African countries and Madagascar.

**T+48h:** The easterly perturbation over western portions of the Gulf of Guinea region is expected to persist, while the convergence associated with the CAB is expected to deepen assuming a cyclonic flow in the region. Besides, the easterly flow from western India Ocean is expected to continue transporting moisture to the coastal regions of East African countries. On the other hand, a mid-latitude westerly trough is expected to continue dominating the flow over Mozambique Channel and the adjacent areas of Southern African countries and Madagascar.

**T+72h:** The easterly perturbation over the Gulf region is expected to move towards the west, while the convergence over the CAB region is expected to fill up slightly. On the other hand, lower tropospheric weakness zone is expected to develop over southern African countries between the two sub-tropical anticyclones.

## **1.4. Flow at 500hPa**

**T+24h:** The northern hemisphere mid-latitude westerly trough is expected to dominate the flow over northeast African countries, while the southern African countries are expected to be dominated by the southern hemisphere mid-latitude westerly trough.

**T+48h:** The mid-latitude westerly trough over northeast Africa is expected to move to the east, while the mid-latitude westerly trough over South African countries is expected to move to the east.

**T+72h:** The mid-latitude westerly troughs Northeast Africa is expected to continue dominating the flow over the region while slightly expanding. On the other hand, the mid-latitude frontal system in the southern hemisphere is expected to move further to the east.

## **1.5. Flow at 200hPa**

**T+24h:** Strong westerly flow associated with the sub-tropical jet stream is expected to dominate the flow between northeastern Mali and Persian Gulf, with core of the jet located over Northeast Africa. Similarly, strong westerlies are expected to dominate the flow over South African countries.

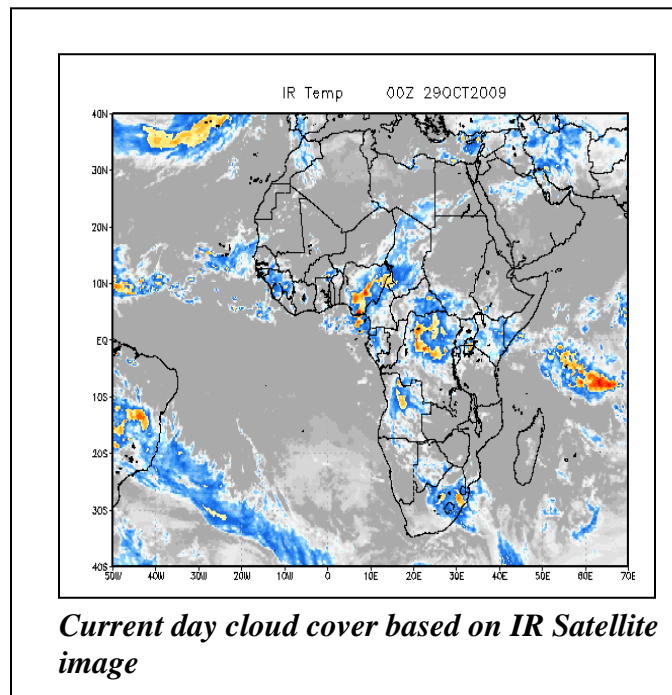
**T+48h:** The strong westerly flow over Northeast Africa is expected to persist. Moreover, westerly flow associated with the sub-tropical westerly jet of the southern hemisphere is expected to have maximum wind speeds in the region between Namibia and Mozambique Channel.

**T+72h:** The sub-tropical jet stream in the northern hemisphere is expected to intensify with maximum wind speed values exceeding 110 knots over Northeast Africa. On the other hand, the maximum wind are over southern African countries is expected to persist in the region between Botswana and Mozambique.

## 2. Previous and Current Day Weather Discussion over Africa (28-29 October 2009)

**2.1. Weather assessment for the previous day (28 October 2009):** During the previous day, moderate to heavy rainfall events were observed over parts of Guinea, Gulf of Guinea, northern Benin, Sierra Leone, eastern Nigeria, southern Chad, southeastern Central Africa Rep., DR Congo, Lake Victoria region, eastern Kenya, northern Angola and central South Africa.

**2.2. Weather assessment for the current day (29 October 2009):** Intense clouds are observed over parts of Guinea, western Nigeria, Chad, southeastern Central Africa Rep., Lake Victoria region, northern Angola, eastern Kenya and South Africa.



**Authors:** Anthony Twahirwa (Rwanda Meteorological Services)  
Chali Debele (National Meteorological Agency of Ethiopia and African desk)

**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.