



## Forecast Guidance for Africa

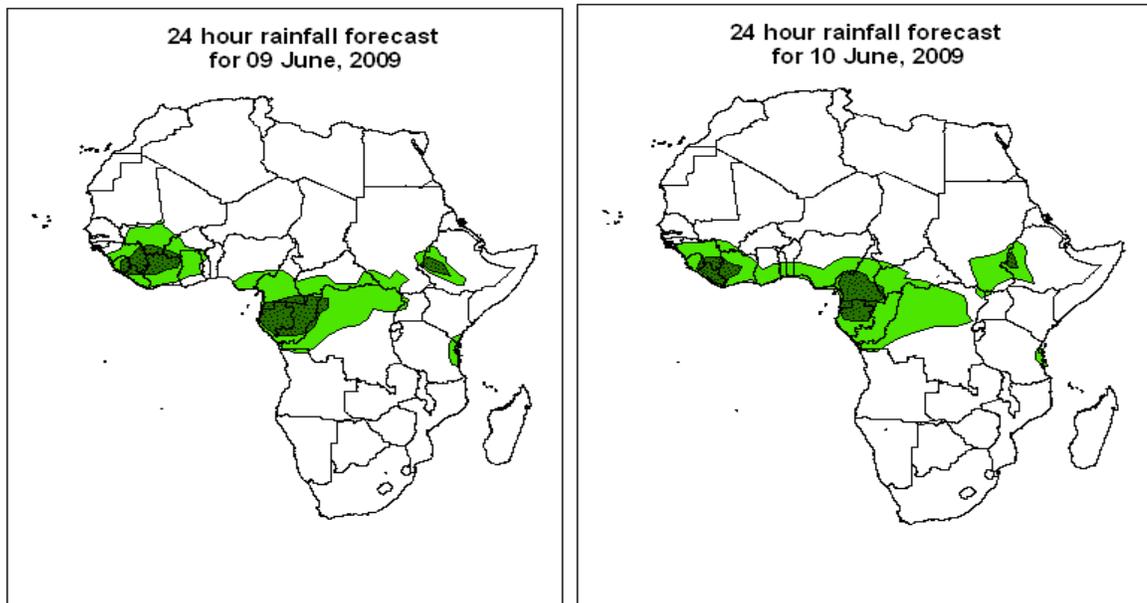
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

**FORECAST DISCUSSION 14H00 EST, 08 JUNE, 2009**

**Valid: 00Z 09 JUNE – 11 JUNE, 2009**

### 1. Twenty Four Hour Cumulative Rainfall Forecasts

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

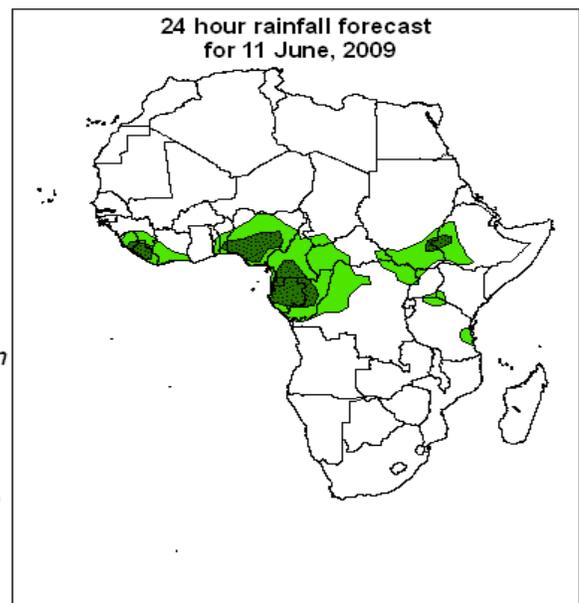


#### Legend

-  africa\_countries\_new
-  > 20mm, with probability 70%
-  > 10mm, with probability 70%

#### Summary

*The Saharan anti-cyclonic system with its dry peripheral winds is expected to influence the flow over northern Africa, while the persistent monsoon cross equatorial flow is expected to suppress precipitation over eastern Africa and the horn of Africa region. Localized convection and confluence lines over Gulf of Guinea extending into the Congo basin, in association with moisture flux from southwest Indian and Southeast Atlantic oceans are expected to enhance chance for precipitation.*



## 2. Model discussion

*Model comparison (Valid from 00Z; 08 June, 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).*

### 2.1. Flow at 850hPa

**T+24h:** In the northern hemisphere, the Saharan anti-cyclonic system with its dry peripheral winds is expected to influence the flow over northern Africa, while the persistent monsoon cross equatorial flow is expected to suppress precipitation over eastern Africa and the horn of Africa region. A trough associated with the westerly wave is expected over northeast Atlantic Ocean, Morocco and northwestern Algeria. Localized convergence and confluent lines are expected over the Gulf of Guinea region, Cameroun, Central African Republic, northern DR Congo, southern Sudan, and Ethiopia. In the southern hemisphere, the sub-tropical anti-cyclonic system is expected to influence flow and over the continental southern Africa, the dry peripheral winds associated with anti-cyclonic system are expected to suppress chances of precipitation.

**T+48h:** In the northern hemisphere, the Saharan anti-cyclonic system is expected to slightly weaken and move westwards as the trough over northeast Atlantic is expected to contract with a closed cyclonic system over northwestern Algeria. Localized convergence and confluent lines are expected to maintain their previous day positions. In the southern hemisphere, the flow is expected to be more similar to the previous day; however a feeble mid-latitude trough over southeastern Atlantic Ocean, extending northwards to 30°S latitude is expected to separate the anti-cyclonic systems.

**T+72h:** In the northern hemisphere, the Saharan and Azores anti-cyclonic systems are expected to merge and expand southwards over western Africa. The localized convergence and confluent lines are expected to be suppressed over western Africa, while maintaining their previous day positions over central and eastern Africa. In southern Africa, no significant changes are expected in the main features affecting the flow; however the trough associated with the westerly wave over southeastern Atlantic Ocean is expected to extend northwards up to 10°S latitude.

### 2.2. Flow at 500hPa

**T+24h:** In the northern hemisphere, the sub-tropical ridge is expected to extend further northwards over northwestern Africa and the Arabian Peninsula; while a trough associated with the westerly wave are expected over North Africa, creating a disturbed flow pattern of the westerlies over northern Africa. In the southern hemisphere, a closed cyclonic system associated with the westerly wave is expected over Southern Africa, creating a disturbed flow pattern of the westerlies.

**T+48h:** In the northern hemisphere the flow is expected to be more similar to the previous day; however the trough associated with the westerly waves over northern Africa is expected to move slightly eastwards. In the southern hemisphere, the southerly extent of the sub-tropical ridge system coupled with a closed cyclonic system over southwestern tip of Africa are expected to create some disturbances in the flow of the westerlies.

**T+72h:** In the northern hemisphere the flow is expected to be more similar to the previous day; however the trough over northern Africa is expected to be more enhanced and expected to expand westwards. In the southern hemisphere, though some feeble troughs associated with the westerly wave are expected over southeastern Atlantic Ocean, the westerly flow is expected to take a more zonal pattern.

### **2.3. Flow at 200hPa**

**T+24h:** The sub-tropical anti-cyclonic systems in both hemispheres are expected to establish closer to the Equator, creating strong easterly flow over eastern Africa. Feeble troughs associated with the westerly wave are expected over northern Africa creating disturbances in the flow of the westerlies. In the southern hemisphere, a ridge over southeastern Atlantic and a feeble trough over southern Africa are expected to create disturbances in the flow of the westerlies.

**T+48h:** Over northern Africa, the trough associated with the westerly wave is expected to be suppressed; while the westerlies are expected to take a more zonal flow pattern. In the southern hemisphere, a feeble trough is expected over southern Africa; however the westerly flow is expected to take a more zonal pattern.

**T+72h:** Troughs associated with the westerly wave are expected to be slightly more enhanced in the northern hemisphere, creating a disturbed flow pattern of the westerlies. In the southern hemisphere, the flow is expected to be similar to the previous day.

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