



## Forecast Guidance for Africa

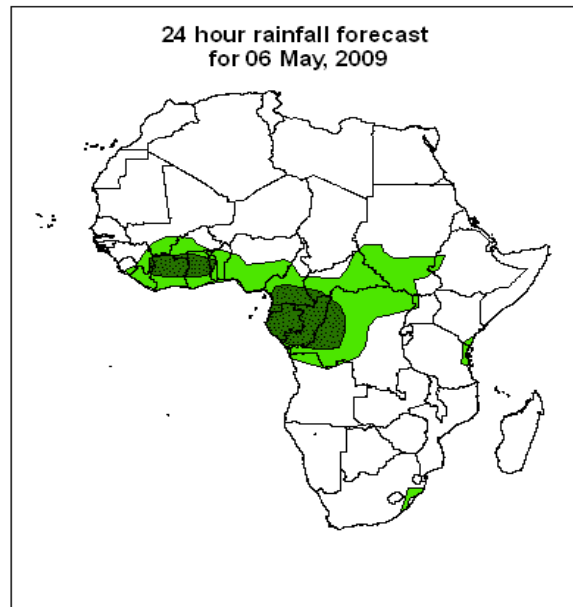
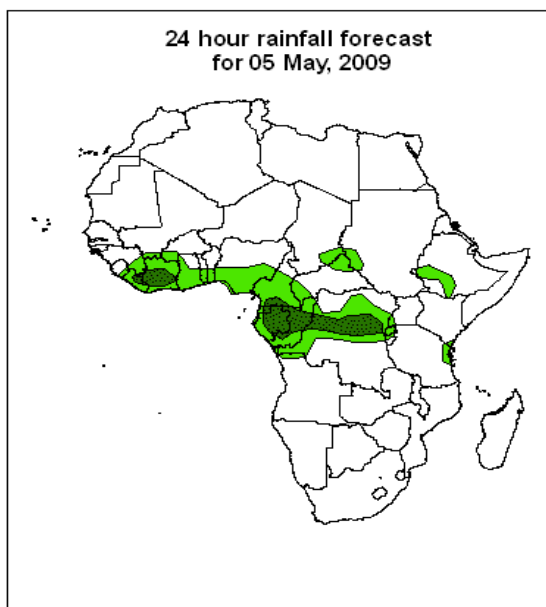
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

**FORECAST DISCUSSION 14H00 EST, 04 MAY, 2009**




**Valid: 00Z 05 MAY – 07 MAY, 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.

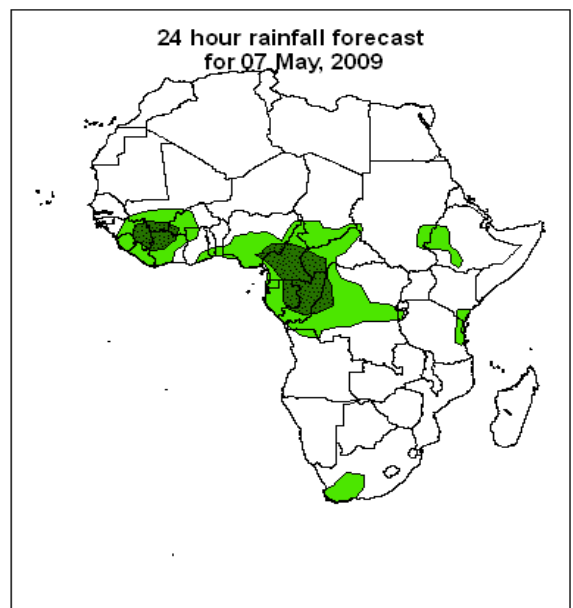


#### Legend

-  africa\_countries\_new
-  > 30mm, with probability 50%
-  > 20mm, with probability 40%

#### Summary

*The Saharan anti-cyclonic circulation system is expected to intensify and centered over Algeria with its ridge extending to Egypt across Libya, minimizing the interaction between the mid latitude and equatorial troughs across Morocco and Western Sahara. . Localized convegence and confluences lines over gulf of Guinea extending into the Congo basin, in association with moisture flux from Southwest Indian and Atlantic oceans are expected to enhance chance for precipitation.*



## 2. Model discussion

*Model comparison (Valid from 00Z; 04 May, 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:** The Saharan anti-cyclonic circulation system is expected to intensify and centered over Algeria with its ridge extending to Egypt across Libya, minimizing the interaction between the mid latitude and equatorial troughs across Morocco and Western Sahara. Localized convergence and confluent lines are expected over the Gulf of Guinea region, Central Africa Republic, northern DR Congo, southern Sudan and western Ethiopia. Much of Southern Africa is expected to be under the influence of the Mascarene anti-cyclonic system assuming continental characteristics as it extends into southern Africa; while cyclonic systems associated with a westerly wave are expected to create a disturbed flow with frontal systems penetrating to the tip of South Africa.

**T+48h:** The flow in the Northern Africa is expected to be similar to the previous day except for the weakening and slight movement to the east of the Saharan anti-cyclonic circulation system. Localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, a slight strengthening of the Mascarene and St. Helena anti-cyclonic circulation systems is expected, while the westerly flow of the mid latitudes are expected to maintain a more zonal flow.

**T+72h:** Continued weakening of the Saharan anti-cyclonic circulation system is expected; however the strengthening of the Arabian anti-cyclonic system is expected as it moves southwards over the Gulf of Aden and adjoining horn of Africa region. The localized convergence and confluent lines are expected to shift slightly northwards over western Africa and maintain their previous day positions in central and eastern Africa. In southern Africa, the frontal systems are expected to persist with expanding closed cyclonic system extending to southern Madagascar, pushing the Mascarene anti-cyclonic circulation more to the east into southwestern Indian Ocean.

### 2.2. Flow at 500hPa

**T+24h:** The flow in the northern hemisphere is expected to be majorly characterized development of a feeble trough within the westerly wave over eastern Mediterranean Sea. Troughs associated with westerly wave are expected in sub-tropical areas of the southern hemisphere; however with the development of anti-cyclonic circulation system over southeastern Atlantic Ocean, a disturbed wave pattern flow is expected.

**T+48h:** In the northern hemisphere, the flow is more similar to the previous day; however the feeble trough is expected to move slightly to the east. In the southern hemisphere the troughs associated with the westerly wave are expected to attain more of a zonal flow pattern.

**T+72h:** In both hemispheres the flow is more similar to the previous day; however the cyclonic systems associated with the westerly waves are expected to move slightly to the east.

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

**T+24h:** In the northern hemisphere, a feeble trough associated with the westerly wave is expected over the Mediterranean Sea, however much of the flow is expected to take a zonal pattern. Moreover in the south, the flow is expected to take on more of a zonal pattern with feeble troughs over southeast Atlantic Ocean.

**T+48h:** The flow is similar to that of the previous day but the axis of the feeble trough associated with the westerly wave shift slightly to the east in the northern hemisphere. In the southern hemisphere the flow is expected to take a more zonal pattern.

**T+72h:** The flow is taking more of a zonal pattern in the northern hemisphere; however a northeast-southwest oriented westerly trough is expected to dominate the flow over the Gulf of Aden and adjoining areas of the horn Africa. In the southern hemisphere, the flow is expected to take a similar pattern as the previous day.

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