



Forecast Guidance for Africa

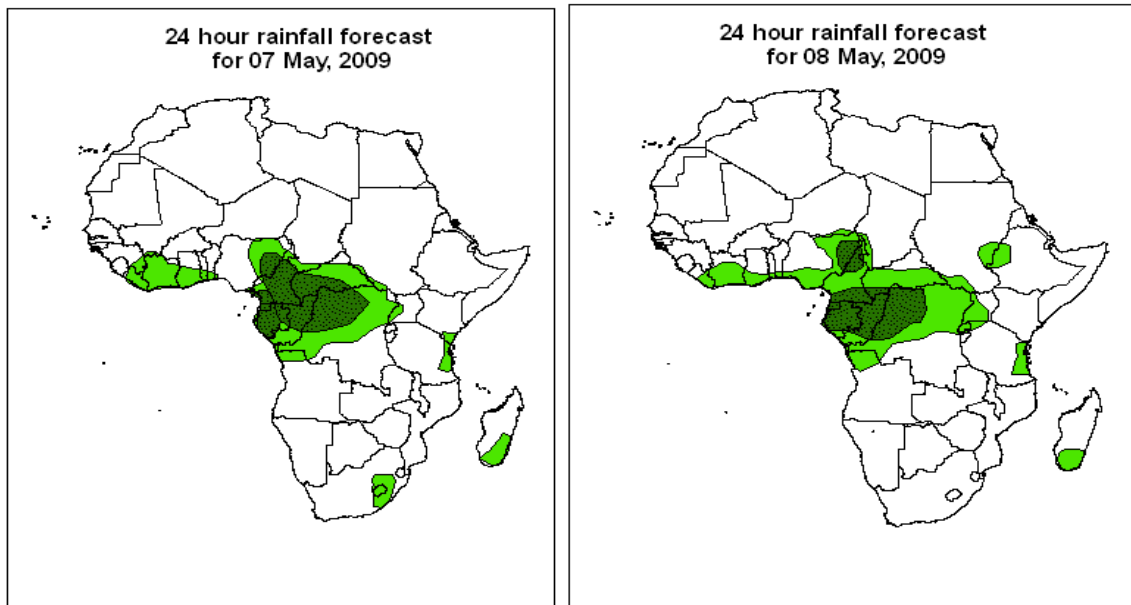
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 06 MAY, 2009




Valid: 00Z 07 MAY – 09 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.

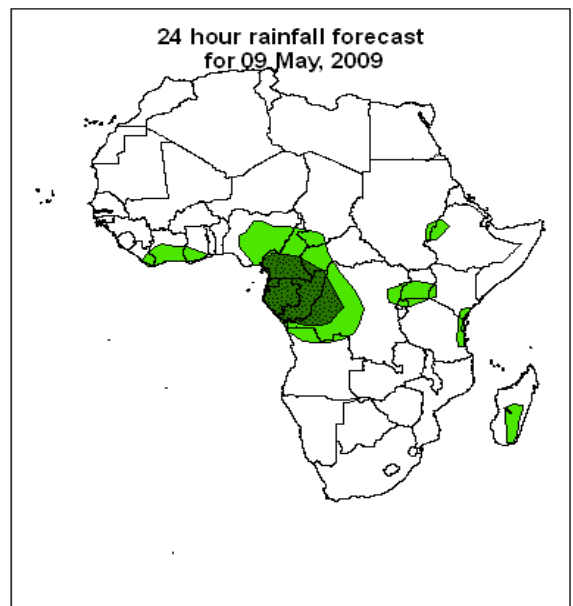


Legend

-  africa_countries_new
-  > 30mm, with probability 50%
-  > 20mm, with probability 40%

Summary

The sub-tropical ridge system over northern parts of Africa and Arabia is expected to continue blocking the interaction between the mid-latitude and tropical cyclonic systems Sudan and Ethiopia. Localized convection and confluence lines over Gulf of Guinea extending into 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; 06 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 sub-tropical ridge system over Northern parts of Africa and Arabia is expected to continue blocking the interaction between the mid-latitude and tropical cyclonic systems across Sudan and Ethiopia. Localized convergence and confluent lines are expected over the Gulf of Guinea region, Central Africa Republic, northern DR Congo, southern Sudan, Uganda and western Ethiopia. Much of Southern Africa is expected to be under the influence of the St. Helena anti-cyclonic system assuming continental characteristics as it extends into southern Africa. A closed cyclonic system expected over southwestern Madagascar and adjoining areas of Mozambique Channel separating the anti-cyclonic circulation systems.

T+48h: The flow in the northern Africa is expected to be similar to the previous day; however a trough off the coast of Morocco in the Atlantic Ocean is expected to separate the Azores from the Saharan anti-cyclonic system. Localized convergence and confluent lines are expected to maintain their previous day positions over western and central Africa, but move slightly westwards over eastern Africa. In southern Africa, the flow is expected to be more or less similar to the previous day; however the closed cyclonic system south of Madagascar is expected to deepen pushing the Mascarene anti-cyclonic system eastwards.

T+72h: The Saharan anti-cyclonic system is expected strengthen and expand over much of North Africa, while its merger with the Arabian anti-cyclonic system is expected to continue blocking the interaction between the mid-latitude and tropical cyclonic systems, across the horn of Africa region. The localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, a closed cyclonic system south of Madagascar is expected to deepen and expand, pushing the Mascarene anti-cyclonic circulation further to the east into southwestern Indian Ocean.

2.2. Flow at 500hPa

T+24h: The flow in the northern hemisphere is expected to be influenced by the development of a trough associated with the westerly wave over the Mediterranean Sea. In the southern hemisphere, the flow is expected to take a more zonal pattern.

T+48h: In the northern hemisphere, troughs associated with the westerly wave are expected to extend up to 20°N latitude, creating a disturbed flow pattern of the westerly wave. In the southern hemisphere flow is expected to be more similar to the previous day; however the development of anti-cyclonic system within the westerlies is expected to create a disturbed flow pattern.

T+72h: In the northern hemisphere the flow is more similar to the previous day; however the troughs associated with the westerly waves is expected to move slightly to the east. In the southern hemisphere, a closed cyclonic system is expected to develop over southeastern Indian Ocean creating more disturbances to westerly flow.

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 a northeast-southwest oriented westerly trough is expected to dominate the flow over the Gulf of Aden and adjoining areas of the horn Africa. 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 with northeast-southwest oriented westerly trough is expected to persist over the Gulf of Aden and adjoining areas of the horn Africa . In the southern hemisphere the flow is expected to take a more zonal pattern.

T+72h: The flow in the northern hemisphere is expected to take a shortwave pattern with three trough axes over north Atlantic, Mediterranean sea and a northeast-southwest oriented westerly trough 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; however a closed cyclonic system is expected off the eastern coast of South Africa, in the Indian Ocean.

Authors:

- 1. Ado Kalaki Kasongo (METTELSAT / DR Congo and African Desk)*
- 2. Khalid Muwembe (UGANDA MET / Uganda and African Desk).*