



Forecast Guidance for Africa

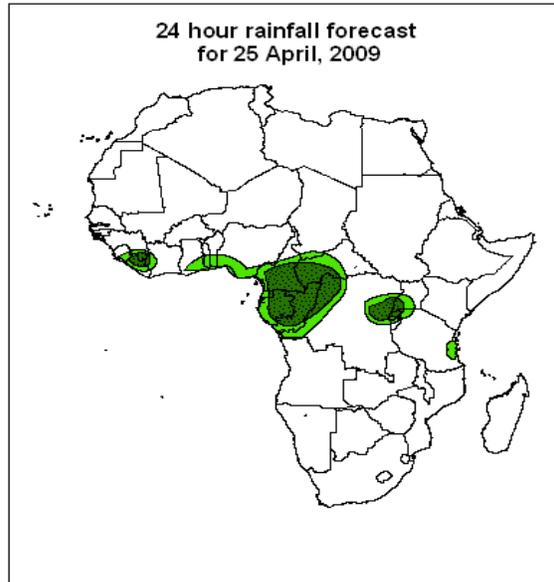
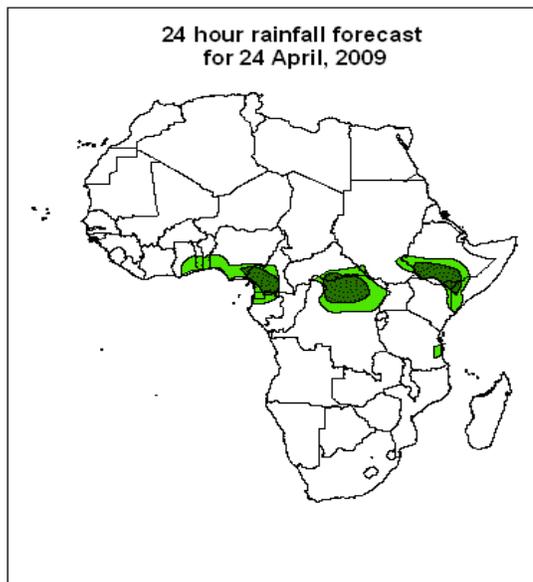
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 23 APRIL, 2009

Valid: 00Z 24 APRIL – 26 APRIL, 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.

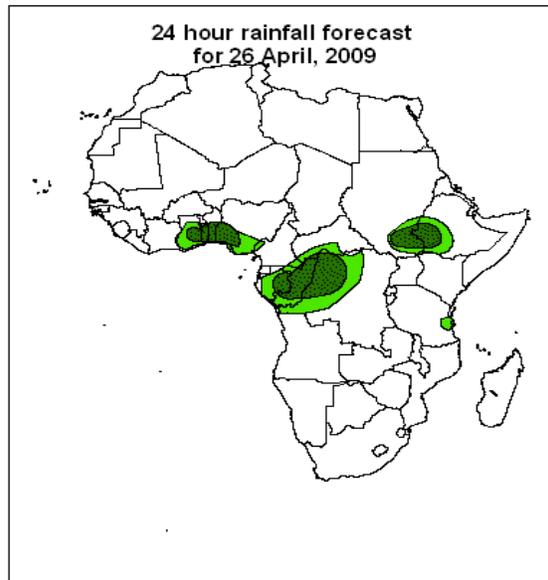


Legend

-  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. This is expected to narrow the rain belt to the Equatorial region. Localized convection and confluence lines over gulf of Guinea extending into central Africa, in association with moisture flux from Southwest Indian ocean and Atlantic ocean are expected to enhance chance for precipitation.



2. Model discussion

Model comparison (Valid from 00Z; 23 April, 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, while a closed cyclonic circulation system over northeast Atlantic Ocean separates the Azores anti-cyclonic system from the sub-tropical ridge. 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 assuming continental characteristics as it extends into southern Africa, while to the South, a deep trough associated with a westerly wave extends northwards into southeast Atlantic Ocean. A closed cyclonic circulation is expected over southwestern tip of South Africa.

T+48h: The sub-tropical ridge system over Northern parts of Africa and Arabia is expected to intensify, while a trough is expected over northeast Atlantic Ocean extending to Morocco. Localized convergence and confluent lines are expected weaken in the eastern African and persist over central and western Africa. A closed cyclonic circulation over southwest portions of S. Africa is expected to separate the St. Helena and Mascarene anti-cyclonic circulation systems.

T+72h: A trough over northeastern Atlantic Ocean is expected move slightly to the east. With southward expansion of the Saharan anti-cyclonic circulation system the localized convergence and confluent lines are expected to slightly shift southwards over gulf of Guinea. The trough associated with the westerly wave is expected to move eastwards over southern Atlantic Ocean and Mascarene anti-cyclone circulation systems moves eastwards closer to the tip of southern African.

2.2. Flow at 500hPa

T+24h: Troughs associated with westerly waves are expected in sub-tropical areas of the southern hemisphere with a closed cyclonic circulation over the southeast Atlantic Ocean, while the flow in the northern hemisphere is characterized by almost zonal flow of the westerlies.

T+48h: A closed cyclonic circulation over the south east Atlantic Ocean is expected to move eastward to the tip of southern Africa, otherwise the flow is similar to the previous day both in the southern and northern hemispheres.

T+72h: A couple of closed cyclonic circulation systems are expected to persist within the westerly wave of the southern hemisphere, but in the northern hemisphere the feeble troughs in the westerly wave are expected to move eastwards.

2.3. Flow at 200hPa

T+24h: Westerly wave with a trough axis over Tunisia and Algeria are expected to dominate the flow over northern portions of Africa. Moreover in the south, troughs associated with the westerly waves are expected to extend northwards into southern Atlantic and Indian Ocean.

T+48h: The flow is similar to that of the previous day. The axis of the trough associated with the westerly wave shift slightly to the east. In the southern hemisphere troughs associated with the westerly waves are expected to intensify with a cut-off cyclonic circulation in southeast Atlantic Ocean and southwest Indian Ocean.

T+72h: The flow is similar to that of the previous day. However in the northern hemisphere, the trough in the westerly is expected to move eastwards.

Authors:

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