



Forecast Guidance for Africa

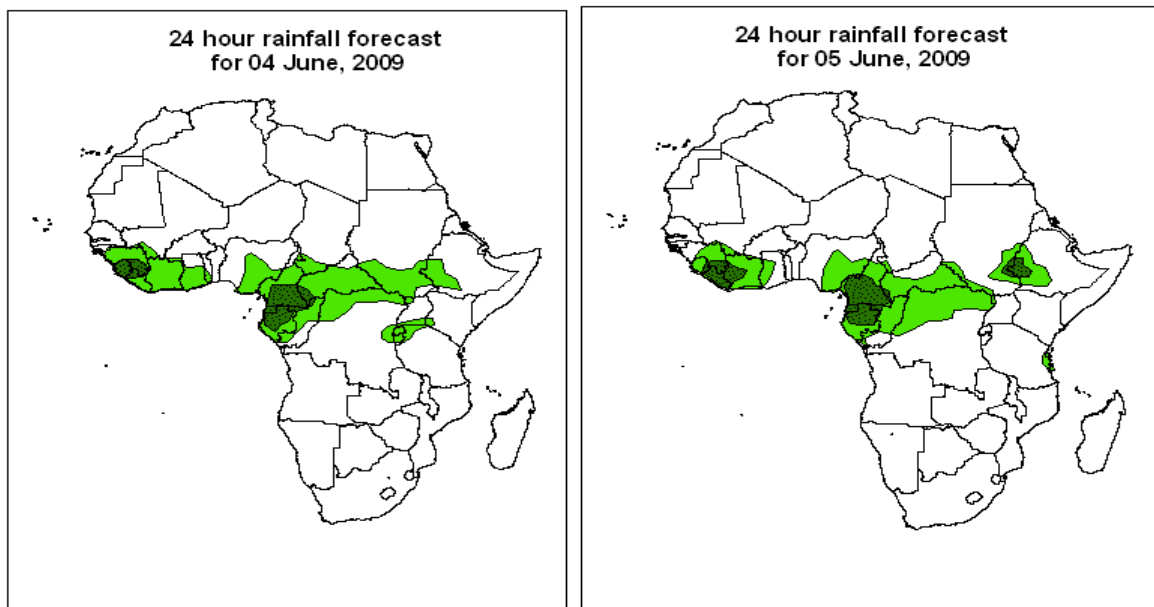
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 03 JUNE, 2009




Valid: 00Z 04 JUNE – 06 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.

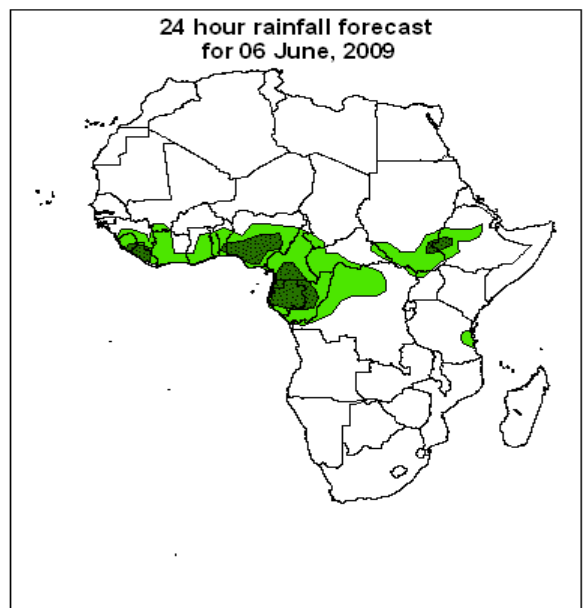


Legend

-  africa_countries_new
-  > 20mm, with probability 70%
-  > 10mm, with probability 70%

Summary

The sub-tropical anti-cyclonic system with its peripheral dry winds is expected to influence the flow over Northern Africa and the persistent monsoonal cross equatorial flow is expected to influence eastern Africa and the horn of Africa region. Localized convergence 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; 03 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 peripheral dry winds is expected to continue influencing the flow over Northern Africa; while the persistent monsoonal cross equatorial flow is expected to influence eastern Africa and the horn of Africa region. A feeble trough associated with the westerly wave is expected over northeast Atlantic Ocean and Morocco. Localized convergence and confluent lines are expected over the Gulf of Guinea region, Cameroun, Central African Republic, northern DR Congo, southern Sudan and western Ethiopia. In the southern hemisphere, the sub-tropical anti-cyclonic system is expected to influence flow over much of southern Africa; while over the Atlantic Ocean, the anti-cyclonic system extends northwards up to the Gulf of Guinea. Troughs associated with the westerly wave are expected over southeastern Atlantic and southwestern Indian Oceans.

T+48h: In the northern hemisphere, no significant changes are expected in the main features affecting the flow over Northern Africa; however the trough over northeast Atlantic is expected to expand Morocco, Western Sahara and northern 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 the mid-latitude troughs over the oceans are expected to move eastwards.

T+72h: In the northern hemisphere, the Saharan anti-cyclonic system is expected to contract and weaken; while the trough over northeast Atlantic is expected to expand further towards Morocco, Western Sahara, Mauritania and northern Algeria. The localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, the significant features are expected to maintain their previous day position; however the trough associated with the westerly wave over South Africa is expected to extend northwards up to 25°S latitude, separating the anti-cyclonic systems.

2.2. Flow at 500hPa

T+24h: In the northern hemisphere, the anti-cyclonic ridge is expected to extend further northwards over northwestern Africa and the Arabian Peninsula; while the troughs associated with the westerly wave are expected over North Africa, creating a disturbed flow pattern of the westerlies. In the southern hemisphere, a trough associated with the westerly wave is expected to extend northwards close to the Equator across the continent and eastern Atlantic; however the westerly flow in the mid-latitudes is expected to take a generally zonal flow pattern.

T+48h: In the northern hemisphere the flow is expected to be more similar to the previous day; however the troughs associated with the westerly waves are expected to be more enhanced creating more disturbances in the flow of the westerlies. In the southern hemisphere, the troughs associated with the westerly wave are expected to be suppressed in the sub-tropical regions, but slightly enhanced in the mid-latitudes; however the flow of the westerlies expected to take a more zonal pattern.

T+72h: In the northern hemisphere the flow is expected to be more similar to the previous day; however the trough over northeastern Atlantic Ocean is expected to be more enhanced. In the southern hemisphere, the flow is expected to be more similar to the previous day.

2.3. Flow at 200hPa

T+24h: In the northern hemisphere, 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 narrow northwest-southeast oriented trough associated with the westerly wave is expected over eastern Atlantic Ocean is expected to extend to 10⁰S latitude creating some disturbances of the westerlies, but a generally zonal flow pattern of the westerlies is expected.

T+48h: The flow is expected to be similar to that of the previous day in both the northern hemisphere; however the troughs associated with the westerly wave are expected to be more enhanced. In the southern hemisphere, the trough associated with the westerly wave is expected to be more suppressed and a more zonal flow pattern of the westerlies is expected.

T+72h: The flow is expected to be similar to that of the previous day in both the northern and southern hemispheres.

Authors:

- 1. Khalid Muwembe (UGANDA MET / Uganda and African Desk).*