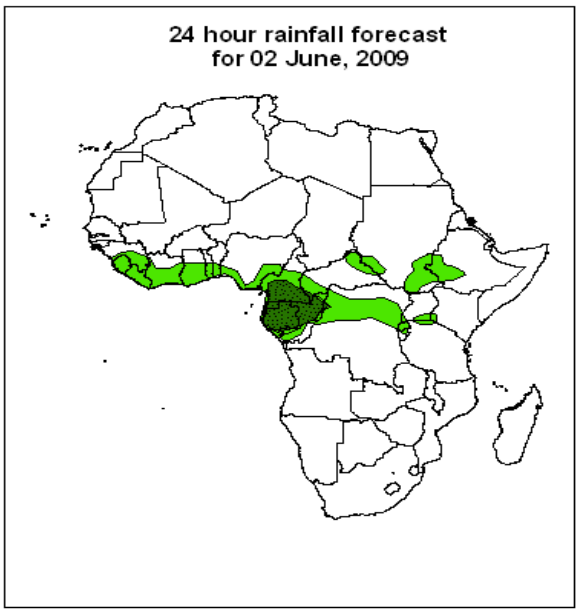
Forecast Guidance for Africa

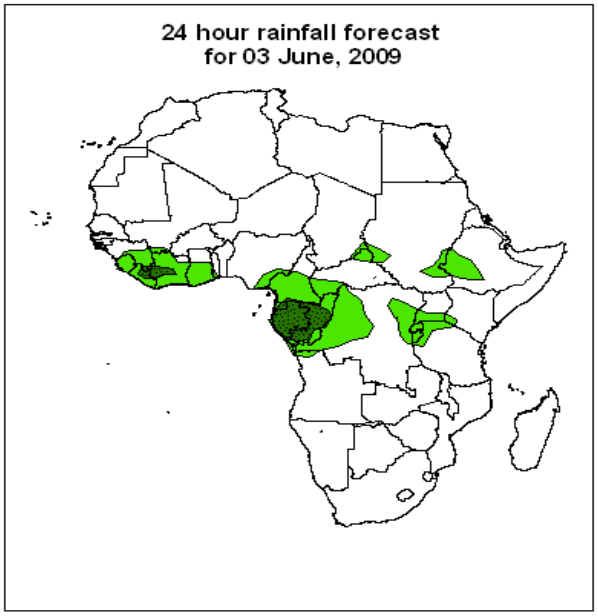
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 01 JUNE, 2009
Valid: 00Z 02 JUNE – 04 JUNE, 2009

1. Twenty Four Hour Cumulative Rainfall Forecasts

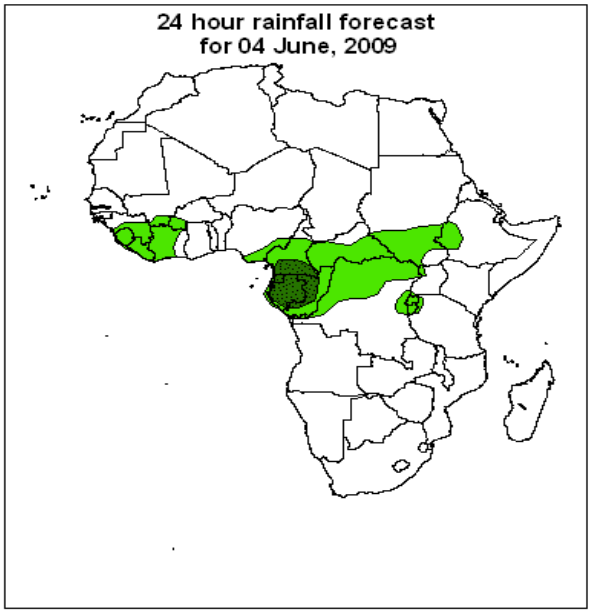
The forecasts are expressed in terms of probability of precipitation (POP) exceedance based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS), and expert assessment.





Legend

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



Summary

The Saharan anti-cyclonic system with mainly dry winds is expected to continue influencing the flow over Northern and Northwestern Africa, while the persistent monsoonal cross equatorial flow is expected to influence eastern Africa and the horn of Africa region. Localized convegence and confluences 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 enchance chance for precipitation.

2. Model discussion

Model comparison (Valid from 00Z; 01 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^oS and 10^oN).

2.1. Flow at 850hPa

T+24h: In the northern hemisphere, the Saharan anti-cyclonic system with its peripheral dry winds is expected 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 trough associated with the westerly wave is expected over northeast Atlantic extending to Morocco. Localized convergence and confluent lines are expected over the Gulf of Guinea region, Cameroun, Central African Republic, northern DR Congo and southern Sudan. In the southern hemisphere, the sub-tropical anti-cyclonic system is expected to influence flow over the Oceans and the continent between latitudes 10^0S and 30^0S. Troughs associated with the westerly wave are expected over southeastern Atlantic and southwestern Indian Oceans.

T+48h: In the northern hemisphere, the significant features are expected to maintain their previous day position; however the Saharan anti-cyclonic system is expected to expand eastwards over the Arabian Peninsula and westwards to northwestern Africa to form the sub-tropical ridge. 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, no significant changes are expected in the main features affecting the flow over Northern Africa. 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 southeast Atlantic Ocean is expected to expand northwards up to 25^0S latitude, separating the anti-cyclonic systems.

2.2. Flow at 500hPa

T+24h: In the northern hemisphere, feeble troughs associated with the westerly wave are expected over North Africa, creating a disturbed flow pattern of the westerlies. Another trough is expected over the Gulf of Aden region. In the southern hemisphere, the development of cyclonic systems over southwest Indian Ocean is expected to create 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 over the Gulf of Aden region is expected to expand over northwestern Indian Ocean. In the southern hemisphere, the trough associated with the westerly wave is expected to extend northwards close to the Equator creating more 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 troughs associated with the westerly wave are expected to expand and

create more disturbances in the flow of the westerlies. 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, a feeble trough associated with the westerly wave is expected over northwestern Africa; however a generally zonal flow pattern of the westerlies is expected over North Africa. In the southern hemisphere, a feeble trough associated with the westerly wave over southwestern Indian Ocean is expected to create a disturbed flow pattern of the westerlies over the mid-latitudes, but over southern Africa a zonal flow pattern is expected.

T+48h: The flow is expected to be similar to that of the previous day in the northern hemisphere. In the southern hemisphere, a small anti-cyclonic system is expected over southwestern Indian Ocean; otherwise the flow is expected to be similar to the previous day.

T+72h: The flow is expected to be similar to that of the previous day in the northern hemisphere, as the troughs over northeast Atlantic are expected to be suppressed, creating a more zonal flow pattern of the westerlies. In the southern hemisphere, the flow is expected to take a zonal pattern over the Indian Ocean; whereas over the Atlantic Ocean, a disturbed flow pattern of the westerlies is expected.

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