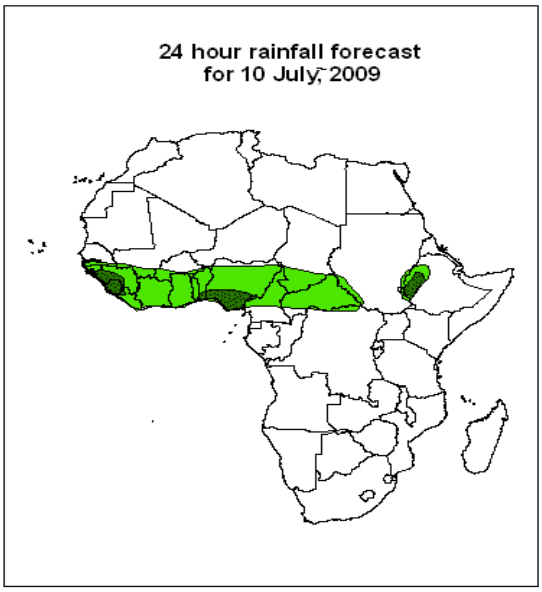
Forecast Guidance for Africa

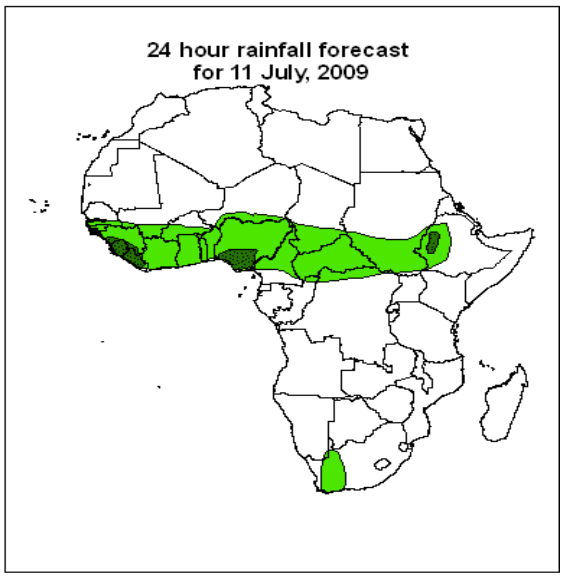
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 09 JULY, 2009
Valid: 00Z 10 JULY – 12 JULY, 2009

1. Twenty Four Hour Cumulative Rainfall Forecasts

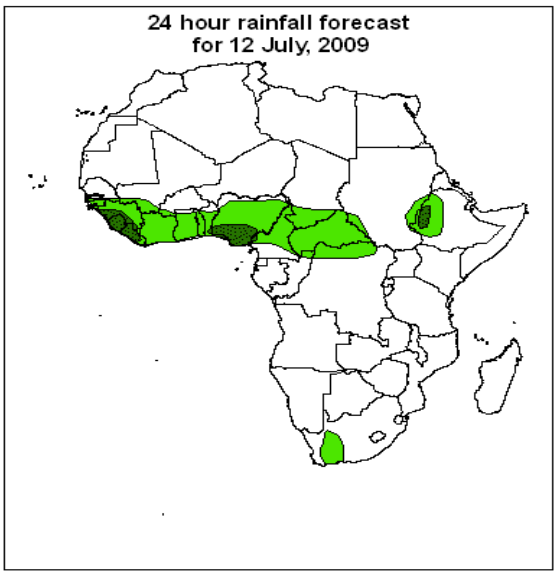
The forecasts are expressed in terms of probability of precipitation (POP) exceedance based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS), and expert assessment.





Legend

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



Summary

The Mascarene Anticyclone is expected to weaken and shift eastwards. As a result of this, the monsoon flow towards the Horn of Africa countries is expected to weaken. The localized convergence and confluent lines a re expected to be persistent over Cameroon, Niger, western Mali, northern Guinea Conakry, Nigeria, Chad, Sudan and Ethiopia. In the southeastern part of the Atlantic Ocean, deep trough in the westerly is expected to extend northward up to 15oS latitude, between the western coast of the southern Africa countries and St. Helena Anticyclone.

2. Model discussion

Model comparison (Valid from 00Z; 09 July, 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: The Mascarene Anticyclone is expected to weaken and shift eastwards. As a result of this, the monsoon flow towards the Horn of Africa countries is expected to weaken. The localized convergence and confluent lines are expected to be persistent over Cameroon, Niger, western Mali, northern Guinea Conakry, Nigeria, Chad, Sudan and Ethiopia. In the southeastern part of the Atlantic Ocean, deep trough in the westerly is expected to extend northward up to 15^oS latitude, between the western coast of the southern Africa countries and St. Helena Anticyclone.

T+48h: the Mascarene Anticyclone is expected to intensify over southwestern Indian Ocean, off the southern coast of Madagascar, contributing to the increased monsoon flow towards the Horn of Africa Region. The localized convergence lines are expected to maintain their previous position over much of central and eastern African courtiers, while the convergence lines over western Africa are expected to extend towards Mauritania. The trough in the westerly over southeastern Atlantic Ocean is expected to move towards the western coast of southern Africa countries.

T+72h: The westerly trough in the southern Hemisphere is expected to move from coastal areas to inland South Africa. No significant change is expected elsewhere.

2.2. Flow at 500hPa

T+24h: The stretch of monsoon trough between India and the horn of Africa across the Arabian Sea is expected to persist. Easterly flow is expected to be dominant over the rest of equatorial African countries, while westerly trough extends northwards off the southwestern coast of Africa.

T+48h: The westerly trough in the southern hemisphere is expected to move towards the western parts of the southern Africa countries.

T+72h: The westerly trough in the southern hemisphere is expected to weaken and move further to the east.

2.3. Flow at 200hPa

T+24h: The easterly flow over western, central and eastern parts of equatorial African countries is expected to persist.

T+48h: The upper level easterly flow is expected to be persistent over western and eastern portions of Equatorial African countries, with a slight disturbed flow over parts of central Africa.

T+72h: The upper level easterly flow is expected to persist over much of the equatorial African countries.

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