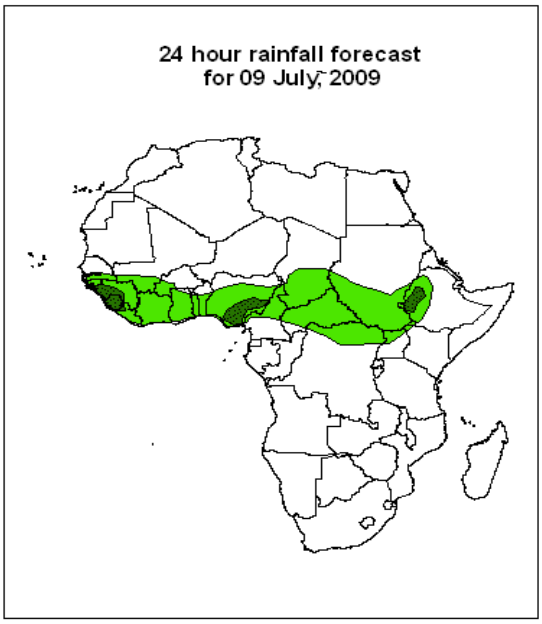
Forecast Guidance for Africa

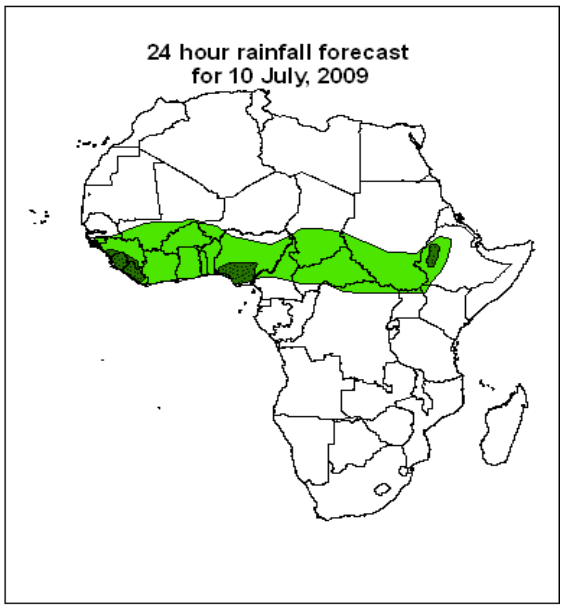
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 08 JULY, 2009
Valid: 00Z 09 JULY – 11 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.



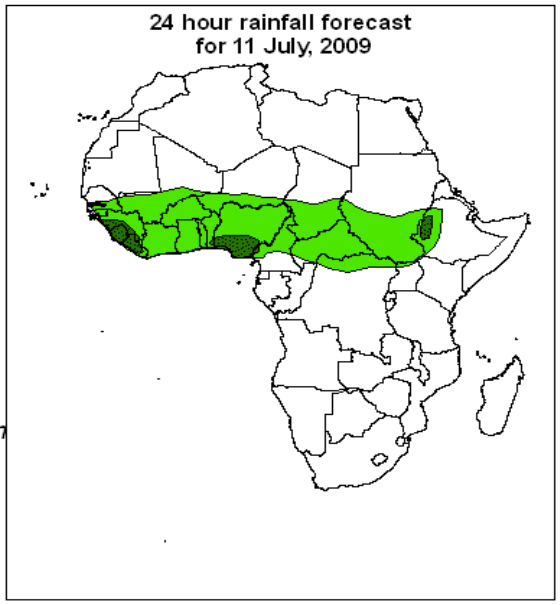


Legend

africa_countries_new

> 20mm, with probability 70%

> 10mm, with probability 70%



Summary

The Saharan anti-cyclonic system is expected to continue influencing the flow over northwes tern Africa, while the persistent monsoon cross equatorial flow is expected to influence precipi tation condition over eastern Africa and the horn of Africa region. Localized convergence and confluent lines are expected over the Gulf of Guinea region, southern Niger, southwestern Mali, Chad, DR Congo, Sudan and Ethiopia.

2. Model discussion

Model comparison (Valid from 00Z; 08 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 monsoon cross equatorial flow is expected to influence precipitation condition over eastern Africa and the horn of Africa region, while localized convergence and confluent lines are expected over the Gulf of Guinea region, southern Niger, western Mali, Guinea Conakry, Chad, Sudan and Ethiopia. In the southern hemisphere, the subtropical anticyclone is expected to be centered over the southwestern Indian Ocean, southeast of the coast of Madagascar, with its ridge extending westwards to southern African countries. Hence, the peripheral winds from this east-west oriented ridge are expected to have more of easterly component.

T+48h: In the northern hemisphere the localized convergence lines are expected to maintain their previous position. In the southern hemisphere, the subtropical anticyclonic system is expected to weaken. The peripheral winds will continue to have more easterly component.

T+72h: In the northern hemisphere the localized convergent lines are expected to maintain their previous day positions. In the Southern Hemisphere, the center of the subtropical anticyclonic system is expected to shift southwestwards.

2.2. Flow at 500hPa

T+24h: In the northern hemisphere stretch of monsoon trough is expected between India and the horn of Africa across the Arabian Sea, while feeble troughs associated with the westerly waves are expected over northeastern Atlantic Ocean and the Mediterranean Sea.. In the southern hemisphere, a perturbed westerly flow is expected to be dominant over southern Africa countries and the adjoining areas of Atlantic and Indian Oceans.

T+48h: No significant change in the main flow pattern is expected in the northern hemisphere. In the southern hemisphere, with anticyclone developing over southern African countries, the westerly flow is expected to be limited over Atlantic and Indian Oceans.

T+72h: In the northern hemisphere the stretch of monsoon trough is expected to be weakened over the horn of Africa. In the southern hemisphere, a perturbed westerly flow associated with a westerly trough is expected to be dominant over southern Africa countries.

2.3. Flow at 200hPa

T+24h: The equatorial western, eastern and central African areas are expected to be dominated by upper level easterly flow.

T+48h: The upper level easterly flow is expected to be persistent over western, central and eastern African countries.

T+72h: No significant change is expected in the main flow.

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