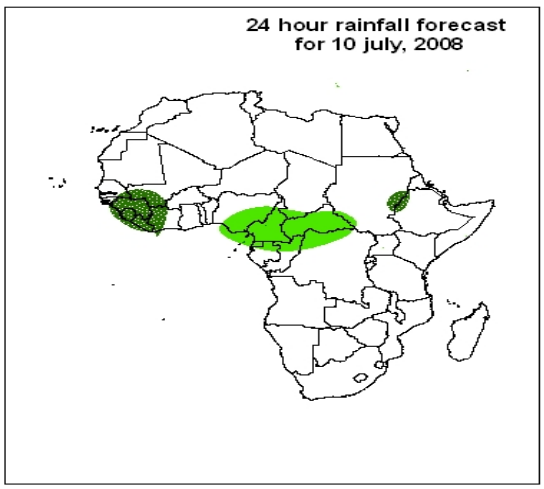
Forecast Guidance for Africa

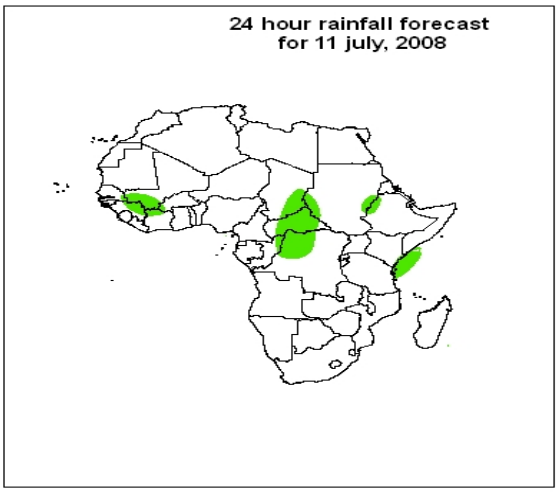
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 09 JULY 2008
Valid: 00Z 10 - 12 JULY, 2008

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.





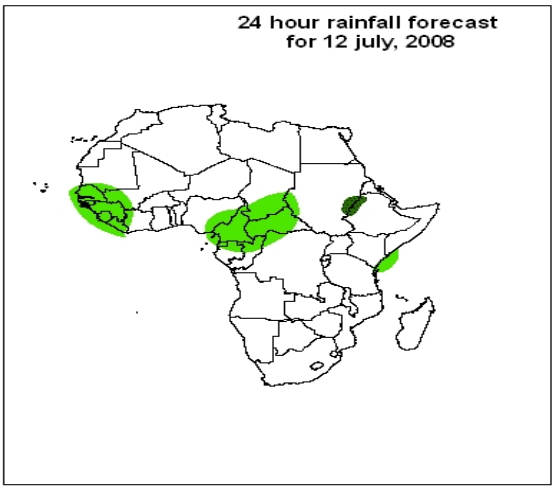
Legend

> 30mm, with probability 50%

> 20mm, with probability 40%

Summary

Moisture advection from the Gulf of Guinea and Atlantic Ocean, couple with localised convergence in the Sahel and Central Africa are expected to increase chance for precipitation over the region. likewise low level moisture advection from the western Indian Ocean will enhance rainfall over Western Ethiopia and along the Kenyan coast.



2. Model discussion

Model comparison (Valid from 00Z; 10 July 2008): all the three models are in general agreement especially with respect to the positioning of large scale features, however, the UK model has a tendency to give lower values than the GFS and ECMWF models in the Equatorial (10^oS and 10^oN) Continental Africa.

2.1. Flow at 850hPa

T+24h, the Maghreb states, the coastal areas of Ghana and northern Ethiopia are expected to be under the influence of an anticyclonic circulation, with a trough over the coastline of Morocco. Northerlies are expected to prevail over Egypt and Cyclonic vortices will be featured over much of Sahel including northern Angola as well as eastern Lake Victoria region. Further south, over Southern Africa, the dominant pattern will be the ridging from both the St. Helena and Mascarene anticyclones.

T+48h, the flow pattern is expected to change, with the evolution of more cyclonic vortex over the western Sahel and a well marked Tropical – Extra tropical interface over these areas. The anticyclonic vortex over Ghana is expected to persist whilst moving slowly eastwards. A series of cyclonic vortices are expected to evolve/develop over western/coastal sectors of Namibia and Angola. The rest of the Southern African region will continue to remain under the influence of an anticyclone circulation as a result of the zonal extension of the St. Helena High.

T+72h, over the Maghreb, the flow pattern is expected to remain as that of the previous day except that the cyclonic vortex over the border of Mali/Mauritania will move further westwards. The anticyclone over Ghana will intensify, whilst a new cell will evolve over the Gambia. The massive cyclonic activities featured over western Namibia and Angola are expected to weaken.

2.2. Flow at 500hPa

T+24h, anticyclonic circulation systems will dominate the general flow pattern over Africa. However, a trough is expected to be featured over Egypt extending into northeastern Chad. Also featured will be a convergence axis over western Ethiopia/ eastern Sudan. The Mascarene anticyclone is expected to dominate over the entire Southern African region with its center located over central Madagascar.

T+48h, the flow pattern is expected to be similar to that of the previous day; except that, the trough over Egypt will fill-up, and the convergence axis over western Ethiopia and eastern Sudan will deepen whilst propagating westwards.

T+72 h, not much changes are expected, except for the propagation of a trough towards Morocco and over western South Africa.

2.3. Flow at 200hPa

T+24h, an extensive upper level anticyclonic flow pattern will prevail over much of northern Africa and the entire southern half of the African continent. Easterlies will dominate equator-ward, whereas westerly waves will prevail over the extreme North and South of the African region.

T+48h, the situation will remain quasi-stationary over the southern part of Africa except for the evolution of a daughter cell over Zimbabwe. Whereas to the north, there will be a well pronounce trough over Libya and the diffluence of the wind field over central Mali.

T+72h, the wind flow pattern is expected to remain as that of the previous day, except for the slight shifting eastwards of the centers of the anticyclonic circulation.

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