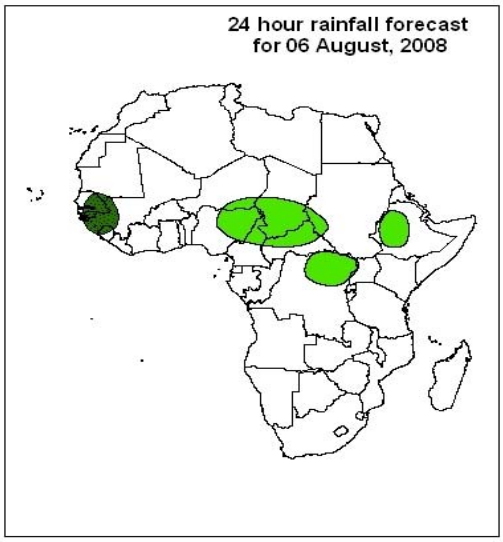
Forecast Guidance for Africa

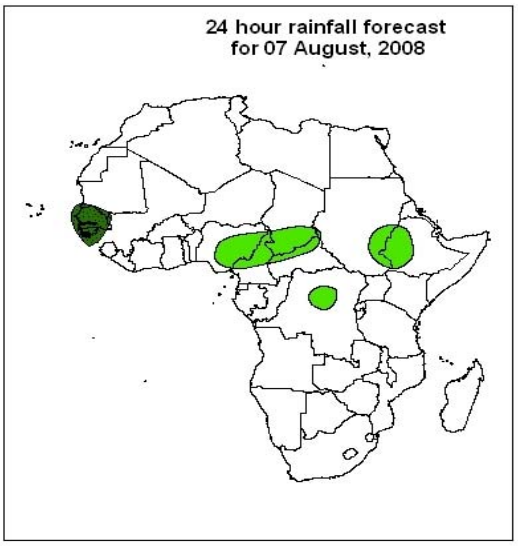
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 05th AUGUST 2008
Valid: 00Z 06th August – 08th AUGUST, 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.





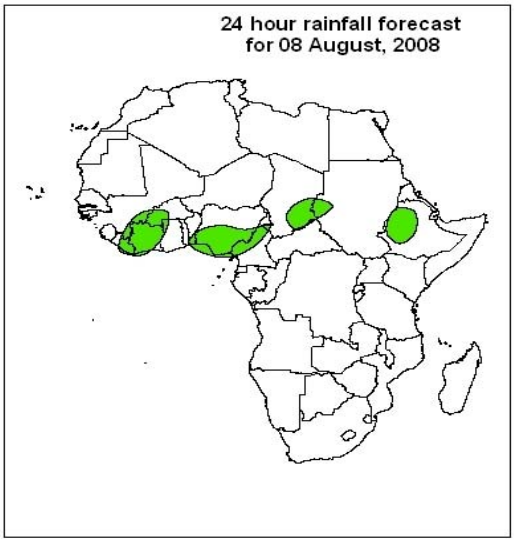
Legend

> 30mm, with probability 50%

> 20mm, with probability 40%

Summary

A series of cyclonic vortices traversing over the Sahel will enchance chances for rain over the region. Moisture advection from the western Indian Ocean, Congo Basin and the Gulf of Guinea will also enhance rain over some parts of Gulf of Guinea Countries, Central Africa and Eastern Sahel.



2. Model discussion

Model comparison (Valid from 00Z; 06th August 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°S and 10°N) Continental Africa.

2.1. Flow at 850hPa:

T+24h, northwestern Africa is expected to be under the influence of an anticyclonic circulation centered over the Mediterranean Sea with northerlies to the east over Libya and Egypt. An anticyclone system is expected to influence the Gulf of Guinea. The Sahel region up to Ethiopia, including southwestern Congo and DRC are expected to experience cyclonic vortices and isolated convergence lines. Southern Africa is expected to be influenced by the Mascarene and St Helene subtropical anticyclonic circulation systems, with a trough over the tip of southern Africa and a cyclonic vortex over southwestern Madagascar.

T+48h, the flow pattern is expected to be similar to that of the previous day. But convergence lines over southwestern Congo are expected to dissipate. Southern Africa is expected to continue being influenced by the Mascarene and St Helene subtropical anticyclones.

T+72h, the flow pattern is expected to remain as that of the previous day, but a cyclonic vortex is expected to develop along the coast of Namibia.

2.2. Flow at 500hPa:

T+24h, an anticyclonic circulation system is expected to dominate the general flow pattern of northwestern and northeastern Africa; while the eastern (part Libya and northern Egypt) will be influenced by a trough penetrating from the Mediterranean Sea. Northeastern Niger, the coast of Togo and Benin, southwestern Congo and northeastern Kenya are expected to be under the influence of isolated convergence lines. However, Southern Africa is expected to be influenced by the Mascarene and St Helene subtropical anticyclones with embedded cyclonic vortices over northern Zambia off the coast of Namibia and Angola. A westerly wave is expected to prevail to the south of South Africa.

T+48h, the flow pattern is expected to be similar to that of the previous day. But, without much of the convergence lines over the Sahel. However a trough is expected to form over the eastern Atlantic Ocean.

T+72 h, no much changes are expected to occur from the flow of the previous day.

2.3. Flow at 200hPa:

T+24h, an extensive upper level anticyclonic flow pattern will prevail over northern Africa with a trough over the northwestern part. However, western Sahel is expected to be influenced by a trough especially over northern Mali; while easterlies will dominate equator-ward. Likewise, a large part of southern Africa is expected to be influenced by a subtropical anticyclone to the south of which, a westerly wave is expected to prevail.

T+48h, the flow pattern will remain quasi-stationary, i.e. similar to the previous day. But the trough over northern Mali is expected to move to the coast of Guinea and Sierra Leone.

T+72h, the wind flow pattern is expected to remain as that of the previous day, but the trough over the coast of Guinea and Sierra Leone is expected to fill up.

Authors:

1- *Hilaire Elenga (Direction de la Meteorologie Nationale du Congo Brazzaville and African Desk).*
2- *George Stafford (Department of Water Resources, The Gambia and African Desk).*