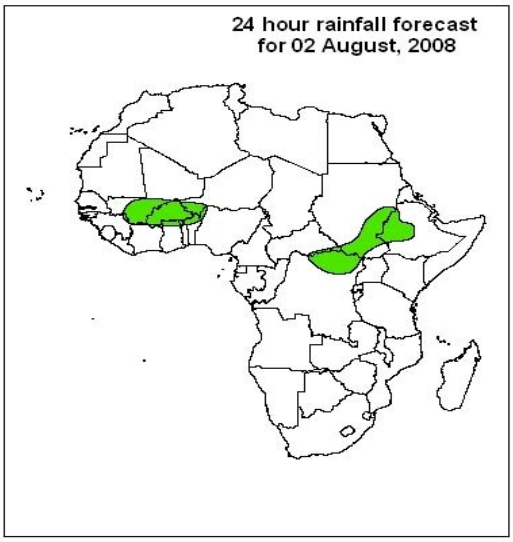
Forecast Guidance for Africa

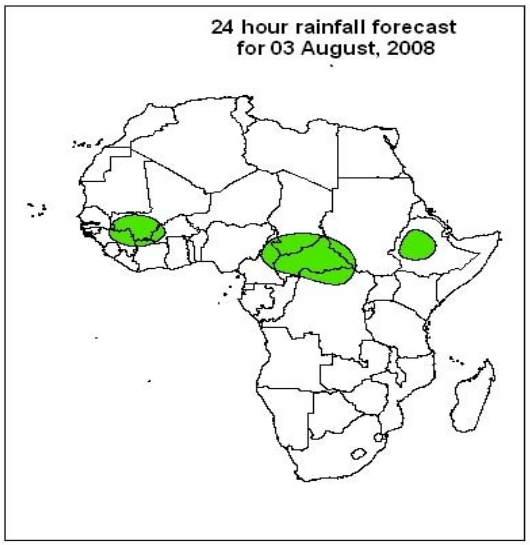
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 01st AUGUST 2008
Valid: 00Z 02nd August – 04th 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.





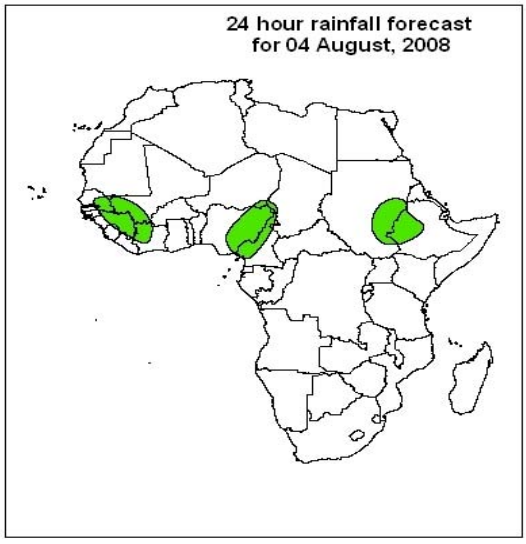
Legend

> 30mm, with probability 50%

> 20mm, with probability 40%

Summary

A series of cyclonic vortices and easterly waves traversing over the Sahel, will enchance chances for precipitation over some parts of Western and Eastern Sahel, including northern parts of Gulf of Guinea countries. Moisture advection from the western Indian Ocean and Congo Basin will also enhance rain over some parts of Central Africa and Eastern Sahel.



2. Model discussion

Model comparison (Valid from 00Z; 02nd 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 with northerlies to the east over Algeria, Libya and Egypt. An anticyclonic circulation is expected to develop off the coast of Guinea. The Sahel region up to Ethiopia and including 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 anticyclones. A cyclonic vortex is expected to develop along the coast of Namibia; while a westerly wave is expected to dominate the southern part.

T+48h, the flow pattern is expected to be similar to that of the previous day with a trough over Morocco and Sahara. However, St Helene anticyclone is expected to move eastwards merging with the Mascarene causing the westerly wave trough to also move eastwards.

T+72h, the flow pattern is expected to remain as that of the previous day, but, a trough over Morocco and Sahara is expected to move westward into the Atlantic Ocean. St Helene anticyclone is expected to continue moving eastward and occupying a large part of southern Africa.

2.2. Flow at 500hPa:

T+24h, an anticyclonic circulation system is expected to dominate the general flow pattern of North Africa with a trough penetrating from the Mediterranean Sea into northern Libya and northwestern Egypt. A cyclonic vortex is expected to develop on the southeastern side of Egypt and northeastern Sudan borders. Eastern Central African Republic and Ethiopia are expected to be under the influence of isolated convergence lines. However, the St Helene and Mascarene anticyclones are expected to influence a large part of southern Africa with a westerly flow pattern to the south. A cyclonic vortex will develop over northern Mozambique and influence southern Tanzania.

T+48h, the flow pattern is expected to be similar to that of the previous day.

T+72h, no much change is expected from the flow of the previous day, except the trough over northeastern Libya is expected to retreat into the Mediterranean Sea.

2.3. Flow at 200hPa:

T+24h, an extensive upper level anticyclonic flow pattern will prevail over much of northern Africa, except over Tunisia, northern Algeria and also over western Sahel which are expected to be influenced by a trough and 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 western Sahel is expected to fill up and retreat northward into the Mediterranean Sea, Tunisia and northern Algeria.

T+72h, the wind flow pattern is expected to remain as that of the previous day, but the trough over Tunisia and northern Algeria is expected to fill up.

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