



Forecast Guidance for Africa

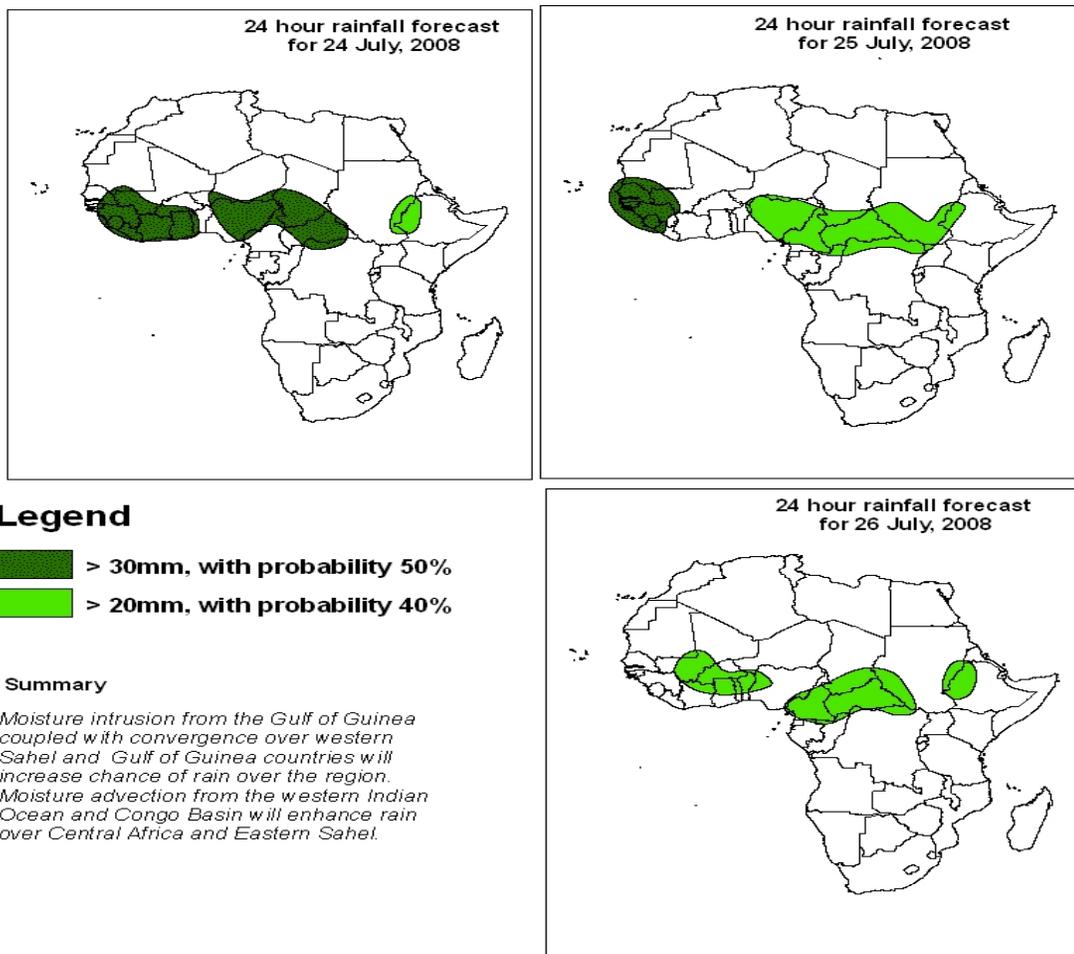
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 23 JULY 2008

Valid: 00Z 24 – 26 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.



2. Model discussion

Model comparison (Valid from 00Z; 24 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°S and 10°N) Continental Africa.

2.1. Flow at 850hPa

T+24h, a large part of northern Africa is expected to be under the influence of an anticyclonic circulation, with cyclonic vortices over south eastern Mauritania and Cote D'Ivoire, and convergence lines over eastern Chad, Ethiopia, DRC and over north western Angola. Southern Africa is expected to be under the influence of the Mascarene anticyclonic system that will generate southeasterlies across from Madagascar through northern Mozambique, Tanzania, Zambia, and Angola to DRC. The south eastern Atlantic is expected to be influenced by the subtropical St Helene anticyclone to the south of which will be westerlies with a cyclonic system that will form a trough off the coast of Namibia and Angola.

T+48h, the flow pattern is expected to be similar to that of the previous day. But, the cyclonic vortex over south eastern Mauritania is expected to move to Senegal; while, over southern Africa the St Helene and Mascarene subtropical anticyclones will merge together thus squeezing the trough off the coast of Namibia.

T+72h, the flow pattern is expected to remain as that of the previous day except that the cyclonic vortex over Senegal will move further westwards into the Atlantic Ocean. The cyclonic vortex over northern Cameroon will intensify and move westward to Nigeria, while over southern Africa the subtropical anticyclone will separate, allowing the trough in between to elongate northwestwards. The south eastern Atlantic is expected to be influenced by the subtropical St Helene anticyclone, to the south of which westerlies will prevail, and the cyclonic system off the coast of Namibia and Angola will form into a trough.

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 over Egypt, while southeastern Mali, Burkina Faso and Cote D'Ivoire are expected to be under the influence of a convergence flow. Also featured will be a trough over eastern Ethiopia, Somalia and Kenya. The St Helene and Mascarene anticyclones are expected to align in a northwest - southeast orientation from the Gulf of Guinea to the southeastern Indian ocean, southern Madagascar thus influencing the flow pattern over southern Africa.

T+48h, the flow pattern is expected to be similar to that of the previous day; with the exception that, the trough over western Egypt will narrow down and elongate. The convergence flow over southeastern Mali, Burkina, and Cote D'Ivoire will fill-up and a cyclonic vortex will replace the trough over western Ethiopia/eastern Sudan and Somalia.

T+72h, not much change is expected from the flow of the previous day except that the cyclonic vortex over southern Ethiopia/eastern Sudan boarder is expected to dissipate.

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, and a westerly wave is expected to prevail over southern Africa, southern Mozambique and southern Madagascar.

T+48h, the flow pattern will remain quasi-stationary, except over the southern part of Africa where a trough will develop over eastern Angola and Zambia, thus separating the subtropical St Helene and Mascarene anticyclones.

T+72h, the wind flow pattern is expected to remain as that of the previous day, but the trough over eastern Angola and Zambia will move westwards into the Atlantic Ocean.

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).*