



## Forecast Guidance for Africa

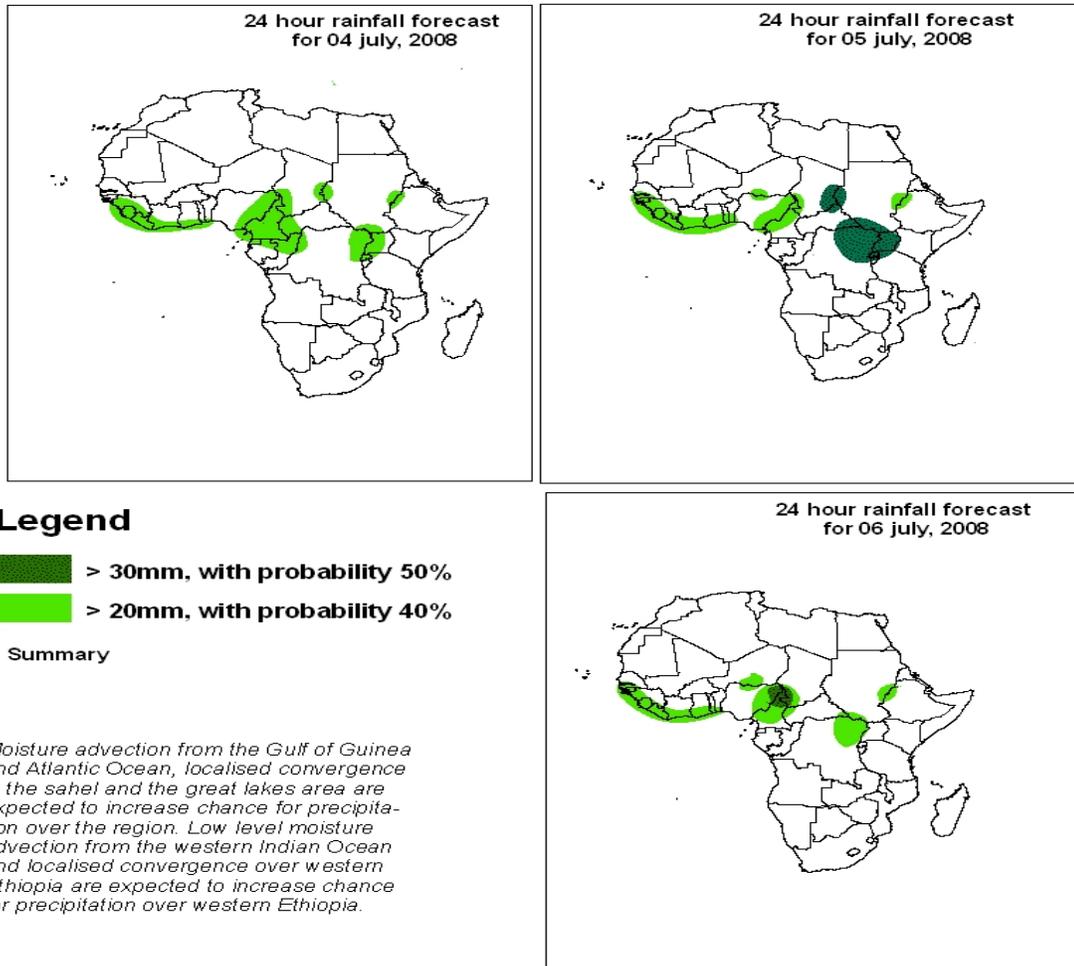
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

**FORECAST DISCUSSION 14H00 EST, 03 JULY 2008**

**Valid: 00Z 04 - 06 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; 04 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 North Africa is expected to be dominated by north easterlies with a ridge to the west. The north easterlies will converge over the Sahel and central Africa with the south easterly/south westerly trades emanating from St Helena anticyclone in the South Atlantic Ocean and the Mascarene anticyclone in the south western Indian Ocean covering the eastern part of southern Africa. Southeasterlies from the south western Indian Ocean and Madagascar are expected to veer north east at the coast of Somalia. A westerly wave with deep troughs and ridges is expected to dominate over the area south of southern Africa.

T+48h, the flow pattern is expected to be similar to that of the previous day. However, the ridge over North Africa is expected to develop into an anticyclone and extend over to Algeria, Tunisia, Libya and Egypt. Localized convergence in the Sahel is expected to prevail over the region. While, the St Helena anticyclone and the cyclonic trough in the Atlantic Ocean will move to the east and occupy part of southern Congo, Angola, Namibia and South Africa, the Mascarene anticyclone is expected to extend further to the east and influence a large part of southern Africa as well as Madagascar.

T+72h, the flow is expected to be similar to the T+48h pattern. However, the St Helene anticyclone is expected to penetrate in land over southern Africa squeezing the trough to the east against the Mascarene anticyclone that will also be pushed out of the main land into the western Indian Ocean and the trough to its east will continue to move eastwards and push the Mascarene anticyclone further to the east over Mozambique and Madagascar.

### **2.2. Flow at 500hPa**

T+24h, a large part of the African continent from the north to latitude 20°S is expected to be covered by an anticyclonic flow pattern due to the subtropical anticyclones lying over land, with a westerly wave over the remaining part of southern Africa; while easterlies are expected to prevail along the equatorial latitudes with a cyclonic vortex over Somalia.

T+48h, a similar flow pattern will prevail as that of the previous day, but the cyclonic vortex over Somalia is expected to dissipate and a trough is expected to influence northern Egypt.

T+72h, a similar flow pattern will prevail as that of the previous day; but the trough over Egypt is expected to deepen and penetrate further southward into Sudan and Ethiopia. Westerlies are expected to dominate over southern Africa.

### **2.3. Flow at 200hPa**

T+24h, an extensive upper level anticyclonic flow pattern is expected to prevail over a large part of Africa north of latitude 20<sup>0</sup>S due to subtropical anticyclones over the Sahel and over southern Africa, with a trough over south western Morocco. Easterlies are expected to prevail equator ward of the subtropical anticyclones, and westerly wave pattern to the south of southern Africa.

T+48h, the flow is expected to be similar to the T+24h flow pattern, but westerly wave pattern to the south of southern Africa is expected to shift eastward.

T+72h, the circulation system is expected to be similar to that of the previous day, but the trough to the south west of Morocco is expected to fill up, and an anticyclonic vortex will move and occupy northern Madagascar.

*Author:*

*Hilaire Elenga (Direction de la Meteorologie Nationale du Congo Brazzaville and African Desk)*