



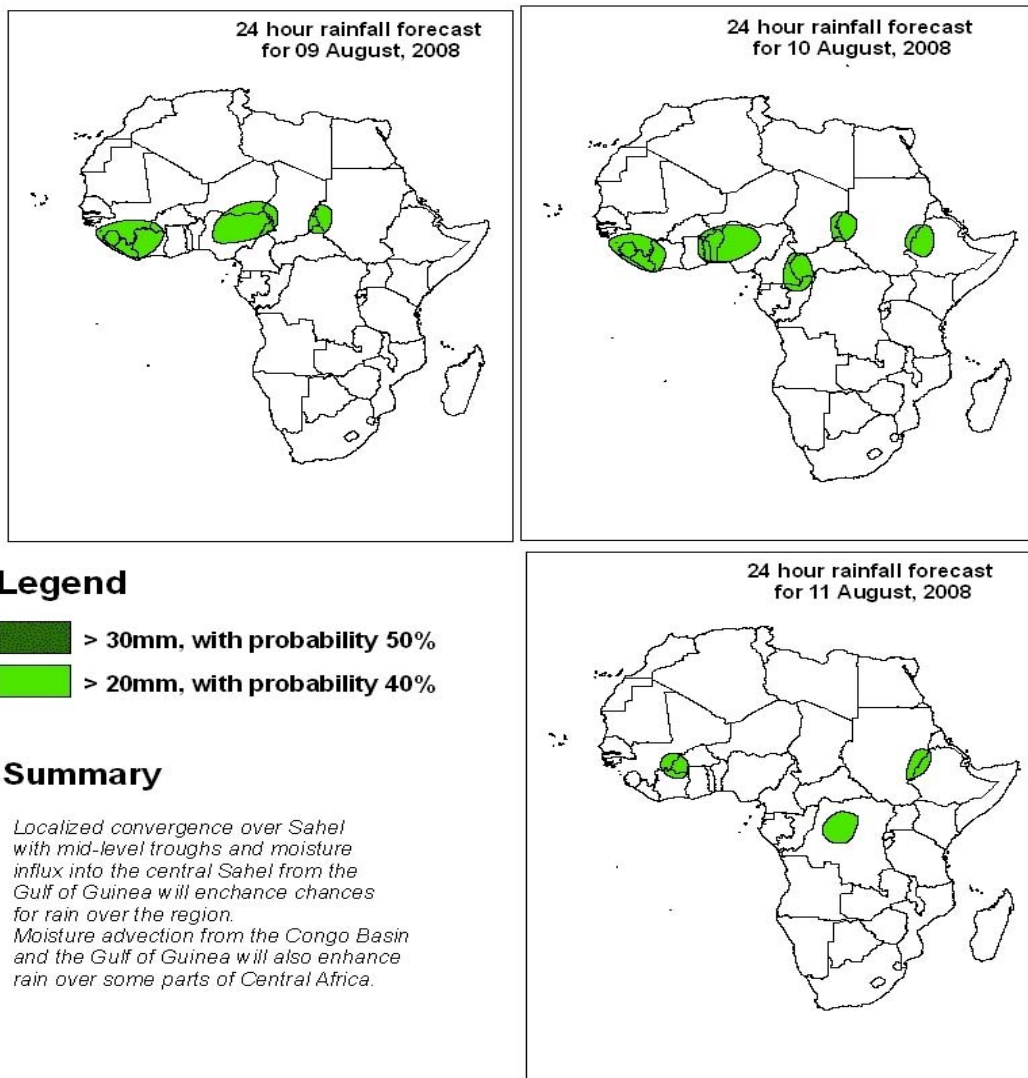
## Forecast Guidance for Africa

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

**FORECAST DISCUSSION 14H00 EST, 08<sup>th</sup> AUGUST 2008**  
**Valid: 00Z 09<sup>th</sup> August – 11<sup>th</sup> 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.



## **2. Model discussion**

*Model comparison (Valid from 00Z; 09<sup>th</sup> 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, the Saharan anticyclonic circulation is expected to be centered over Tunisia influencing the flow over the Maghreb region. A Series of localized convergence will develop over the Sahel region. The influx of the Southwest Monsoon will be well established over the central and eastern Sahel. An Anticyclonic flow pattern will occur between the borders of Sudan, CAR and DRC. Apart from the trough centered over central South Africa, the flow over the southern African region will be controlled mainly by the St. Helena and Mascarene Anticyclonic systems.

T+48h, The Saharan anticyclonic system over northern Africa is expected to shift slightly southwestwards. A cyclonic vortex will develop over northern Mali; while localized convergence is expected over western Niger and between the borders of Chad and Sudan northern Congo and northern Angola. On the contrary, an anticyclonic circulation will prevail over Senegal while a diffluent flow pattern will dominate over much of Niger, CAR and southern Sudan. The St. Helena anticyclonic system will move eastwards extending its ridge to cover much of Southern Africa.

T+72h, the anticyclonic system over North Africa will persist while continuing its slow southwest movement. The cyclonic vortex over Mali will deepened while shifting northwards into southern Algeria. Another cyclonic vortex will develop over central Niger. Localized convergence will be featured over western and eastern Chad while the same will be scattered over DRC. The anticyclonic circulation over Senegal and CAR will persist while a new system will evolve over Chad. The St. Helena anticyclonic system will move further eastwards over Southern Africa while dominating the entire flow over the region.

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

T+24h, two subtropical anticyclonic circulations are expected over northern Africa and will be centered over Morocco and southern Egypt respectively. These two systems will be separated by a mid-latitude trough stretching from the Mediterranean Sea into northeastern Libya. A cyclonic vortex will be featured over Nigeria which is expected to cause a perturbation on the easterly flow south of the Subtropical ridge systems. A short wave trough will also be featured with its axis centered over eastern Cote D'Ivoire. An extensive Subtropical anticyclonic Circulation will dominate the flow over the northern sectors of southern Africa, while the southern sectors will be under the influence of a westerly wave and a trough over the southeastern Atlantic.

T+48h, the flow over North Africa will in general be similarly to that of the previous day except that a cut off cyclonic circulation will evolve over southern western Algeria. The trough axis over Cote D'Ivoire will move into Liberia while confluent flow-lines are expected over eastern Nigeria and Uganda. The entire northern half of southern Africa will be under the influence of an anticyclonic system, while the southern part will be dominated mainly by a westerly wave with a cut-off anticyclonic circulation off the western coast of South Africa.

T+72h, the Trough over Libya/Egypt will propagate eastwards while another will develop off the Moroccan coast. To the south of these mid-latitude systems lies the subtropical anticyclonic system which is expected to decay. An anticyclonic vortex will develop over the coastal areas of the Gulf of Guinea; whereas diffluent flows will dominate over Niger, eastern Sahel and eastern DRC. Much of Southern Africa will be under the influence of anticyclonic circulation systems with the exception of Namibia and Botswana which will be under the influence of cut-off cyclonic flows and Madagascar will be under the influence of a trough axis from the westerly wave.

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

T+24h, an extensive upper level anticyclonic flow pattern will prevail over northern Africa; a short wave trough is expected to develop over central Niger. 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 with a trough over northern Morocco, Algeria and Tunisia. But the short wave trough over central Niger is expected to move to southeastern Algeria.

T+72h, the wind flow pattern is expected to remain as that of the previous day, but a trough over southeastern Algeria is expected to move southeastwards while another one is expected to develop over northern Chad.

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