



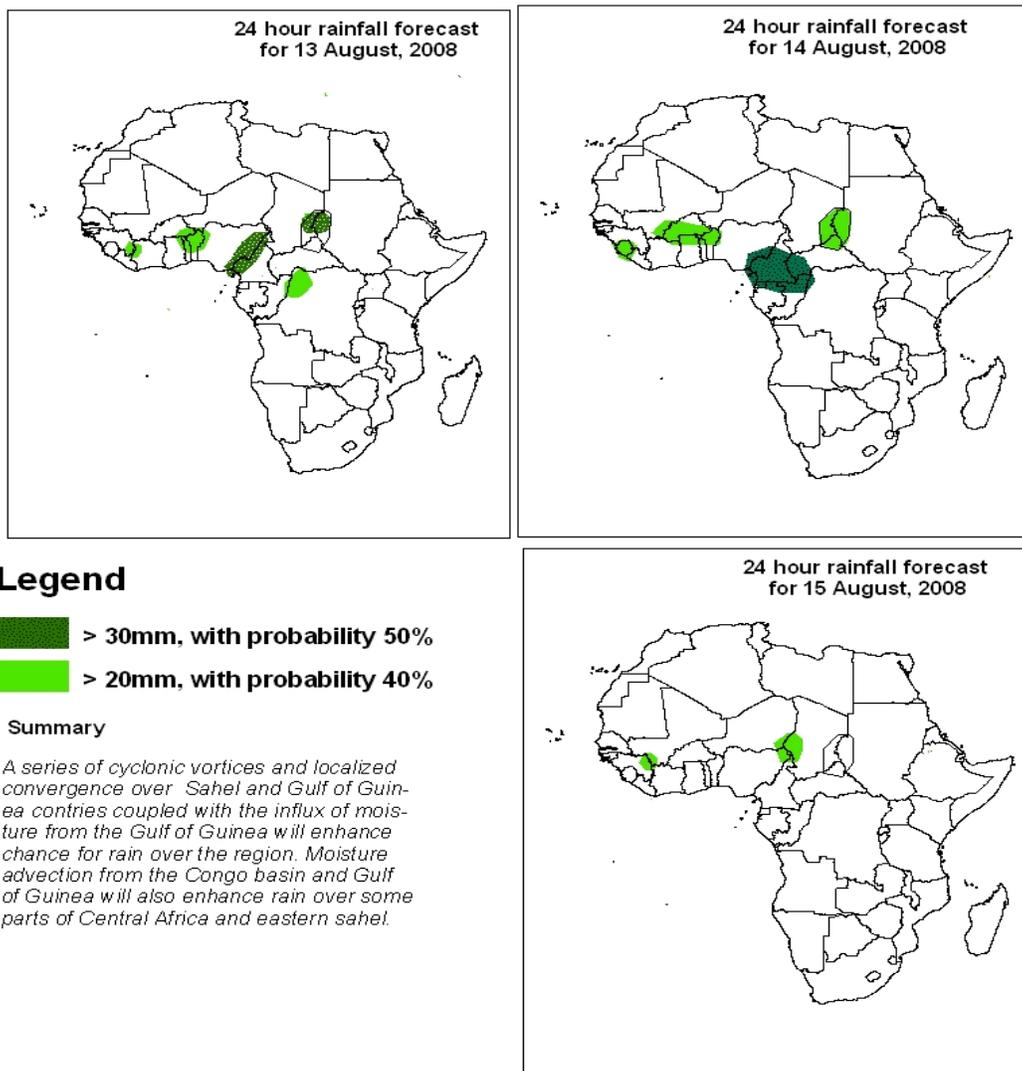
## Forecast Guidance for Africa

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

**FORECAST DISCUSSION 14H00 EST, 12<sup>th</sup> AUGUST 2008**  
**Valid: 00Z 13<sup>th</sup> August – 15<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; 13<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 centered over northern Algeria but it's expected to be a weak system. A series of cyclonic vortices will be featured over north Western Sahara, eastern Mali, western Niger, Eastern Chad and western Cote d'Ivoire; whereas, an anticyclonic circulation will characterize the flow over northern Mali, eastern Niger and western Sudan. Localized convergence will occur over central Cameroon, northern DRC and over Angola; whereas, diffluent flow patterns are expected over CAR. The eastern sector of Southern Africa will be under the Influence of The Mascarene anticyclonic circulation while the western and southern sectors will be affected by a westerly wave with a back hanging trough.

T+48h, The Saharan anticyclonic system over northern Africa is expected to shift north into the Mediterranean Sea. The cyclonic vortex that was featured over Western Sahara during the previous day will propagate slightly westwards into the Atlantic and its expected to weaken becoming a trough, while that over Mali, Chad and Cote d'Ivoire will propagate south-westwards to be located over southern Mali, central Chad and the coast of Sierra Leone respectively. Localized convergence is expected over southern Chad, central CAR and north-western Angola. On the contrary, diffluent flow will occur over western Mauritania, eastern Chad and Zambia. The Mascarene anticyclonic system will propagate eastwards with its trailing ridge expected to influence the flow over eastern sectors of Southern Africa; whereas, a cut off low from a westerly wave will prevail over the western and southern sectors.

T+72h, the flow over north and Southern Africa are expected to be similar to that of the previous day, except for the confluence of the winds over eastern Morocco/northwestern Algeria. The cyclonic vortex over Chad will move into Niger while intensifying. New cyclonic vortices are expected to develop over northern Mauritania/Mali and northeastern Sudan.

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

T+24h, two subtropical anticyclonic circulations are expected over northern Africa and will be centered over The Maghreb region and northern Sudan. These two systems will be separated by a mid-latitude trough with an axis lying between the borders of Libya and Egypt. The cyclonic vortex featured over north of Western Sahara at the 850hPa level is quite intense and deep as it still prevails at this level. Shortwave troughs are expected within the easterly flow south of the Sub-Tropical anticyclonic systems over Mauritania and western Nigeria. Diffluent flows are expected to occur over Chad and DRC. The northern sectors of Southern Africa, including northern parts of Madagascar will be under

the influence of an anticyclonic system; whereas, the rest of Southern Africa will be dominated by a westerly wave.

T+48h, generally the flow over Northern and Southern Africa will be similar to that of the previous day except that the cyclonic vortex over Western Sahara with its associated trough over Mali will propagate westwards to the Atlantic, while that over western Nigeria will be centered over western Mali/Cote d'Ivoire. A cyclonic circulation is expected to develop over the Mozambique Channel.

T+72h, the anticyclonic system over the Maghreb will intensify extending its ridge southwards over western Sahel. Cyclonic vortices will evolve over northern and southern Cameroon. The anticyclonic circulation over northern sectors of Southern Africa will persist while the rest of Southern Africa will continue to be under the influence of a westerly wave. A back hanging trough is expected over the western sector while the cyclonic circulation will propagate north-eastward to dominate the flow over Madagascar.

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

T+24h, an extensive upper level anticyclonic flow pattern will prevail over northern Africa with a cyclonic vortex and trough to the northwest. A trough is expected to develop into the Senegal and along the coast of Guinea, Sierra Leone and Liberia. 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 short wave trough along the coast of Senegal is expected to move into the Atlantic Ocean.

T+72h, the wind flow pattern is expected to remain as that of the previous day. But a cyclonic vortex over northwestern Africa is expected to move into the Atlantic Ocean. However a short wave trough along the coast of Senegal is expected to fill up.

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