



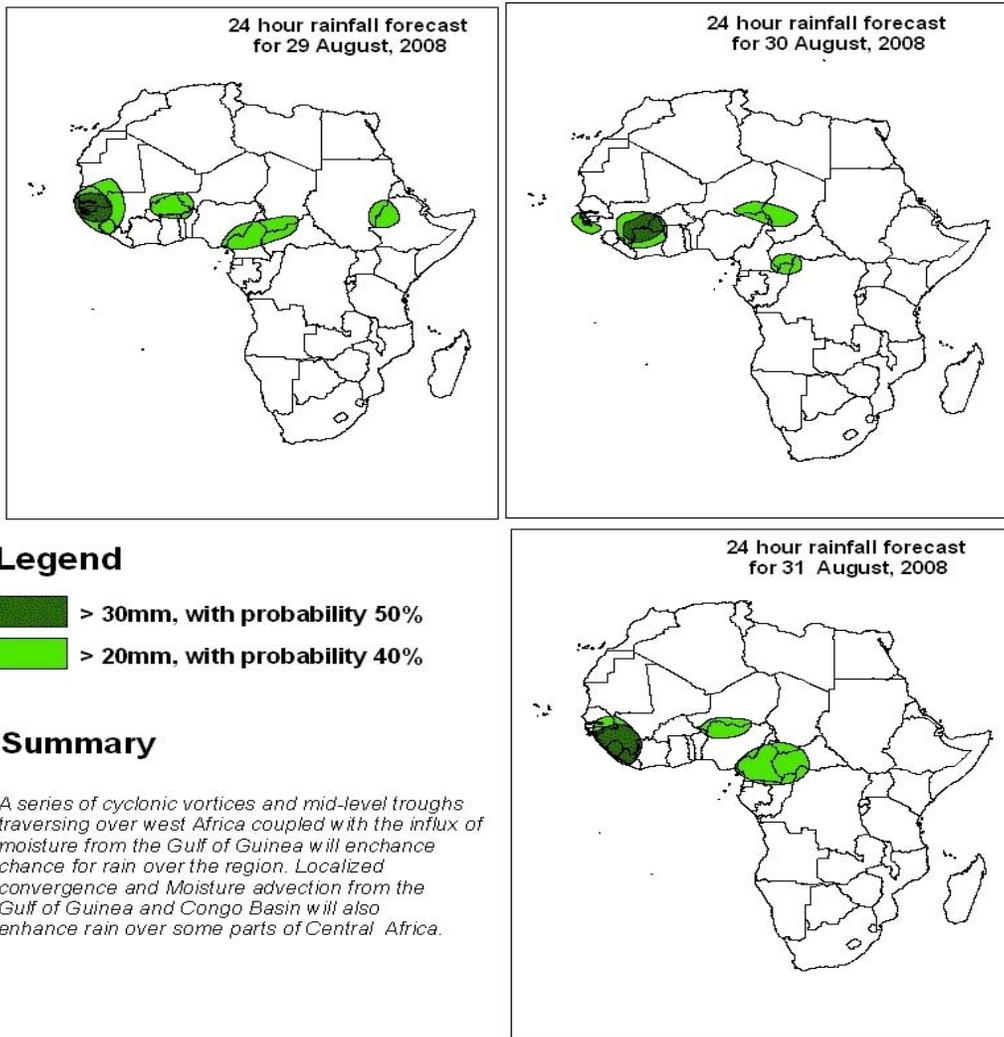
## Forecast Guidance for Africa

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

**FORECAST DISCUSSION 14H00 EST, 28<sup>th</sup> AUGUST 2008**  
**Valid: 00Z 29<sup>th</sup> August – 31<sup>st</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; 29<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 northern Libya; thus, dominating the flow over much of North Africa except for the Moroccan coast due to the penetration of a trough over the area. Cyclonic vortices are featured over northern Mauritania, off the Guinean coast, Benin, eastern and southern Chad. Localized convergence is likely over Burkina, western Sudan, Rwanda, western and southern DRC and Angola. Conversely, localized divergence is likely over eastern and southern Sudan, central Ethiopia, Gabon, northern Congo and some parts of southwestern DRC. Much of Southern Africa will be under the influence of the St. Helena's ridge to the west and Mascarene anticyclonic circulation to the east. However, the southern coast will be affected by a westerly wave.

T+48, a similar flow to that of the previous day will prevail over North Africa. All cyclonic vortices featured during the previous day are expected to decay except the one off the coast of Guinea which is expected to propagate westwards. Localized convergence is likely to occur over western Mali, southern Guinea Conakry, southern Niger, southern Chad, northeastern Sudan, southern DRC and central Angola; whereas localized divergence will prevail over Nigeria, southern Sudan, Ethiopia and Kenya. The western and eastern sector of Southern Africa will be influenced by a ridge from the St. Helena and Mascarene anticyclonic circulations respectively while a mid-latitude trough will affect the southern sector.

T+72, the Saharan anticyclonic circulation is expected to intensify. Cyclonic vortices will develop over southern Algeria, Senegal and environs, northwestern Sudan and southern Chad. Localized convergence will prevail over eastern Mali, northern Nigeria, northeastern Sudan and Angola; whereas, localized divergence will prevail over Cote d'Ivoire and the areas between central CAR and southern Ethiopia. A similar flow pattern will prevail over Southern Africa as compared to that of the previous day.

### 2.2. Flow at 500hPa:

T+24, the flow pattern over Northern Africa is expected to be dominated by an extensive Sub-Tropical anticyclonic circulation system. However, a mid-latitude trough from the Mediterranean Sea will penetrate onto eastern Libya. South of the anticyclonic system are easterlies, in which shortwave troughs are embedded with their axes centered along the coast of Senegal and over western Sudan. Diffluent flows will occur over the western Gulf of Guinea states and the area between northeastern DRC and Kenya. The northern sector of Southern Africa will be under the influence of a Sub-Tropical anticyclonic system while the southern sector will be dominated by a westerly wave.

T+48, similar flow patterns to that of the previous day are expected to prevail over Northern and Southern Africa. However, the mid-latitude trough over Libya will deepen while another will develop over the northeast Atlantic Ocean. A cyclonic circulation is likely to evolve over the coast of Cote d'Ivoire. The shortwave trough featured along the coast of Senegal will persist and propagate further westwards over the Atlantic Ocean; while that over Sudan will move towards the border with Chad. Confluent flow will occur over Cameroon while diffluent flow will prevail over northern DRC onwards to Kenya.

T+72, not much changes are expected on the general flow as compared to that of the previous day except that the cyclonic circulation featured over cote d'Ivoire will propagate westwards and will be centered off the coast of Sierra Leone.

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

T+24h, a westerly wave featuring two upper level troughs will prevail over the northeast Atlantic Ocean and Maghreb region respectively with their axes oriented in a north-northeast and south-southwest direction. An extensive anticyclonic system will be featured stretching across the Sahara. Easterlies are expected to dominate the flow south of the anticyclonic system with a shortwave trough featured stretching from Sierra Leone into Mauritania. A cyclonic circulation is likely to develop over northeastern Kenya. Much of the northern sector of Southern Africa will be under the influenced of an anticyclonic system while, the south will be dominated by a westerly wave.

T+48h, generally, the wind flow pattern is expected to remain as that of the previous day. However, a series of short wave troughs will be featured over Senegal, western Nigeria, western Chad and western/southern Sudan. The cyclonic circulation over northeastern Kenya will move southwestwards to Uganda and deepened. A similar flow is expected to prevail over Southern Africa except for the deepening of the trough over the Mozambique Channel.

T+72h, the upper level trough over the northeast Atlantic Ocean is expected to weaken while that over the Maghreb region will deepen and extend southwestwards. It is expected to stretch from the Mediterranean Sea onto eastern Mali; hence, splitting the anticyclonic flow pattern over Northern Africa. A confluent flow will occur over Lake Chad. The cyclonic circulation over Uganda will shift slightly northeast to southern Sudan while another will evolve over northern Zambia. Easterlies will dominate equator-ward of the anticyclonic systems. Much of the northern sector of Southern Africa will be under the influenced of an anticyclonic system while, the south will be dominated by a westerly wave.

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