



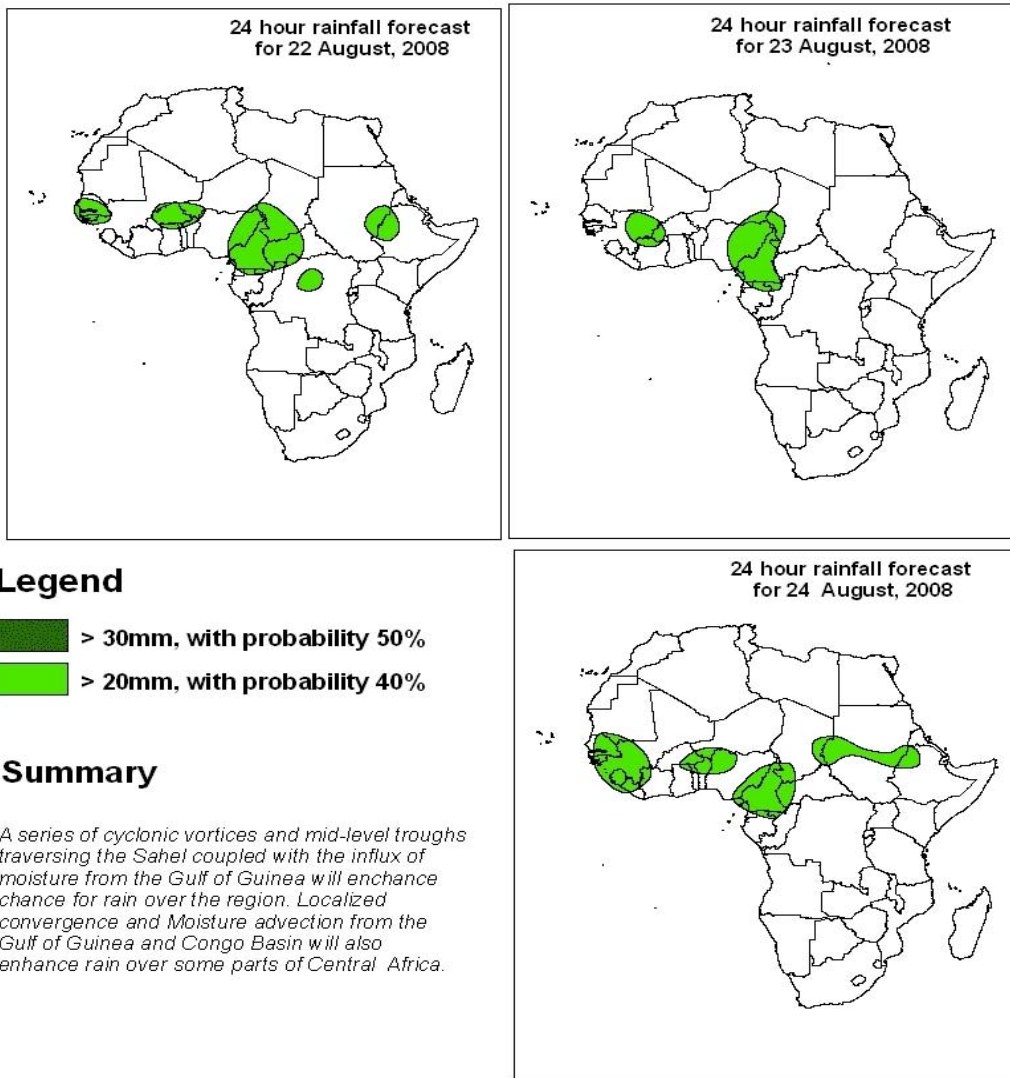
Forecast Guidance for Africa

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

FORECAST DISCUSSION 14H00 EST, 21st AUGUST 2008
Valid: 00Z 22nd August – 24th 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; 22nd 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 dominate the flow over North Africa. However, a mid-latitude trough will influence the flow over northwest Morocco and northern Egypt. Cyclonic vortices are featured over southwestern Mali, Nigeria and northeastern Sudan; whereas anticyclonic vortices will occur over eastern Niger and eastern Sudan. Localized convergence is likely over southern Mauritania, western Chad, western and eastern Ethiopia, Cameroon, eastern Congo, northern DRC, and northern Angola. On the contrary localized divergence is likely over central Mali, southern Ethiopia, central Chad, southern Sudan and central DRC. A westerly wave will affect the southern coastline areas of South Africa while the rest of the Southern African region will be under the influence of both the St. Helena and Mascarene anticyclonic circulation systems.

T+48, the flow pattern over north Africa is expected to remain quasi-stationary. The cyclonic vortex featured over southwestern Mali and Nigeria during the previous day will decay, while the one over Sudan will prevail, but propagate slightly westwards. Three new ones will evolve over western and southern Mauritania, and over southern Mali. Localized convergence is likely to occur over Liberia, Cote d'Ivoire, southern Cameroon, central Sudan, eastern Ethiopia, Rwanda, southern DRC and northern Angola; whereas localized divergence will prevail over central Mali, CAR and southern Sudan. Much of Southern Africa will be under the influence of the Mascarene anticyclonic system except for the northwestern coast which will be influenced by the St. Helena's Ridge and the southwest by a mid-latitude trough.

T+72, a similar flow to that of the previous day will prevail over North and Southern Africa. The cyclonic vortex over western Mauritania and Sudan will persist while those over southern Mauritania and Mali will decay. Others are expected to develop over southern Algeria and northeastern Sudan. The anticyclonic vortex over CAR is expected to persist. Localized convergence will prevail over Liberia stretching onto northern Benin, southern Nigeria and northern Angola. Localized divergence is expected to develop over central Sahel, northern and central DRC.

2.2. Flow at 500hPa:

T+24, a well pronounced omega block pattern is expected over Northern Africa, with a Sub-Tropical anticyclonic circulation system centered over western Algeria. The Sub-Tropical anticyclonic system will be flanked on either side by a mid-latitude trough centered over northeast Atlantic Ocean and Egypt respectively. South of the anticyclonic system lies the easterlies with a series of shortwave troughs, but the most prominent is centered over Ghana stretching northwestwards into Mali. A cyclonic circulation will be featured over southern Cameroon while confluent flows are likely to occur over central

Ethiopia. Much of Southern Africa will be under the influence of a Sub-Tropical anticyclonic system except for the westerly wave which will affect South Africa and the passage of a trough over Madagascar.

T+48, similar flow patterns to that of the previous day are expected over Northern and Southern Africa. However, the cyclonic circulation featured over southern Cameroon will intensify and move northwest towards central Nigeria generating a shortwave trough with its axis extending to central Niger. Similar troughs but of less amplitudes will prevail over the southern borders of Niger/Chad and Chad/Sudan.

T+72, changes that are expected on the general wind flow pattern as compared to that of the previous day will be the slight westward propagation of the shortwave troughs, the decay of the cyclonic vortex over Niger and the evolution of confluent flow over southern Niger and central DRC; and diffluent flow over Guinea Bissau, southern Nigeria, southern Sudan and western Ethiopia.

2.3. Flow at 200hPa:

T+24h, an extensive upper level anticyclonic flow pattern will prevail over northern Africa with a trough to the northwest. A short wave trough is expected to develop along the coast of western Sahel. 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 wind flow pattern is expected to remain as that of the previous day, but a trough over northwestern Africa is expected to retreat into the north Atlantic Ocean. A short wave trough along the coast of western Sahel is expected to move to the Atlantic Ocean.

T+72h, the flow pattern will similar to the pervious day, but a short wave trough is expected to develop over central Niger.

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