



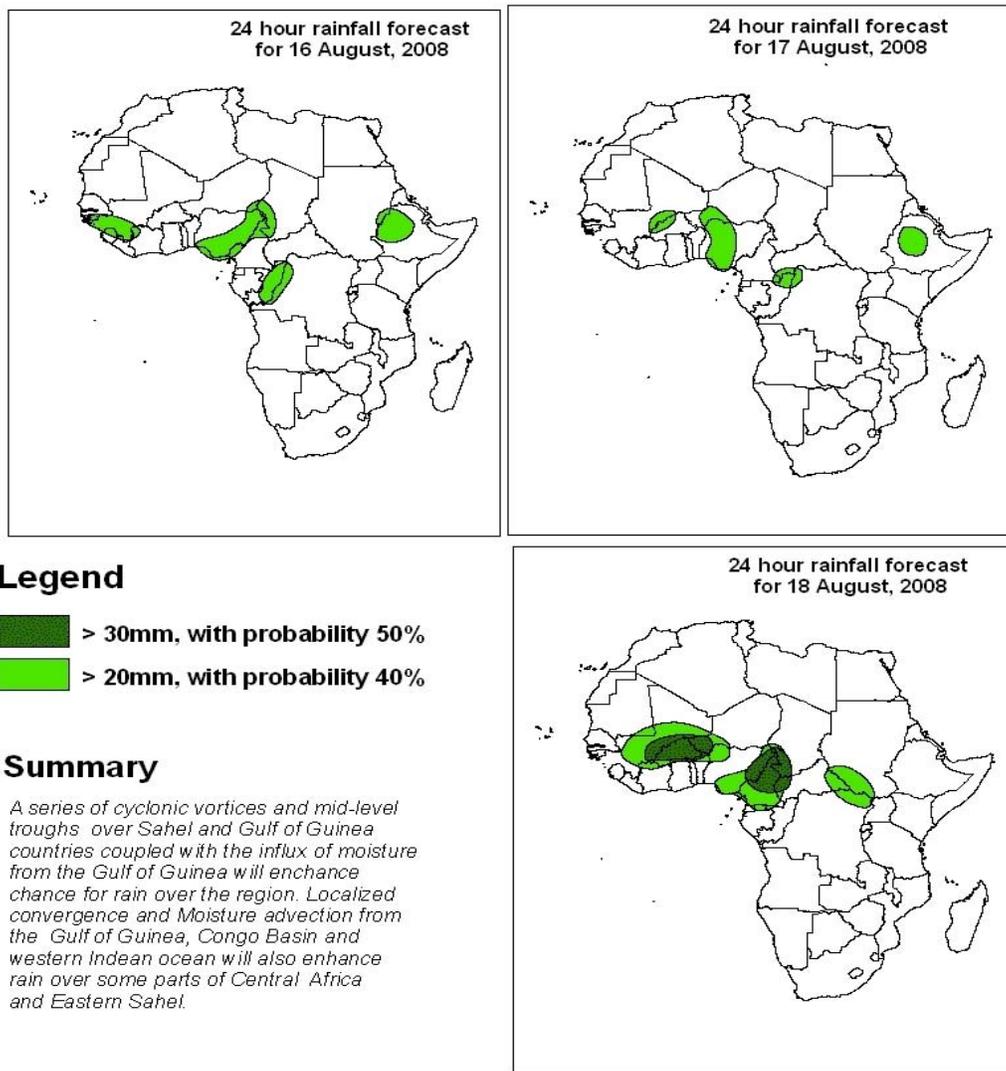
Forecast Guidance for Africa

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

FORECAST DISCUSSION 14H00 EST, 15th AUGUST 2008
Valid: 00Z 16th August – 18th 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; 16th 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 Azores anticyclonic circulation is expected to be intense, extending its ridge over the Maghreb region. A series of cyclonic vortices are featured over western Mauritania, eastern Mali and northeastern Nigeria. Localized convergence will occur over Guinea Conakry, Ethiopia, southern DRC, Angola and Botswana; whereas, localized divergent flows are expected over southern Mauritania, Burkina, eastern CAR, southern Sudan, western Ethiopia and western DRC. The western and eastern sectors of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic systems while, the southern sector will be affected by a mid-latitude trough.

T+48h, a cyclonic circulation is expected to develop over eastern Morocco and split the anticyclonic systems into an Azores anticyclonic circulation system confined to the north Atlantic and the Saharan anticyclonic circulation centered over southern Tunisia. The cyclonic vortices featured over the Sahel during the previous day will propagate southwestwards while that over Nigeria will move northeastwards to western Niger. A new cyclonic vortex will develop over western Sudan. Localized divergence will be featured over Senegal, Guinea, western Nigeria, Chad, Sudan and western Congo; whereas, localized convergence will prevail over Ethiopia, eastern/southern DRC and Angola. The western and eastern sectors of Southern Africa will remain under the influence of the St. Helena and Mascarene anticyclonic systems except for small areas to the southeast and the Mozambique Channel which will be under the influence of a mid-latitude trough.

T+72h, the flow over North Africa is expected to be similar to that of the previous day. The cyclonic vortices are expected to continue their westward propagations with centers over central Mauritania, central Mali, northeastern Chad and western CAR. Northwestern/western DRC will be affected by divergent flows; whereas southern DRC and Angola will continue to experience localized convergence. The wind flow over much of the Southern Africa will be characterized by the merging of both the St. Helena and Mascarene anticyclonic circulation systems.

2.2. Flow at 500hPa:

T+24h, the flow over Northern Africa is expected to be dominated by two Sub-tropical anticyclonic systems with centers over western Algeria and northern Sudan. However, the former will be quite intense. A mid-latitude trough with its axis lying over eastern Libya and northern Egypt will separate the two anticyclonic systems. Cyclonic circulations are expected over Nigeria, northern Congo and eastern DRC while shortwave perturbations on the easterlies will be featured over eastern Niger and central Sudan. An anticyclonic circulation system will dominate the flow over northern sectors of Southern Africa;

whereas a westerly wave will prevail to the south with a deep back hanging trough on the western sectors, while a cyclonic circulation will dominate the flow over Madagascar.

T+48h, generally the flow over Northern and Southern Africa will be similar to that of the previous day but with both Sub-Tropical anticyclonic systems expected to weaken. The trough will prevail and shift slightly eastward. The cyclonic circulation over Nigeria will prevail with its associated trough axis shifting slightly westwards over Niger. The one over northern Congo will also prevail while that over DRC will decay. The anticyclonic system over northern sectors of Southern Africa will prevail while a westerly wave will characterize the flow to the southern sectors. The cyclonic circulation over Madagascar is expected to prevail.

T+72h, the most striking feature expected during this period will be the westward shift of the cyclonic circulation from Nigeria to northern Liberia while another will evolve over central Mali thus creating a massive shortwave trough on the easterlies.

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 short wave trough is expected to develop over northern Mali. 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 with a trough from eastern Indian Ocean through central Madagascar to northeastern Mozambique.

T+48h, the flow pattern will remain quasi-stationary, i.e. similar to the previous day. But a short wave trough over northern Mali is expected to move to southern Mauritania and a trough from eastern Indian Ocean is expected to retreat to northeastern Madagascar.

T+72h, the wind flow pattern is expected to remain as that of the previous day, but another short wave trough is expected to develop over central Niger.

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