



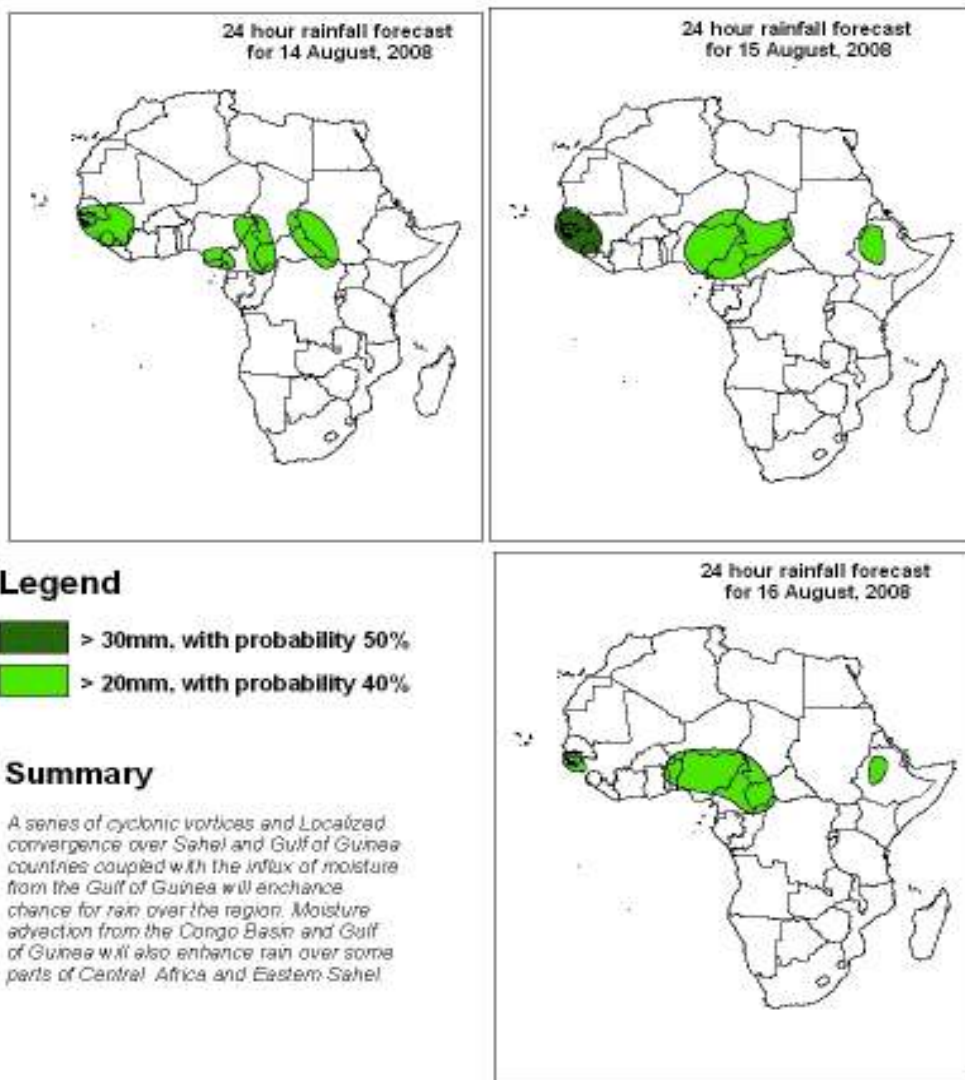
Forecast Guidance for Africa

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

FORECAST DISCUSSION 14H00 EST, 13th AUGUST 2008
Valid: 00Z 14th August – 16th 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; 14th 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 Tunisia and is expected to influence the flow over North Africa. A series of cyclonic vortices will evolve over the Sahel and Sierra Leone; whereas, an anticyclonic circulation will characterize the flow over northeastern Nigeria. Localized convergence will occur over Cameroon, Ethiopia, DRC and Angola. The eastern and central sectors 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 center of the Saharan anticyclonic system over northern Africa is expected to shift slightly northeastwards into the Mediterranean Sea, giving way to a mid-latitude trough that will be centered over north of Morocco/Algeria. The cyclonic vortices that were featured over the Sahel during the previous day will develop and will be centered over eastern Mauritania/northern Mali, central Niger and northern Sudan. The one over Sierra Leone will propagate westwards into the Atlantic while intensifying. The Localized convergence over Ethiopia, DRC and Angola are expected to persist, while the other one over eastern Namibia will prevail and stretches to central South Africa. Diffluent flow will occur over central Mali and western DRC. The Mascarene anticyclonic system is expected to remain quasi-stationary over the central and eastern sectors of Southern Africa; whereas, a cut-off cyclonic circulation from a westerly wave will influence the flow over the western and southern sectors.

T+72h, the flow over North Africa will be dominated by the extension of a ridge from the Azores anticyclonic circulation centered over the Atlantic. The cyclonic vortices over the Sahel are expected to propagate slightly westwards with the one over Mauritania decaying while a new one will develop over Niger. The cut-off cyclonic circulation which was featured during the previous day will move southeastwards giving way to a mid-latitude trough over South Africa. The western and eastern sectors of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic systems respectively.

2.2. Flow at 500hPa:

T+24h, the flow over Northern Africa will be dominated mainly by Sub-tropical anticyclonic systems with centers over northern Algeria and northern Sudan respectively. A cyclonic vortex is expected over Western Sahara while a mid-latitude trough from the Mediterranean Sea will penetrate deep onto eastern Libya. Equator-wards of the anticyclonic systems laid the easterlies. An anticyclonic flow is expected to dominate the flow over the southern borders of Nigeria/Cameroon and the entire northern sector of Southern Africa; whereas, a Westerly wave will prevail to the south and a cyclonic circulation expected over the Mozambique Channel.

T+48h, generally the flow over Northern and Southern Africa will be similar to that of the previous day. Cyclonic vortices including their associated shortwave troughs will develop over Nigeria and CAR. Much of the region stretching from central Ethiopia onto DRC will be under the influence of a diffluent flow. The cyclonic system over the Mozambique Channel will move to the southern coast of Madagascar, while a back hanging trough will approach western southern Africa.

T+72h, the subtropical anticyclonic circulation over the Maghreb region will intensify extending its ridge over western Sahel and further into the equatorial Atlantic. The mid-latitude trough will propagate eastwards with its axis lying over Egypt. A cut-off anticyclonic circulation will prevail over central Chad and south of the Red Sea. Cyclonic vortices will be featured over southern Nigeria, central Cameroon and central Sudan; thus, generating shortwave troughs within the easterly flow south of the Sub-Tropical anticyclonic systems. Diffluent flows are expected to occur over Cote d'Ivoire, Nigeria, southern Sudan and Ethiopia; whereas confluent flow will prevail over southern Cameroon. The northern sectors of Southern Africa will remain under the influence of an anticyclonic system; whereas, the rest of Southern Africa will be dominated by a westerly wave with the cut-off cyclonic flow persisting 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. 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 a cyclonic vortex and trough over northwestern Africa is expected to retreat to the North.

T+72h, the wind flow pattern is expected to remain as that of the previous day. But a westerly wave is expected to prevail over southern Africa with a back longing trough from eastern Indian Ocean through central Madagascar to the northeastern part of Mozambique.

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