



Forecast Guidance for Africa

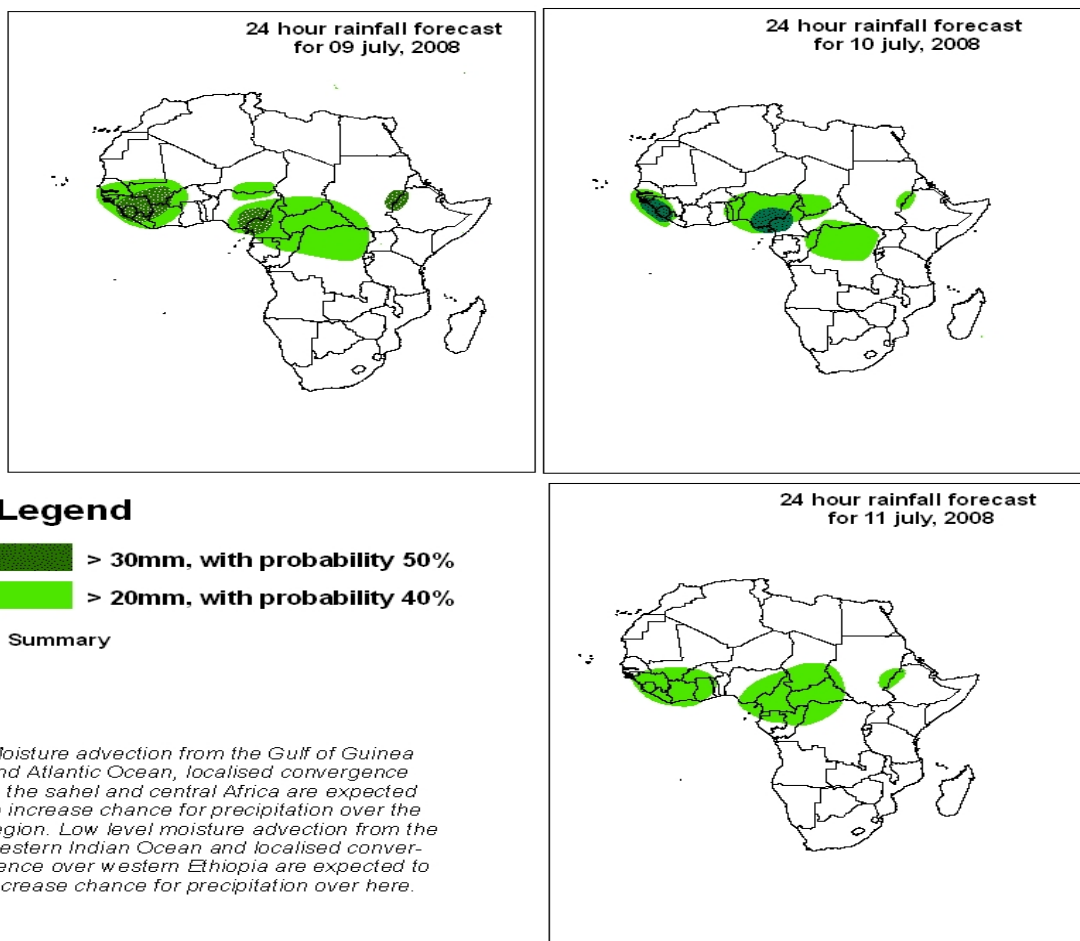
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 08 JULY 2008

Valid: 00Z 09 - 11 JULY, 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; 09 July 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 entire North African region is expected to be under the influence of an anticyclonic circulation. A series of cyclonic vortices are featured over the Sahel, the border of Niger/Nigeria, the central areas of Chad and Sudan; as well as over northeast Angola, the Great lakes region and northeastern Ethiopia, Where northeasterly trades converge with southeasterly/southwesterly winds from the southern hemisphere. The main flow pattern over the southern half of the African continent is generated by an anticyclonic vortex centered over the south western Indian Ocean off the southwestern tip of Madagascar together with its ridge that extend to the northwestern sector of southern Africa. On the contrary, northwesterly winds are expected to dominate over the southwestern sector of southern Africa.

T+48h, the flow pattern is expected to be similar to that of the previous day over the Maghreb States. However, a cyclonic vortex over Sierra Leone/Liberia is expected to move to the Atlantic Ocean. The ridge over the northwestern sector of Southern Africa will weaken as the anticyclonic Vortex moves to the southwest Indian Ocean, causing much of Southern Africa to be under the influence of a Trough that extends from the cyclonic vortex located over the South Atlantic Ocean, and a ridge that extends from an anticyclonic vortex over southeastern Atlantic.

T+72h, over the Maghreb, the flow pattern is expected to remain as that of T+48h. The cyclonic vortex that was influenced over Sierra Leone/ Liberia will move westwards into the Atlantic. An anticyclonic vortex centered over the south Atlantic and is expected to dominate over southern Africa.

2.2. Flow at 500hPa

T+24h, much of the northern and Southern parts of Africa are expected to be under the influence of subtropical anticyclonic circulation systems of both hemispheres, with a trough over northeastern Egypt. The extreme southern Africa will mainly be dominated by northwesterly flow, as a result of the cyclonic circulation centered over southern Atlantic.

T+48h, a similar flow pattern will prevail as that of the previous day; however, a trough is expected to develop over Egypt. The flow over equatorial Africa will be dominated by an easterly flow pattern. The situation over Southern Africa is expected to remain as that of the previous day.

T+72h, a similar flow pattern will prevail over northern Africa as that of the previous day, except that the trough over Egypt is expected to retreat northwards. The systems over the southern half of the Continent will remain quasi-stationary.

2.3. Flow at 200hPa

T+24h, an extensive upper level anticyclonic flow pattern will prevail over a large part of Africa north of latitude 20⁰N with a divergence flow centered over northwestern Nigeria. Also featured between latitudes 00⁰ and 20⁰S are a series of upper level anticyclonic circulations. Easterlies dominate the flow equator-ward, whereas westerlies prevail over the entire Southern African region.

T+48h, the divergent flow over northwestern Nigeria will move westwards into the Atlantic Ocean. The series of anticyclonic flow pattern to the south will merge into two centers located, over northwestern Angola and over central Mozambique; while westerly flow is expected to dominate over Southern Africa.

T+72h, the wind flow pattern is expected to remain as that of the previous day, except a trough will develop over northern Libya and the centers of the respective subtropical anticyclones in the southern hemisphere are expected to shift westwards to the Atlantic Ocean and Zimbabwe respectively.

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