



Forecast Guidance for Africa

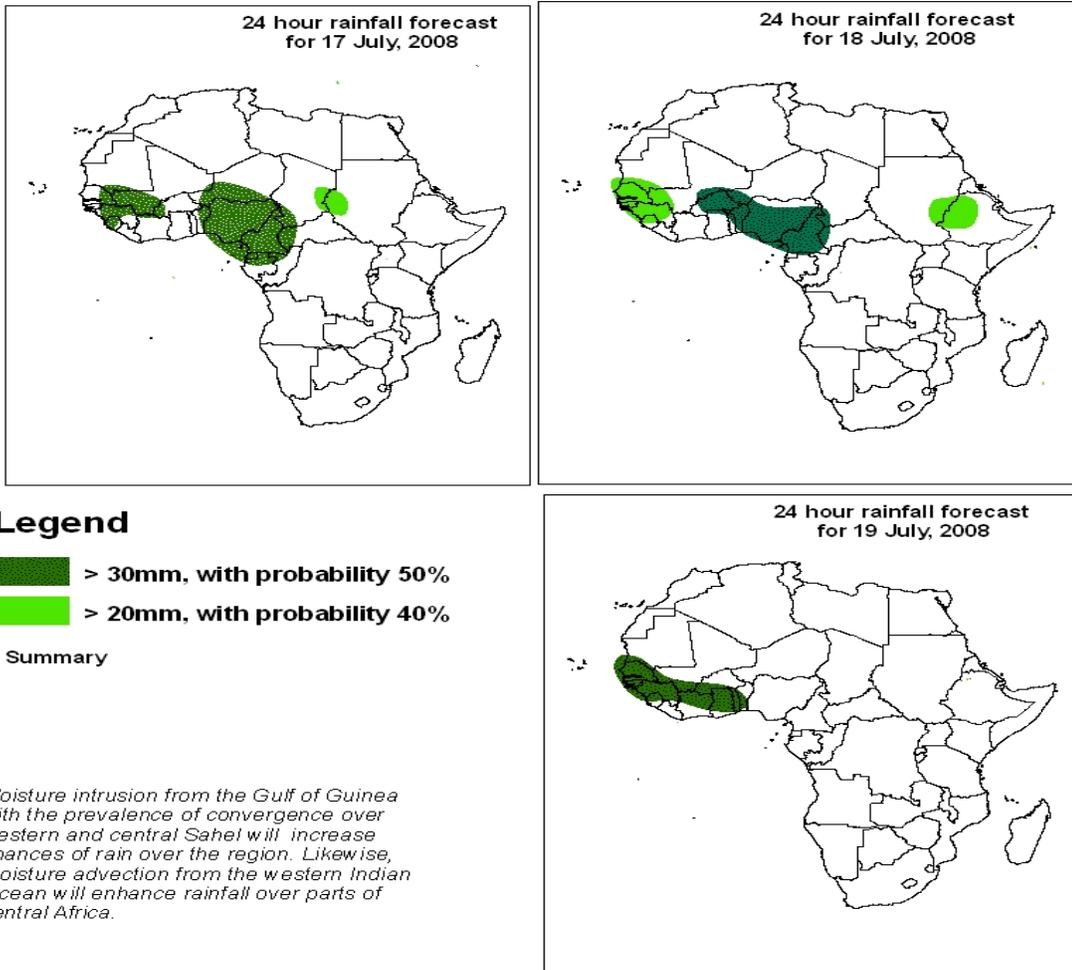
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 16 JULY 2008

Valid: 00Z 17 – 19 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; 17 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 Maghreb region is expected to be under an anticyclonic circulation, with northerly airstreams affecting Egypt. Cyclonic vortices will prevail over central Mauritania and southern Chad while localized convergence will be featured over other areas of the Sahel, Cote D'Ivoire and the Congo Basin. The West African monsoon is expected to prevail over the Gulf of Guinea countries and further inland up to Central Sahel. Much of Southern Africa will be under the influence of an anticyclonic circulation that will generate southeasterly flow over northern parts of Southern Africa extending across the Great Lakes region into DRC. The Indian monsoon is expected to prevail over the Western Indian Ocean region of Eastern Africa.

T+48h, the anticyclonic circulation over Maghreb region will remain quasi-stationary. However, the cyclonic circulation over central Mauritania will propagate south-westwards to the coast of Senegal. Series of cyclonic vortices will develop over northern Mauritania and Niger causing deep inland intrusion of southwesterlies from the Gulf of Guinea into the western and central Sahel. Localized convergence will prevail over central Ethiopia, northwestern Sudan, southern Sudan and stretching over to northeastern DRC. The anticyclonic circulation over Southern Africa will intensify and expand southeastward, hence pumping more southeasterlies into the Great lakes region and Congo basin.

T+72h, the anticyclonic circulation over the Maghreb will move slightly eastwards while being split from the parent cell by a mid-latitude trough over Morocco. The cyclonic vortices over Sahel will continue to propagate westwards with the southwesterlies being confined mainly to the western Gulf of Guinea countries including Senegal and environs. Isolated anticyclonic systems will develop over Western Sahara and Mauritania. Localized convergence will form over eastern Niger, northern Chad stretching across into northeastern Sudan, Ethiopia and western DRC. The anticyclonic circulation system over Southern Africa will prevail.

2.2. Flow at 500hPa

T+24h, an anticyclonic circulation will prevail over the Maghreb flanked by two troughs located off the Moroccan coast and over the Mediterranean coast of Egypt. Equator-ward of these systems lie the Easterlies with a perturbation extending from Sierra Leone onwards to Mali into southern Algeria. Convergence is evident over southern Burkina/northern Cote D'Ivoire. The main systems affecting Southern Africa will be a cyclonic circulation over northeastern Namibia with an anticyclonic circulation to the north and east respectively, and northwesterlies to the South. However, cyclonic systems will be featured to the northeast over northern Mozambique and the coast of Tanzania.

T+48h, the anticyclonic system over the Maghreb region is expected to relax, giving way to cyclonic circulations mainly over Algeria. The trough over northern Egypt including the

cyclonic circulation to the south will persist while that over northeastern Cote D'Ivoire/southern Burkina will propagate westwards. The easterly wave is evident between south of latitude 20° N and north of 08° N. Northern, western and parts of eastern Southern Africa will be under the influence of an anticyclonic circulation; whereas the central areas and northeastern including the Tanzanian coast will be under the influence of a cyclonic system. Northwesterlies will persist to the south.

T+72h, the entire North Africa will once again be under the influence of an anticyclonic circulation extending ridge southwestwards into western Sahel. Cyclonic vortices will persist over southern Egypt and develop over eastern Sudan. Localized convergence is expected over Lake Victoria while cyclonic systems will prevail over northern Southern Africa. An anticyclonic circulation located off the Angola/Namibia coastline will extend its ridge southeastwards onto southern Mozambique. Northwesterlies will persist to the south.

2.3. Flow at 200hPa

T+24h, an extensive upper level subtropical anticyclonic flow pattern is expected to prevail over the entire north Africa with a mid-latitude trough over Morocco. Easterlies will dominate equator-ward of the subtropical anticyclones with a diffluent flow over central Mali. Westerly component flows will prevail over south of Southern Africa whereas, the influence of a ridge will affect the northwestern and northeastern portions with a saddle over the central areas.

T+48h, the flow pattern will be similar to that of the previous day over North Africa. Diffluent wind fields will prevail over Sudan and Niger. The entire Southern African region will be under the influence of an anticyclonic circulation.

T+72h, the flow pattern will be similar to that of the previous day over much of the African continent. A trough will develop over Niger with a diffluent flow ahead, over the borders of Burkina/Mali. The entire southern part of the continent will be under the influence of a massive anticyclonic system.

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