



Forecast Guidance for Africa

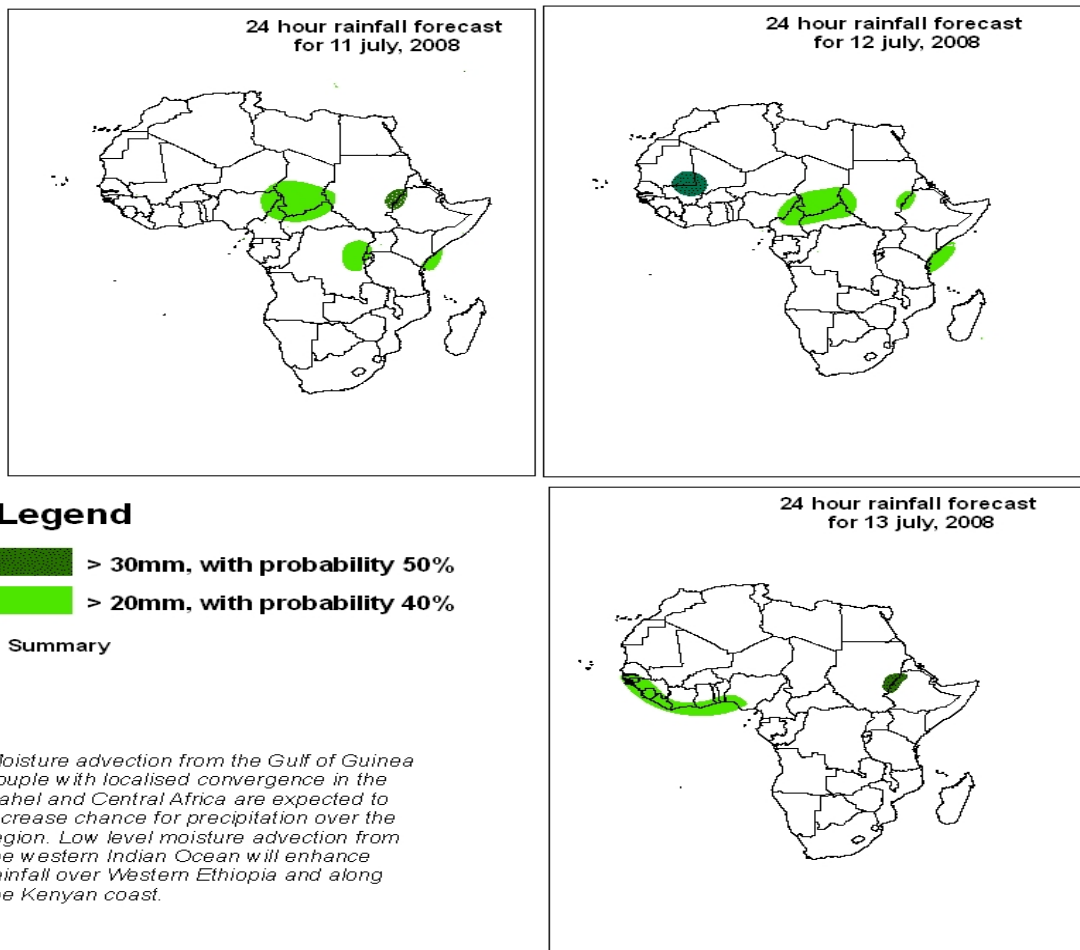
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 10 JULY 2008

Valid: 00Z 11- 13 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; 11 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, an anticyclonic circulation is expected over North Africa with a centre over northern Algeria whereas; north-easterlies are expected to prevail over Egypt. Scattered convergence systems are expected over the Sahel, DRC and Angola respectively, whilst a diffluent flow will occur over the Gulf of Guinea countries. Southern Africa will be under the influence of a ridge from the St. Helena anticyclone.

T+48h, the flow pattern is expected to change considerably. The Azores anticyclone will separate into two cells with the entire western Maghreb to be under a convergence zone including, western Mali and southern Cote D'Ivoire. The same situation is expected to occur over Southern Africa whereby; a cyclonic circulation, off the southern coast of Africa will deepen and split the St. Helena anticyclone into two, such that, one will be featured over the South Atlantic and the other off the eastern coast/South-west Indian Ocean.

T+72h, over the Maghreb, the flow pattern is expected to remain as that of the previous day except that a cyclonic vortex will evolve over northern Algeria thus making the Saharan anticyclone to relax. The cyclonic vortex over Mauritania will move westwards into the Atlantic. Whilst, that over Cote D'Ivoire will move into Liberia/Guinea Conakry. An anticyclone will evolve over the southern coastline of South Africa.

2.2. Flow at 500hPa

T+24h, apart from the troughing that is expected to affect parts of Egypt/Sudan and off the western coast of Southern Africa, much of Africa will be under the influence of anticyclone circulations with easterlies in the equatorial latitudes and westerly waves at the northern and southern extremes of the continent.

T+48h, the flow pattern is expected to be similar to that of the previous day; except that, a trough from the North-eastern Atlantic, will move eastwards closer to the coast of Morocco, whilst its counter part over the South-eastern Atlantic is also expected to move eastwards over South Africa.

T+72h, many changes are expected to occur particularly over the Eastern Sahel, Central and Eastern Africa, where anticyclonic/diffluent winds will be replaced by cyclonic/confluent wind patterns.

2.3. Flow at 200hPa

T+24h, an extensive upper level anticyclonic flow pattern will prevail over much of northern and southern half of the African continent. Easterlies will dominate equator-ward of the subtropical anticyclones with a diffluent flow towards the Kenyan/Tanzanian coast. Whereas, westerly waves will prevail over the extreme North and South of the African region, with a trough axis over Libya.

T+48h, the troughing over Libya will deepen whilst the diffluent flow will expand to cover the entire east African region. Upper level diffulence is also expected over the western Sahel. The system to the south will be quasi-stationary with more anticyclonic cells forming.

T+72h, the wind flow pattern is expected to change over North Africa with weakening of the trough over Libya and a deepening of the one on approach towards northwestern Morocco.

Authors:

- 1- *Hilaire Elenga (Direction de la Meteorologie Nationale du Congo Brazzaville and African Desk).*
- 2- *George Stafford (Department of Water Resources, The Gambia and African Desk).*