



## Forecast Guidance for Africa

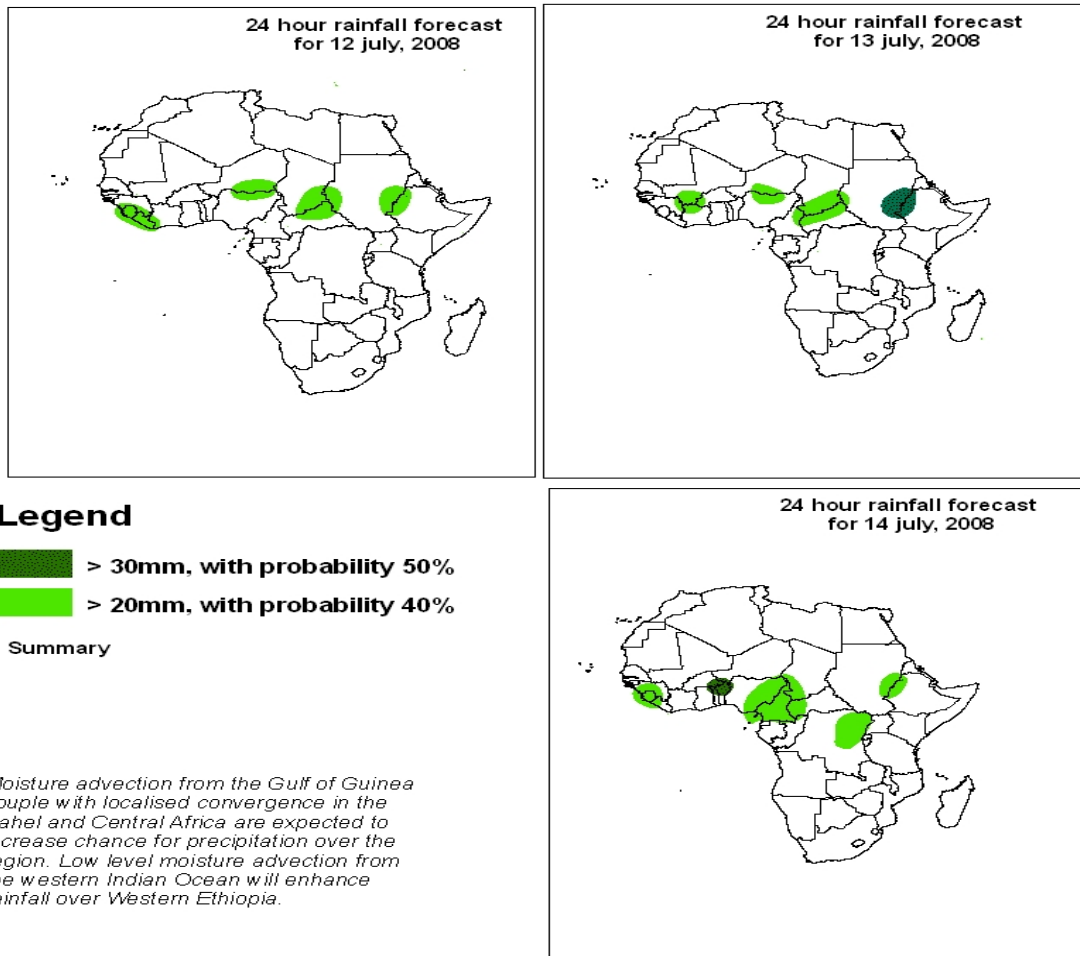
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

**FORECAST DISCUSSION 14H00 EST, 11 JULY 2008**

**Valid: 00Z 12 - 14 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; 12 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 Algeria and Libya, with northerlies over Egypt, whereas, a ridge from the Azores anticyclone will generate northerly/northeasterly winds over Morocco/Western Sahara. A series of scattered convergence systems are expected over the Sahel, eastern DRC and Angola, whilst a diffluent flow will occur over much of the Gulf of Guinea Countries including The Gambia. Southern Africa will be under the influence of an anticyclonic system.

T+48h, a deep trough will develop over Morocco, while the anticyclonic circulation over Algeria and Libya will prevail. The anticyclonic circulation over the Gulf of Guinea countries will recede to the west over Senegal and environs allowing for a warm moist southerly flow inland from Cote D'Ivoire to Cameroon. The Anticyclonic circulation over Southern Africa will generate cool strong south-westerlies into Mozambique onwards to the Great lakes region and Congo Basin.

T+72h, the flow pattern will remain generally quasi-stationary over much of Africa, despite the slight shift in positions of cyclonic/anticyclonic systems.

### **2.2. Flow at 500hPa**

T+24h, Mid-latitude troughs are expected to affect parts of Morocco and Egypt and the western coast of Southern Africa, as a result of westerly waves over the northern and southern extremes of the continent. Much of Sahara/Sahel including the northern sector of Southern Africa will be under the influence of anticyclonic circulations due to the subtropical anticyclones. Strong convergence will be featured over southern Chad.

T+48h, the flow pattern is expected to be similar to that of the previous day particularly over the northern half of the continent. However, over the southern half, a cyclonic circulation will develop over the western Indian Ocean, off the Tanzanian/Mozambique coastline and split the Mascarene Anticyclone over the region.

T+72h, changes that are expected to occur to the circulation patterns over Africa will mainly be confined to Eastern and Central Africa where divergent wind field will develop over Uganda being surrounded by cyclonic flow patterns over Somalia, Tanzania and southern Sudan. A diffluent flow system will also develop over Namibia with a westerly wave pattern to the South.

### 2.3. Flow at 200hPa

T+24h, extensive upper level subtropical anticyclonic flow patterns will prevail over much of northern and southern African continent. Easterlies will dominate equator-ward of the subtropical anticyclones with a diffluent flow over the East African 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 propagate slightly eastwards to Egypt. There will be a diffluence of the wind field between the borders of Niger, Nigeria and Chad. The anticyclonic circulation to the south will be quasi-stationary with more cells forming.

T+72h, the systems to the north of the continent will remain quasi-stationary although, the diffluence of the wind over central Sahel will propagate westwards. A deep trough in the westerlies is expected to traverse eastwards to Southern Africa, with its axis lying over western Botswana and eastern Angola.

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