



Forecast Guidance for Africa

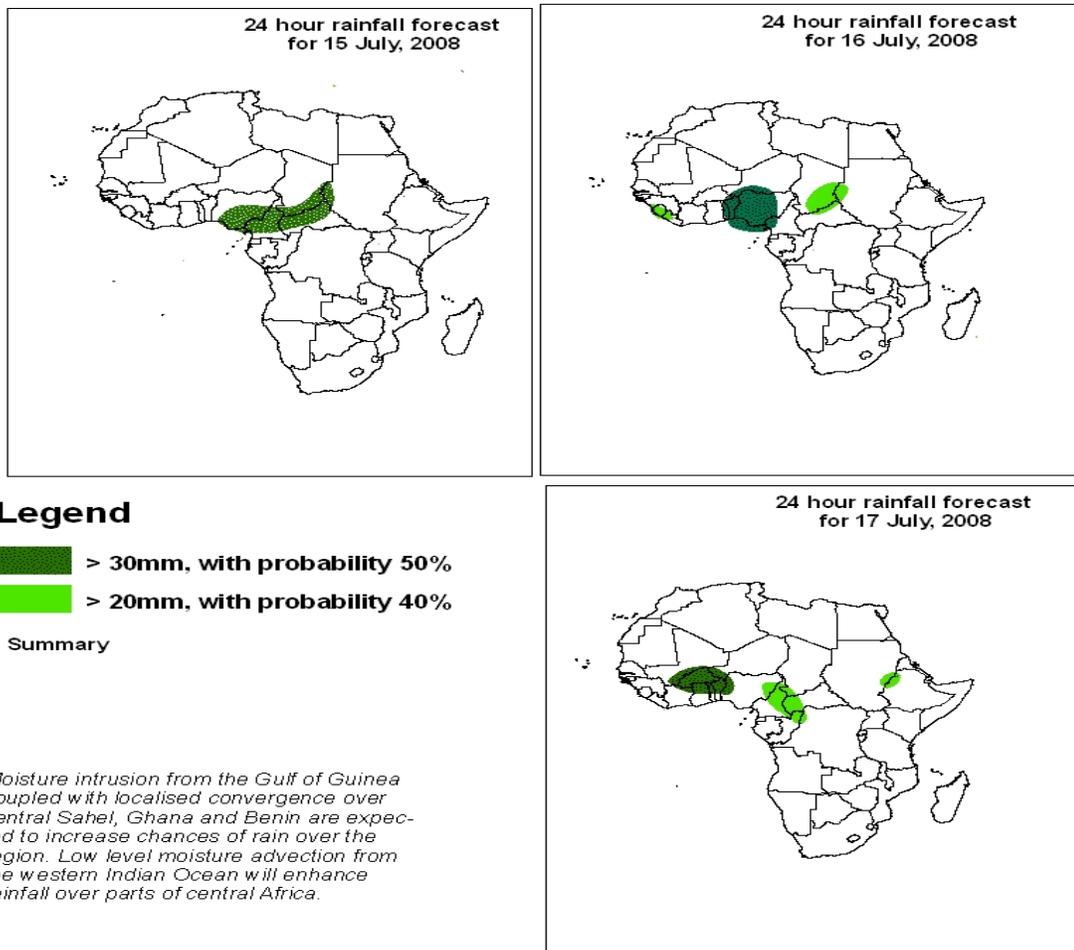
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 14 JULY 2008

Valid: 00Z 15 – 17 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; 15 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 a zone of an anticyclonic circulation system, with a center located over northern Algeria/ Tunisia. Localized cyclonic circulations will be featured over western Niger, central Chad, southern Ghana, including the borders between south-eastern Nigeria/western Cameroon. The entire Southern African region will be under the influence of an anticyclone circulation that will generate strong southeasterly flow over Mozambique to the Congo Basin. Southeasterly and Southwesterly monsoon are expected to prevail over the Western Indian Ocean region of Eastern Africa.

T+48h, the anticyclonic circulation over North Africa will remain quasi-stationary. However, the cyclonic circulation over Niger will propagate westwards to western Mali and deepen, causing deep inland intrusion of southwesterlies from the Gulf of Guinea. Central Africa will experience the evolution of anticyclonic vortices, whereas, the St. Helena and Mascarene anticyclones will merge over Southern Africa featuring a trough over western South Africa.

2.2. Flow at 500hPa

T+24h, much of North Africa will be under the influence of an anticyclonic circulation. However this will be split by mid-latitude troughs located off the Moroccan coast and Northeastern Egypt. An easterly wave will be featured over the Sahel region to the equator. While the subtropical region of southern Africa is expected to be dominated by cyclonic circulation systems, the extreme southern African region will be influenced by a westerly wave regime.

T+48h, as the troughs over the extremities of the African continent deepen, the anticyclonic circulation over North Africa will retreat equator wards, thus generating an easterly wave perturbation over central Sahara/Sahel with a cyclonic circulation over southern Nigeria. North easterlies will prevail over the Horn of Africa while turning into westerlies over the East African countries. The entire Southern Africa will be under the influence of an

anticyclonic circulation with the passage of a mid-latitude trough over the southern coastline.

T+72h, the circulation pattern will change considerably with both troughs of Northern Africa squeezing the anticyclonic circulation over the Maghreb countries; thus causing a deep trough on the easterly wave over Mali and Burkina Fasso. The Mascarene anticyclone will be centered over the Mozambique Channel with northwesterlies dominating the flow over much of South Africa.

2.3. Flow at 200hPa

T+24h, an extensive upper level subtropical anticyclonic flow pattern is expected to prevail over much of northern and southern African sub-continent. Easterlies will dominate the flow equator-ward of the subtropical anticyclones with a diffluent wind field over Chad. A trough will prevail off the coast of Morocco and a well pronounced westerly wave flow regime over Southern Africa, with a ridge/trough axis lying over Namibia/Mozambique-Zimbabwe area respectively.

T+48h, the trough off the coast of Morocco is expected to propagate slightly eastwards to Morocco and deepen, while weakening and splitting the anticyclone over the area. The diffluence of the wind field over Chad will propagate further westwards to southern Niger. The anticyclonic circulation to the south will be quasi-stationary, with a zonal westerly flow over South Africa.

T+72h, the systems over Africa will remain quasi-stationary although, more anticyclonic circulations are expected to develop particularly over southern Algeria and the Mozambique Channel. A diffluence of the wind will occur over southern DRC.

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