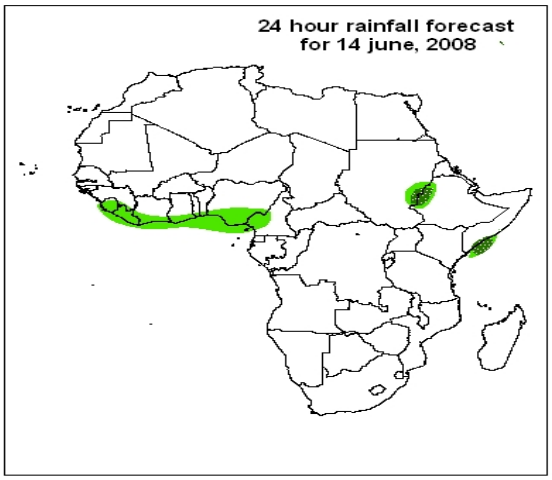
Forecast Guidance for Africa

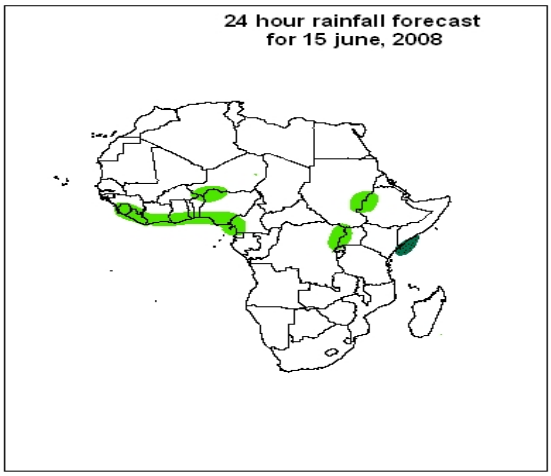
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

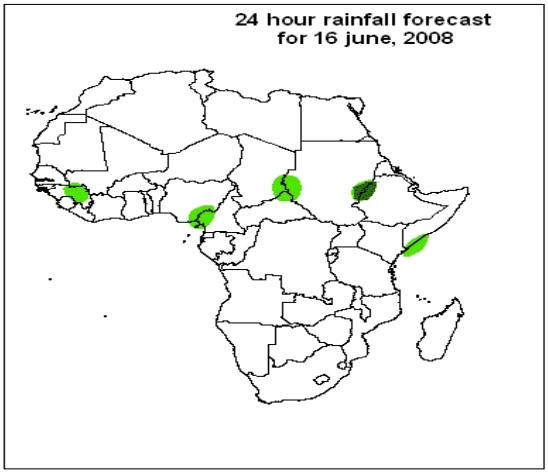
FORECAST DISCUSSION 14H00 EST, 13 JUNE 2008
Valid: 00Z 14- 16 JUNE, 2008

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.







Legend

> 30mm, with probability 50%

> 20mm, with probability 40%

Summary

Moisture advection from Atlantic Ocean and isolated velocity convergence are expected to increase chance for precipitation over western Niger, southeastern Chad , eastern DRC and over the Gulf of Guinea from Sierra Leone to Nigeria; while a low level moisture advection from the western Indian Ocean and localised convergence over western Ethiopia are expected to increase chance for precipitation over western Ethiopia and along the southerncoastline of Somalia.

2. Model discussion

Model comparison (Valid from 00Z; 13 June 2008): all the three models are in agreement especially with respect to the positioning of large scale features, although UK model gives lower values as always in the Equatorial (10^oN and 10^oS) Continental Africa.

2.1. Flow at 850hPa

T+24h, an anticyclonic flow pattern is expected to dominate over along part of north Africa from Morocco, through Algeria, Tunisia, Libya to Western Egypt; and over a large part of western Africa from Mauritania, through the Gulf of Guinea to southern Africa and Madagascar; with northerlies over Egypt. A general low pressure area is expected to dominate over the Sahel including Central Africa. An anticyclonic circulation system is expected to dominate over the Equatorial western Indian Ocean causing southeasterlies to dominate over Tanzania, Kenya, Burundi, Rwanda, DRC, and southwesterlies along the coast of Somalia. A cyclonic circulation is expected to dominate over the tip of Southern Africa.

T+48h, an anticyclonic flow pattern is expected to dominate over Western Sahara, eastern Algeria, Tunisia, Libya and Egypt with a trough over Morocco. A general low pressure area is expected to prevail over the Sahel including Central Africa while an anticyclonic circulation system is expected to prevail over the Equatorial western Indian Ocean. A low pressure area/trough system is expected to dominate off the coast of Namibia and over South Africa, while an anticyclonic flow pattern is expected to dominate over the remaining part of Southern Africa.

T+72h, an anticyclonic flow pattern is expected to prevail over a large part of north Africa with a trough to the west over Morocco and Algeria. General Low pressure areas with isolated convergence are expected to prevail over the Sahel including Central Africa. An anticyclonic circulation system is expected to prevail over the Equatorial western Indian Ocean with southeasterlies over Kenya and Tanzania and southwesterlies along west of Somalia. A trough is expected to dominate along the coast of Namibia and western South Africa; while an anticyclonic flow pattern is expected to dominate over a large part of southern Africa and Madagascar.

2.2. Flow at 500hPa

T+24h, an extensive anticyclonic flow pattern is expected to dominate over a large part of Africa from North Africa to southern Africa with an exception of the western Indian Ocean and along its coastline from Somalia, through Kenya to Tanzania and northern Mozambique. A westerly flow regime is expected to dominate over, and to the South of South Africa.

T+48h, an extensive anticyclonic flow pattern is expected to prevail over a large part of the African continent with a trough along the coast of Somalia and an anticyclonic flow pattern over the western Indian Ocean including Madagascar, southern Mozambique; while a westerly flow pattern is expected to dominate over the extreme part of Southern Africa.

T+72h, an anticyclonic flow pattern is expected to prevail over a large part of Africa from North Africa to the eastern part of southern Africa; While a cyclonic flow pattern is expected to dominate over eastern Ethiopia, Somalia and over southern Congo, Angola, Namibia; while westerlies are expected to dominate over the extreme part of South Africa.

2.3. Flow at 200hPa

T+24h, an upper level anticyclonic flow pattern is expected to dominate over a large part of North Africa with a trough over north Morocco, and Algeria. An upper level anticyclonic flow pattern is expected to dominate over Subtropical region between latitudes 20N to 20S (including Sahel, Central and eastern Africa); while a westerly flow pattern is expected to dominate over the remaining southern part of Southern Africa.

T+48h, an upper level anticyclonic flow pattern is expected to dominate over north Africa and over the Subtropical region up to 20S latitude (including Sahel, Central and eastern Africa); while a westerly flow pattern is expected to dominate over the remaining part of southern Africa.
T+72h, an upper level anticyclonic flow pattern is expected to dominate from north Africa through the Subtropical region to latitude 20S (including Sahel, Central and eastern Africa); while a westerly flow pattern is expected to dominate over the remaining part of southern Africa.

Authors:

1. Arlindo Meque ("Instituto Nacional de Meteorologia" (INAM), Mozambique and African Desk).
2. Hilaire Elenga (Direction de la Meteorologie Nationale du Congo Brazzaville and African Desk)