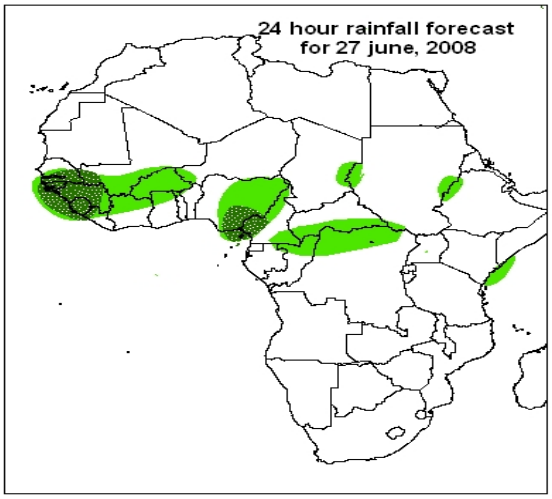
Forecast Guidance for Africa

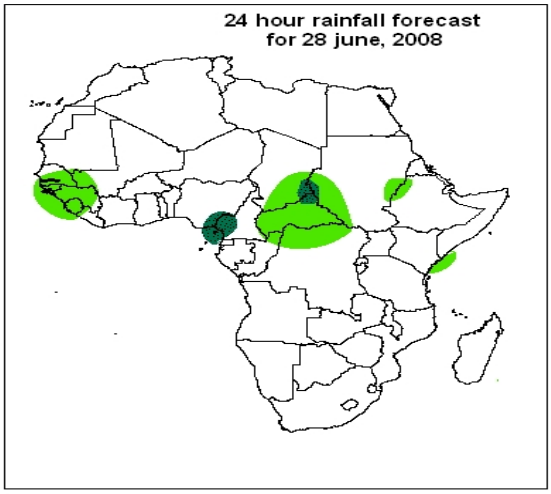
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 26 JUNE 2008
Valid: 00Z 27- 29 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.





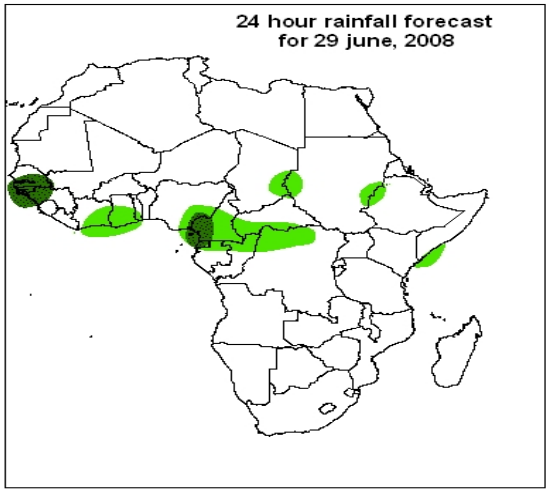
Legend

> 30mm, with probability 50%

> 20mm, with probability 40%

Summary

Moisture advection from the Gulf of Guinea and Atlantic Ocean, localised convergence in the sahel and the equtorial area, are expected to increase chance for precipitation over the region. 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 coast of Somalia and Kenya.



2. Model discussion

Model comparison (Valid from 00Z; 26 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

850 hpa:

T+24h, north easterly flow pattern is expected to dominate over a large part of north Africa, and converge south easterlies/south westerlies over the Sahel and central Africa with the south easterlies emanating from an anticyclone centered over southern Africa. Southeasterlies from the southern western Indian Ocean north of Madagascar are expected to turn into south westerlies along the coast of Somalia. A cyclonic flow system is expected to be located over south western South Africa and over the tip of southern Madagascar.

T+48h, two anticyclonic circulation patterns are expected to prevail over a large part of the African continent from North to southern Africa separated over the Sahel and central Africa, by a general low pressure area where the north easterlies from north Africa will converge with south easterlies from southern Africa. Along the coastline of eastern Africa, Southeasterlies from the southern western Indian Ocean are expected to turn into south westerlies. An extensive through system is expected to prevail over the south east part of southern Africa, from southern South Africa to southern Madagascar.

T+72h , the flow system is expected to be similar to that of the previous day, but the anticyclone over southern Africa will expand to the south east, and the cyclonic flow over southern south Africa and southern Madagascar is expected to move eastwards stretching into the Mozambique channel.

2.2. Flow at 500hPa

T+24h, an axis of anticyclonic cells is expected to be located over North Africa from Morocco through northern Chad to Eritrea with a trough over northern Libya and Egypt. The western Africa area will be influenced by localized convergence. An anticyclonic vortex will develop along the coast of Namibia; while a cyclonic system in the westerlies is expected to influence over the tip of southern Africa, Botswana, Mozambique and Madagascar.

T+48h, an anticyclonic circulation pattern is expected to prevail over Northern Africa with a trough over Tunisia, Libya and Egypt. An anticyclonic vortex is expected to persist along the coast of Namibia and another one along the coast of northern Mozambique; while westerlies are expected to prevail to the south with an embedded cyclonic system over central Mozambique and southern Madagascar.

T+72h, an anticyclonic circulation pattern is expected to prevail over the Morocco, western Algeria, western Sahara, Mauritania and northern Mali with a trough over north western Algeria, Tunisia, and northern Libya and along the coast of Somalia; while Westerlies are expected to dominate over south Africa, southern Mozambique and southern Madagascar.

2.3. Flow at 200hPa

T+24h, a large part of the continent from northern Africa to 10^{o}S latitude of Equator is expected to be dominated by anticyclonic flow patterns with a trough over western Libya; while an upper level trough is expected to influence over the remaining part of Africa.

T+48h, the flow is expected to be similar to the (T+24h) flow pattern but the trough over western Libya is expected to move westwards to Tunisia and a westerly flow is expected to dominate a large part of southern Africa.

T+72h, the flow is expected to be similar to the (T+48h) flow pattern but the trough over Tunisia will move further to the west.

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