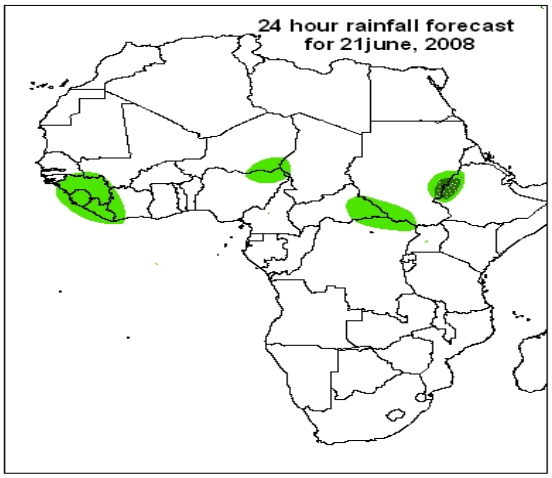
Forecast Guidance for Africa

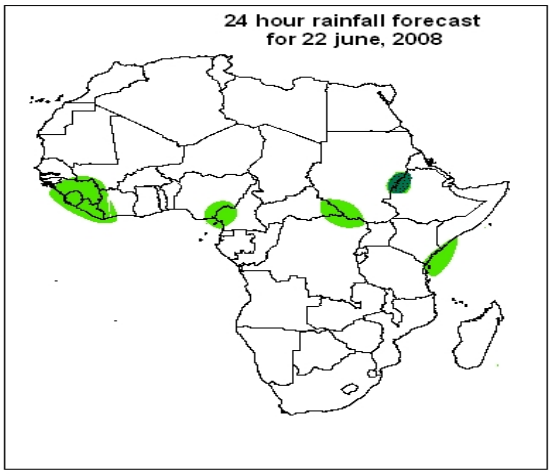
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 20 JUNE 2008
Valid: 00Z 21- 23 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.





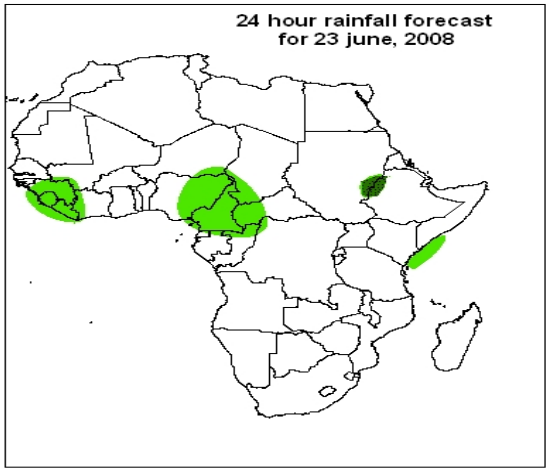
Legend

> 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 eastern Niger, Guinea, Sierra Leone, Liberia, eastern Nigeria, Cameroon, northen Congo, eastern DRC, southern Central African Republic, and southwestern Sudan. 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 Tanzania.



2. Model discussion

Model comparison (Valid from 00Z; 20 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, a trough system is expected to influence over southwestern Angola, Namibia and South Africa with two anticyclonic cells on either side. Southeasterlies from the western Indian Ocean will transport moisture over the coast of Kenya and Tanzania and turn into southwesterlies along the coast of Somalia. Localized convergence is expected to occur over the Sahelian countries due to southeasterlies and southwesterlies emanating from the Indian Ocean and the Gulf of Guinea, respectively and north easterlies from North Africa.

T+48h, the trough system over southwestern Angola, Namibia and South Africa is expected to fill up and the southern part move to the east over the eastern coast of South Africa and southern Mozambique while the anticyclonic flow pattern over the western Indian Ocean also moved further east allowing for continuation of the Indian Ocean moisture transport to the coast of Kenya and Tanzania. Further to the North, localized convergence over the Sahel will persist with a trough over Morocco as well as north easterlies over the eastern part of North Africa (Tunisia, Libya and Egypt)

T+72h, an extensive anticyclonic flow pattern will prevail over a large part of southern Africa from the Atlantic Ocean to western Indian Ocean with an exception of southwestern South Africa which will be influenced by a trough. Convergence activity will continue taking place over southern Mali, Niger, and northwestern Sudan with a trough over Morocco and north easterlies over Libya and Egypt.

2.2. Flow at 500hPa

T+24h, an extensive anticyclonic flow pattern is expected to dominate over a large part of the African continent from North Africa to southern Africa at about latitude 20^oS with an exception of a cyclonic vortex that will prevail over the eastern part of Africa from eastern Ethiopia, along the coast of Somalia, eastern Kenya, Tanzania, Rwanda, Burundi and over south eastern DRC; while a westerly flow will extend southwards over the remaining part of Southern Africa from Namibia, Botswana and southern Mozambique..

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T+48h, an extensive anticyclonic flow pattern is expected to prevail over a large part of the African continent with a trough over eastern Libya and Egypt. Another trough will be located over south eastern DRC, Mozambique and Malawi with a cyclonic vortex over Rwanda, Burundi, eastern Ethiopia, Somalia and Kenya. A westerly flow pattern is expected to persist over the remaining part of Southern Africa.

T+72h, an extensive anticyclonic flow pattern is expected to prevail over a large part of the African continent from north to latitude 20^oS with a trough over north Libya, Egypt and

another one over south eastern Tanzania; while westerlies are expected to influence the remaining part of southern Africa.

2.3. Flow at 200hPa

T+24h, an upper level anticyclonic flow pattern is expected to dominate over a large part of the African continent through the Subtropical region to 10^{o}S latitude with a cyclonic flow pattern over eastern DRC, Rwanda, Burundi, Uganda southern Ethiopia, Kenya Somalia and Tanzania. Westerlies are expected to prevail over the remaining part of Southern Africa.

T+48h, an upper level anticyclonic flow pattern is expected to prevail over a large part of Africa through the Subtropical region to 10^{o}S latitude (including Sahel, Central Africa). A cyclonic flow pattern will be over eastern DRC, Rwanda, Burundi, Uganda southern Ethiopia, Kenya, Somalia and Tanzania with westerlies over the remaining part of southern Africa.

T+72h, an upper level anticyclonic flow pattern is expected to dominate over a large part of the African continent through the Subtropical region to 10^{o}S latitude with a cyclonic flow pattern over DRC, Rwanda, Burundi, Uganda southern Ethiopia, southern Sudan, Kenya, Somalia and Tanzania. Westerlies will continue to persist over the remaining part of Southern Africa.

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