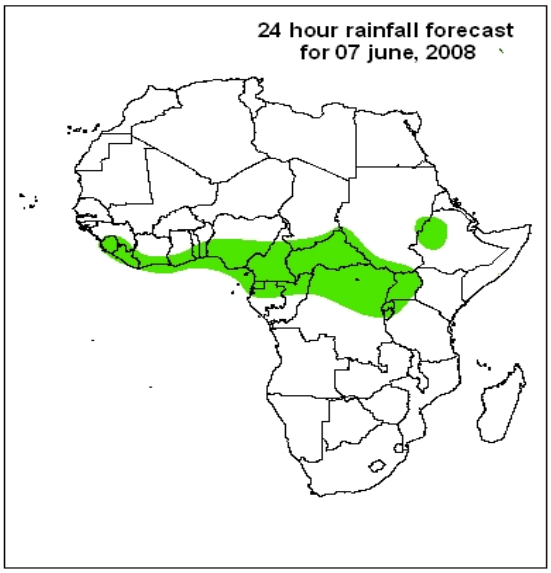
Forecast Guidance for Africa

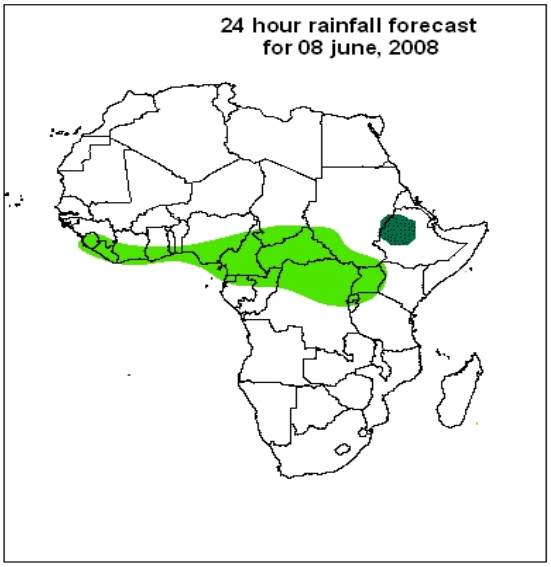
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 06 JUNE 2008
Valid: 00Z, 07 - 09 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

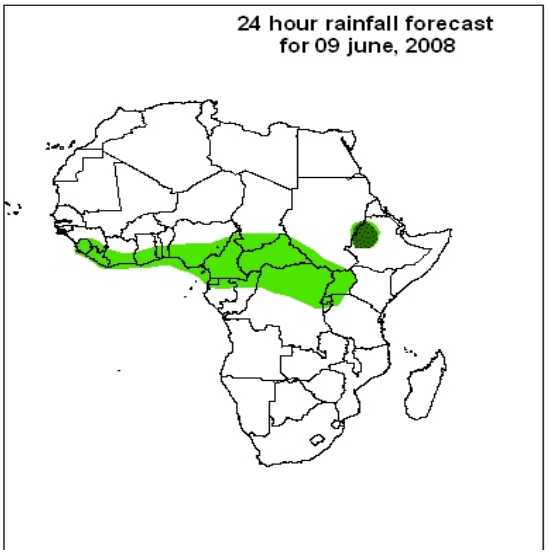
> 40mm, with probability 60%

> 30mm, with probability 50%

> 20mm, with probability 40%

Summary :

Warm SSTs in the Gulf of Guinea, general low pressure over Sahel and central Africa, low level moisture advection from the Gulf of Guinea and westen Indian Ocean are expected to increase chance for precipitation in the Sahel,central Africa , western Ethiopia and over southeastern Madagascar.



2. Model discussion

Model comparison (Valid from 00Z; 06 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 the eastern part of North Africa (Tunisia, Libya and Egypt) with a cyclonic flow pattern to the west over Morocco and Algeria. Isolated convergent flow pattern is expected to dominate over the Sahel and over the Lake Victoria basin. A southerly flow pattern is expected to dominate over the coasts of Tanzania and Kenya while a southwesterly flow pattern is expected to dominate along the coast of Somalia. An anticyclonic flow pattern is expected to be centered over Botswana and Zimbabwe and cause southeasterlies over a large part of Southern Africa to the Equator; while a cyclonic flow pattern is expected to surround Southern Africa from southern Namibia to southwestern Madagascar in the western Indian Ocean.

T+48h, an anticyclonic flow pattern is expected to prevail over the eastern part of North Africa with a cyclonic flow pattern to the west, while an isolated convergent flow pattern is expected to prevail over the Sahel, Central Africa to the lake Victoria basin. Southerlies are expected to prevail over the coast of Kenya and Tanzania with southwesterlies along the coast of Somalia. An anticyclonic flow pattern is expected to prevail over a large part of Southern Africa and cause a general southeasterly flow into the Northern Hemisphere while a trough flow system is expected to dominate over southwestern Madagascar.

T+72h, an anticyclonic flow pattern is expected to prevail over the eastern part of North Africa with a cyclonic flow pattern to the west over Morocco Algeria and Tunisia. A general convergent flow pattern is expected to prevail over the Sahel, Central Africa and the Lake Victoria basin with a cyclonic flow pattern over Gabon. An anticyclonic flow pattern is expected to prevail over a large part of Southern Africa with a cyclonic flow circulation to the west, off the coast of Namibia and a trough to the east over southern Madagascar.

2.2. Flow at 500hPa

T+24h, a trough is expected to dominate off the coast of Morocco. 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 eastern coastline from Somalia, Tanzania, Mozambique, Madagascar to eastern and southwestern tip of South Africa where a cyclonic flow pattern is expected to dominate.

T+48h, an extensive anticyclonic flow pattern is expected to prevail over the Africa continent with a cyclonic flow over the Central African Republic, Congo, DRC, Somalia,

Madagascar and the extreme part of South Africa to the Atlantic ocean over the western part.

T+72h, an anticyclonic flow pattern is expected to prevail over a large part of Africa with troughs along the northwestern coast of Morocco, Ethiopia and over Somalia. A cyclonic flow pattern is expected to dominate over the Central African Republic, Congo, DRC, Rwanda, Burundi, Uganda, Kenya, Madagascar and the extreme part of South Africa to the Atlantic Ocean.

2.3. Flow at 200hPa

T+24h, Westerlies are expected to dominate over Morocco, Algeria, Tunisia and Libya while an upper level anticyclonic flow pattern is expected to dominate over Egypt and the Sahelian countries with an upper level divergent flow pattern over the boarder of Chad and Central African Republic. An upper level cyclonic circulation is expected to dominate over southern Ethiopia, northern Kenya and southern Somalia while an upper level anticyclonic flow pattern is expected to dominate over Angola and a ridge to dominate over northern Madagascar. An upper level trough embedded in westerly regime is expected to dominate over the Mozambique Channel and over a large part of Southern Africa.

T+48h, a westerly flow pattern is expected to prevail over a large part of North Africa with an extensive anticyclonic flow pattern over the Sahel. An upper level cyclonic circulation is expected to prevail over southern Ethiopia, northern Kenya and southern Somalia while an upper level anticyclonic flow pattern is expected to prevail over Angola and a ridge to prevail over northern Madagascar. A westerly flow pattern is expected to prevail over a large part of Southern Africa with an embedded upper level trough over central and southern Madagascar.

T+72h, an upper level anticyclonic flow pattern is expected to dominate between latitude 10^{o}N -30^{o}N and another one to dominate from latitude 20^{o}S to near the Equator while an upper level cyclonic circulation is expected to prevail over southern Ethiopia northern Kenya and southern Somalia. A westerly flow pattern is expected to prevail over the remaining part of Southern Africa.

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