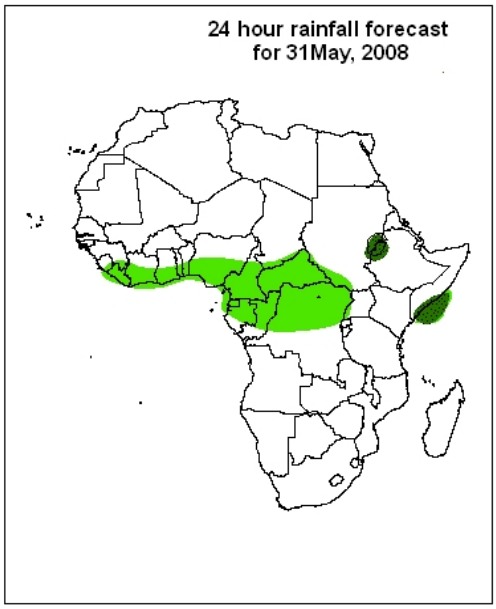
Forecast Guidance for Africa

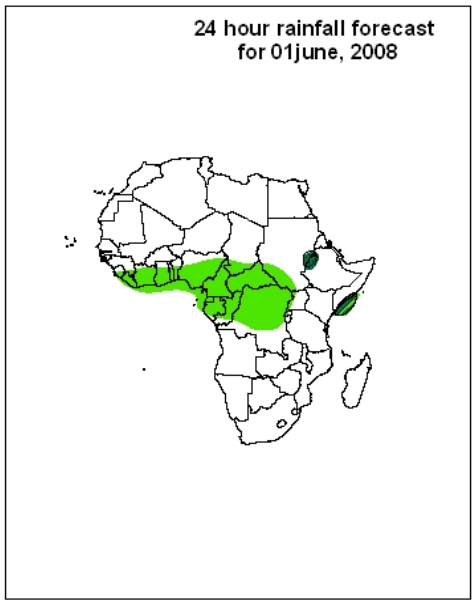
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 30 MAY 2008
Valid: 00Z, 31 May-02 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.



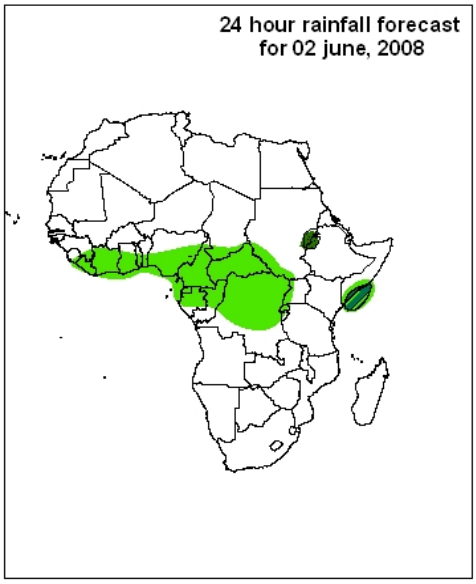


Legend

> 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 along the coast of southern Somalia.

2. Model discussion

Model comparison (Valid from 00Z; 30 May 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 northeastern Algeria. Tunisia, Libya, Egypt and over western Sahel (over southern Mauritania, southern Mali, Burkina Faso, Cote D'Ivoire, Ghana, Togo and Benin), with a trough in between over Morocco while a general low pressure area is expected to dominate over the remaining part of the Sahel including Central Africa. An anticyclonic circulation system is expected to dominate over the Equatorial western Indian Ocean causing southeasterlies over the coasts of Kenya and Tanzania and southwesterlies along the coast of Somalia. A anticyclonic circulation system is expected to dominate off the coast of Angola and a trough to dominate over southern Namibia, South Africa and southern Mozambique while an anticyclonic flow pattern is expected to dominate over the remaining part of Southern Africa.

T+48h, an anticyclonic flow pattern is expected to prevail over Tunisia, Libya, Egypt and northern Chad and Sudan, and over western Sahel (over southern Mauritania, Senegal, Guinea-Bissau, Guinea, Sierra Leone and Liberia), with a trough in between, while a general low pressure area is expected to prevail over the remaining part of the Sahel including Central Africa. An anticyclonic circulation system is expected to prevail over Equatorial western Indian Ocean that is expected to cause moisture advection inland by southeasterlies. An anticyclonic flow pattern is expected to dominate over a large part of Southern Africa with a low pressure area over the coasts of southwestern Angola, western Namibia and South Africa, and another one over the southeastern coast of South Africa expanding to southern Madagascar

T+72h, an anticyclonic flow pattern is expected to prevail over the eastern side of North Africa (over Libya, Egypt and northern Chad and Sudan) as well as over the western side of the Sahel (over Senegal, northern Mauritania, western Mali and Guinea) with a low pressure over Algeria stretching to Morocco and western Sahara while a general low pressure area is expected to prevail over the remaining part of the Sahel including Central Africa. An anticyclonic circulation system is expected to prevail over Equatorial western Indian Ocean enhancing the low level moisture supply to the coasts of Kenya and Tanzania. A low pressure area with a center over the tip of South Africa is expected to influence almost over all of western Southern Africa (southwestern Angola, western Namibia and south Africa) while an anticyclonic flow pattern is expected to dominate over the remaining part of Southern Africa with a low pressure over the southern coast of Madagascar in the Indian Ocean.

2.2. Flow at 500hPa

T+24h, an anticyclonic flow pattern is expected to dominate over a large part of Africa north of the Equator with a trough off the coast of Morocco and over Egypt, and two low pressure centers, one off the coast of Sierra Leone and the other over the tip of Somalia. A

northwesterly flow pattern is expected to dominate over western Angola, Namibia, Botswana and South Africa due to an extensive trough system lying in the Atlantic Ocean. A trough is also expected to dominate over Madagascar including northern Mozambique in the Indian Ocean. An anticyclonic flow pattern is expected to dominate over the remaining part of Southern Africa.

T+48h, an anticyclonic flow pattern is expected to prevail over a large part of Africa north of the Equator with a trough off the coast of Morocco and a low pressure center over the tip of Somalia. A high pressure center is expected to dominate over western Angola, southern Zambia, Zimbabwe, northeastern Botswana and South Africa, and over central and southern Mozambique with a trough on either side, one lying in the Atlantic Ocean acting as a source of northwesterlies over Namibia and western South Africa, and the other over northern Mozambique through the Mozambique Channel to Madagascar.

T+72h, an anticyclonic flow pattern is expected to prevail over a large part of Africa north of the Equator with a trough off the coast of Morocco and a low pressure center over eastern Ethiopia and northern Somalia. A high pressure center is expected to prevail over western Angola, southern Zambia, Zimbabwe, northeastern Botswana and South Africa and over Mozambique, with a trough on either side, one in the Atlantic Ocean over southwestern South Africa and the other over eastern Madagascar in the Indian Ocean.

2.3. Flow at 200hPa

T+24h, a westerly flow pattern is expected to dominate over a large part of North Africa with an embedded trough over northern Niger while an upper level anticyclonic flow pattern is expected to dominate over the Sahel including Central and Eastern Africa. A westerly flow pattern is also expected to dominate over a large part of Southern Africa with an upper level trough over southwestern tip of South Africa in the Atlantic Ocean and another one over eastern Madagascar in the western Indian Ocean.

T+48h, a westerly flow pattern is expected to prevail over a large part of North Africa with an embedded trough off the coast of Morocco and over eastern Libya. An upper level anticyclonic flow pattern is expected to prevail over the Sahel including Central and Eastern Africa with a divergent flow pattern over the boarder of Sudan and Central African Republic ,similarly, an upper level anticyclonic flow pattern centered over northern Zimbabwe is expected to dominate over a large part of continental southern Africa with westerlies over South Africa due to an upper level trough in the Atlantic Ocean, and over eastern side of Madagascar where another upper level trough is expected to dominate.

T+72h, a westerly flow pattern is expected to prevail over a large part of North Africa with an embedded trough over eastern Egypt while an upper level anticyclonic flow pattern is expected to prevail between latitude 20^{o}S and 20^{o}N with a divergent flow pattern over Guinea and over northern Ghana. A northwesterly flow pattern is expected to prevail over Namibia and South Africa due to a prevailing upper level trough over southwestern South Africa.

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