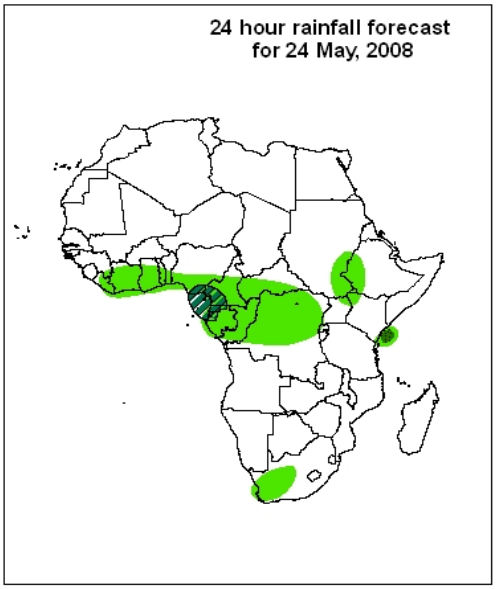
Forecast Guidance for Africa

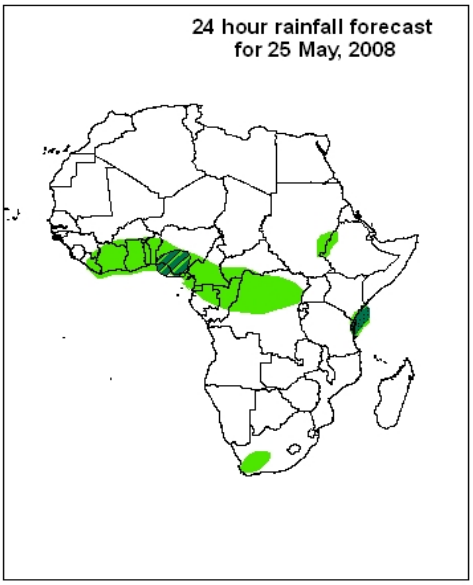
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 23 MAY 2008
Valid: 00Z, 24-26 MAY, 2008

1. Twenty Four Hour Cumulative Rainfall Forecasts

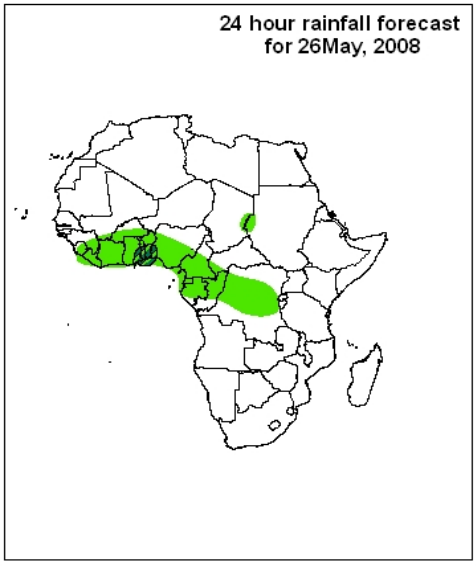
The forecasts are expressed in terms of probability of precipitation (POP) exceedance based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS), and expert assessment.





Legend

- **> 40mm, with probability 60%**
- **> 30mm, with probability 50%**
- **> 20mm, with probability 40%**



Summary:

Warm SSTs in the Gulf of Guinea, low pressure over northern DRC, a cyclonic flow over western South Africa and low level moisture advection from the western Indian Ocean are expected to increase chance for Precipitation.

2. Model discussion

Model comparison (Valid from 00Z; 23 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 Tropical(10^oN and 10^oS) Continental Africa.

2.1. Flow at 850hPa

T+24h, an anticyclonic flow pattern is expected to dominate over a large part of North Africa including the western side of the Sahel (western Mauritania, Senegal and Guinea-Bissau) with a low pressure area over Morocco and southeastern Algeria and a general low pressure area in the remaining part of the Sahel including Central Africa. An anticyclonic circulation is expected to dominate over the Equatorial western Indian Ocean with associated southeasterlies over the coasts of Kenya and Tanzania that are expected to converge over the Tanzanian/Kenyan coastline and southwesterlies along the coast of Somalia. A low pressure area is expected to dominate along the Angola and over southern Namibia and western South Africa while an anticyclonic flow pattern is expected to dominate over the remaining part of southern Africa with a small trough over the Central part of the Mozambique Channel.

T+48h, an anticyclonic flow pattern is expected to prevail over Tunisia, Libya and Egypt with a low pressure to the west over Morocco and Algeria. A general low pressure area is expected to prevail over the Sahel and Central Africa with widespread convergence activity. An anticyclonic circulation is expected to prevail over the Equatorial western Indian Ocean driving moisture inland by southeasterlies along the coast of Tanzania and Kenya. A low pressure area is expected to dominate off the coast of Angola and a trough to dominate over Namibia and western South Africa, while an anticyclonic flow pattern is expected to prevail over the remaining part of Southern Africa.

T+72h, an anticyclonic flow pattern is expected to prevail over Tunisia, Libya and Egypt with a low pressure to its west. A general low pressure area is expected to prevail over the Sahel and Central Africa while an anticyclonic circulation is expected to prevail over the Equatorial western Indian Ocean. A low pressure system is expected to prevail off the coasts of Angola and Namibia while an anticyclonic flow pattern is expected to prevail over the remaining part of Southern Africa.

2.2. Flow at 500hPa

T+24h, a trough is expected to dominate over Morocco and over northern Libya while an extensive anticyclonic flow pattern is expected to prevail over the remaining part of North Africa to latitude 10^oS. A westerly flow pattern is expected to dominate over a large part of southern Africa with a low pressure area over southern Namibia and western South Africa, a trough over southern Madagascar and a high pressure center over southeastern coast of South Africa in between.

T+48h, a trough is expected to prevail over Morocco while an extensive anticyclonic flow pattern is expected to prevail over the remaining part of North Africa to latitude 10^oS with isolated convergence activity off the coast of Nigeria. A westerly flow pattern is expected to prevail over a large part of southern Africa with a low pressure area to the west over

southern Namibia and western South Africa, a trough over southern Madagascar to the east with a high pressure center in between over southeastern coast of South Africa.

T+72h, westerlies are expected to dominate over northern Africa with embedded troughs over Morocco and northern Libya. An extensive anticyclonic flow pattern is expected to dominate from North Africa to latitude 10^{o}S with a low pressure weakness over southern Cote D'Ivoire, Togo and Benin. A low pressure over western South Africa is expected to migrate slightly eastwards influencing northeastern South Africa, western Namibia, Botswana, southern Zimbabwe and southern Mozambique while a small high pressure center is expected to develop over the tip of South Africa. A trough is expected to dominate along the coasts of Angola and Namibia in the Atlantic Ocean and another one over southeastern Madagascar.

2.3. Flow at 200hPa

T+24h, westerlies are expected to dominate over a large part of North Africa with an embedded deep trough over Libya, while an anticyclonic flow pattern is expected to dominate from West Africa through Central to Eastern Africa with an upper level divergent flow pattern over western Sudan and over southeastern of Kenya. Similarly, westerlies are expected to dominate over a large part of Southern Africa with an upper level low pressure over western South Africa and an upper level ridge to its south.

T+48h, westerlies are expected to prevail over a large part of North Africa while an anticyclonic flow pattern is expected to prevail from West Africa through Central to Eastern Africa with an upper level divergent flow pattern over the coasts of Nigeria and Kenya. A westerly flow pattern is expected to prevail over a large part of Southern Africa with an upper level trough over northern Namibia and western South Africa.

T+72h, westerlies are expected to prevail over a large part of North Africa with a trough off the coast of Morocco while an extensive anticyclonic flow pattern is expected to prevail in the tropics (10^{o}N and 10^{o}S). Westerlies are also expected to prevail over a large part of Southern Africa with an upper level trough over northeastern South Africa and an upper level ridge to its west.

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