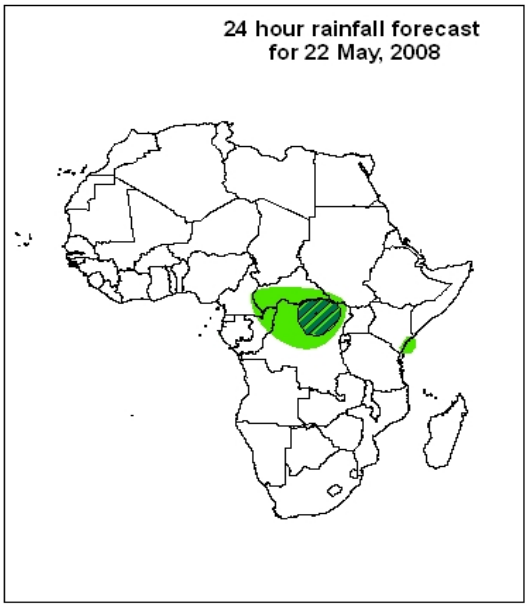
Forecast Guidance for Africa

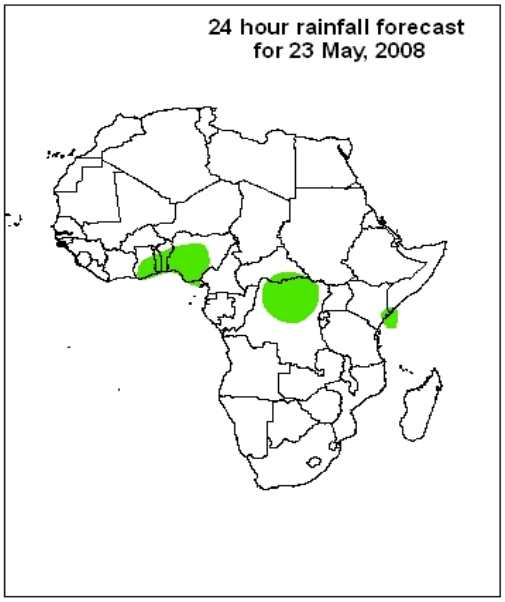
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 21 MAY 2008
Valid: 00Z, 22-24 MAY, 2008

1. Twenty Four Hour Cumulative Rainfall Forecasts

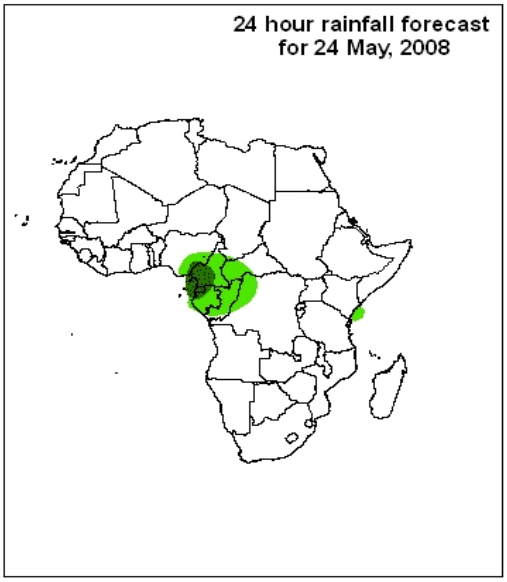
The forecasts are expressed in terms of probability of precipitation (POP) exceedance based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS), and expert assessment.





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 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; 21 May 2008): except for the tropical latitudes (i.e, between 10^{o}N and 10^{o}S) where UK Model gives low pressure values than both ECMWF and GFS, all the three models are in agreement especially with respect to the positioning of large scale features.

2.1. Flow at 850hPa

T+24h, an anticyclonic flow pattern is expected to dominate over a large part of North Africa while a general low pressure area is expected to dominate over the Sahel, Central and Eastern Africa. A low pressure area is expected to dominate over the Equatorial western Indian Ocean off the coast of Somalia with a confluence flow pattern over the southern coast of Kenya and northern coast of Tanzania. An anticyclonic flow pattern is expected to dominate over a large part of Southern Africa with a trough to the west along the coast of Angola, Namibia and South Africa and another one off the eastern coast of Madagascar.

T+48h, an anticyclonic flow pattern is expected to prevail over a large part of North Africa including Mauritania, western Mali, Senegal and Guinea in the Sahel. A general low pressure area is expected to continue dominating over the remaining part of the Sahel including Central and Eastern Africa. A confluence flow pattern is expected to prevail over southern coast of Kenya and northeastern coast of Tanzania. An anticyclonic flow pattern is expected to prevail over a large part of Southern Africa with a low pressure area to the west along the coast of southern Angola, Namibia and South Africa, and a shallow trough over the central part of the Mozambique Channel.

T+72h, a general low pressure area is expected to dominate over a large part of Africa north of the Equator except over western Sahara, northern Algeria, Tunisia, northern Libya and Egypt where an anticyclonic flow pattern is expected to dominate. An anticyclonic flow pattern is expected to prevail over a large part of Southern Africa with a low pressure area over southwestern Angola and western Namibia and South Africa.

2.2. Flow at 500hPa

T+24h, a westerly flow pattern is expected to dominate over a large part of North Africa with an anticyclonic flow pattern over the Sahel and a trough over Sudan and Ethiopia. Localized convergence activities are expected to occur over Gabon and DRC while an anticyclonic flow pattern is expected to extend inland from the Western Indian Ocean into southern Kenya and Tanzania. A westerly flow pattern is expected to dominate over a large part of Southern Africa with a trough over South Africa and over southern Madagascar and a ridge in between.

T+48h, westerlies are expected to dominate over a large part of North Africa with an embedded trough over Algeria. An anticyclonic flow pattern is expected to prevail over the Sahel and Eastern Africa with a low pressure weakness over northwestern DRC. Westerlies are expected to prevail over a large part of Southern Africa with alternating ridge/trough systems south of latitude 20^{o}S.

T+72h, two anticyclonic cells are expected to dominate over the western and eastern parts of North Africa with a trough in between over northern Morocco, Algeria and Mali. An anticyclonic flow pattern is expected to prevail over the Equatorial western Indian Ocean while a low pressure weakness over northwest DRC. A low pressure area is expected to dominate over southern Namibia, southwestern Botswana, South Africa and southern Mozambique while a trough is expected to prevail over southwestern Madagascar and a westerly flow to prevail over the remaining part of Southern Africa.

2.3. Flow at 200hPa

T+24h, westerlies are expected to dominate over a large part of North Africa with embedded upper level trough over eastern Libya while an anticyclonic flow pattern is expected to dominate from West Africa through Central to Eastern Africa bringing about a strong divergent flow pattern over northern DRC. Westerlies are expected to dominate over a large part of Southern Africa with an upper level trough over the tip of South Africa.

T+48h, westerlies are expected to dominate over a large part of North Africa with embedded upper level trough over eastern Libya. An anticyclonic flow pattern is expected to prevail from West Africa through Central to Eastern Africa with associated divergent flow pattern over western Nigeria. Westerlies are expected to prevail over a large part of Southern Africa with an upper level trough over western South Africa and a ridge system on either side.

T+72h, westerlies are expected to dominate over a large part of North Africa with embedded upper level trough over eastern Libya. An anticyclonic flow pattern is expected to prevail from West Africa through Central to Eastern Africa with associated divergent flow pattern over the southern coast of Kenya and the northern coast of Tanzania. Westerlies are expected to prevail over a large part of Southern Africa with an upper level low pressure over southwestern South Africa.

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