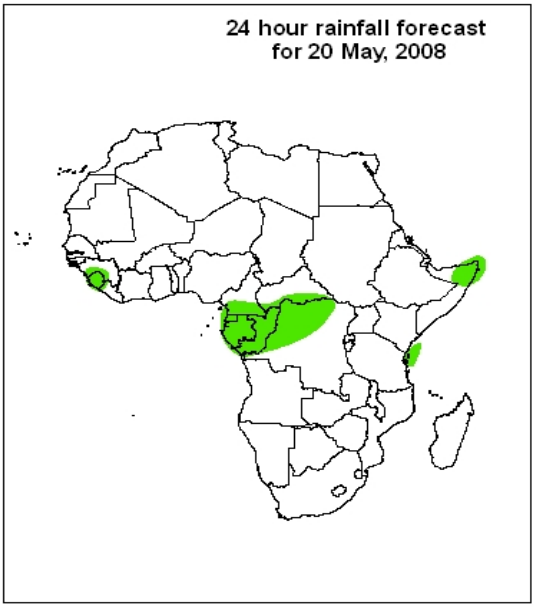
Forecast Guidance for Africa

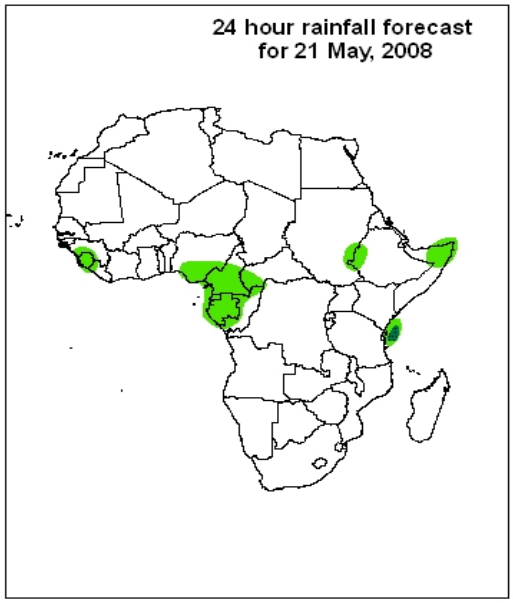
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

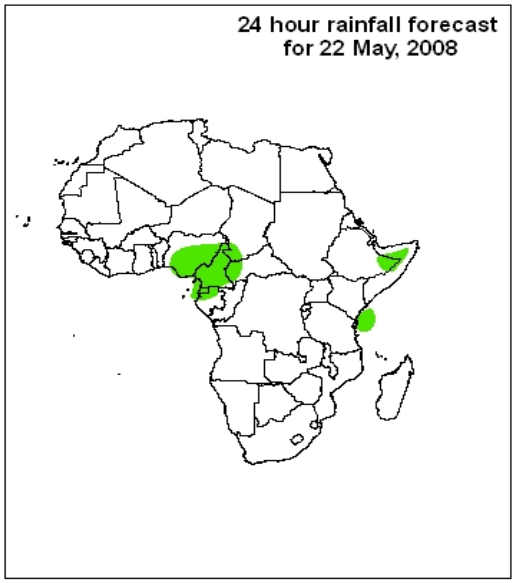
FORECAST DISCUSSION 14H00 EST, 19 MAY 2008
Valid: 00Z, 20-22 MAY, 2008

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

> 30mm, with probability 50%

> 20mm, with probability 40%

Summary:

Warm SSTs in the Gulf of Guinea 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; 19 May 2008): all the three models (GFS, ECMWF and UK) are in agreement especially with respect to the positioning of large scale feature, except the UK model gives lower values overland in the tropics (10^o N and 10^o S) on T+24h and T+48h.

2.1. Flow at 850hPa

T+24h, a general low pressure area is expected to dominate over a large part of Africa north of the Equator except over Morocco where an anticyclonic flow pattern is expected to dominate. An anticyclonic flow pattern is expected to dominate over large part of southern Africa due to the Mascarene high pressure center, with a trough to the west along the coast of Namibia and South Africa and another one to the east off the eastern coast of Madagascar.

T+48h, a general low pressure area is expected to prevail over a large part of Africa north of the Equator except over Morocco where an anticyclonic flow pattern is expected to dominate. A confluence flow is expected to dominate over the southeastern coast of Kenya. An anticyclonic flow pattern is expected to prevail over large part of southern Africa due to the Mascarene high pressure center, with a trough to the west over southern Namibia and western South Africa and another one to the east off the southeastern coast of Madagascar.

T+72h, a general low pressure area is expected to prevail over a large part of Africa north of the Equator while an anticyclonic flow pattern is expected to prevail over large part of southern Africa due to the Mascarene high pressure center, with a trough along the coast of Namibia and South Africa.

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 over northern Morocco, Algeria and Tunisia with embedded localized confluence lines. A low pressure weakness is expected to dominate off the coast of Kenya while an extensive middle level ridge is expected to dominate from Zimbabwe to southeastern coast of South Africa into Western Indian Ocean with a trough on either side, one over western Angola, Namibia and South Africa and the other from the Mozambique Channel to Madagascar into the Indian Ocean.

T+48h, an anticyclonic flow pattern is expected to prevail over a large part of Africa north of the Equator with a trough over northern Algeria and Tunisia with embedded localized confluence lines. Two trough systems are expected to dominate over a large part of Southern Africa with a shrunken ridge in between over Mozambique.

T+72h, a westerly flow pattern is expected to dominate over a large part of North Africa while an anticyclonic flow pattern is expected to dominate over the Sahel and eastern Africa. Two trough systems are expected to dominate over a large part of Southern Africa with a ridge in between over the Mozambique Channel.

2.3. Flow at 200hPa

T+24h, upper level westerlies are expected to dominate over North Africa with an embedded trough over northern Morocco an Algeria and a deep one from western Saudi Arabia to western Ethiopia and eastern Sudan. An anticyclonic circulation system is expected to dominate over West Africa and over the Horn of Africa while westerlies are expected to dominate over a large part of Southern Africa with an embedded trough system over Madagascar.

T+48h, upper level westerlies are expected to prevail over North Africa with an embedded trough over Libya, Egypt and Sudan. Anticyclonic circulation system are expected to prevail over West Africa and over Ethiopia and Somalia while westerlies are expected to prevail over a large part of Southern Africa with embedded trough system over southwestern South Africa and over Madagascar.

T+72h, upper level westerlies are expected to prevail over North Africa with an embedded trough over Libya, northeastern Chad and northwestern Sudan. Anticyclonic circulation systems are expected to prevail over West Africa and over Ethiopia and northern Somalia. Westerlies are expected to prevail over a large part of Southern Africa with embedded trough system over southwestern South Africa and over the western Indian Ocean.

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