



Forecast Guidance for Africa

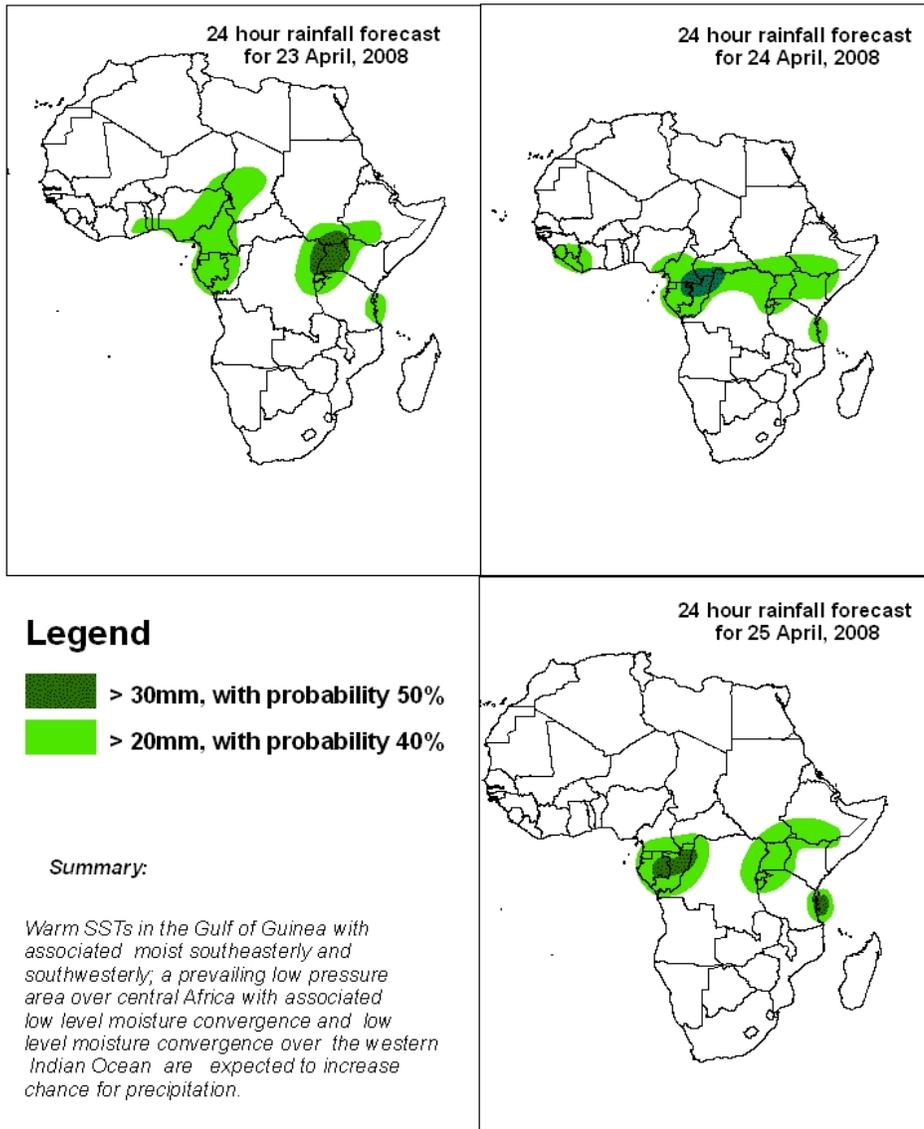
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 22 APRIL 2008

Valid: 00Z, 23-25 APRIL, 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.



2. Model discussion

Model comparison (Valid from 00Z; 22 April 2008): The UKMET model persistently underestimates the values of PMSL in comparison to the ECMWF and GFS models.

2.1. Flow at 850hPa

T+24h, an anticyclonic flow pattern is expected to dominate over the extreme west and east of North Africa with a trough over northern Libya, a low pressure over western Mauritania and a general low pressure area over the Sahel and Eastern Africa, causing isolated convergence in the area. A low pressure is expected to dominate off the coast of southern Somalia and Kenya contributing to a southeasterly flow from the coasts of Tanzania and northern Mozambique to Angola and all the way through the Gulf of Guinea to West Africa causing moisture advection inland from the Indian Ocean. The moist southeasterly flow over the Gulf of Guinea turns into southeasterlies and southwesterlies as they cross the coastlines into West Africa causing convergence over southwest Mali, Togo, Benin and Nigeria. An anticyclonic flow pattern is expected to dominate over a large part of southern Africa due to the St. Helena and Mascarene ridges with a low pressure over southern Madagascar separating the two high pressure centers.

T+48h, an anticyclonic flow pattern is expected to dominate over a large part of North Africa with a low a pressure off the coast of Mauritania and a general low pressure area over the Sahel and Eastern Africa. The low pressure off the coast of Somalia and Kenya is expected to expand to northern Madagascar. A southeasterly flow over the Tanzanian and northern Mozambique coast is expected to prevail. An anticyclonic flow pattern is expected to dominate over a large part of southern Africa due to the St. Helena high pressure ridge with a trough over southern Madagascar.

T+72h, an anticyclonic flow pattern is expected to dominate over a large part of North Africa with a low a pressure off the coast of Mauritania and a general low pressure area over the Sahel and Eastern Africa where localized convergence occurs over western Mali, northern Nigeria, Gabon, Chad and western Ethiopia . A southeasterly flow is expected to dominate over the coast of Somalia to northern Mozambique. An anticyclonic flow pattern is expected to dominate a large part of southern Africa, from the Atlantic Ocean to western Indian Ocean with a trough over southern Namibia, southwestern South Africa and over western Madagascar.

2.2. Flow at 500hPa

T+24h, a cyclonic circulation system is expected to dominate over northern Africa and an anticyclonic circulation over Sahara. A cyclonic circulation is expected to dominate over Ghana, the Gulf of Guinea and the northern part of central Africa including western Sudan. An anticyclonic flow pattern from the Indian Ocean is expected to dominate over eastern Africa with middle level line of convergence from western to over northeastern DRC, southern Sudan and western Ethiopia. An anticyclonic circulation system is expected to dominate over southwestern Africa while a trough associated with a frontal system is expected to dominate over southeastern Africa including the Mozambique Channel.

T+48h, the cyclonic and anticyclonic circulation systems over northern Africa and Sahara respectively are expected to prevail with an expansion of a localized cyclonic circulation area from Guinea to western Nigeria. A cyclonic circulation system is expected to prevail over central Africa with middle level convergence pattern over Central African Republic, and northeastern DRC. A northerly flow is expected to dominate over Horn of Africa with convergence over western Ethiopia and northwestern Kenya, while an anticyclonic circulation system is expected to prevail over southern DRC, northern Zambia, Tanzania, northern Mozambique and northern Madagascar. The anticyclonic circulation system over southwestern Africa is expected to expand southeastward and push the middle level trough further east.

T+72h, the cyclonic circulation over northern Africa is expected to move eastward and the anticyclonic circulation system over Sahara is expected to expand toward the west African countries. The cyclonic circulation over central Africa is expected to prevail with middle level convergence over northeastern DRC. A northerly flow is expected to prevail over Horn of Africa and a new middle level trough is expected to develop into the Indian Ocean along the Tanzanian coast. The anticyclonic circulation over southwestern Africa is expected to prevail while the middle level trough to its east is expected to weaken.

2.3. Flow at 200hPa

T+24h, a westerly jet is expected to dominate over northern Africa and a small anticyclonic circulation system is expected to dominate over western Africa, southern DRC, southern Sudan, Uganda and northwestern Kenya. An upper level westerly wave is expected to dominate over southern Africa with a trough associated to a frontal system into the Indian Ocean east of South Africa.

T+48h, a westerly jet stream is expected to prevail over northern Africa, a divergent flow pattern is expected to develop over Ghana and Cameroon, and merge into the north African upper level jet. A localized divergent flow pattern is expected to develop over northern DRC and western Kenya. The upper level westerly wave over southern Africa is expected to prevail with a ridge over Namibia and western South Africa and a trough south of Madagascar.

T+72h, a localized divergent flow pattern over Ghana is expected to move into the Gulf of Guinea, northern DRC and Kenya. The westerly wave over southern Africa is expected to prevail and weaken.

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