



Forecast Guidance for Africa

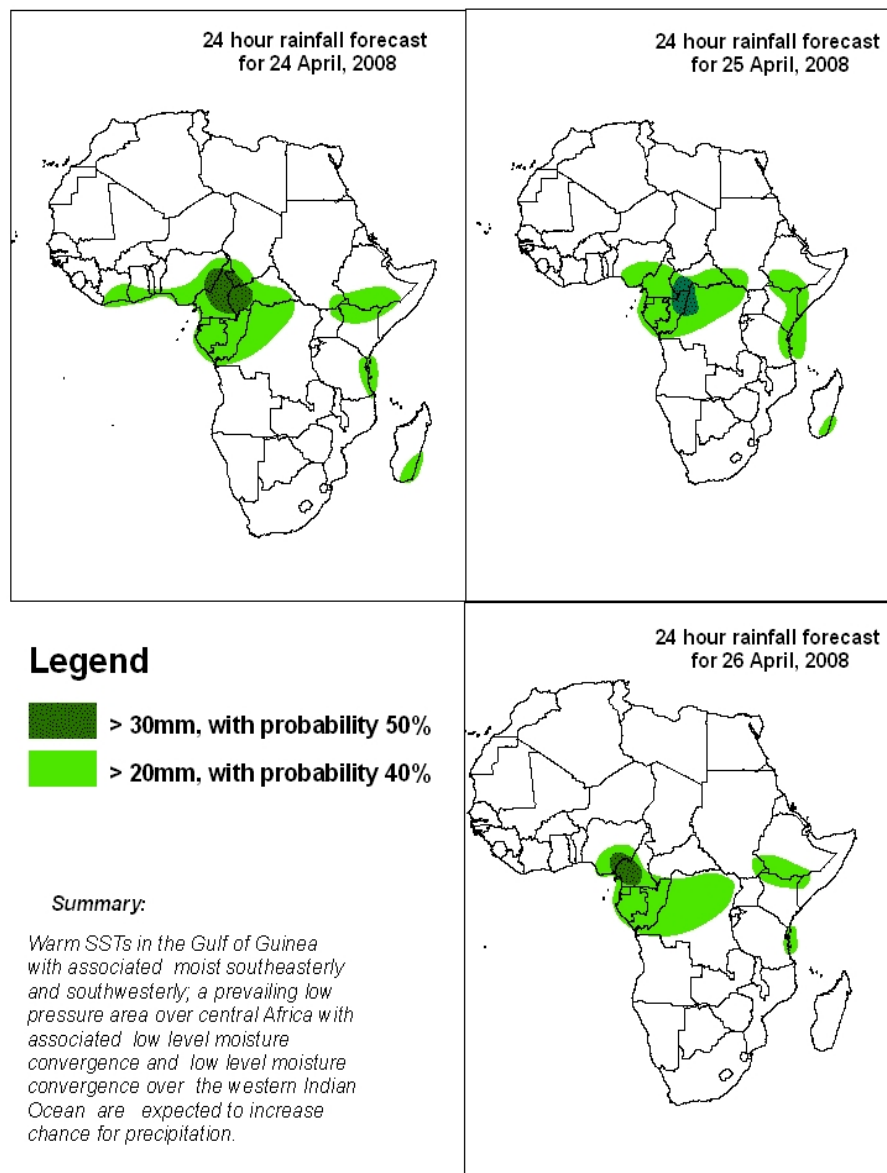
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 23 APRIL 2008

Valid: 00Z, 24-26 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; 23 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 North Africa with a low pressure off the coast of 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 Somalia and Kenya to northern Madagascar contributing to a southeasterly flow over Tanzania and northern Mozambique and causing moisture advection inland from the Indian Ocean. The moist southeasterly flow over the Gulf of Guinea is expected turn into southeasterlies and southwesterlies as they cross the coastlines into West Africa causing southeasterlies over most of Southern Africa to the Gulf of Guinea. An anticyclonic flow pattern is expected to dominate over a large part of southern Africa due to the St. Helena ridge with a trough over southeastern Madagascar.

T+48h, an anticyclonic flow pattern is expected to prevail over North Africa with a low pressure off the coast of Mauritania and a general low pressure area over the Sahel and Central Africa. A low pressure is expected to prevail off the coast of Somalia and Kenya to northern Madagascar. An anticyclonic flow pattern is expected to dominate over a large part of southern Africa due to St. Helena and Mascarene high pressure ridges with a trough over southeastern Namibia and southwestern South Africa.

T+72h, an anticyclonic flow pattern is expected to prevail over North Africa as well as the general low pressure over the Sahel and Eastern Africa while a low pressure off the coast of Mauritania is expected to move slightly offshore . A low pressure area is expected to dominate over northern Madagascar in the Indian Ocean. A southeasterly flow is expected to dominate along the coast of Somalia to northern Mozambique. An anticyclonic flow system is expected to prevail over a large part of southern Africa due to St. Helena and Mascarene high pressure ridges with a trough over southern Namibia and southwestern South Africa.

2.2. Flow at 500hPa

T+24h, an anticyclonic circulation system is expected to dominate over western Africa while a cyclonic circulation with middle level convergence is expected to dominate over the Sahel. An anticyclonic flow pattern is expected to dominate over southern DRC, Angola, Namibia, southern Africa, northern Zambia, Tanzania, Malawi and northern Mozambique. A trough associated with a frontal system is expected to extend from the Mozambique Channel to southern Zambia.

T+48h, a trough system from the Mediterranean region is expected to expand further south eroding the anticyclonic circulation over western Africa. A cyclonic circulation is expected to prevail over the Sahel and over the Horn of Africa. An anticyclonic circulation is expected to prevail over southern DRC, southern Africa, and Tanzania, while the trough

system associated with a frontal system will extend to the Mozambique Channel and weaken as a result of the eastward propagation of the frontal system.

T+72h, the trough system over northern Africa is expected to extend southeastward. The anticyclonic circulation system over western Africa will strengthen and expand into Algeria and Tunisia. It will cause the cyclonic circulation over southern Sahel countries to intensify and expand northward. An anticyclonic circulation is expected to develop over the Horn of Africa while the anticyclonic circulation over the southern Africa is expected to shrink with a trough system to its south over South Africa, this trough system is expected to join with the other trough over the Mozambique Channel.

2.3. Flow at 200hPa

T+24h, a westerly jet is expected to dominate over northern Africa and an anticyclonic circulation system is expected to dominate over western Africa with a divergent flow pattern over Nigeria, Gabon and western DRC. A weak upper level divergent flow is expected to dominate over the Horn of Africa. An upper level easterly wave is expected to dominate over southern Africa with a trough over the Atlantic Ocean, southwest of South Africa, and another one is expected to extend from southern DRC through southern Zambia, Zimbabwe, through southern Mozambique into the Indian Ocean south of Madagascar.

T+48h, a westerly jet stream is expected to prevail over northern Africa and a divergent flow pattern is expected to move slightly to the east over Central African Republic. An upper level divergent flow is expected to prevail over Gabon, while upper level confluent flow is expected to develop over eastern Africa. An upper level westerly wave is expected to prevail over southern Africa with a trough associated with a frontal system to the south of South Africa, the other one is expected to move further east into the Indian Ocean.

T+72h, the westerly jet stream over northern Africa is expected to reduce the upper level anticyclonic circulation and divergence over western Africa, while a divergent flow pattern is expected to develop over Congo and western DRC. The westerly wave over southern Africa is expected to prevail with an upper level trough to the southeast of South Africa.

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