



Forecast Guidance for Africa

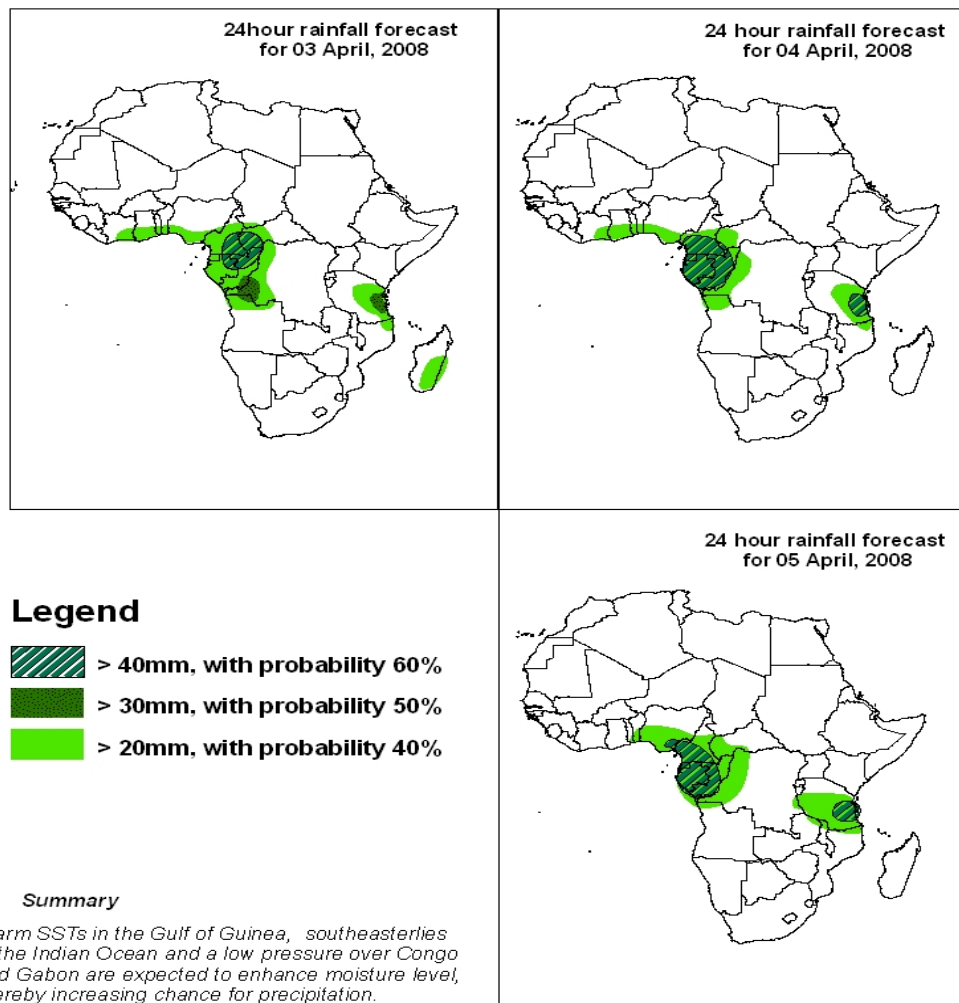
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 02 APRIL 2008

Valid: 00Z, 03-05 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: There is a general agreement between UK MET, ECMWF and GFS models. Except the UKMET model underestimates the high pressure which is expected to dominate over southern Africa.

2.1. Flow at 850hPa

T+24h, two anticyclonic flow patterns are expected to dominate over the southern (southern Mozambique, Zimbabwe, eastern Botswana and South Africa) and the eastern (over southeastern Madagascar) parts of the subcontinent with a trough in between (over the Mozambique Channel including southern Madagascar). A low pressure system is expected to dominate over southern Congo, Gabon, western DRC and northern Angola while a trough is expected to dominate over southern Angola, northern Namibia and northwestern Botswana. A trough is expected to dominate over southwestern South Africa in the Atlantic Ocean. A southeasterly flow pattern is expected to dominate over Tanzania, northern Mozambique and northeastern and Zambia.

T+48h, a low pressure area is expected to dominate over southern Madagascar surrounded by the two anticyclonic flow patterns one on either side. The trough system over southern South Africa in the Atlantic Ocean is expected to move eastward reaching Western Cape Province. A trough over southern Angola, northern Namibia and northwestern Botswana is expected to prevail while a low system is expected to dominate off the coast of Gabon and the southeasterly flow over Tanzania, northern Mozambique and northeastern and Zambia is expected to prevail.

T+72h, the low pressure area over southern Madagascar is expected to move southeastward splitting the Mascarin high pressure system in two parts, one over northeastern Madagascar and the other over southern Mozambique, Zimbabwe, Botswana and northeastern South Africa. The trough system over southern South Africa is expected to prevail while the low pressure off the coast of Gabon is expected to move further to the west. The easterly flow in the Indian Ocean is expected to turn into a southeasterly flow over Tanzania, northern Mozambique and northeastern and Zambia.

2.2. Flow at 500hPa

T+24h, two middle level cyclonic circulation patterns are expected to dominate the southern part of the subcontinent, the first is associated with a frontal system in the Atlantic Ocean to the south west of South Africa, while the other is associated with a frontal system in the southwestern Indian Ocean, separated by an anticyclonic circulation dominating the southeastern South Africa. An anticyclonic circulation is expected to dominate northern Madagascar, Tanzania, DRC, Zambia and Angola, while a localized cyclonic circulation

will dominate over northern Angola, western DRC, Congo and Gabon, and enhance localized convection.

T+48h, a middle level anticyclonic circulation is expected to dominate over South Africa through southern Namibia and Zimbabwe. This system is expected to weaken the frontal system in the Indian Ocean. The easterly flow associated with the expansive anticyclonic area over the subcontinent is expected to prevail and cause a cyclonic flow to be limited only over Gabon and southern Cameroon.

T+72h, the cyclonic circulation system to the west of South Africa is expected to dominate the western part of the country and western Namibia, while the one in the southwestern Indian Ocean is expected to weaken but will still dominate over southern Madagascar. An easterly flow is expected to prevail over Tanzania, Kenya, Uganda, DRC and Angola, and maintain middle level convergence over western Gabon and Cameroon.

2.3. Flow at 200hPa

T+24h, a localized upper level divergence is expected to dominate over northern Angola and northern Congo, with convergence over southern Sudan and eastern DRC. An upper level divergence is also expected to dominate over northern Tanzania therefore, possibility of localized convection activity in the area. A westerly upper level flow is expected to dominate through southern Angola to the Indian Ocean. Two upper level anticyclonic circulations separated by a cyclonic circulation are expected to dominate over the southwestern Indian Ocean, depicting a frontal system expected to be localized over southeastern South Africa and one to the south east of Madagascar.

T+48h, a localized upper level divergent circulation is expected to prevail and move slightly to the north over Congo and Central African Republic, with convergence over southern Sudan and northwestern DRC, while a westerly flow is expected to prevail over the southern part of the subcontinent. The upper level cyclonic circulation in the Indian Ocean is expected to weaken and extend over the Mozambique Channel and southern Madagascar.

T+72h, a localized upper level divergent circulation is expected to prevail over southern Sudan, northern DRC, Congo and Cameroon, while a westerly flow is expected to prevail over the southern part of the subcontinent. The upper level flow leading a frontal system activity in the southwestern Indian Ocean is expected to weaken and move slightly eastward.

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