



Forecast Guidance for Africa

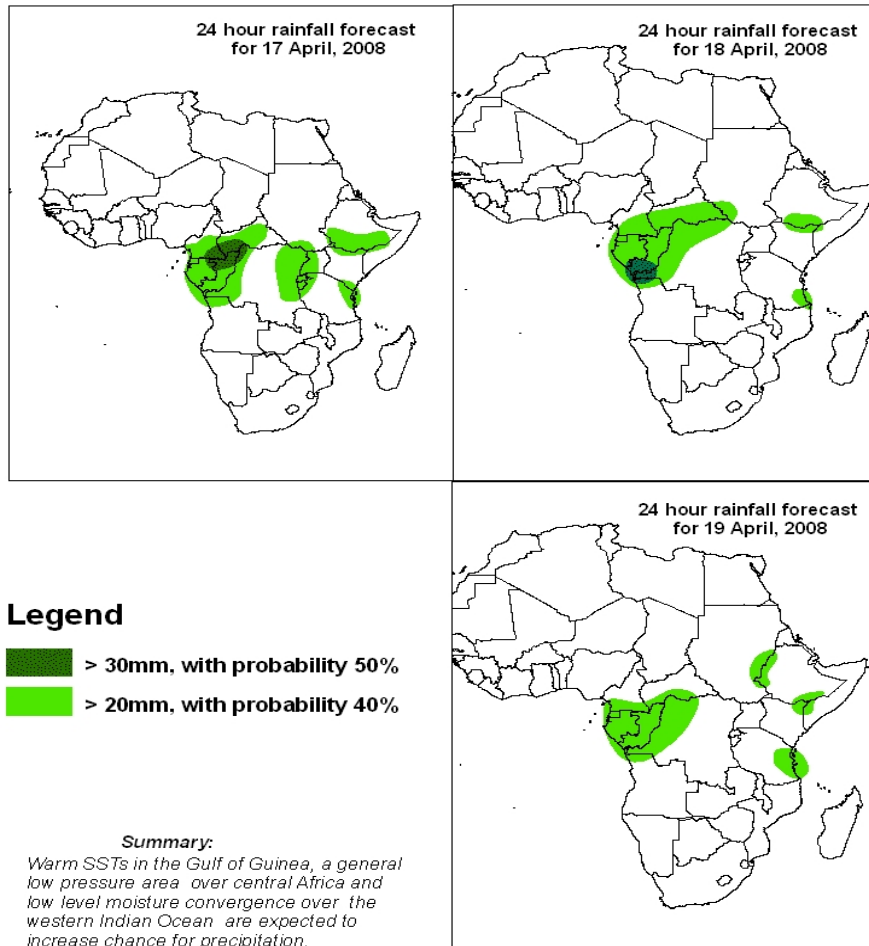
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 16 APRIL 2008

Valid: 00Z, 17-19 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; 16 April 2008): There is a general agreement between the UKMET, ECMWF, and GFS models with respect to positioning of large scale features. However, the UKMET model underestimates the MSLP between 10°N and 10°S latitudes relative to the GFS and ECMWF models. The UKMET model also underestimates the trough system over southwestern Africa.

2.1. Flow at 850hPa

T+24, an anticyclonic flow pattern is expected to dominate over eastern North Africa with a trough to the west (over northern Morocco, Algeria and Tunisia) and a general low pressure area over western Africa through central Africa, Congo, DRC, Uganda to Ethiopia and western Kenya causing localized convergence in the area. Rainfall is expected over Gabon, Congo, eastern DRC including Uganda and Lake Victoria basin as well as over Western and Central Africa. An anticyclonic flow pattern is expected to dominate over southern Africa due to St. Helena high pressure ridge while a trough is expected to dominate over southern and northern Madagascar with the Mascarene high pressure ridge over eastern Madagascar suppressing convective activity.

T+48, an anticyclonic flow pattern is expected to dominate over a large part of North Africa with a trough over Morocco, northern Algeria and northern Tunisia. A general low pressure area is expected to dominate over a large part of Sahelian countries (from western Africa through Gabon, Congo, to Sudan and Ethiopia) causing convergence over West Africa, Central African republic, eastern DRC, southern Sudan, Uganda and over western Ethiopia. An anticyclonic flow pattern is expected to prevail over southern Africa due to St. Helena high pressure ridge with a trough over southeastern and northern Madagascar.

T+72, an anticyclonic flow pattern is expected to dominate over central North Africa with a trough to the west (over Morocco and northern Algeria). A general low pressure area is expected to prevail over a large part of Sahelian countries (from western Africa through Gabon, Congo, to Sudan and Ethiopia). An anticyclonic flow pattern is expected to dominate over southern Africa due to Mascarene high pressure ridge with a shallow trough over central part of the Mozambique Channel and another one over southern Namibia and southwestern South Africa.

2.2. Flow at 500hPa

T+24h, an expansive anticyclonic circulation system is expected to dominate over northern and western Africa with convergent easterlies over western Africa (Cameroon, Gabon and Congo) and a cyclonic circulation over the Gulf of Guinea. Eastern Africa and central Africa will be dominated by an anticyclonic flow system. A localized cyclonic circulation is expected to be cut-off over western Namibia while an anticyclonic circulation system is expected to dominate over Southern Africa with a southwesterly flow pattern. A middle level trough associated with a frontal system is expected to dominate over southeastern Indian Ocean including the Mozambique Channel and southern Madagascar.

T+48h, the anticyclonic circulation over the northern Africa is expected to weaken causing a trough system to develop over western Africa while the cyclonic circulation over the Gulf

of Guinea is expected to prevail. An anticyclonic circulation is expected to prevail over eastern and central Africa and another one is expected to expand over southern Africa causing the cyclonic circulation over Namibia to weaken. The anticyclonic circulation associated with a frontal system over South Africa is expected to move eastward to the eastern part of the country with a middle level trough to its east.

T+72h, the anticyclonic circulation over northern Africa is expected to strengthen over North Africa with a northeasterly flow. An easterly flow pattern is expected to prevail over eastern Africa. The anticyclonic circulation over central Africa is expected to weaken as a result of a new frontal system moving toward the Tip of South Africa, hence a cyclonic circulation is expected to dominate over the country.

2.3. Flow at 200hPa

T+24h, a divergent upper level westerly jet is expected to dominate over northern and western Africa with an upper level anticyclonic circulation system over the Sahel and divergent flow over Cameroon and western Chad. An easterly flow pattern from the Indian Ocean is expected to dominate over the Horn of Africa and an anticyclonic circulation system will dominate over the central Africa, with a divergent flow pattern over western DRC and Congo. A convergent westerly flow associated with an upper level jet is expected to dominate over southern Africa with an anticyclonic circulation system to the west of the Tip of South Africa. This circulation system is expected to interfere with the upper level jet and lead to a frontal system at the surface.

T+48h, the upper level jet over northern Africa and the anticyclonic circulation over the Sahel are expected to prevail with an upper level divergence pattern over southern Nigeria, Cameroon, southern Chad and central Sudan, while the easterly flow over the Horn of Africa is expected to become a southwesterly. An anticyclonic circulation system is expected to prevail over central Africa with divergence pattern over northern Angola and southern DRC. The westerly flow pattern over southern Africa is expected to prevail and the anticyclonic circulation to the west of South Africa is expected to move to the Eastern Cape along the Indian Ocean coast.

T+72h, the two jets are expected to prevail over the northern and southern Africa respectively. Between them, two anticyclonic circulations are expected to prevail, the one over the Sahel region with divergence pattern over Central African Republic, and the other over central Africa with divergence pattern over Congo, southern DRC and southern Tanzania. The upper level disturbance over South Africa is expected to weaken and move into the southwest Indian Ocean south of Madagascar.

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