



Forecast Guidance for Africa

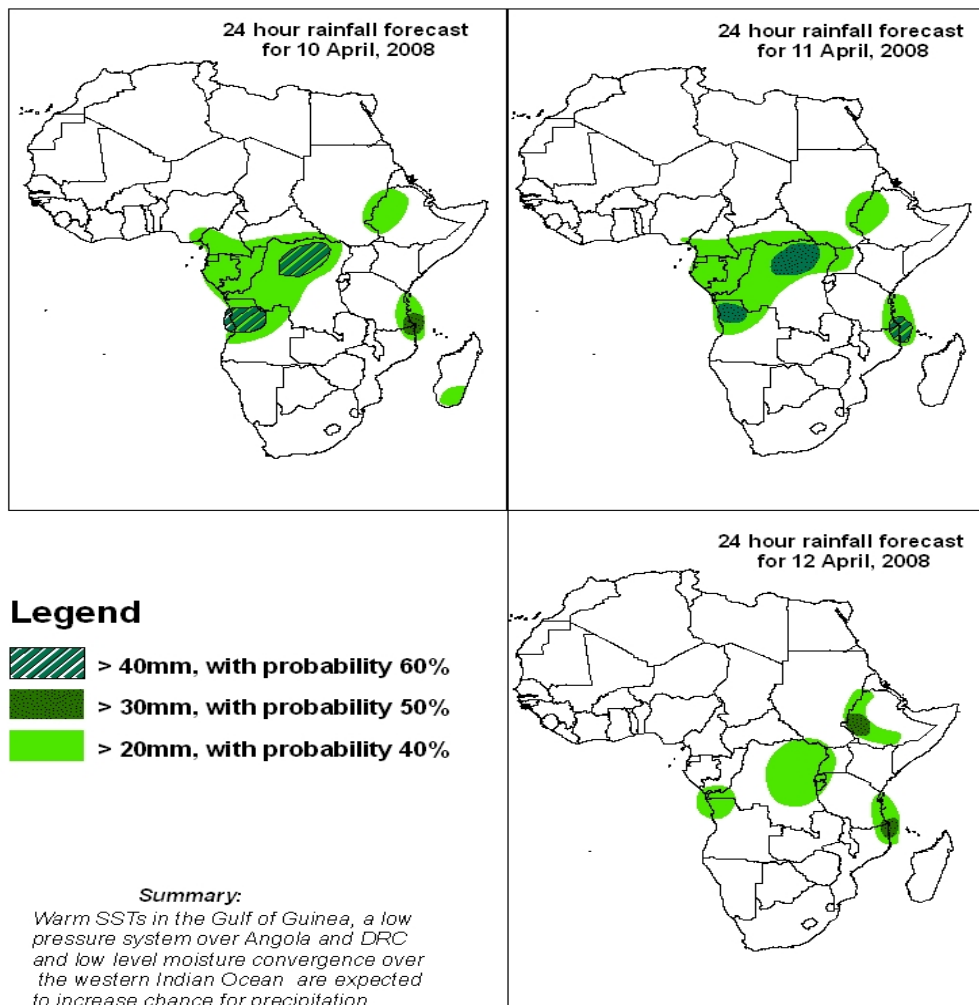
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 10 APRIL 2008

Valid: 00Z, 11-13 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; 10 April 2008): There is a general agreement between the UKMET, ECMWF, and GFS models with respect to positioning of large scale features. However, initialization of the ECMWF model has slightly higher MSLP values. In addition, GFS model produces higher MSLP values than UKMET and ECMWF models in the tropical region between 10°N-10°S at T+48h and at T+72h.

2.1. Flow at 850hPa

T+24, an anticyclonic flow system is expected to dominate over a large part of the Sahara desert (eastern Algeria, northern Niger and Chad, western Sudan and Egypt) with a trough to the west over Morocco and to the east over eastern Sudan, Eritrea, Djibouti and northwestern Ethiopia. An easterly flow from the Indian Ocean is expected to dominate over Somalia to West Africa where they will converge with southeasterlies from the Gulf of Guinea. A low pressure area is expected to dominate over Angola and DRC contributing to a convective activity over Angola, DRC, Uganda and southeast Sudan while a trough is expected to dominate along the coast of Kenya and Tanzania and over the Mozambique Channel to southern Madagascar causing northeasterly flow in the Indian Ocean to turn into southeasterlies at the coast. An extensive anticyclonic flow pattern is expected to dominate over the southern part of the subcontinent, from the Atlantic Ocean to the western Indian Ocean with a trough over southern Namibia and southwestern South Africa.

T+48, an anticyclonic flow system is expected to prevail over a large part of the Sahara desert with a trough to the west and a trough to the east. The low pressure over Angola and DRC is expected to prevail as well as the easterly flow over Somalia and the trough over eastern Tanzania and Mozambique Channel. An extensive anticyclonic flow pattern is expected to prevail over the southern part of the subcontinent with a trough over southern Namibia and southeastern South Africa and low pressure over southern Madagascar. A low pressure area is expected to dominate over northeast of Madagascar.

T+72, an anticyclonic flow pattern is expected to dominate over the Sahara desert with a large area of pressure weakness to the south over the coast of Mauritania and Senegal, northwestern Angola, Central DRC and over the tip of Madagascar, respectively. An extensive anticyclonic flow pattern is expected to prevail over southern part of the subcontinent with a trough over southern Namibia and southeastern South Africa and low pressure over southern Madagascar, although, the trough over southeastern South Africa is expected to move slightly to the east.

2.2. Flow at 500hPa

T+24h, an upper level trough extending over Egypt through southern Sudan is expected to separate two anticyclonic circulation systems associated respectively with the Sahara and the Arabian ridges. A weak cyclonic circulation system is expected to extend over the Gulf of Guinea, Cameroon, Central African Republic, Gabon, Congo and western DRC, associated with a low pressure over these areas, while an easterly flow pattern is expected to dominate over northern Angola, eastern and southern DRC, northern Zambia and Tanzania. A cyclonic circulation associated with a frontal system to the south east of

Madagascar is expected to dominate over the Mozambique Channel, southern Mozambique and southern Madagascar while an anticyclonic circulation associated with the Mascarene anticyclone is expected to dominate over northern Madagascar. A cyclonic circulation system associated with a weak frontal system is expected to dominate over Namibia and the tip of South Africa.

T+48h, the cyclonic circulation over north Africa is expected to weaken, causing a northerly flow from the Sahara anticyclone to develop and enhance middle level convergence over Gabon, Congo and western DRC, while an anticyclonic circulation is expected to prevail over eastern Africa, with a cyclonic circulation over the coast from Somalia to Tanzania. In general a weak cyclonic circulation is expected to prevail over the southern Africa (south of 20°S).

T+72h, the northerly flow from the Saharan anticyclonic circulation is expected to weaken, causing a cyclonic circulation to develop over Cameroon and Central African Republic, while the cyclonic/anticyclonic circulation system over northern Africa is expected to prevail. A cyclonic circulation is expected to prevail over the Gulf of Guinea, Gabon, Congo and northern DRC. An anticyclonic circulation is expected to develop over the coast of Tanzania and Kenya and extend to southern DRC, Angola, Namibia, northern Mozambique and northern Madagascar, while a weak cyclonic circulation associated with a frontal system is expected to dominate over south east of South Africa, and over southwestern Indian Ocean.

2.3. Flow at 200hPa

T+24h, an upper level anticyclonic circulation system is expected to dominate over west Africa with a cyclonic circulation to dominate over north Africa. A divergent flow pattern is expected to dominate over northern DRC, southern Somalia, northeastern Kenya and southeastern Tanzania, while a westerly flow pattern is expected to dominate over southern Africa.

T+48h, an anticyclonic circulation is expected to prevail over west Africa causing divergence over Cameroon, while the cyclonic circulation over north Africa is expected to intensify and maintain an upper level disturbance over the Horn of Africa, therefore divergent flow is expected to prevail over southern Somalia. The divergent flow pattern over DRC is expected to weaken while a westerly flow is expected to prevail over southern Africa.

T+72h, the upper level anticyclonic circulation over western Sahel is expected to prevail and cause a divergent flow pattern over Nigeria, and over southern Sudan due to an increased upper level disturbance over the western part of the country. A weak divergent flow pattern is expected to prevail over northern DRC and western Uganda while an upper level convergence is expected to develop over southern Tanzania and northern Kenya.

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