



Forecast Guidance for Africa

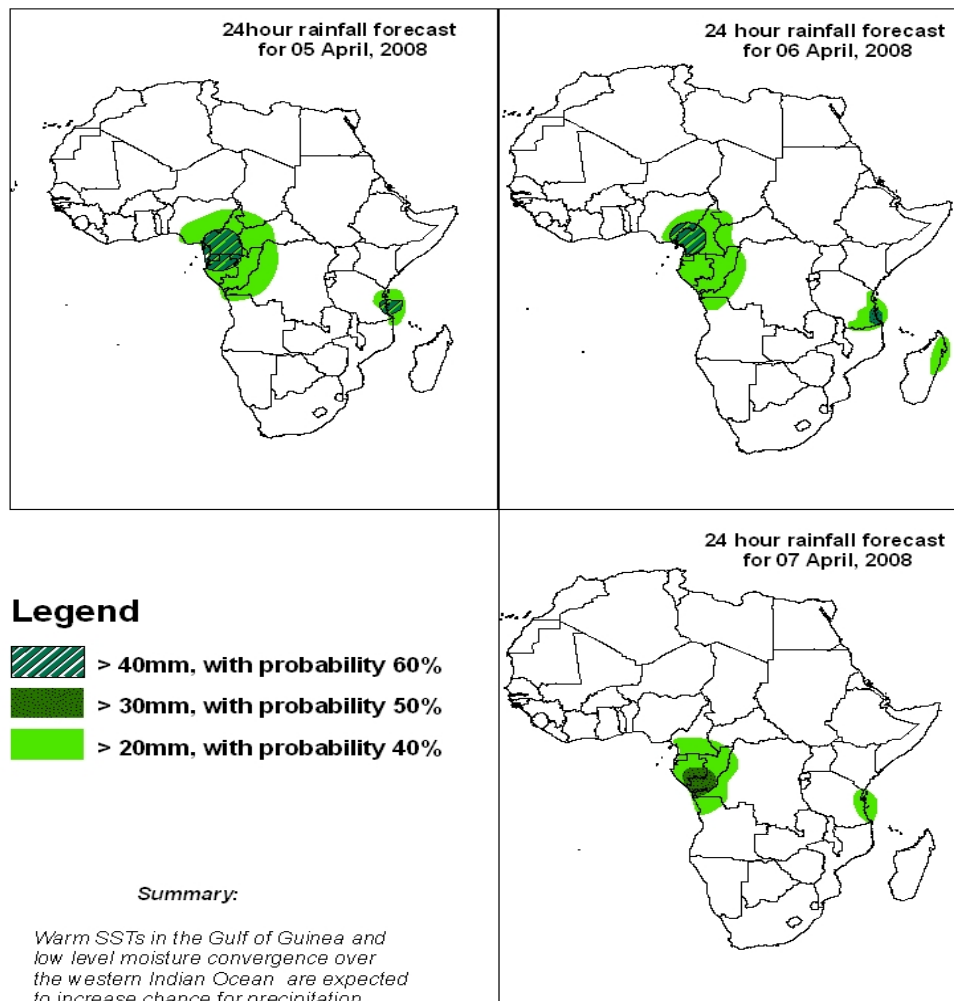
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 04 APRIL 2008

Valid: 00Z, 05-07 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; 04 March 2008): Over all, there is a general agreement between the UKMET, ECMWF, and GFS models with respect to positioning of large scale features. However, the UKMET model systematically underestimates the intensity of surface pressure over land, especially in the tropics between 10°N-10°S. It also underestimates the relative humidity at 700hPa.

2.1. Flow at 850hPa

T+24h, three anticyclonic flow systems are expected to dominate over the southern (southern and central Mozambique, Zimbabwe, Botswana and northeastern South Africa) and the eastern (over southern Madagascar) part of the subcontinent. Two low pressure systems are expected to dominate to the northern part of the subcontinent, one over eastern DRC and other off the coast of Gabon that will cause localized convergence over DRC, Congo and Gabon. An easterly flow pattern over the Indian Ocean is expected to converge with a southeasterly flow along the coast of Tanzania and Kenya with a trough system (over Namibia to southern tip of South Africa) and a cyclonic circulation (over southern Madagascar) imbedded in between.

T+48h, an anticyclonic flow pattern is expected to dominate over the southern part of the subcontinent (Mozambique, Zambia, Zimbabwe, Botswana and northeastern South Africa including Madagascar) from the Atlantic to western south Indian Ocean with a trough over western South Africa and southern Namibia. The low pressure over eastern DRC is expected to prevail and cause a confluence over the western side of the Lake Victoria basin with the south easterlies originating from the Indian Ocean.

T+72h, the anticyclonic flow pattern is expected to prevail over the southern part of the subcontinent (northern Mozambique, Zambia, Zimbabwe, Botswana and western South Africa including Madagascar) from the Atlantic to western south Indian Ocean with a trough over eastern South Africa and southern Mozambique. The cyclonic flow system over eastern DRC is expected to prevail and cause convergence over the Lake Victoria basin with the southeasterly flow pattern from across Tanzania.

2.2. Flow at 500hPa

T+24h, two expansive anticyclonic circulations are expected to dominate over the eastern part of Africa; associated respectively with the Arabian and Mascarene anticyclones. These two systems will cause easterly flow from the Indian Ocean to the Atlantic Ocean, while a cyclonic circulation is expected to dominate over the Gulf of Guinea and over southern part of Sahel countries. A succession of a cyclonic and anticyclonic circulations is expected to develop over the southern Africa, indicating two frontal systems; one to the southeast of the tip of South Africa and the other to the southeast of Madagascar.

T+48h, an expansive anticyclonic flow pattern is expected to prevail over the area between 10°N – 15°S due to a combination of the Arabian and Mascarene anticyclones, while the cyclonic circulation over the Gulf of Guinea is expected to weaken. The succession of anticyclonic and cyclonic circulations over the subtropical region is expected to translate eastward, and the cyclonic circulation to the southeast of Madagascar is expected to weaken.

T+72h, the anticyclonic circulation associated with the Arabian and Mascarene anticyclones is expected to prevail over the tropical areas between 10°N – 20°S, with a northeasterly flow over the Horn of Africa, southern Sudan, Kenya, Uganda and DRC, reducing convection over the area.

A succession of anticyclonic and cyclonic circulations is expected to prevail over the southern part of Southern Africa, with a trough circulation to the south east of South Africa.

2.3. Flow at 200hPa

T+24h, a localized upper level divergence is expected to dominate over Cameroon, Central African Republic, causing an upper level anticyclonic flow over DRC, northern Angola, DRC and Lake Victoria Basin, while a westerly flow pattern is expected to dominate over the southern part of southern Africa. A localized upper level cyclonic pattern is expected to dominate to the south of Madagascar, while an upper level cyclonic circulation is expected to dominate over the Atlantic Ocean to the southwest of South Africa.

T+48h, a localized upper level divergent circulation is expected to prevail over Cameroon and Congo associated with an upper level anticyclonic circulation over central DRC and Tanzania, this circulation is expected to permit convective activity, while a westerly flow pattern is expected to prevail over the southern part of southern Africa.

T+72h, the localized upper level divergent circulation is expected to move slightly southward over Congo and northern Angola causing southerly flow over western DRC and western Tanzania and a confluent westerly flow over southern Angola, Namibia, and Botswana.

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