



Forecast Guidance for Africa

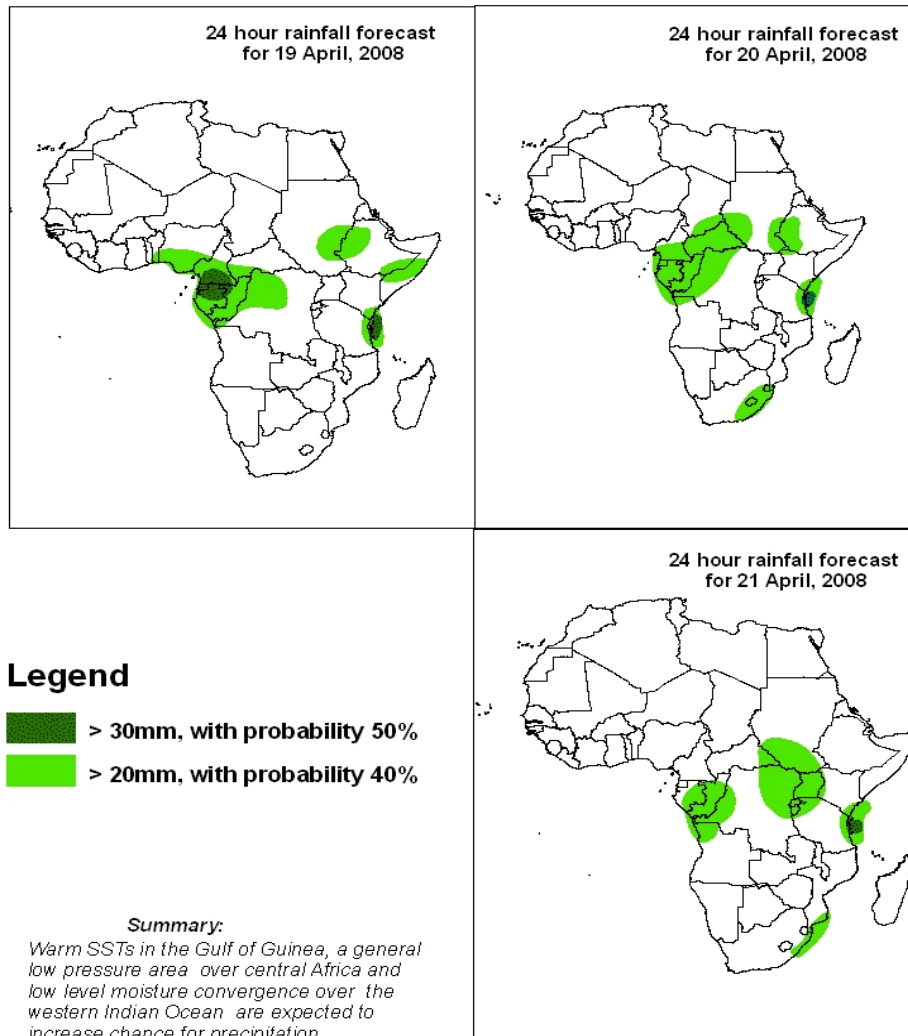
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

FORECAST DISCUSSION 14H00 EST, 18 APRIL 2008

Valid: 00Z, 19-21 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; 18 April 2008): There is a general agreement between the UKMET, ECMWF, and GFS models with respect to positioning of large scale features. However, the InterTropical Discontinuity (ITD) over west Africa, the ridge over Angola and the East African ridge are well defined by the GFS model as compared to the ECMWF and UKMET models.

2.1. Flow at 850hPa

T+24h, an anticyclonic flow system is expected to dominate over eastern North Africa with a trough to the west (over Morocco, northern Mauritania, northern Algeria and Tunisia) and a general low pressure area in the Sahel and Eastern Africa, causing isolated convergence over there. A southeasterly flow pattern is expected to dominate along the coast of Somalia to northern Mozambique causing moisture advection inland from the Indian Ocean. An extensive anticyclonic flow pattern is expected to dominate over southern Africa, from the Atlantic Ocean to Western Indian Ocean with a trough in between over southern Namibia and western South Africa.

T+48h, an anticyclonic flow system is expected to prevail over eastern North Africa with a trough to the west over northern Morocco, northern Mauritania, northern Algeria, Tunisia and northwestern Libya. A low pressure area is expected to dominate over Western Sahara and western Mauritania while a general low pressure is expected to prevail from West Africa, through Central Africa to western Ethiopia, Kenya and Tanzania. Moisture advection over east Africa is expected to prevail due to a persistent southeasterly flow from the Indian Ocean. An extensive anticyclonic flow pattern is expected to prevail over southern Africa, from the Atlantic Ocean to Western Indian Ocean with a trough over southeastern South Africa.

T+72h, an anticyclonic flow system is expected to prevail over eastern North Africa with a trough to the west over northern Morocco, northern Mauritania, northern Algeria, Tunisia and northwestern Libya. A low pressure area is expected to prevail over western Mauritania as well as over West and Central Africa with widespread convergence activity over there. An anticyclonic flow pattern is expected to dominate over the tip of Horn Africa and a trough is expected to dominate off the coast of Tanzania causing a southeasterly flow to prevail. A low pressure is expected to develop over northwestern Angola. An anticyclonic flow pattern is expected to prevail over a large part of southern Africa due to the St. Helena and Mascarene ridges with a low pressure over eastern South Africa and southern Mozambique separating the two high pressure centers.

2.2. Flow at 500hPa

T+24h, an expansive anticyclonic circulation system is expected to dominate over northern and western Africa, and a cyclonic circulation system over Central Africa including the Gulf of Guinea, eastern Nigeria and eastern Niger. An easterly flow pattern is expected to

dominate over eastern Africa. An anticyclonic circulation system is expected to dominate over southern Africa with a middle level trough to the southwest associated with a frontal system.

T+48h, the anticyclonic circulation over northern Africa is expected to prevail while a localized middle level convergent flow is expected to prevail over the Gulf of Guinea, Cameroon, and Congo. A cyclonic circulation system is expected to develop over the Horn of Africa (eastern Ethiopia and Somalia) while an easterly flow pattern is expected to prevail over eastern Africa. A westerly flow pattern associated with a frontal system is expected to dominate over southern Africa and the Mozambique Channel.

T+72h, the anticyclonic circulation system over northern Africa is expected to strengthen over southern Sahel and enhance convergence over northeastern Chad and Cameroon. A cyclonic circulation is expected to develop over the Gulf of Guinea and central Africa with convergent flow pattern over Congo and western DRC, and another one over the Horn of Africa. An easterly flow pattern is expected to prevail over eastern Africa while the trough system over southern Africa is expected to move over south eastern South Africa.

2.3. Flow at 200hPa

T+24h, an upper level westerly jet is expected to dominate over northern Africa between 20N- 15N, with an upper level anticyclonic circulation system over the Sahel and divergent flow over Ghana, southern Nigeria and western Chad. A confluent flow pattern is expected to develop over the Horn of Africa and an anticyclonic circulation system will dominate over central Africa, with a divergent flow pattern over northern and eastern DRC. A westerly flow associated with an upper level jet is expected to dominate over southern Africa.

T+48h, the upper level jet over northern Africa, the anticyclonic circulation over the Sahel, with an upper level divergence pattern over southern Nigeria and Cameroon are expected to prevail. An upper level disturbance is expected to enhance a divergent flow pattern over southern Sudan. The divergent flow pattern over DRC is expected to weaken and the westerly flow over southern Africa is expected to prevail with a weak disturbance south of the Tip of South Africa.

T+72h, a divergent flow pattern is expected to develop over Ghana and Cameroon while a deep trough is expected to develop in the upper level jet over western Sudan and contribute to uplift to the east of the country. A divergent flow pattern is expected to prevail over northwestern DRC, Gabon and eastern Tanzania. A westerly flow is expected to dominate over southern Africa with a diffluence associated with a frontal system southeast South Africa into the Mozambique Channel and the southwest Indian Ocean.

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