



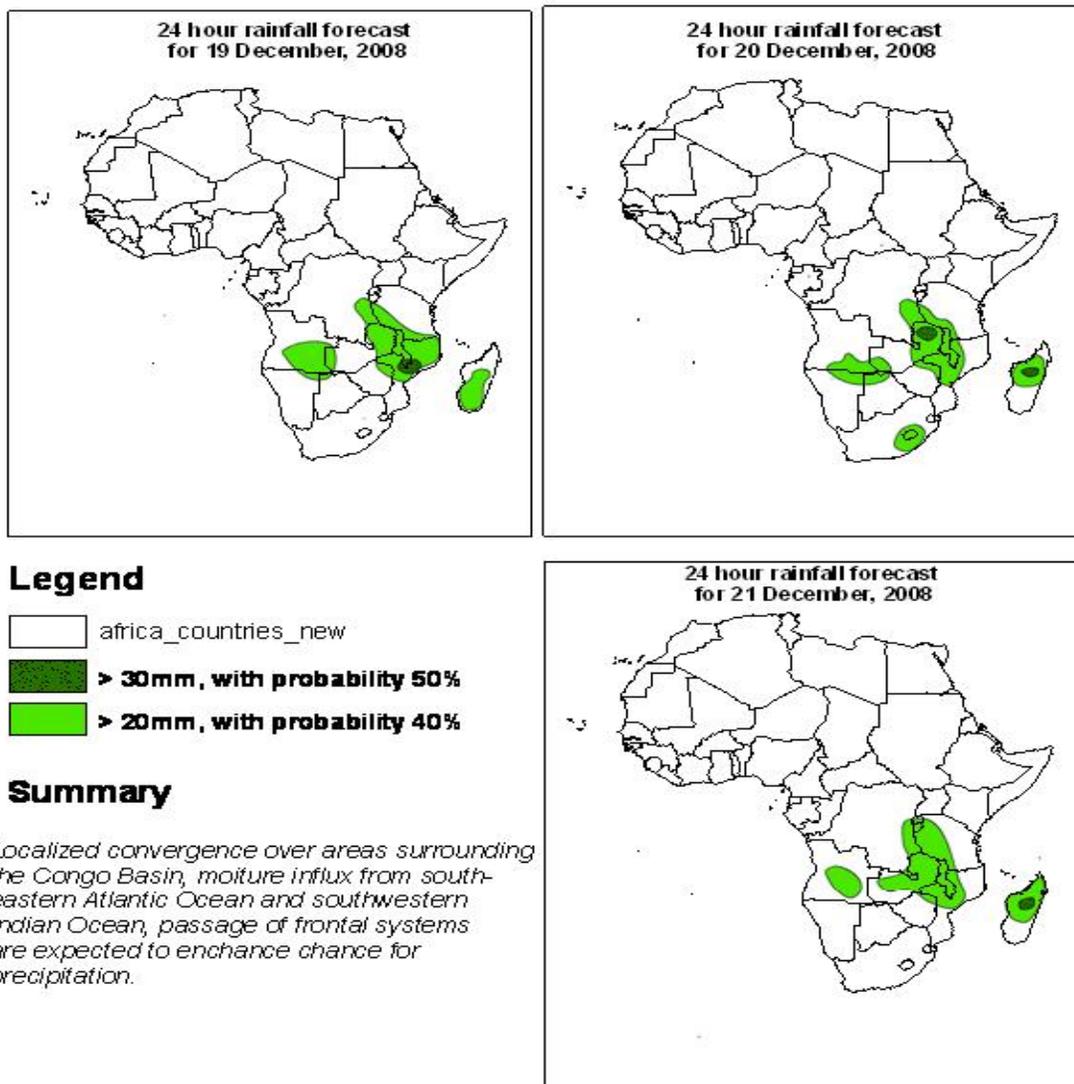
Forecast Guidance for Africa

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

FORECAST DISCUSSION 14H00 EST, 18th DECEMBER, 2008
Valid: 00Z 19th DECEMBER – 21st DECEMBER, 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; 19th December, 2008): all the three models are in general agreement especially with respect to the positioning of large scale features, however, the UK model has a tendency to give lower values than the GFS and ECMWF models in the Equatorial (10°S and 10°N) Continental Africa.

2.1. Flow at 850hPa:

T+24h, the Azores anticyclonic circulation will affect the bulge of Africa, while the Saharan anticyclonic circulation is expected to prevail over much of North Africa. A weak trough will be featured over northern Algeria and Tunisia. Cyclonic vortices are likely to develop over southern Zambia and central Mozambique. Localized Convergence is expected to occur over northeastern DRC, southern Uganda, southern Angola and over central Namibia. Confluent flows are expected to occur over eastern Cameroon, eastern Congo onto western DRC, western Tanzania, southeastern Angola and northeastern Zimbabwe. On the other hand, diffluent flows are expected to occur over central DRC, northwestern Angola and southeastern Tanzania. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulation systems. To the South, a trough in the westerly wave will affect the southern sector of South Africa.

T+48h, the Azores anticyclonic circulation is expected to strengthen and merge with the Saharan and dominate the flow over much of North Africa. The trough over northern Algeria and parts of Tunisia will weaken and retreat northeastwards. Cyclonic vortices are expected to develop over the border between southern Zambia and northern Zimbabwe and over southern Madagascar. Localized convergence is expected to occur over western Ethiopia, the Lake Victoria region, western DRC, southeastern Namibia and central South Africa. Confluent flows are expected to occur over eastern Cameroon, western Gabon, central Tanzania, southern Angola, eastern Namibia, northern Botswana and northern Madagascar. On the other hand, Divergence will be featured over northern DRC. Diffluent flows are expected to occur over northern Angola and southern Zimbabwe. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulation systems. To the South, a trough in the westerly wave will affect the southern sector of South Africa.

T+72h, N/A

2.2. Flow at 500hPa:

T+24, a westerly wave in which a weak trough is embedded over western Maghreb is expected to prevail over much of North Africa. To the South, a Sub-tropical anticyclonic circulation will dominate the flow. A closed cyclonic circulation will affect the southwestern sector of Angola. Convergence will be featured over northern Zambia and northern Zimbabwe. Confluent flows are expected to occur over eastern Kenya, southeastern DRC and western Zambia. Diffluent flows are expected to occur over eastern DRC, western Tanzania and over northeastern Angola. The flow over much of Southern Africa will be dominated by the St. Helena and Mascarene anticyclonic circulation systems to the south of which a westerly wave will prevail.

T+48, a westerly wave will continue to prevail over much of North Africa. The trough over western Maghreb will remain in the same position. To the South, a sub-tropical anticyclonic circulation will prevail. A cyclonic vortex is expected to develop over central Mozambique. Confluent flows are likely to occur over southern Congo, southern DRC and eastern Zambia. Divergence will be featured over central DRC. Diffluent flows are

expected to occur over eastern DRC and southwestern Zambia. The flow over much of Southern Africa will be dominated by the St. Helena and Mascarene anticyclonic circulation systems. A trough in the westerly wave will affect southwestern Angola, western Namibia and southern South Africa.

T+72, N/A

2.3. Flow at 200hPa:

T+24h, a westerly wave will dominate the flow over much of North Africa. A trough will be featured over northeastern Algeria and Tunisia. To the South, an anticyclonic circulation system will prevail. Convergence will be featured over the border between eastern Congo and western DRC and eastern DRC. Confluent flows are expected to occur over northern DRC and southern Tanzania. Divergence is likely to occur over southern Congo and southeastern DRC. The northern sector of Southern Africa will be under the influence of an anticyclonic circulation, while the southern sector will be dominated by a westerly wave.

T+48h, a westerly wave will continue to prevail over North Africa. The trough over northeastern Algeria and Tunisia is expected to weaken and retreat northwards. The near equatorial region will be affected by an anticyclonic circulation system. Confluent flows are expected to occur over northwestern Gabon, central DRC, western Kenya and over southern Tanzania. Divergence is likely to occur over southeastern DRC and central Mozambique. Much of the Southern Africa will be dominated by an anticyclonic circulation system with a westerly wave to the south.

T+72h, N/A

Author: Lutumba Tima (Instituto Nacional de Meteorologia, Angola, and African Desk).