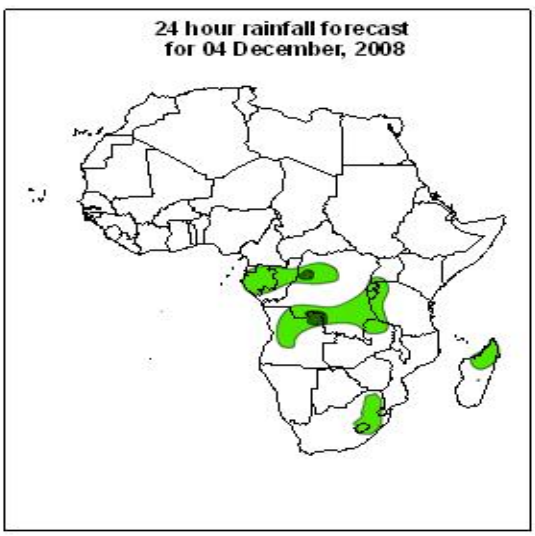
Forecast Guidance for Africa

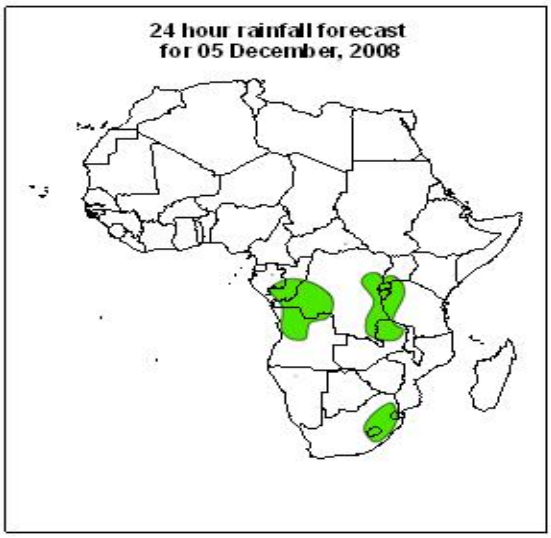
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 03rd DECEMBER, 2008
Valid: 00Z 04th DECEMBER – 06th 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.





Legend

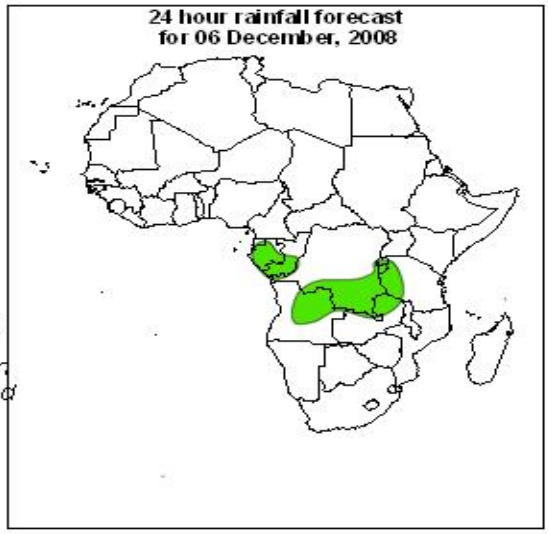
africa_countries_new

> 30mm, with probability 50%

> 20mm, with probability 40%

Summary

Localized convergence over areas surrounding the Congo Basin, moiture influx from south-eastern Atlantic Ocean and southwestern Indian Ocean, passage of frontal systems are expected to enchance chance for precipitation.



2. Model discussion

Model comparison (Valid from 00Z; 03rd 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 and Saharan anticyclonic circulation will dominate the flow over much of North Africa. A deep trough will affect northeastern Algeria, Tunisia and parts of Libya. Cyclonic vortices are likely to develop over southern Algeria and northern Niger, while a small trough will prevail over northeastern Angola. Localized convergence is expected to occur over northern Cameroon, western Ethiopia, northern Gabon, southeastern Congo, eastern DRC, northern Namibia, central South Africa and over southwestern Madagascar. Confluent flows will be featured over southern Togo, northern Nigeria, western Sudan, eastern CAR, southern Uganda, northwestern Tanzania and over eastern Namibia. Diffluent flows will occur over northeastern Sudan, northern DRC, southern Somalia and over southern Angola. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulation systems with a westerly wave to the south.

T+48, the Azores and Saharan anticyclonic circulations will continue to prevail over much of North Africa. The trough over Libya is likely to strengthen and shift southwestwards to northern Niger and northeastern Mali. An anticyclonic circulation is expected to affect the central sector of DRC, while a closed cyclonic circulation centered over the Atlantic Ocean will affect the northern coast of Angola. Convergence will occur over northern Cameroon, northeastern DRC and over northeastern Namibia. Confluent flows are expected to occur over northeastern Nigeria, northeastern CAR, southern Ethiopia, northwestern Uganda, southeastern Gabon, northwestern Angola, northwestern Zambia, northwestern Botswana and over eastern Namibia. Diffluent flows are expected to occur over northeastern Sudan and over northeastern Angola. The flow over much of Southern Africa is expected to be under the influence of the St. Helena and Mascarene anticyclonic circulation systems.

T+72, the Azores and Saharan anticyclonic circulations are expected to dominate the flow over much of North Africa. A weak trough will be featured over northeastern Algeria and Tunisia, while a closed cyclonic circulation is expected to affect parts of Libya. A cyclonic vortex is likely to develop over northern Angola. Localized convergence will be featured over eastern Cameroon, southwestern Botswana and over the eastern sector of South Africa. Confluent flows are expected to occur over northeastern and southern Nigeria, southwestern Ethiopia, northeastern DRC, central Uganda and over the northern sector of Botswana. Divergence is expected to occur over western DRC and central Angola. 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.

2.2. Flow at 500hPa:

T+24, a westerly wave, in which a trough is embedded over northern Algeria and Tunisia is expected to dominate the flow over much of North Africa. To the South, the Saharan anticyclonic circulation system is expected to prevail. Cyclonic vortices are likely to develop over southern DRC and northern Tanzania. Convergence will be featured over eastern DRC and over eastern Madagascar. Confluent flows are expected to occur over eastern CAR, central Ethiopia and over western DRC. On the other hand, divergence will be featured over northern Congo and northwestern Angola. The flow over Southern Africa

will be dominated by an anticyclonic circulation system. A westerly wave will affect the southern sector of South Africa.

T+48, the flow over much of North Africa will be similar to that of the previous day. The trough over Algeria and Tunisia is expected to strengthen and deepen to southern Algeria. A cyclonic vortex is likely to develop over western DRC. Convergence is expected to occur over southern Gabon. Confluent flows will be featured over southern CAR, eastern Congo, northwestern Tanzania and over the southern sector of DRC. Diffluent flows are expected to occur over southern Somalia and over northwestern Angola. The flow over much of Southern Africa will be under the influence of the St. Helena anticyclonic circulation system with a westerly wave to the South affecting the southern sector of South Africa.

T+72, the trough in the westerly wave over Algeria and Tunisia is likely to strengthen and move eastwards to western Libya. To the South, the Saharan anticyclonic circulation system will prevail. Cyclonic vortices are likely to develop over southern Congo and northeastern Angola. Confluent flows are expected to occur over northern CAR, southwestern Cameroon, central DRC, eastern Angola and over central Malawi. Diffluent flows will occur over the western sector of Cameroon, southern Somalia and over northern Tanzania Somalia. An anticyclonic circulation system will dominate the flow over much of Southern Africa with a trough in the westerly wave over southern Madagascar.

2.3. Flow at 200hPa:

T+24h, the flow over much of North Africa will be dominated by a westerly wave in which a trough is embedded over northern Algeria and Tunisia, while another trough will be featured over the western Gulf of Guinea. The near equatorial region will be dominated by an extensive upper-level anticyclonic circulation. Confluent flows are expected to occur over southwestern CAR, northern DRC and over southwestern Tanzania. Divergence is expected to occur over southwestern Congo, western and southern DRC. The flow over the southern sector of Southern Africa will be under the influence of a westerly wave with a trough over parts of Mozambique and Madagascar.

T+48h, a similar flow to that of the previous day will prevail over most of North Africa. The trough over northern Algeria and Tunisia is expected to deepen and expand eastwards to northwestern Libya, while the one over the western Gulf of Guinea is likely to weaken. Confluent flows are expected to occur over northern Congo, southern CAR and over eastern Angola. Divergence is expected to occur over western and southern DRC and over northern Angola. The flow over Southern Africa will be similar to that of the previous day and the trough over Mozambique will deepen to central Zambia.

T+72h, a westerly wave will prevail over much of North Africa. The trough over northern Algeria and Tunisia is expected to move eastwards to western Libya, while the one over the western Gulf of Guinea is likely to weaken and move slightly eastwards. Around the equatorial region, an extensive anticyclonic circulation system will dominate the flow. Confluent flows are expected to occur over southwestern Cameroon, southern CAR, northwestern Zambia and over southern Angola. On the other hand, Divergence is likely to occur over eastern Congo, central DRC and over eastern Angola. The southern sector of Southern Africa and the southwestern Indian Ocean will be dominated by a westerly wave with a back hanging trough over southeastern Atlantic Ocean.

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