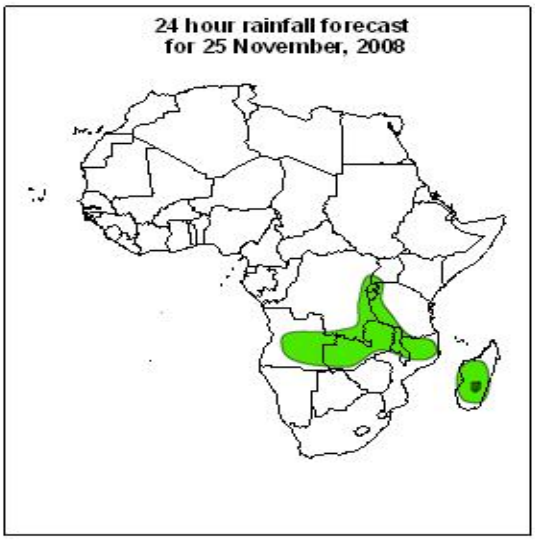
Forecast Guidance for Africa

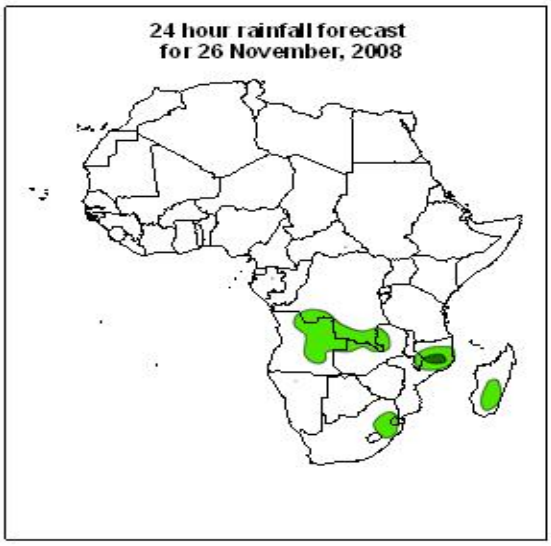
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 24th NOVEMBER, 2008
Valid: 00Z 25th NOVEMBER – 27th NOVEMBER, 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

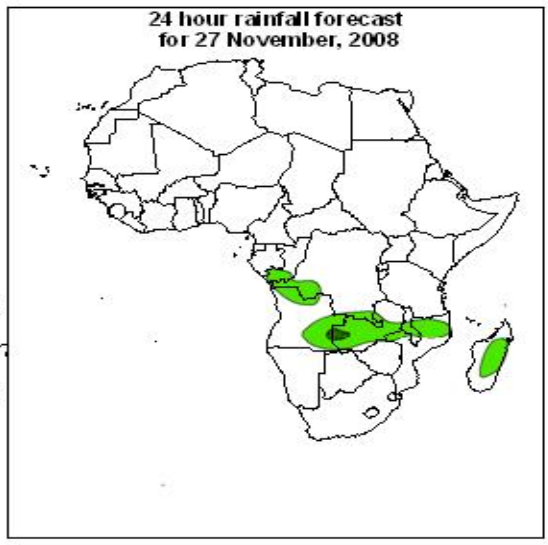
africa_countries_new

> 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 mid latitude disturbances embedded in the westerly waves are expected to enchance chance for precipitation.



2. Model discussion

Model comparison (Valid from 00Z; 25th November, 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^oS and 10^oN) Continental Africa.

2.1. Flow at 850hPa:

T+24h, the flow over much of North Africa is expected to be dominated by the Saharan anticyclonic circulation system with a trough from the Mediterranean Sea affecting the Maghreb region. Cyclonic vortices are likely to develop over southern Angola, western South Africa and over the southern Mozambique Channel. Localized convergence is expected to occur over northeastern DRC, northwestern Tanzania, northern Zambia and over the northern sector of South Africa. Confluent flows are expected to occur over central Cameroon, western and southern Ethiopia, southeastern DRC, southeastern Namibia and over northern South Africa. On the other hand, diffluent flows will be featured over northeastern Sudan, northwestern Angola and over northwestern Zimbabwe. Much of Oceanic Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulation systems, to the South of which a westerly wave will prevail.

T+48, the flow over much of North Africa will be similar to that of the previous day with a trough over the Maghreb region remaining in the same position .A closed cyclonic circulation will prevail off the northern coast of Angola. Localized convergence is likely to occur over northern Tanzania, eastern Angola and over southern Namibia. Confluent flows are expected to occur over southwestern Ethiopia onto southeastern Sudan, northeastern DRC, northern Angola, central Zambia, northern Botswana, northern South Africa and over the central Mozambique Channel. Diffluent flows will be featured over eastern northeastern Sudan and over northern DRC. The flow over much of Southern Africa will be dominated by the St. Helena and Mascarene anticyclonic circulation systems, while a trough in the westerly wave will affect the southern sector of Madagascar.

T+72, the Saharan anticyclonic circulation system will continue to prevail over much of North Africa and the trough over the Maghreb region is expected to intensify and move southwestwards. The closed cyclonic circulation over the northern coast of Angola will retreat westwards. Convergence is expected to occur over the eastern sector of DRC and over northwestern Tanzania. Confluent flows are likely to occur over central Cameroon, southeastern Ethiopia, southwestern Tanzania, southern Angola, northern and western Zambia, northern Mozambique and over central Namibia. On the other hand, diffluent flows are expected to occur over northeastern Sudan, northern DRC and over northern Angola. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulation systems, while westerly wave will affect the southern sector of South Africa with a trough over parts of Madagascar.

2.2. Flow at 500hPa:

T+24, a westerly wave will dominate the flow over much of North Africa with an embedded trough over Morocco, northern Algeria and Tunisia. To the South, the Saharan anticyclonic circulation system will prevail. A cyclonic vortex is likely to develop over southern Somalia. Convergence is expected to occur over northern Tanzania and over southwestern Zambia. Confluent flows will be featured over southeastern DRC, eastern Angola and over northwestern Zambia. Diffluent flows are expected to occur over northeastern DRC and over central Angola. Much of Southern Africa will be dominated by an anticyclonic circulation with trough in the westerly wave affecting parts of Madagascar.

T+48, a westerly wave will dominate the flow over much of North Africa. The trough over the Maghreb region is likely to strengthen and move southwestwards. To the South, a sub-tropical anticyclonic circulation will prevail. An anticyclonic vortex is likely to develop over the western sector of Angola. Convergence will be featured over northwestern Mozambique. Confluent flows are likely to occur over eastern DRC, northern Tanzania, the coast of Kenya, eastern Angola, northern and southwestern Zambia and over the southern coast of Tanzania. Diffluent flows are expected to occur over central DRC. Much of Southern Africa will be under the influence of the St. Helena anticyclonic circulation system. To the South, westerly wave with a trough over southern Madagascar will prevail.

T+72, the trough over western Maghreb will strengthen and be centered over northern Morocco. A Sub-tropical anticyclonic circulation will dominate the flow over the rest of North Africa. An anticyclonic vortex is likely to develop over the central sector of DRC, while a cyclonic vortex will be featured the southern sector of Angola. Convergence will be featured over the border between southern Kenya and northeastern Tanzania. Confluent flows are expected to occur over southeastern Kenya and over southwestern Zambia. Diffluent flows are expected to occur over southeastern Tanzania. The flow over much of Southern Africa will be dominated by an anticyclonic circulation system. To the South, a westerly wave will prevail with two troughs over the southeastern Atlantic Ocean and over the southern Mozambique Channel and parts of Madagascar.

2.3. Flow at 200hPa:

T+24h, a westerly wave with two embedded troughs over northern Algeria and northern Somalia will dominate the flow over much of North Africa. To the south, an anticyclonic circulation system will prevail. Convergence is expected to occur over northeastern DRC. Confluent flows are expected to occur over northern Kenya and over northwestern Angola. Divergence is likely to occur over northwestern Angola and over southeastern DRC. The flow over much of Southern Africa will be dominated by an anticyclonic circulation, while a westerly wave will affect the southern sector and the southwestern Indian Ocean.

T+48h, the trough in the westerly wave over northern Algeria will weaken and retreat northwards, while the one over northern Somalia will also weaken and retreat eastwards but still affect the tip of Somalia. To the South, an anticyclonic circulation system will prevail. Confluent flows are expected to occur over southeastern CAR, southern Sudan and over central and northeastern DRC. Divergence is likely to occur over southeastern DRC and over southwestern Zambia. The northern sector of Southern Africa will be under the influence of an anticyclonic circulation, while the southern sector and the southwestern Indian Ocean are likely to be dominated by a westerly wave.

T+72h, a westerly wave will prevail over North Africa and the trough over northern Algeria is likely to strengthen and move westwards to Morocco, while the one over the tip of Somalia is likely to weaken and retreat eastwards. An anticyclonic circulation is expected to dominate the flow to the South. Confluent flows are expected to occur over western Gabon, northwestern Tanzania, eastern DRC and over eastern Angola. Divergence is likely to occur over the eastern sector of DRC. The flow over the northern sector of Southern Africa is expected to be dominated by an anticyclonic circulation except for the southern sector and the southwestern Indian Ocean which will be under the influence of a westerly wave.

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