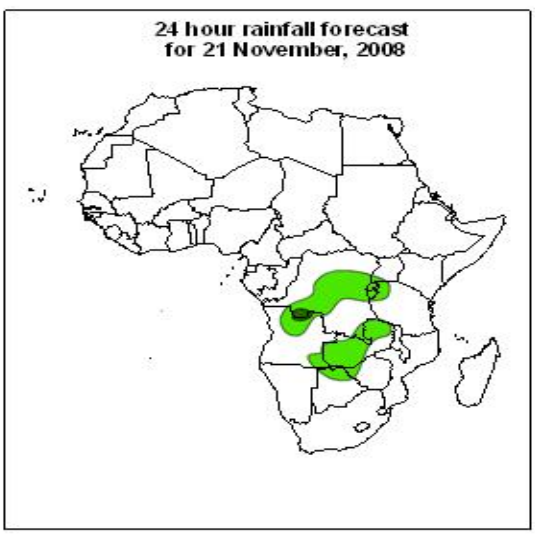
Forecast Guidance for Africa

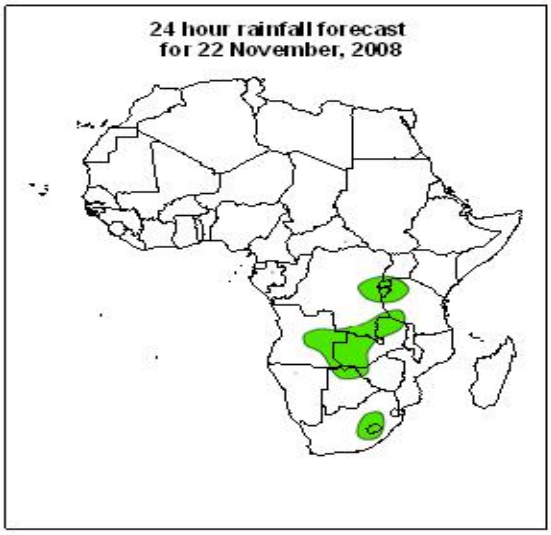
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 20th NOVEMBER, 2008
Valid: 00Z 21st NOVEMBER – 23rd 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

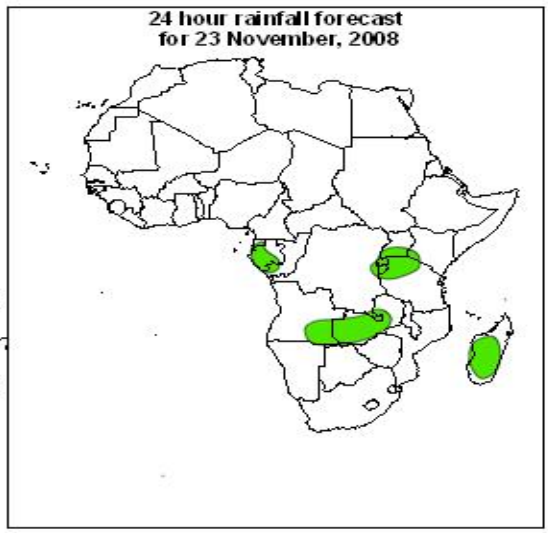
africa_countries_new

> 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; 21st 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. A cyclonic vortex will be featured over western Maghreb. Cyclonic vortices are likely to develop over the central Mozambique Channel and over southwestern Madagascar. Localized convergence is likely to occur over western Tanzania, southern DRC, southeastern Angola and over southern Namibia. Confluent flows are expected to occur over northwestern DRC, northwestern Angola, northern Mozambique, southwestern Zambia and over southern Angola. On the other hand, localized divergence is expected to occur over the central sector of DRC. Diffluent flows will be featured over central Ethiopia and over southeastern Sudan. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulation systems except for northern Madagascar which will be affected by a trough from equatorial Indian Ocean.

T+48, the flow over much of North Africa will be similar to that of the previous day. The closed cyclonic circulation over western Maghreb will remain in the same position, while a trough will be featured over northeastern Algeria and Tunisia. The cyclonic vortex over the central Mozambique Channel will move eastwards to the coast of Mozambique, while the one over southeastern Madagascar is expected to retreat westwards. Localized convergence is likely to occur over western Tanzania, eastern Angola and over northern Zambia. Confluent flows are expected to occur over southwestern Sudan, eastern Ethiopia, eastern DRC, northern Tanzania, southeastern Angola and over northern Mozambique. Divergence will be featured over northern DRC. Diffluent flows are expected to occur over southern Sudan and over southern DRC. The flow over much of Southern Africa will be dominated by the St. Helena and Mascarene anticyclones except for the Mozambique Channel which will be affected by a trough from the equatorial Indian Ocean.

T+72, the closed cyclonic circulation over western Maghreb is expected to strengthen and remain in the same position, while the trough over northeastern Algeria and Tunisia is likely to deepen and expand southeastwards to central Libya. To the South, the Saharan anticyclonic circulation system will continue to prevail. An anticyclonic vortex will be featured over central DRC. Convergence is expected to occur over southeastern Uganda, the southwestern sector of Tanzania and over southern Angola. Confluent flows are likely to occur over northwestern Ethiopia, northern Tanzania, central Angola and over western Zambia. On the other hand, divergence will be featured over western Zimbabwe. Diffluent flows are expected to occur over southern Sudan and over western Tanzania. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulations. To the South, a westerly wave will prevail.

2.2. Flow at 500hPa:

T+24, a westerly wave will dominate the flow over much of North Africa with a closed cyclonic circulation featured over western Maghreb. To the South, the Saharan anticyclonic circulation system will prevail. Cyclonic vortices are likely to develop over northern Gabon and southeastern Angola. Convergence is expected to occur over western DRC and over northeastern Angola. Confluent flows will be featured over northern and central Tanzania. Divergence is expected to occur over southern DRC. Much of Southern Africa will be

dominated by the Mascarene anticyclonic circulation with a trough in the westerly wave which will affect eastern South Africa and southern Mozambique.

T+48, a westerly wave will dominate the flow over much of North Africa. The closed cyclonic circulation over western Maghreb is likely to move southwestwards, while a weak trough will be featured over northeastern Algeria and Tunisia. To the South, a sub-tropical anticyclonic circulation will prevail. A closed cyclonic circulation will affect the eastern sector of Angola. Confluent flows are likely to occur over central Cameroon, western DRC, western Angola, eastern Zambia and over eastern Botswana. Diffluent flows are expected to occur over northeastern Kenya and over eastern DRC. Much of Southern Africa will be under the influence of the St. Helena anticyclonic circulation system. To the South, a westerly wave with two troughs over eastern South Africa and Tanzania will prevail.

T+72, the closed cyclonic circulation over western Maghreb is expected to weaken, while the trough in the westerly wave over northeastern Algeria and Tunisia will weaken and retreat northeastwards. A Sub-tropical anticyclonic circulation system will dominate the flow over the rest of North Africa. The closed cyclonic circulation over eastern Angola is likely to weaken and shift southeastwards. Convergence will be featured over northern Tanzania and over southwestern Angola. Confluent flows are expected to occur over northeastern Tanzania, eastern Angola and over southern Zambia. Divergence is likely to occur over northeastern DRC and over southern Botswana. The flow over much of Southern Africa will be dominated by an anticyclonic circulation system. To the South, a westerly wave will prevail with a trough over the Southern Mozambique Channel and southern Madagascar.

2.3. Flow at 200hPa:

T+24h, a westerly wave with two embedded troughs over western Maghreb and over eastern Ethiopia and northern Somalia will dominate the flow over much of North Africa. To the south, an anticyclonic circulation system will prevail. Confluent flows will be featured over northern and eastern DRC and over southwestern Kenya. Divergence is likely to occur over central DRC. The flow over much of Southern Africa will be dominated by an anticyclonic circulation, while a westerly wave will affect the southern sector.

T+48h, the trough in the westerly wave over western Maghreb will move westwards, while another one will be featured over northeastern Algeria and Tunisia. The trough over eastern Ethiopia and northern Somalia is likely to weaken and expand eastwards. To the South, an anticyclonic circulation system will prevail. Confluent flows are expected to occur over southern Sudan, western DRC and over southwestern Tanzania. Divergence is likely to occur over eastern Angola and over eastern Uganda. Much 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 western Maghreb is likely to weaken, while the one over eastern Ethiopia and northern Somalia will retreat eastwards but still affect the tip of Somalia.. An anticyclonic circulation is expected to dominate the flow to the South. Confluent flows are expected to occur over western Ethiopia, northwestern Gabon, northern DRC, northwestern Kenya and over eastern Angola. Divergence is likely to occur over southern DRC. The flow over much of Southern Africa is expected to be dominated by an anticyclonic circulation.

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