



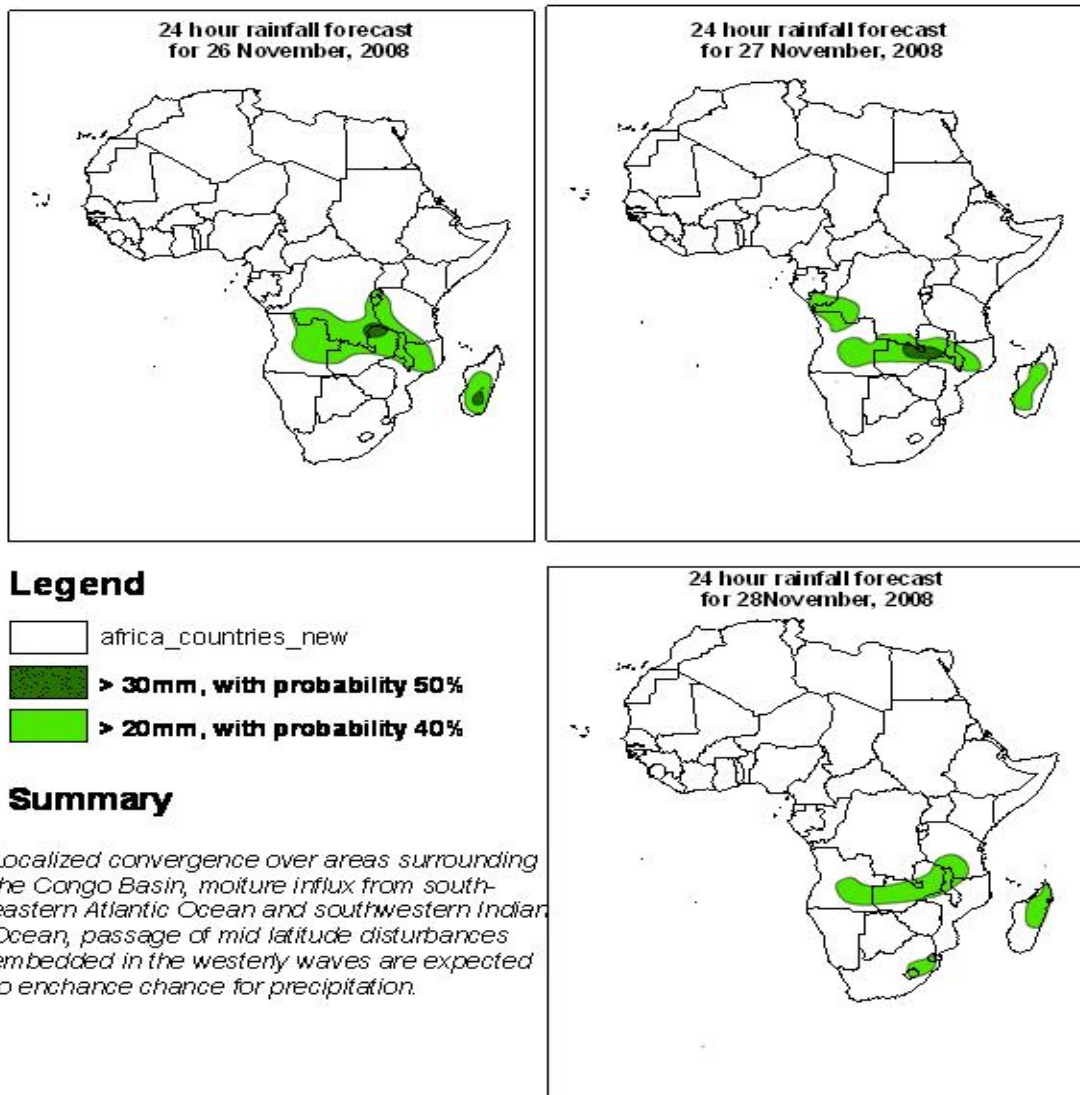
Forecast Guidance for Africa

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

FORECAST DISCUSSION 14H00 EST, 25th NOVEMBER, 2008
Valid: 00Z 26th NOVEMBER – 28th 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.



2. Model discussion

Model comparison (Valid from 00Z; 26th 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°S and 10°N) 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 affecting the Maghreb region. Localized convergence is expected to occur over eastern DRC, western Tanzania and over central Angola. Confluent flows are expected to occur over southeastern Sudan, southern Ethiopia, northern Tanzania, northwestern Angola, northwestern Zambia and over northwestern Mozambique. On the other hand, Divergence is likely to occur over southeastern DRC. Diffluent flows will be featured over northeastern Sudan and over eastern Kenya. Much of Southern Africa will be under the influence of a merger of the St. Helena and Mascarene anticyclonic circulation systems. To the South, a westerly wave with a trough over southern Madagascar will prevail.

T+48, the flow over much of North Africa will be similar to that of the previous day, but the trough over the Maghreb region is expected to strengthen and move slightly southwestwards. An anticyclonic vortex is likely to develop over the eastern sector of DRC, while a cyclonic vortex will be featured off the southern coast of Angola. Localized convergence is likely to occur over northern Tanzania and over central Angola. Confluent flows are expected to occur over southwestern and southeastern Ethiopia, northern Gabon, southern DRC, northeastern Angola, southwestern Tanzania, northern Mozambique and over northern Namibia. Diffluent flows will be featured over northern Congo and over southeastern DRC. The flow over much of Southern Africa will be dominated by the St. Helena and Mascarene anticyclonic circulation systems that will split into three distinct cells, while two troughs in the westerly wave will affect the southern sector of South Africa

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 move northwestwards to northwestern Libya. The anticyclonic vortex over eastern DRC will shift southwards to the southeastern sector, while a cyclonic vortex is likely to develop over the southern Mozambique Channel. Convergence is expected to occur over the Lake Victoria region, southern Angola and over eastern Namibia. Confluent flows are likely to occur over central Cameroon, southeastern Sudan, the southern sector of Ethiopia, western Tanzania, northwestern Zambia, southeastern Angola and over northern Namibia. On the other hand, divergence is expected to occur over western Zambia and off the southern coast of Mozambique. Much of Southern Africa will be under the influence of the St. Helena and Mascarene anticyclonic circulation systems that will be confined in the Atlantic Ocean and the southwest Indian Ocean respectively, while westerly wave will affect the southeastern sector of South Africa.

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. Convergence is expected to occur over the border between northern Tanzania and southern Kenya and over northeastern Mozambique. Confluent flows will be featured over eastern Kenya, central Angola, southeastern DRC onto eastern Angola and over northwestern Mozambique. Divergence will be featured over

eastern DRC. Diffluent flows are expected to occur over southeastern Tanzania. Much of Southern Africa will be dominated by an anticyclonic circulation with a trough in the westerly wave affecting parts of Madagascar and the Mozambique Channel.

T+48, the trough over the Maghreb region will strengthen and move southwards to northern Western Sahara. A Sub-tropical anticyclonic circulation will dominate the flow over the rest of North Africa. An anticyclonic vortex is likely to develop over eastern DRC, while a cyclonic vortex will be featured the southeastern sector of Angola. Convergence will be featured over the border between southern Kenya and northeastern Tanzania. Confluent flows are expected to occur over southeastern DRC and eastern Angola. Diffluent flows are expected to occur over southern Congo and 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 northeastern Mozambique and parts of Madagascar.

T+72, a westerly wave will dominate the flow over much of North Africa. The trough over the Maghreb region is likely to strengthen and move northwards. To the South, a sub-tropical anticyclonic circulation will prevail. A closed cyclonic circulation will be featured over southeastern Angola and over western Zambia. Confluent flows are likely to occur over northern Zambia and over northeastern Zimbabwe. Divergence is expected to occur over the northern sector of Tanzania. Diffluent flows will be featured southern Congo. The influence of the St. Helena anticyclonic circulation system over Southern Africa will be diminished. To the South, a westerly wave will prevail with two troughs over the southeastern Atlantic Ocean and northern Madagascar.

2.3. Flow at 200hPa:

T+24h, a westerly wave with two embedded troughs over northern Morocco and the tip of Somalia will dominate the flow over much of North Africa. To the south, an anticyclonic circulation system will prevail. Confluent flows are expected to occur over central DRC, northeastern Kenya and over southwestern Tanzania. Divergence is likely to occur over southern DRC. The flow over the northern sectors 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 northern Morocco will strengthen and move southwestwards, while the one over the tip of Somalia will weaken and retreat eastwards. To the South, an anticyclonic circulation system will prevail. Confluent flows are expected to occur over northern DRC, northeastern Kenya, northern Tanzania and over northwestern Angola. Divergence is likely to occur over northeastern DRC and over eastern Angola. The northern sector of Southern Africa will be under the influence of an anticyclonic circulation, while the southern sector is likely to be dominated by a westerly wave.

T+72h, a westerly wave will prevail over North Africa and the trough over northern Morocco is likely to weaken and retreat northwards but still affect northern Morocco. An anticyclonic circulation is expected to dominate the flow to the South. Confluent flows are expected to occur over northern DRC, southern Somalia and over northeastern Zimbabwe. Divergence is likely to occur over southern DRC and over eastern Angola. 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.

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