



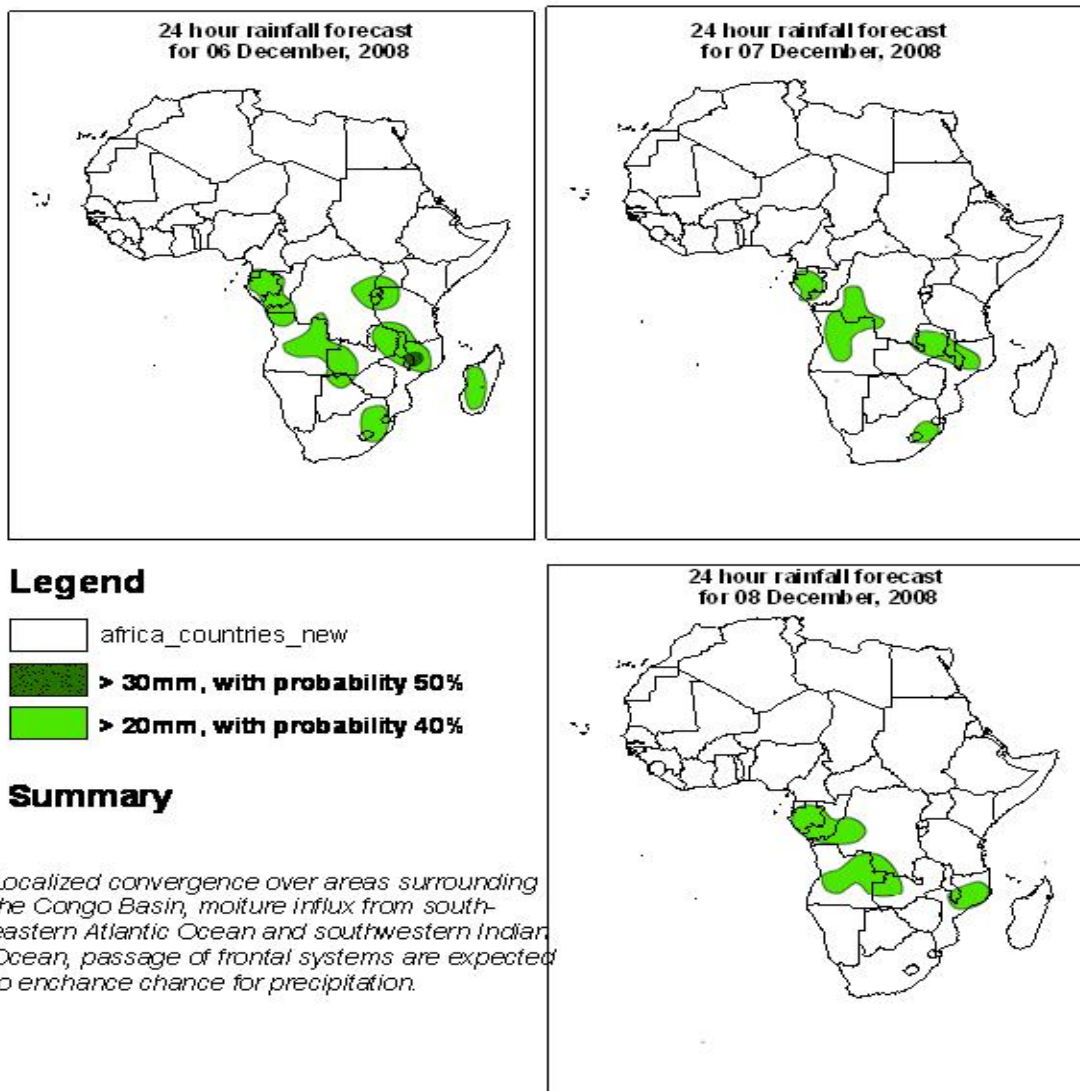
## Forecast Guidance for Africa

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

**FORECAST DISCUSSION 14H00 EST, 05<sup>th</sup> DECEMBER, 2008**  
**Valid: 00Z 06<sup>th</sup> DECEMBER – 08<sup>th</sup> 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; 06<sup>th</sup> 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:**

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T+24, the flow over much of North Africa will be under the influence of the Saharan anticyclonic circulation system. A trough will be featured over northern Morocco. An anticyclonic vortex is likely to develop over northern DRC. Localized convergence is likely to occur over Ruanda, southern Angola, central Zambia, southwestern Botswana and over northeastern South Africa. Confluent flows are expected to occur over northern Gabon, western and southeastern Ethiopia, southwestern Tanzania, northern Zambia, southeastern Zimbabwe and over the southwestern Mozambique Channel. Diffluent flows will be featured over northeastern Sudan and over southern DRC. The flow over much of Southern Africa will be dominated by the St. Helena and Mascarene anticyclonic circulation systems.

T+48h, the Saharan anticyclonic circulation system will continue to prevail over much of North Africa. The trough over northern Morocco is expected to deepen and move eastwards to northern Algeria and parts of Tunisia. Cyclonic vortices will be featured over western Zimbabwe and southern South Africa. Localized convergence is expected to occur over western Ethiopia and eastern Uganda. Confluent flows are expected to occur over northern CAR, southern Ethiopia, central Tanzania, northern and southern Zambia, northeastern Namibia and over northeastern South Africa. On the other hand, Divergence is likely to occur over northern and southern DRC, southern Gabon and central Angola. Southern Africa will be under the influence of the St. Helena anticyclonic circulation system. To the South, a westerly wave will prevail.

T+72, the flow over much of North Africa will be similar to that of the previous day, while a small ridge from the Azores anticyclone will affect northern Morocco and northwestern Algeria. The trough over northern Algeria will move southeastwards to northwestern Libya. A cyclonic vortex is likely to develop over the central coast of Angola, while a small trough will affect northeastern Angola. Convergence is expected to occur over eastern Uganda, southern Angola and northern Zambia. Confluent flows are likely to occur over southeastern Ethiopia onto southeastern Sudan, southwestern Kenya, eastern DRC, northern Zimbabwe, northeastern Namibia and over southern Botswana. On the other hand, divergence is expected to occur over western DRC. 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 a trough in the westerly wave will affect the southern 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 northern Morocco and northwestern Algeria. To the South, the Saharan anticyclonic circulation system will prevail. Confluent flows will be featured over southern Sudan, the northern sector of DRC, central Congo, northern Tanzania and over the southern coast of Angola. Diffluent flows will be featured over southeastern Sudan and

over southwestern DRC. Much of Southern Africa will be dominated by an anticyclonic circulation except for southern Madagascar which will be affected by a westerly wave with a back hanging trough over the southeastern Atlantic Ocean.

T+48, the trough over the western Maghreb region is expected to remain in the same position. A Sub-tropical anticyclonic circulation will dominate the flow over the rest of North Africa. Confluent flows are expected to occur over western Gabon, northwestern DRC, and over northwestern Angola. Diffluent flows are expected to occur over southeastern Nigeria, western DRC and over central Angola. 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 southeastern Atlantic affecting southern Namibia and parts of South Africa.

T+72, a westerly wave will continue to prevail over much of North Africa. The trough over the western Maghreb region is likely to expand westwards to Tunisia. To the South, a sub-tropical anticyclonic circulation will prevail. A cyclonic vortex will be featured over eastern Congo. Confluent flows are likely to occur over northeastern Uganda, northeastern Gabon and over western DRC. Diffluent flows are expected to occur over northwestern DRC and over the central coast of Angola. The flow over much of Southern Africa will be dominated by the Mascarene anticyclonic circulation system to the south of which a westerly wave will prevail.

### **2.3. Flow at 200hPa:**

T+24h, a westerly wave with an embedded trough over the western Gulf of Guinea 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 southeastern CAR, southern Sudan, southern DRC and over northwestern Angola. . Divergence is likely to occur over eastern Gabon, northern and eastern DRC. The flow over the northern sector of Southern Africa will be dominated by an anticyclonic circulation, while a westerly wave with a trough over southeastern Tanzania will affect the southern sector and the southwestern Indian Ocean.

T+48h, the trough in the westerly wave over the western Gulf of Guinea is expected to weaken and retreat westwards. To the South, an anticyclonic circulation system will prevail. Confluent flows are expected to occur over southeastern CAR, southwestern Sudan and over southwestern Zambia. Divergence is likely to occur over northwestern Gabon, southeastern Congo and over eastern DRC. Much of Southern Africa will be under the influence of an anticyclonic circulation to the south of which a westerly wave will prevail.

T+72h, a westerly wave will prevail over North Africa and the trough over the western Gulf of Guinea is expected to remain in the same position. A cyclonic vortex is likely to develop over eastern DRC. Confluent flows are expected to occur over northern DRC, northeastern Kenya, southern Somalia and over southern Tanzania. Divergence is likely to occur over western DRC. The flow over much of Southern Africa is expected to be dominated by an anticyclonic circulation with a westerly wave to the south.

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