



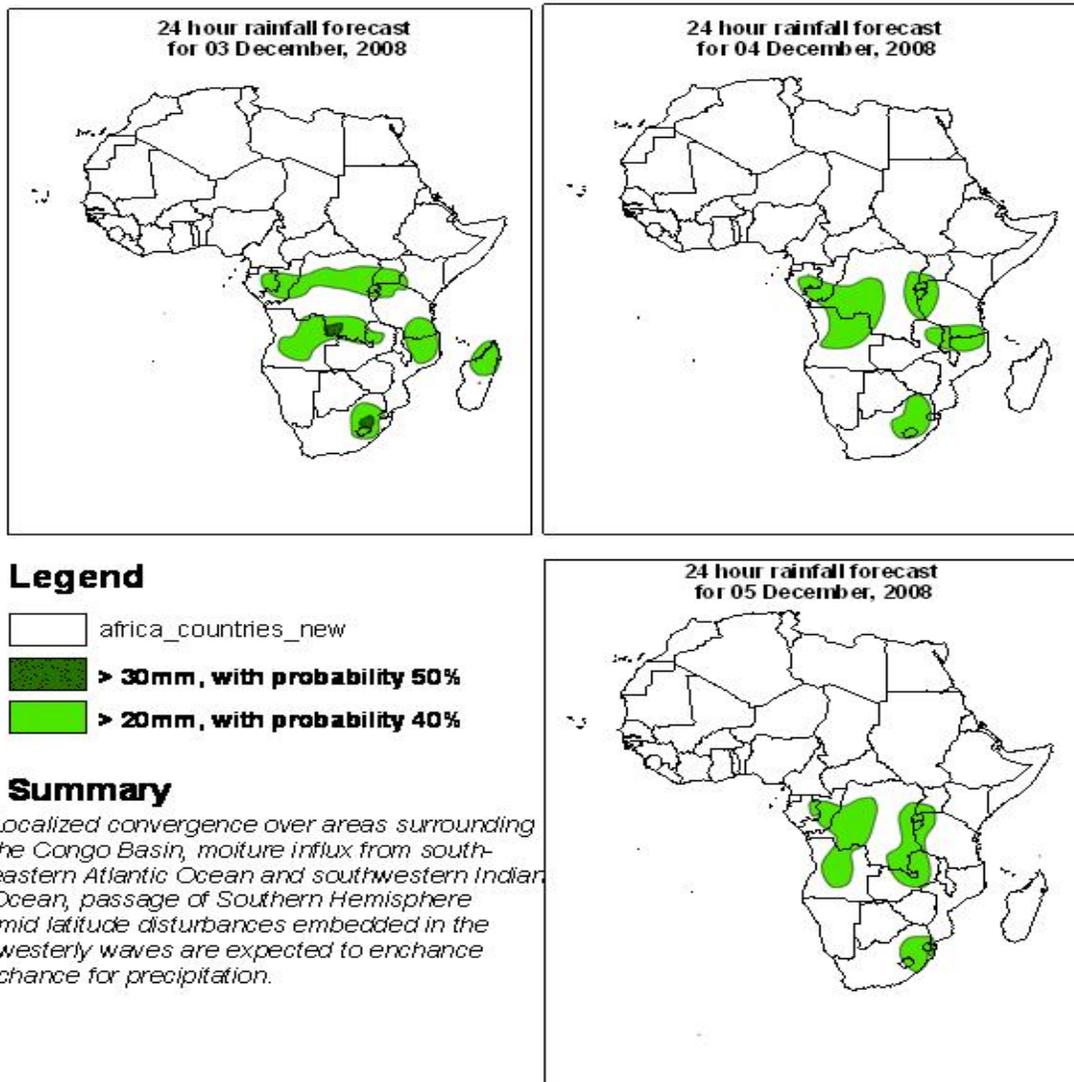
## Forecast Guidance for Africa

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

**FORECAST DISCUSSION 14H00 EST, 02<sup>nd</sup> DECEMBER, 2008**  
**Valid: 00Z 03<sup>rd</sup> DECEMBER – 05<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; 02<sup>nd</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:**

T+24h, the Azores and Saharan anticyclonic circulation will dominate the flow over much of North Africa. A deep trough will affect parts of Algeria, Tunisia and northwestern Libya. A cyclonic vortex is likely to develop off the central coast of Angola, while a small trough will prevail over northeastern Angola. Localized convergence is expected to occur over eastern Cameroon, western Ethiopia, northwestern DRC, northern Uganda and over central South Africa. Confluent flows will be featured over southern Nigeria, northeastern DRC, western Zambia, northeastern and southeastern Namibia and over the northern Mozambique Channel. Diffluent flows will occur over western DRC and over the central coast of Mozambique. 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 Saharan anticyclonic circulation is likely to weaken, while the Azores anticyclonic circulation is expected to intensify. The trough over Algeria will move eastwards to Libya, while a cyclonic vortex is likely to develop over southern Algeria. The small trough over northeastern Angola will strengthen and turn into a closed cyclonic circulation over northeastern Angola and southwestern DRC. Convergence will occur over southern Chad, northeastern Cameroon, northeastern DRC, southern Uganda, northwestern Tanzania and over northern Namibia. Confluent flows are expected to occur over northern Nigeria, western and southeastern Ethiopia, southeastern CAR, northeastern DRC, the western sector of Botswana, northwestern Madagascar and over southeastern Mozambique Channel. Localized divergence is expected to occur over southeastern Nigeria, northwestern DRC and over central Angola. The flow over much of Southern Africa is expected to be under the influence of a merger of the St. Helena and Mascarene anticyclonic circulation systems with a westerly wave to the South.

T+72, the Azores and Saharan anticyclonic circulations are expected to dominate the flow over much of North Africa. The trough over Libya will shift southwestwards and deepen to northeastern Mali and northern Niger. Localized convergence will be featured over northern Cameroon, western Ethiopia, central Uganda, southwestern Angola and over northwestern Botswana. Confluent flows are expected to occur over eastern CAR, southern Ethiopia, eastern DRC, southwestern Zambia and over northeastern Namibia. Diffluent flows are expected to occur over northeastern Sudan, northern Gabon and over western DRC. Much of Southern Africa will be dominated by the St. Helena and Mascarene anticyclonic circulation systems. A trough in the westerly wave will affect the eastern coast of South Africa.

### **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. A cyclonic vortex is likely to develop over western DRC. Convergence will be featured over southwestern CAR and over northern DRC. Confluent flows are expected to occur over northwestern Kenya, northern Tanzania and over eastern DRC. On the other hand, divergence will be featured over

southeastern Congo. The flow over Southern Africa will be dominated by an anticyclonic circulation system with a westerly wave to the South.

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 propagate eastwards to northwestern Libya. Cyclonic vortices are likely to develop over southern Sudan, northern Tanzania and over southern DRC. Convergence is expected to occur over eastern DRC. Confluent flows will be featured over southwestern Ethiopia and over western DRC. On the other hand, divergence is expected to occur over southwestern Congo. 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 shift southwards to southern Algeria. To the South, the Saharan anticyclonic circulation system will prevail. A cyclonic vortex is likely to develop over the central coast of Somalia, while a closed cyclonic circulation will affect Gabon, parts of Congo and western DRC. Confluent flows are expected to occur over southern CAR, northern DRC and over southern Uganda. Diffluent flows are expected to occur over southwestern Somalia. An anticyclonic circulation system will dominate the flow over much of Southern Africa with a westerly wave affecting the southern sector of South Africa.

### **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. The near equatorial region will be dominated by an extensive upper-level anticyclonic circulation. Confluent flows are expected to occur over southwestern Nigeria, northeastern Congo, southern DRC, eastern Angola and over southwestern Cameroon, southwestern Gabon and central DRC. Divergence is expected to occur over western DRC and over northern Angola. The flow over the southern sector of Southern Africa will be under the influence of a westerly wave with a trough over southern Tanzania, parts of Zambia and Mozambique.

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 expand eastwards to northwestern Libya, while another trough will be featured over the western Gulf of Guinea. Confluent flows are expected to occur over the southern sector of CAR, eastern Congo, southeastern DRC, northern Zambia and over eastern Angola. Divergence is expected to occur over central DRC. The flow over Southern Africa will be similar to that of the previous day.

T+72h, a westerly wave will prevail over much of North Africa. The trough over northern Algeria and Tunisia is expected to stretch southwards to southern Algeria, while the one over the western Gulf of Guinea is likely to weaken. Around the equatorial region, an extensive anticyclonic circulation system will dominate the flow. Confluent flows are expected to occur over southeastern Gabon and over western Uganda. On the other hand, Divergence is likely to occur over southeastern Congo and over eastern DRC. The southern sector of Southern Africa and the southwestern Indian Ocean will be dominated by a westerly wave with a trough over parts of Zambia and Mozambique.

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