



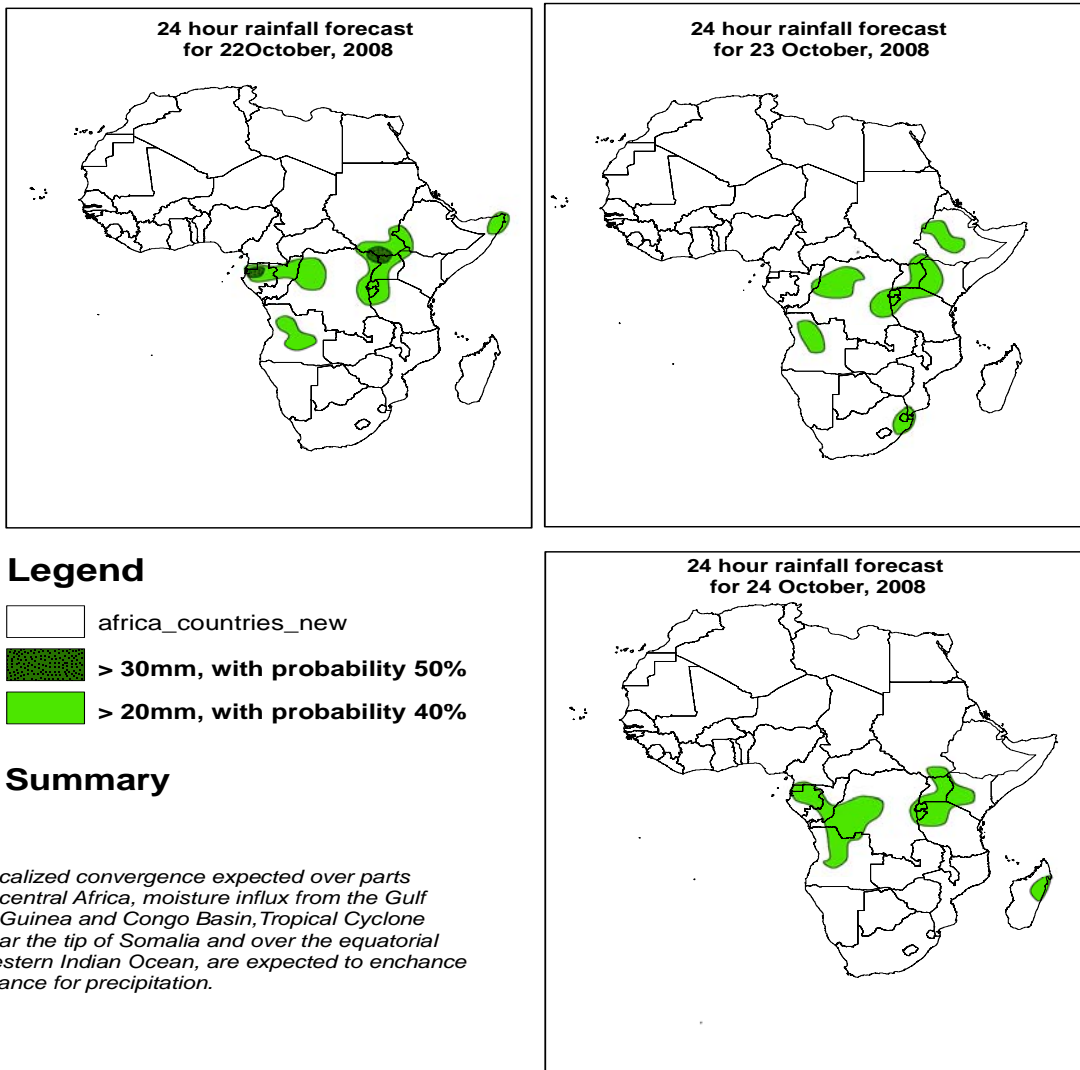
## Forecast Guidance for Africa

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

**FORECAST DISCUSSION 14H00 EST, 21<sup>st</sup> OCTOBER, 2008**  
**Valid: 00Z 22<sup>nd</sup> OCTOBER – 24<sup>th</sup> OCTOBER, 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; 22<sup>nd</sup> October, 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, much of North Africa will be under the influence of the Saharan Anticyclonic circulation, while a trough over the western Mediterranean Sea will affect the flow over much of Morocco and northwestern Algeria. To the South, the Saharan anticyclonic system will prevail with a closed cyclonic circulation center over the Arabian Sea and affecting the tip of Somalia. Localized convergence is likely to occur over western Burkina Faso, northwestern Ethiopia, southern Sudan, northwestern Tanzania and over the border between southeastern DRC and western Zambia. Confluent flows are expected over central Sudan, northwestern DRC and over southeastern Angola. On the other hand, divergence is expected over eastern Kenya. Much of Southern Africa will be under the influence of the Santa Helena and Mascarene anticyclones with a trough which will affect southeastern South Africa and Lesotho.

T+48, a closed cyclonic circulation will affect the flow over Morocco, while the Saharan anticyclonic circulation will be centered over Libya and Algeria, and is expected to dominate the flow over much of North Africa. The closed cyclonic circulation over the Arabian Sea will propagate southwards to northeastern Ethiopia. Convergence is likely to occur over southeastern Mali, eastern Chad, southeastern Sudan, western Tanzania and over southeastern DRC. Confluent flows are expected to occur over northwestern Ethiopia, northeastern Cameroon, northeastern Congo, central DRC and over northeastern Namibia. Conversely, divergent flows are expected over southwestern Niger and over the western coast of Tanzania. The flow over much of Southern Africa will be dominated by the St. Helena ridge and the trough over southeastern South Africa will retreat southeastwards.

T+72, the closed cyclonic circulation over Morocco will expand southwestwards and affect much of Western Sahara. The Saharan anticyclonic circulation is expected to intensify. The cyclonic circulation over the tip of Somalia (Tropical Cyclone) will weaken and retreat eastwards. Convergence is expected over western Sudan and over western Zambia with confluent flows over eastern Ethiopia onto northwestern Somalia, western DRC, northern Tanzania and over southwestern Angola. Conversely, divergence will be featured over central Mali and over northeastern DRC. Southern Africa is expected to be under the influence of a merger between the St. Helena and Mascarene anticyclones, while a trough will affect northern Madagascar.

### **2.2. Flow at 500hPa:**

T+24, the flow over much of North Africa will be dominated by a sub-tropical anticyclonic circulation, while a trough embedded in westerly wave will affect northeastern Morocco and northwestern Algeria. Easterlies will prevail equator-wards and feature a cyclonic circulation centered over the tip of Somalia. Convergence is likely to occur over the eastern Gulf of Guinea and over southern Congo with confluent flows over eastern Chad, eastern CAR, northeastern DRC and over northeastern Tanzania. Divergence will be featured over southeastern Nigeria and over central Sudan. Much of Southern Africa will be dominated by the St. Helena ridge, while a trough will affect the flow over the Mozambique Channel and Madagascar.

T+48, An extensive Sub-tropical anticyclonic circulation will dominate the flow over North Africa, while the mid-latitude trough over western Maghreb will strengthen and propagate southwestwards and affect much of Morocco. The cyclonic circulation centered over the tip of Somalia will remain in the same position. Convergence is expected over southeastern Sudan and the southwestern coast of Gabon with confluent flows over southeastern Western Sahara, southeastern Nigeria, central Cameroon, central DRC, northwestern Tanzania and over the northern Mozambique Channel. Divergence is expected over southeastern DRC and over northeastern Mozambique. Much of Southern Africa will be under the influence of the St. Helena ridge with a westerly wave to the South in which a trough is embedded over southern Mozambique Channel and southern Madagascar.

T+72, Much of North Africa is likely to be under the influence of a Sub-tropical anticyclonic circulation system. The trough over western Maghreb will expand northeastwards and affect northern Algeria. The cyclonic circulation over Somalia will propagate northwards and affect the flow over eastern Ethiopia. Confluent flows will be featured over central Gabon, northeastern and southeastern DRC, northern Tanzania and over the Mozambique Channel. On the other hand, divergence is expected over central DRC. The flow over much of Southern Africa will be dominated by the St. Helena Ridge and the trough over the Mozambique Channel will expand northwestwards and reach northern Mozambique and northeastern Zambia. A westerly wave will dominate to the South.

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

T+24h, a westerly wave will dominate the flow over the Maghreb region. To the south, an extensive anticyclonic circulation system will prevail. Convergent flows are expected over northwestern Mauritania, western DRC, northeastern and western Zambia and over southwestern Zimbabwe. A strong divergence is likely to occur over northern Uganda. The northern sector of Southern Africa will be under the influence of an anticyclonic circulation, while a mid-latitude westerly wave will dominate the flow over the southern sector.

T+48h, a westerly wave will dominate the flow over the Maghreb region with an embedded trough over western Morocco. To the South, an extensive anticyclonic circulation system will prevail. Confluent flows are expected over northeastern Niger, northeastern Kenya and over western Tanzania. Localized divergence is likely to occur over northeastern DRC and over northwestern Gabon. The flow over the northern sector of Southern Africa will be dominated by an anticyclonic circulation system, while the southern sector will be under the influence of a westerly wave.

T+72h, a westerly wave will prevail over North Africa and the upper-level trough over western Maghreb will prevail. An anticyclonic circulation is expected to dominate the flow to the South. Confluent flows will be featured over western DRC and over northeastern Mozambique. Divergence is likely to occur over the Lake Victoria region. The flow over the northern sector of Southern Africa is expected to be dominated by an anticyclonic circulation system, while a westerly wave will affect the southern sector.

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