



Forecast Guidance for Africa

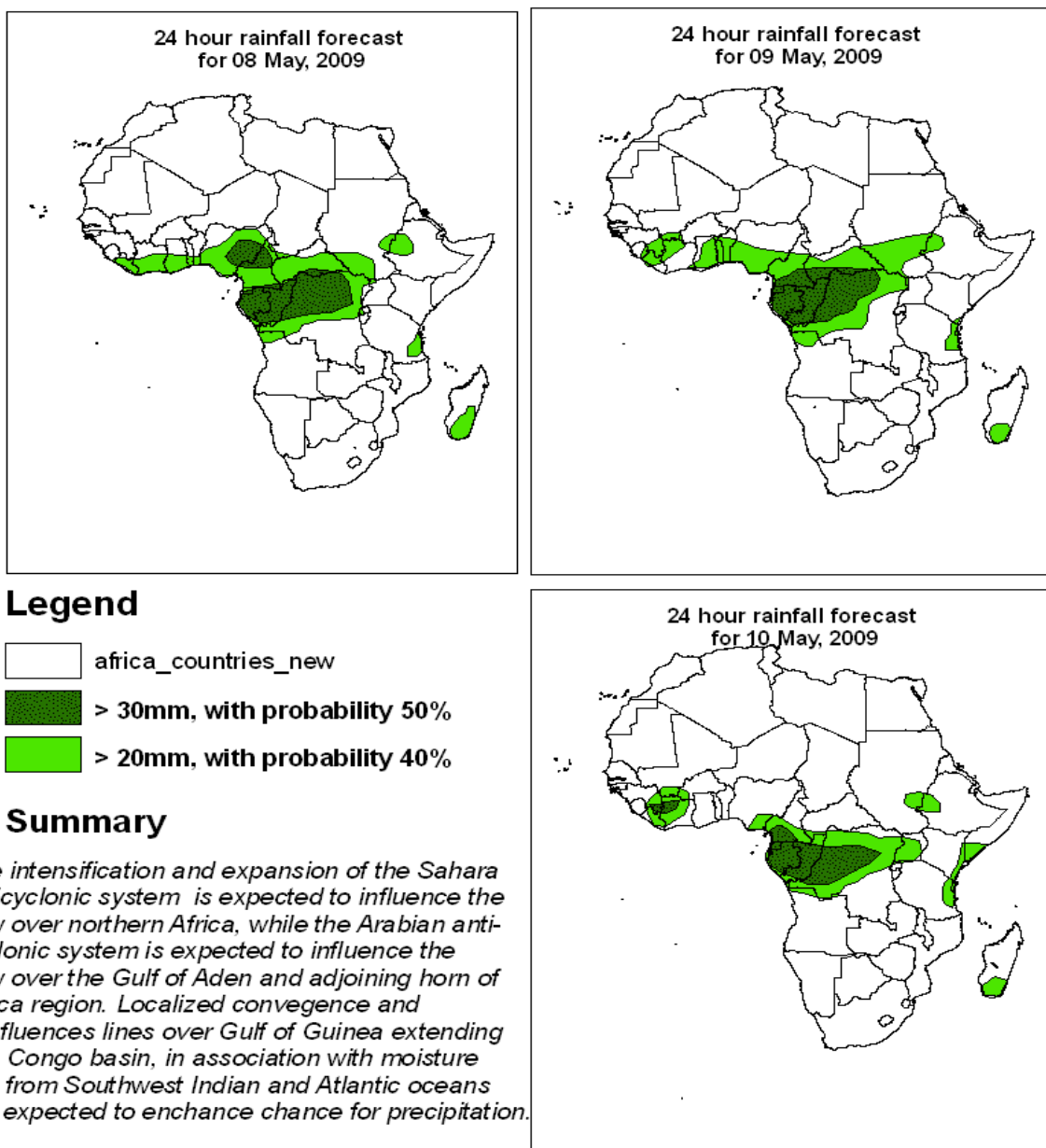
NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative.

FORECAST DISCUSSION 14H00 EST, 07 MAY, 2009

Valid: 00Z 08 MAY – 10 MAY, 2009

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; 07 May, 2009): all the three models are in general agreement especially with respect to the positioning of large scale features, however, the UK model tends to give lower values than both the GFS and ECMWF models especially in the Equatorial region (10°S and 10°N).

2.1. Flow at 850hPa

T+24h: The intensification and expansion of the Sahara anti-cyclonic system is expected to influence the flow over northern Africa, while the Arabian anti-cyclonic system is expected to be maritime with its peripheral moist air flowing over the Gulf of Aden and adjoining horn of Africa region. A trough is expected over northeast Atlantic Ocean, pushing the Azores anti-cyclonic system further into the Atlantic Ocean. Localized convergence and confluent lines are expected over the Gulf of Guinea region, Central Africa Republic, northern DR Congo, southern Sudan, Uganda and western Ethiopia. Southern Africa is expected to be under the influence of the St. Helena anti-cyclonic system assuming continental characteristics as it extends over the continent. The closed cyclonic system that has persisted south of Madagascar is expected to interact with the mid latitude westerlies.

T+48h: The flow in the northern Africa is expected to be similar to the previous day; however a merger between the Saharan and Arabian anti-cyclonic system is expected to block the interaction between the mid latitude and equatorial trough across the horn of Africa. Localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, the flow is expected to be more or less similar to the previous day; however the closed cyclonic system south of Madagascar is expected to deepen and expand, pushing the Mascarene anti-cyclonic system slightly eastwards.

T+72h: The Saharan anti-cyclonic system is expected strengthen and expand over much of North Africa, while its merger with the Arabian anti-cyclonic system is expected to continue blocking the interaction between the mid-latitude and tropical cyclonic systems, across the horn of Africa region; however the expansion of the trough over northeast Atlantic Ocean, Morocco and Western Sahara is expected to push the Saharan anti-cyclonic system slightly to the east. The localized convergence and confluent lines are expected to maintain their previous day positions. In southern Africa, a closed cyclonic system south of Madagascar is expected to deepen and expand, pushing the Mascarene anti-cyclonic circulation further to the east into southwestern Indian Ocean.

2.2. Flow at 500hPa

T+24h: In the northern hemisphere, troughs associated with the westerly wave are expected to extend up to 20°N latitude, creating a disturbed flow pattern of the westerly wave. In the southern hemisphere, the development of anti-cyclonic system within the westerlies is expected to create a disturbed flow pattern; however the flow is expected to take a more zonal pattern.

T+48h: In the northern hemisphere the flow is more similar to the previous day; however the troughs associated with the westerly waves is expected to move slightly to the east. In the southern hemisphere flow is expected to be influenced by the development of a closed cyclonic system off the southeastern tip of South Africa and the anti-cyclonic system over southwestern tip of South Africa. These systems within the westerlies are expected to create a disturbed flow pattern.

T+72h: In the northern hemisphere the flow is more similar to the previous day; however the troughs associated with the westerly waves is expected to move slightly to the east. In the southern hemisphere, the cyclonic systems associated with the westerly wave are expected to move slightly eastwards; otherwise the flow is similar to that of the previous day.

2.3. Flow at 200hPa

T+24h: In the northern hemisphere, a feeble trough associated with the westerly wave is expected over the Mediterranean Sea, however a northeast-southwest oriented westerly trough is expected to dominate the flow over the Gulf of Aden and adjoining areas of the horn Africa. Moreover in the south, the flow is expected to take on more of a zonal pattern with feeble troughs over southeast Atlantic Ocean.

T+48h: The flow is similar to that of the previous day but the axis of the feeble trough associated with the westerly wave shift slightly to the east in the northern hemisphere with northeast-southwest oriented westerly trough is expected to persist over the Gulf of Aden and adjoining areas of the horn Africa . In the southern hemisphere the flow is expected to take a more zonal pattern.

T+72h: The flow in the northern hemisphere is expected to take a shortwave pattern with three trough axes over north Atlantic, Mediterranean sea and a northeast-southwest oriented westerly trough over the Gulf of Aden and adjoining areas of the horn Africa. In the southern hemisphere, the flow is expected to take a similar pattern as the previous day; however a closed cyclonic system is expected off the eastern coast of South Africa, in the Indian Ocean.

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