

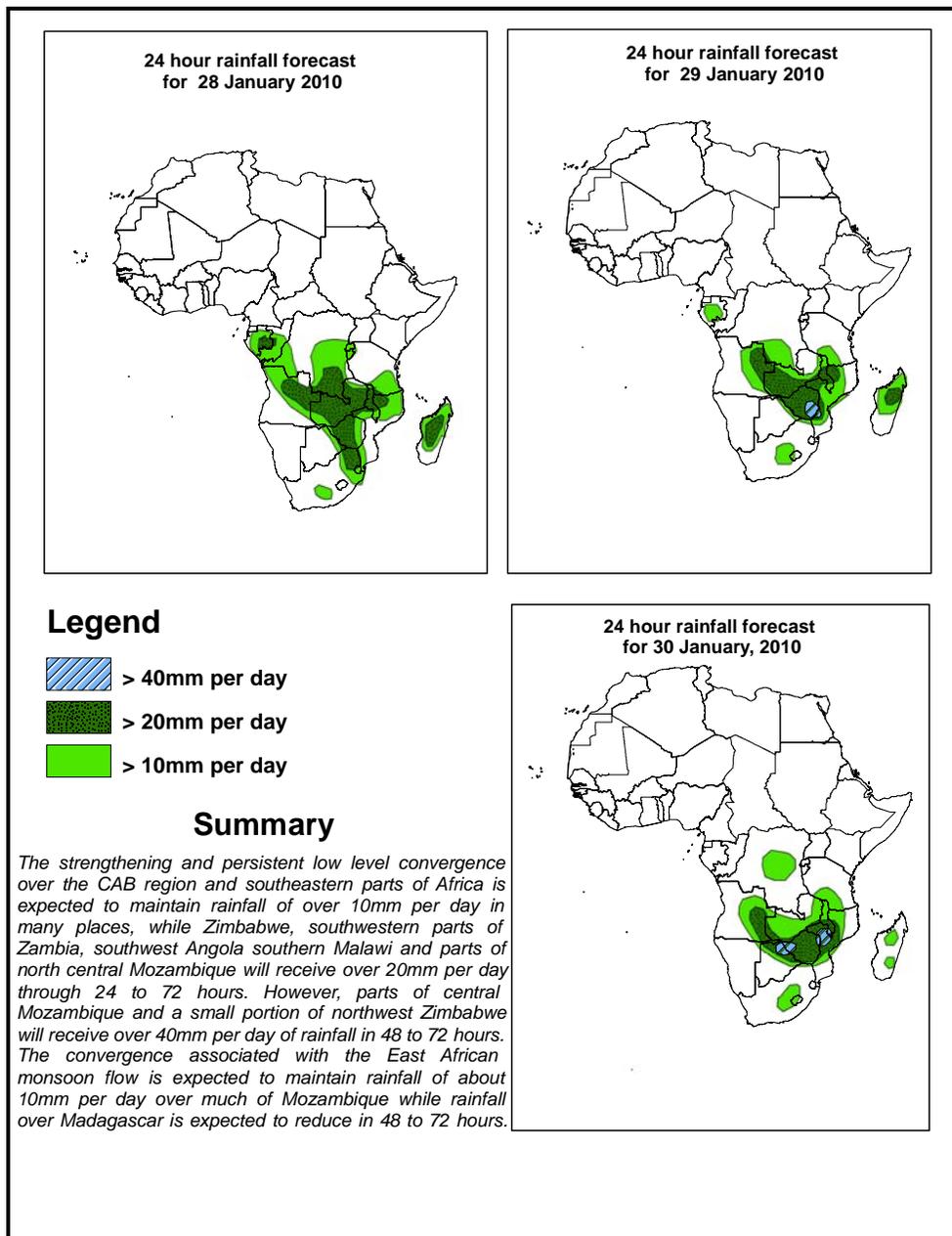


NCEP Contributions to the WMO Severe Weather Forecasting Demonstration Project (SWFDP) and to the African Monsoon Multidisciplinary Analysis (AMMA) Initiative

1.0. Rainfall Forecast: Valid, 06Z of 28 January –06Z of 30 January 2010, (Issued at 14:00EST of 27 January 2010)

1.1. Twenty Four Hour Cumulative Rainfall Forecasts

The forecasts are expressed in terms of probability of precipitation (POP) exceedence based on the NCEP, UK Met Office and the ECMWF NWP outputs, the NCEP global ensemble forecasts system (GEFS) and expert assessment.



1.2. Models Comparison and Discussion - Valid from 00Z of 28 January 2010

In 24 to 72 hours, a mid-latitude low pressure system with centre over central Mediterranean Sea is expected to retreat northwards, while deepening, to southern Europe reaching central pressure values of 998mb. The low pressure system, through its trough, is expected to maintain interaction with the tropics over North Africa penetrating eastwards up to the south of the red sea, while its southeast northwest oriented trough will weaken the high pressure system over the Middle East confining it south of the Arabian Peninsula in 24 to 48 hours. However, the high pressure system center will shift northwestwards, over the Arabian Peninsula, while gaining strength, in 48 to 72 hours, pushing the trough northwards. Moreover, a ridge extending from the Azores is expected to cover much of northwest African up to eastern Algeria, northern Mali and central Mauritania tending to move eastwards through 48 to 72 hours. In 24 to 72 hours, places in much of northern, central and southern Africa are generally expected to experience low pressure with central pressure values reaching 1008mb over Gulf of Guinea, 1005 over northern DRC, southern Sudan and Central African Republic. Most places over southern Africa are expected to reach pressure values of 1006mb over Namibia and Botswana, and 1004mb over northern South Africa, south central Mozambique and the Mozambique Channel. The low pressure system off the east coast Madagascar will have pressure values of about 1004mb. A ridge from St. Helena high is expected to penetrate the east coast of South Africa extending northwards towards the Zimbabwe border.

At 850mb level, the mid-latitude cyclonic circulation is expected to move eastwards, while slightly deepening and covering much of north Africa extending eastwards up to the north of the Persian gulf in 24 to 48 hours. However, the Arabian anticyclone is expected to strengthen extending northwards while pushing the cyclonic circulation westward up to 40⁰ E over the turkey, in 48 to 72 hours. On the other hand, anticyclonic circulation off the coast of northwest African will tend to push the mid-latitude cyclonic system over much of North Africa northwards limiting its southern extent to 20⁰ N, in 24 to 72 hours.

Most parts of east central and southern Africa are expected to be affected by the convergence of the northeasterly to easterly flow, from the east African monsoon, and westerly flow from the Atlantic Ocean through 24 to 72 hrs. The seasonal convergence over the CAB region is expected to persist through 24 to 72 hrs with a significant enhancement over the DRC in 48 to 72 hours. Localized convergence over southern Angola is expected to increase through 24 to 72 hrs. A cyclonic system is expected off the east coast of Madagascar through 24 to 48 hours declining in 48 to 72 hours.

At 500mb level, a zonal flow in the westerly is expected over much of North Africa in 24 to 48 hours; however this pattern is likely to assume a weak wave through 48 to 72 hours. On the other hand, the southern hemisphere is expected to have a weak wavy pattern in the sub tropical areas through 24 to 72 hrs.

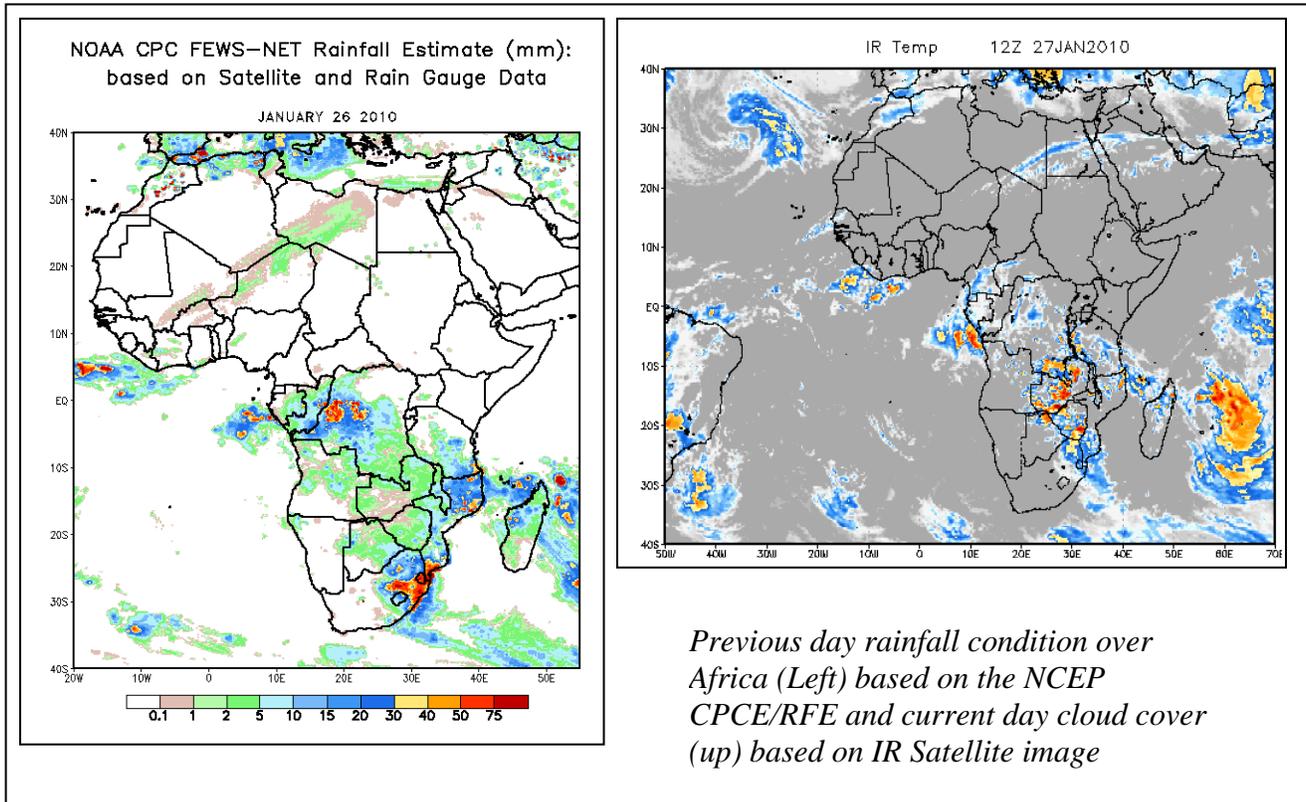
At 200mb, most parts of North Africa will experience mid-latitude zonal flow with wind speeds of up to 110 knots in 24 hours while a narrow zone will develop in 48 hours over northern Libya covering the southeast of Mediterranean Sea up to Egypt with wind speeds of up to 130 knots. In 72 hours, the flow is expected to assume a weak wavy pattern with wind speeds of 110 knots and a zone stretching from western Libya over the Mediterranean Sea up to the north of the Arabian Peninsula attaining wind speed of 130 knots. A small stretch north of Libya is expected to reach wind speeds of up to 150 knots in 48 to 72 hours.

The strengthening and persistent low level convergence over the CAB region and southeastern parts of Africa is expected to maintain rainfall of over 10mm per day in many places, while Zimbabwe, southwestern parts of Zambia, southwest Angola southern Malawi and parts of north central Mozambique will receive over 20mm per day through 24 to 72 hours. However, parts of central Mozambique and a small portion of northwest Zimbabwe will receive over 40mm per day of rainfall in 48 to 72 hours. The convergence associated with the East African monsoon flow is expected to maintain rainfall of about 10mm per day over much of Mozambique while rainfall over Madagascar is expected to reduce in 48 to 72 hours.

2. 0. Previous and Current Day Weather Discussion over Africa (26 –27 January 2010)

2.1. Weather assessment for the previous day (26 January 2010): During the previous day, patches of intense rainfall activity were observed over South Africa, northern and southern Mozambique, and northwest DRC.

2.2. Weather assessment for the current day (27 January 2010): Intense cloud patches are observed over Zambia, Zimbabwe, northern South Africa and southern tip of Mozambique



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