



Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 11th April 2007

**AFRICA DESK
CLIMATE PREDICTION CENTER
National Centers for Environmental predictions
National Weather Service
NOAA
Camp Springs MD 20746**

FORECAST DISCUSSION 14H00 EST 11th April 2007

Valid: 00Z 12th April 2007- 00Z 14th April 2007.

***Highlights:** SUB-TROPICAL DEPRESSION number 15, to the extreme southeast of the Mozambican Channel at 111200Z with 998hPa pressure at the center, moving southeastward at 15 kt with max sustained wind – 045 kt, gusts 0631kt.*

The system has tracked southward over the past six hours, entering into cold ocean water. The system is expected to continue weakening due to decreasing upper level outflow and low temperatures of this part of the Ocean.

A persistent deep low system to the further north of the coast of Madagascar, near 10°S 60°E, supported by a low at 500 mb and the presence of a ridge at 200 mb is tracking westward to the southeastern coast of Tanzania at T+72 hrs , hence thundershowers and intense rainfall.

At 200mb, the GFS, ECMWF and UK-MET models show the following general flow pattern over Southern Africa (South of the Equator). There is a shallow trough over western Zambia stretching into central Mozambique, hence convergence. Another shallow trough is lying to the southeast of the Mozambican Ocean, causing convergence over southwestern Madagascar. The trough just over the southwestern coast of the sub continent is causing convergence over southwestern coast of Namibia and western coast of South Africa. There is a low to the far north of Madagascar (8°S 48°E) inducing convergence over these areas also. Two high pressure systems have their centers located over northeastern Madagascar (18°S 59°E) and over northern Angola (10°S 18°E), and they are causing divergence over the rest of the sub continent. At T+48 hrs, the trough which was to the east of the Mozambican Channel has weakened while the shallow trough over western Zambia has shifted slightly eastwards to northern Mozambique, causing convergence over these areas. The trough which was over southwestern coast of the sub continent slightly shifts eastward. The low to the north of Madagascar has shifted slightly southwestwards as there is a persistent high near 9°S 62°E. Elsewhere divergence prevails. At T+72 hrs, the trough has shifted further eastward such that southern Namibia and most of South Africa are under convergence. The low to the north of Madagascar has

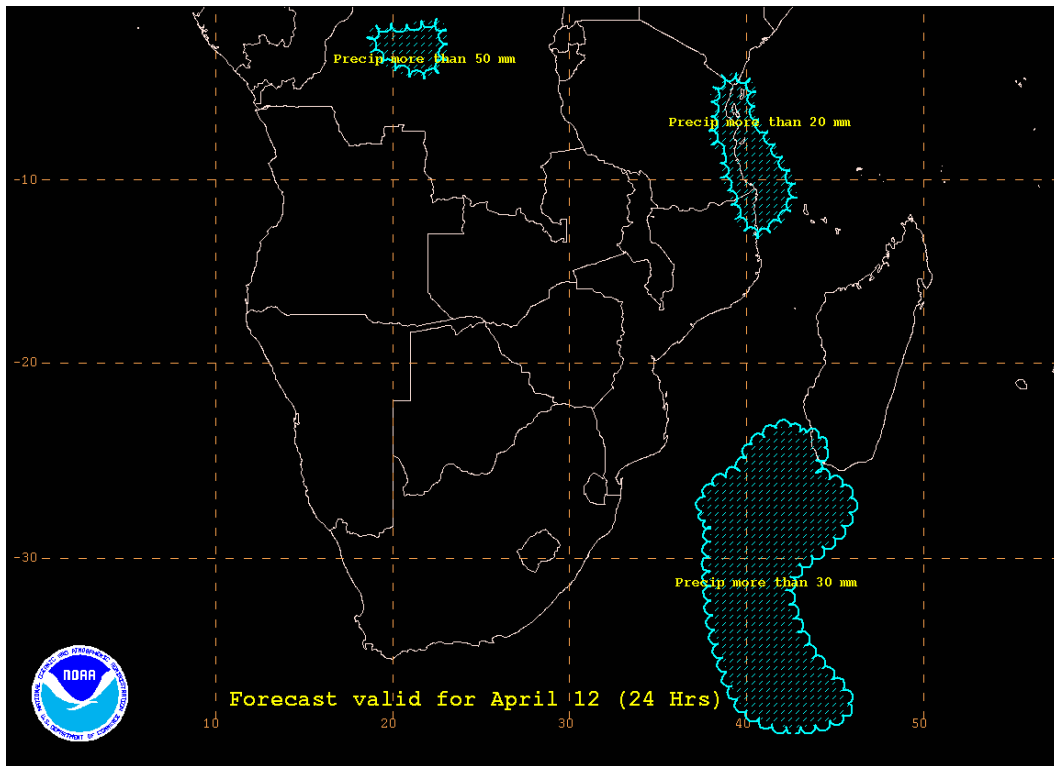
moved further southwestwards to near Mozambique/Tanzania coast ($11^{\circ}\text{S } 42^{\circ}\text{E}$) and the shallow trough which was over northern Mozambique has shifted to central Mozambican Channel and has linked up with the low. The high which was near $9^{\circ}\text{S } 62^{\circ}\text{E}$ persists. The rest of the sub continent is under divergence.

At 500mb, the GFS models show a shallow trough over the southern Mozambican Channel. There is another trough to the west of the southwestern coast of the sub continent, causing convergence over these areas. An Equatorial warm core low lying over the coast of Tanzania ($4^{\circ}\text{S } 41^{\circ}\text{E}$) is causing convergence over these areas. Slight convergence is also seen over northeastern Zambia. There is a deep Low near $9^{\circ}\text{S } 60^{\circ}\text{E}$. The three models show the Mascarene high with two cells centered at $21^{\circ}\text{S } 51^{\circ}\text{E}$ and at $21^{\circ}\text{S } 30^{\circ}\text{E}$, ridging the eastern parts of the sub continent and blocking the deepening of the shallow trough with over southern Mozambican Channel. The St Helena high also has two cells with centers located at $28^{\circ}\text{S } 19^{\circ}\text{W}$ and at $9^{\circ}\text{S } 8^{\circ}\text{W}$, ridging into most of the western parts of the sub continent. At T+48 hrs, the three models show that the trough over southern Mozambican Channel has shifted southeastwards, weakening in amplitude. The trough which was to the west of the southwestern coast of the sub continent slightly shifts eastward. The low over the coast of Tanzania and over northeastern Zambia has filled up. The deep low to the further northeastern Madagascar (near $9^{\circ}\text{S } 60^{\circ}\text{E}$) is maintained. The models also show that the ridges of the Mascarene and the St Helena highs prevails over the rest of the sub continent, hence divergence. At T+72 hrs, the trough which was over the southwestern coast of the sub continent is slightly shifting eastward, hence convergence over southeastern Namibia, and most of South Africa. The shallow trough which was over the southeastern Mozambican Channel has weakened, and the low which was to the northeast of the coast of Madagascar has filled up as the Mascarene high has shifted westward, throwing a ridge over the most of the sub continent. The St Helene high is ridging into northwestern parts of the sub continent. The rest of the sub continent is under divergence. The ensemble members of the GFS show a huge spread of the 5700m and 5870m height contours over Angola, Zambia/D.R. Congo border and to the north of the coast of Madagascar at T+24 up to T+72, which implies uncertainty in the position of the trough over southwestern coast of the sub continent and the low over Zambia and to the northeast of the coast of Madagascar.

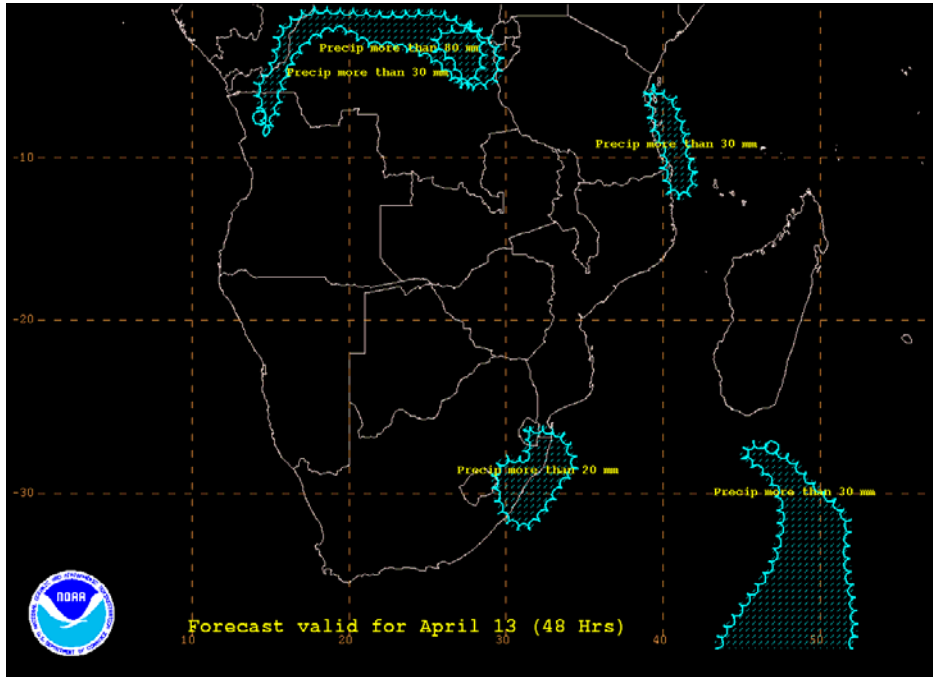
At 850mb, there is a deep low lying further northeast of the coast of Madagascar, near $10^{\circ}\text{S } 60^{\circ}\text{E}$. There is a trough over southern Mozambican Channel, associated with Sub-Tropical Depression number 15, causing convergence over these areas. Convergence is also seen over South Africa, Namibia, northern Angola and D.R. Congo. The St Helene high with its center located at $35^{\circ}\text{S } 1^{\circ}\text{W}$ is ridging into most of the western coast of the sub continent. A bud-off high is lying over the equator at 50°E longitude blocking the intensification of the deep low and forcing to track westward. The Mascarene high is centered at $39^{\circ}\text{S } 61^{\circ}\text{E}$ and is throwing a ridge over the rest of the sub continent. At T+48 hrs, the deep low which was near $10^{\circ}\text{S } 60^{\circ}\text{E}$, is shifting westward. The trough which was over southern Mozambican Channel has shifted southeastward, weakening as the Mascarene high has developed a second cell at $29^{\circ}\text{S } 39^{\circ}\text{E}$. Convergence over Namibia, eastern South Africa, northern Angola and D.R. Congo is maintained. Divergence

prevails over the rest of the sub continent. At T+72 hrs, there is a trough over the southwestern coast of the sub continent, causing convergence over western coast of South Africa and southwestern coast of Namibia. The deep low to the northeast of the coast of Madagascar, still tracks westward toward the southeastern coast of Tanzania. The rest of the sub continent is under divergence of the Mascarene high centered at 35°S 42°E. There is a reasonable agreement between the ensemble products of the 50 mm isolines of 6 hourly total precipitations to the south of the southern coast of Madagascar, eastern coast of Tanzania at T+24 up to T+48 hrs and northeastern South Africa at T+48 hrs.

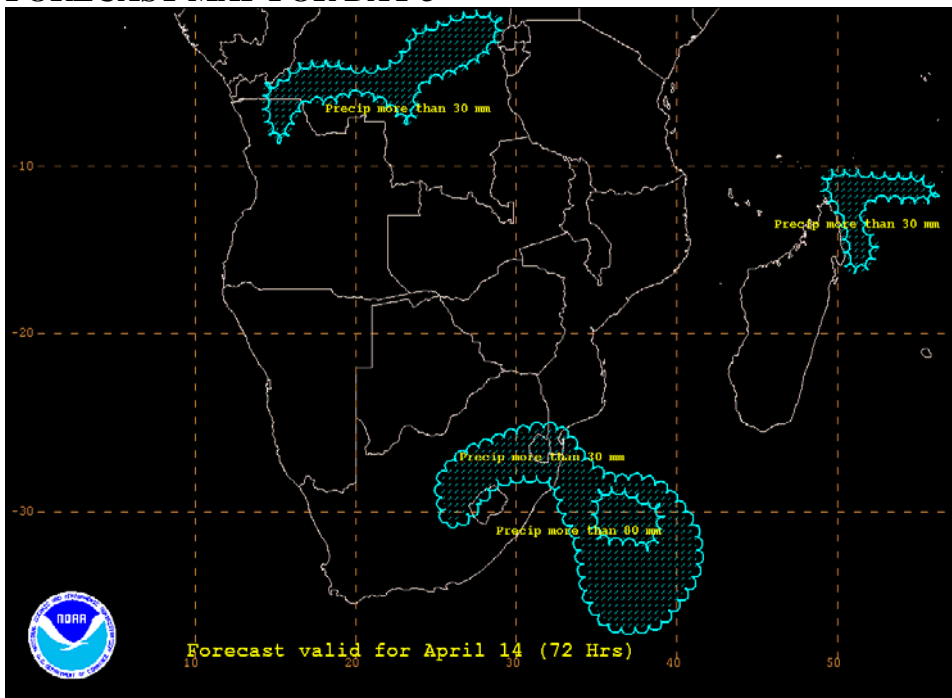
FORECAST MAP FOR DAY 1



FORECAST MAP FOR DAY 2



FORECAST MAP FOR DAY 3



Authors:

Sérgio Buque: - Mozambique Meteorological Services and African Desk

Oliver Moses: - Botswana Meteorological Services and African Desk