



Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 19th, January, 2007

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

**FORECAST DISCUSSION 14H00 EST 19th, January, 2007
Valid 12:00Z 20th, January, 2007- 00z 22th, January 2007**

At T+24, the general pattern at 200hpa over the Southern Africa (South of the Equator) shows a high pressure system which has been divided into two cells, with centers at 14°S 30°E and 22°S7°E, making most parts of the sub continent to be under subsidence. Between the two high pressure cells is a back hanging westerly trough from the southeast causing some instability over the extreme southeastern parts of the sub continent. There is another back hanging westerly trough coupled with an easterly to the west of the sub continent, with its southeast axis extending to the position 41°S18°E and its northwesterly axis extending to the position 10°S30°W. At T+ 48 Hrs the two cells of the high pressure system have not changed their position significantly, but the two back hanging westerly troughs have almost merged, causing some instability over Namibia, Botswana, South Africa, stretching into the southern parts of the Mozambique/Madagascar channel. At T+72 Hrs the centre of the cell of the high pressure system over the Atlantic ocean has shifted to 32°S14°E, while the centre of the cell over the interior has shifted to 20°S37°E, and has pushed the trough slightly to the south, making it to cover only the southern half of the border between Botswana and Namibia, stretching into the southeastern parts of South Africa.

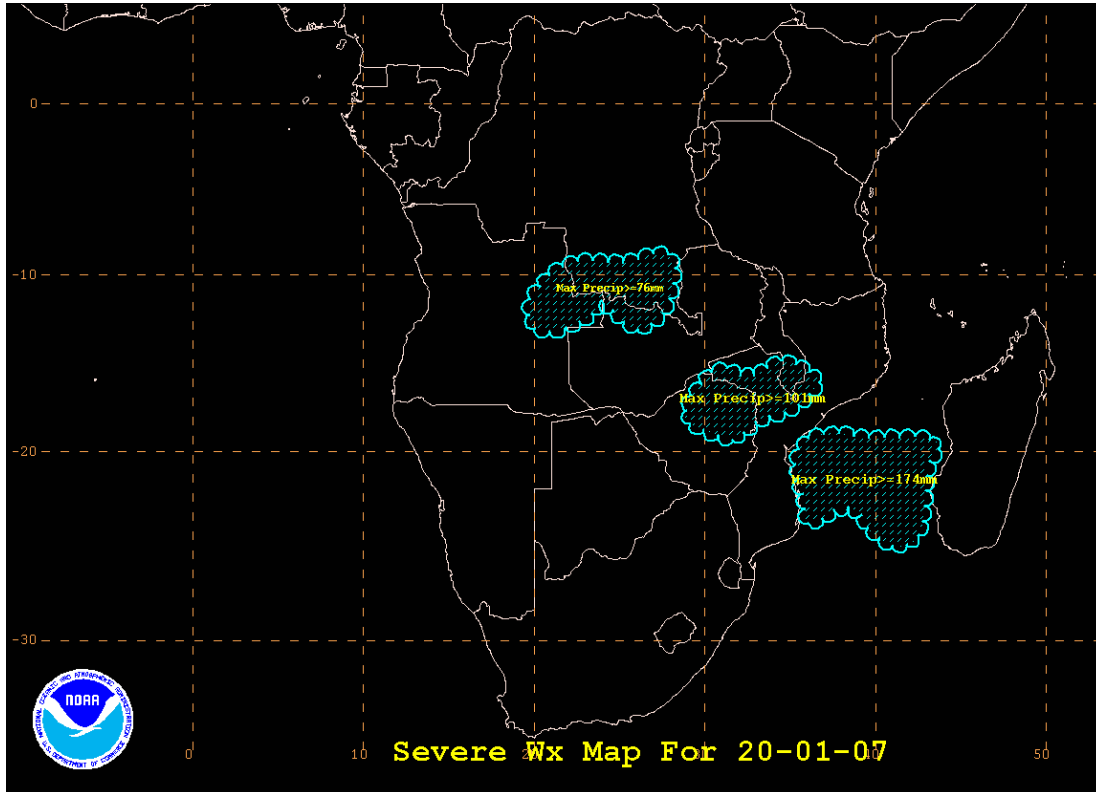
At 500hpa the St Helena high over the Atlantic ocean has its centre at 26°S 8°E, and is ridging into Namibia, South Africa, Botswana and the southern parts of Angola. The Mascarine high has two cells, with centers at 8°S34°E and 17°S 70°E, and is causing subsidence over DR Congo stretching into the northern half of Madagascar. Between the St Helena high and the Mascarine high is a back hanging westerly trough from the southeast causing instability over northern Angola stretching into the southern half of Madagascar. At T+48 the centre of the St Helena high has moved to 30°S 5°W, but it is still influencing the same areas as at T + 24 hrs. The two cells of the Mascarine high have merged, and the centre of the high is at 19°S 67°E. This high pressure system is causing subsidence over Tanzania, northern Angola and Zambia, stretching into the northern half

of Madagascar. The back hanging westerly trough between the high pressure systems is causing some instability over the remaining parts of the sub continent, from Zambia stretching into the southern half of Madagascar. A back hanging secondary trough is lying just to the west of the southwestern coast of the sub continent. At T+72 hrs, the only significant change is that the back hanging secondary trough has moved over the coast between South Africa and Namibia, and has developed a closed circulation. So, this trough is inducing some instability over the areas which are under it.

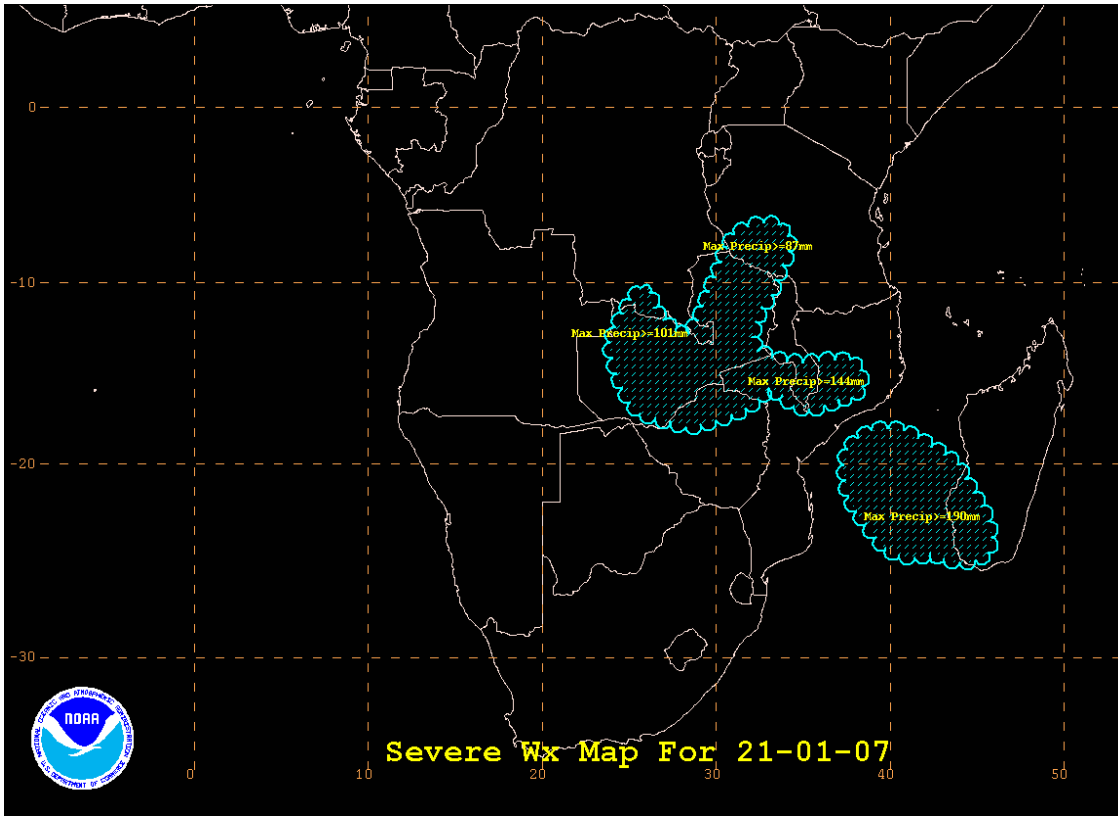
At 850 hPa the St Helena high pressure in the Atlantic ocean has its centre at 31°S 07°W with a ridge extending upto 27°S 41°E, this ridge has push the meridional arm of the ITCZ to the north and the trough from the south associated with a front to the east. The Mascarine high pressure in the Indian ocean has its center beyond 70°E can not be seen in the chart, cyclonic circulations are located over the boarder of Angola and Namibia and over central Madagascar otherwise there is a convergence extending from Gabon to Northern Uganda. At T + 48 Hrs the St Helena high pressure in the Atlantic ocean has slightly moved to northwest with its centre at 29°S 12°W and its ridge has become a back hanging ridge which pushes the meridional arm of the ITCZ to the northwest and the trough from the south associated with a front has moved further to the east. The Mascarine high pressure in the Indian ocean is still having its center beyond 70°E and the cyclonic circulations are located over Angola, Botswana, Namibia and northwest of South Africa and over southern Madagascar and north of Madagascar otherwise the convergence extending from Gabon to Northern Uganda has shifted to northern DR Congo. At T+72 Hrs the St Helena high pressure in the Atlantic ocean has weaken and its center has moved eastward to 30°S 05°W, there is another trough from the south associated with a front between the St Helena high and the Mascarine high pressure in the Indian ocean which has moved to the east with its two centers at 28°S 50°E and 22°S 64°E respectively with a ridge extending to the north of Madagascar, cyclonic circulations are located over Namibia and off the coast of Angola in the Atlantic ocean otherwise the convergence over northern DR Congo has shited to the central DR Congo.

Generally there is a resemblance in the patterns of UK- Met, ECMWF and GFS models because for the consecutive three days the 200hPa shows anticyclonic circulation while at lower levels the general flow is cyclonic which means there is a vertical motion in the area and the three models mentioned above show similarity meaning that the season has not changed.

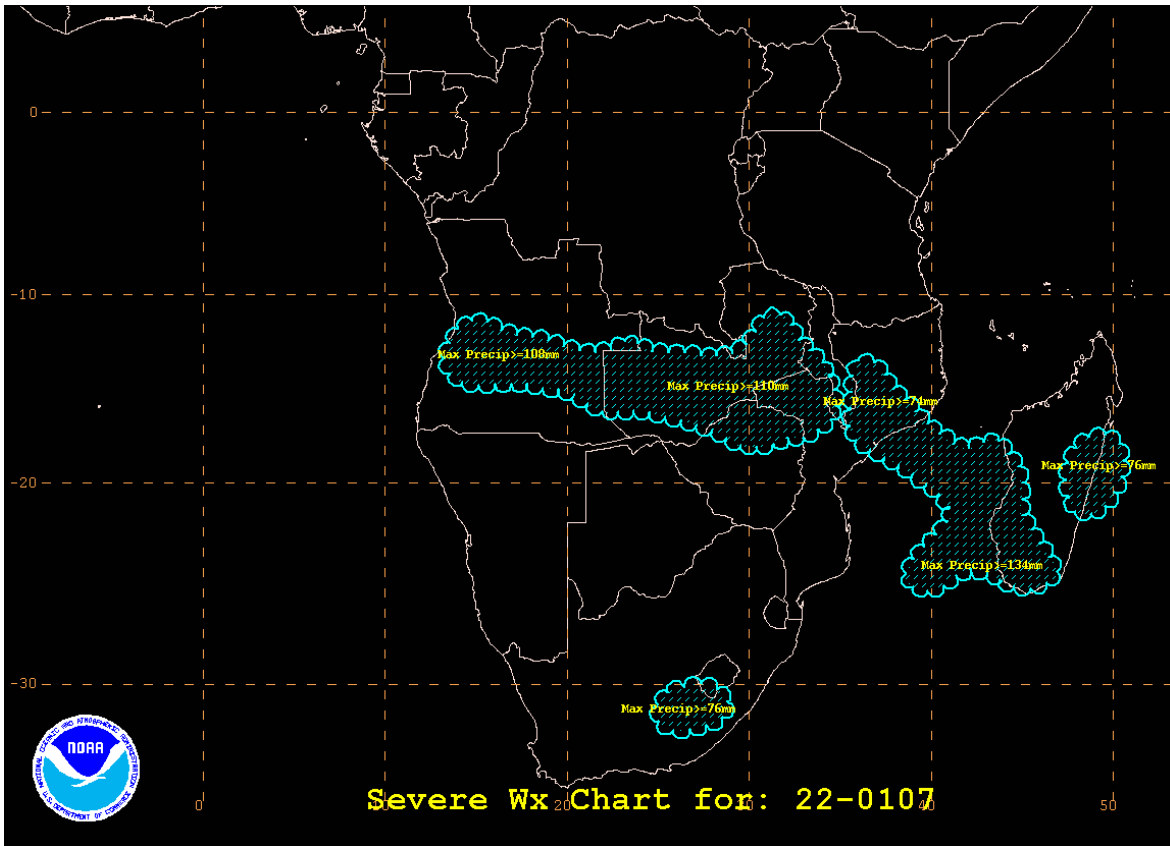
FORECAST MAP FOR DAY1



FORECAST MAP FOR DAY2



FORECAST FOR DAY 3



Authors :

Oliver Moses:- Botswana Meteorological Services and African Desk

Siyabonga F. Mthethwa:- South African Weather Service and African Desk

Francis K. Gumbo:- Tanzania Meteorological Services and African Desk

Wassila Thiaw:- African Desk