



Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 05th April 2007

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

FORECAST DISCUSSION 14H00 EST 05th April 2007

Valid: 00Z 6th April 2007- 00Z 08th April 2007.

Highlights: TROPICAL DEPRESSION EX-JAYA, over the northeastern coast of Mozambique 15,5°S 41,8°E (the coast of Nampula Province) at 051200Z with 1006hPa pressure at the center, moving south-southwestward at 8 kt with 10m max sustained wind – 020 kt, gusts 028kt. EX-JAYA has tracked west-southwestward at 10 knot over the past six hours, in the Mozambican Channel, weakening due to some dry air entrainment, weak wind shear and northwesterly flow related to the trough over the southeastern part of the sub continent. The system is expected to continue weakening in the next 24 hrs. At T+48 hrs the system is expected to slightly re- intensifying due to warmer water, the presence of a ridge at 200 mb and as the St Helene high is ridging in from the south causing onshore flow along the eastern coast of Mozambique feeding the system . Ex-Jaya is expected to track southwestward along the northeastern coast of Mozambique, experiencing a landfall and taking a south-southeastward turn. But the strong wind followed by intense rainfall will persist over the northeastern Mozambique.

At T+24 hrs, the general flow pattern at 200hpa over Southern Africa (South of the Equator) as shown by the GFS, ECMWF and UK-MET models, is a persistent deep low system centered at 8°S 51°E, causing convergence over areas which are to the north of Madagascar. The models show a trough over the southeastern part of the sub continent, with a northwesterly flow, stretching into northeastern Angola, causing convergence over these areas. Another trough is over the Atlantic Ocean, approaching the southwestern coast of the sub continent. There is a high pressure system centered at 5°S 8°E throwing a ridge over most of the sub continent. A bud-off high over the northeastern part of the Mozambican Channel is ridging these areas. At T+48 hrs, persistent deep low system which was centered at 8°S 51°E, has shifted northeastward, has there is a ridge over northwestern part of Mozambique. The trough which was over the southeastern part of the sub continent still prevails, with northwesterly winds of up to 55 KT. The trough which was over the Atlantic coast approaching the southwestern part of the sub continent has shifted eastward to the south, aligning with the trough to the southeastern part of the

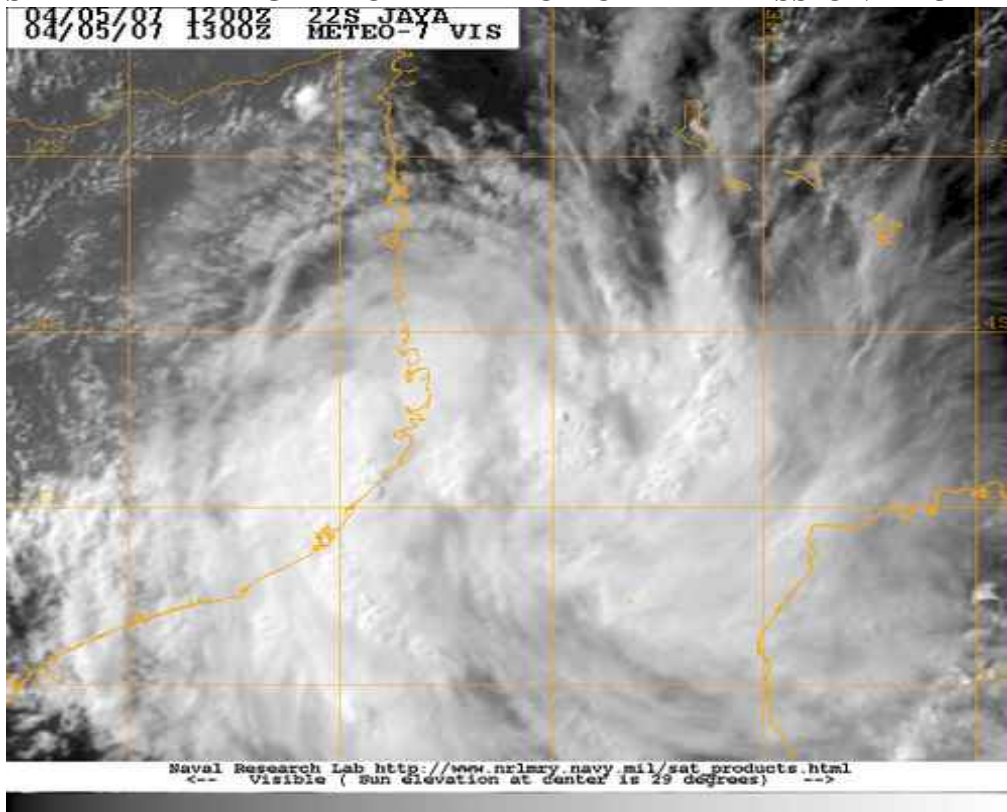
sub continent, causing convergence over these areas. Elsewhere the general flow pattern is maintained. At T+72 hrs, the trough over the southern part of the sub continent has slightly weakened in amplitude, and shifted to the southeastern parts of the sub continent. Elsewhere the general flow pattern prevails, except that the bud-off high which was over the northeastern part of Mozambique is ridging the northern parts of Madagascar, hence subsidence.

At 500mb, the GFS models show a trough over northeastern coast of Mozambique stretching into the Mozambican Channel, which is associated with the tropical depression ex-Jaya. The UKMET and ECMWF models do not show a trough (but clearly show a low) over northeastern coast of Mozambique, but agrees with the GFS that there is a trough over southeastern part of the sub continent, stretching into southeastern Angola, causing convergence over these areas. The UKMET puts the center of the low associated to ex-Jaya near 16°S 40°E. There is another trough to the southwestern coast of South Africa. The three models show the Mascarene high with two cells centered at 22°S 41°E and at 19°S 52°E, throwing a ridge over most of the eastern parts of the sub continent thus blocking the deepening of TC ex-Jaya. The St Helena high also has two cells with centers located at 9°S 11°W and at 21°S 11°E, ridging into most of the western parts of the sub continent. At T+48 hrs, the three models show that the trough associated with the tropical cyclone Jaya shifts westwards along the northeastern coast of Mozambique re-intensifying as the trough over the southeastern part of the sub continent is weakening and shifting eastward. 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 to the southeastern part of the sub continent, weakening, has shifted into Mozambican Channel and is linking the trough associated with the tropical cyclone Jaya, hence convergence, has the ridge reorients and the result steering is meridional. There is a shallow trough over Zimbabwe and southwestern Zambia, causing convergence over Zimbabwe, southwestern Zambia and central Mozambique. The ridges of the St Helena and the Mascarene highs prevail over the rest of the sub continent. The ensemble members of the GFS show a reasonable hug of the 5700m and 5870m height contours over northeastern Mozambique at T+24 up to T+72, which implies uncertainty in the position and extension of the trough associated with the tropical depression ex-Jaya.

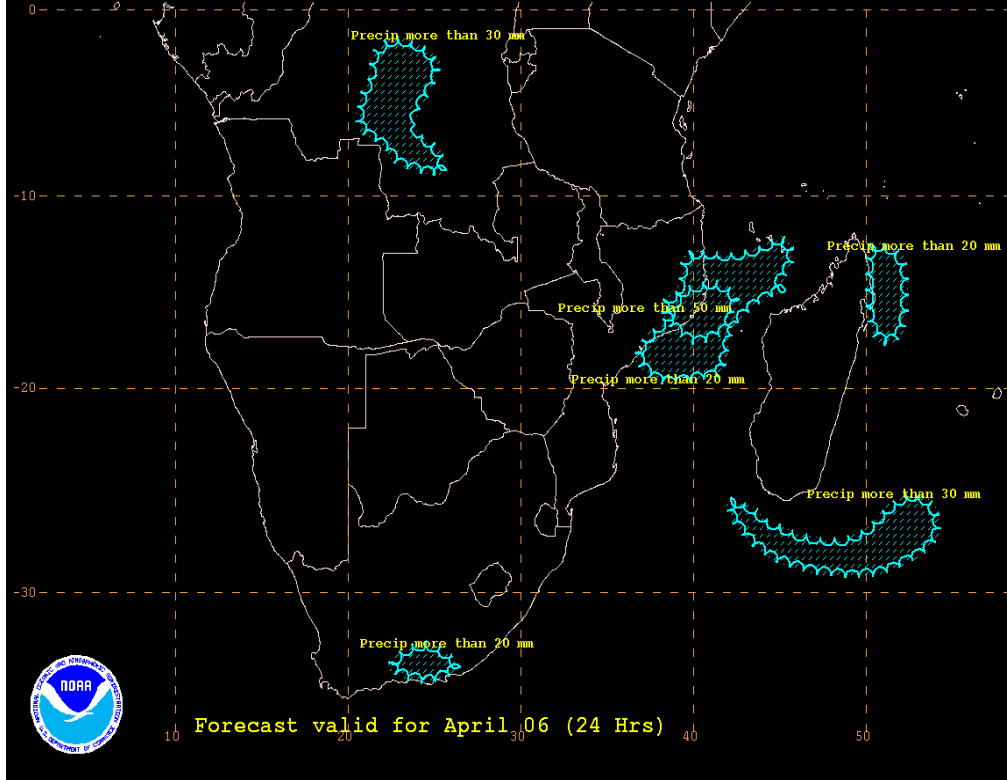
At 850mb, there is a trough associated with the Tropical depression ex-JAYA is lying over the northern part of the coast of Mozambique; hence intense thundershowers are expected to continue over northeastern coast of Mozambique and over the channel. There is a trough to the south of the sub continent, aligned with low over central South Africa and the southwestern coast of Namibia, causing convergence over these areas. Convergence is also seen over northeastern D.R. Congo. The Mascarene high with its centre located at 34°S 55°E has its ridge lying over most of the sub continent, hence divergence. The St Helene high with two cells centered at 31°S 1°E and at 39°S 5°E is hardly ridging into southwestern coast of the sub continent. At T+48 hrs, the trough associated to ex-Jaya shifts southwestward into central Mozambique, hence intense thundershowers and strong winds are expected over northern and central Mozambique and also over the channel, but some reduction over northern parts. The trough which was

to the south of the sub continent has rapidly shifted further east as the St Helen high progress's southeastward and is ridging in from the south causing onshore flow along the southeastern coast of the sub continent feeding the tropical depression ex-Jaya leading to re-intensification. Convergence over southwestern coast of Namibia and to the D.R. Congo is maintained. Divergence prevails over the rest of the sub continent. At T+72 hrs, there is a low near 19°S 38°E, deepening, as the onshore flow of the St Helene ridge along the southeastern coast of the sub continent prevails. The western coast of Namibia and southwestern Angola is under convergence. The low over northeastern D.R. Congo is shifting northeastward to the north of the equator. Divergence is maintained over the rest of the sub continent.

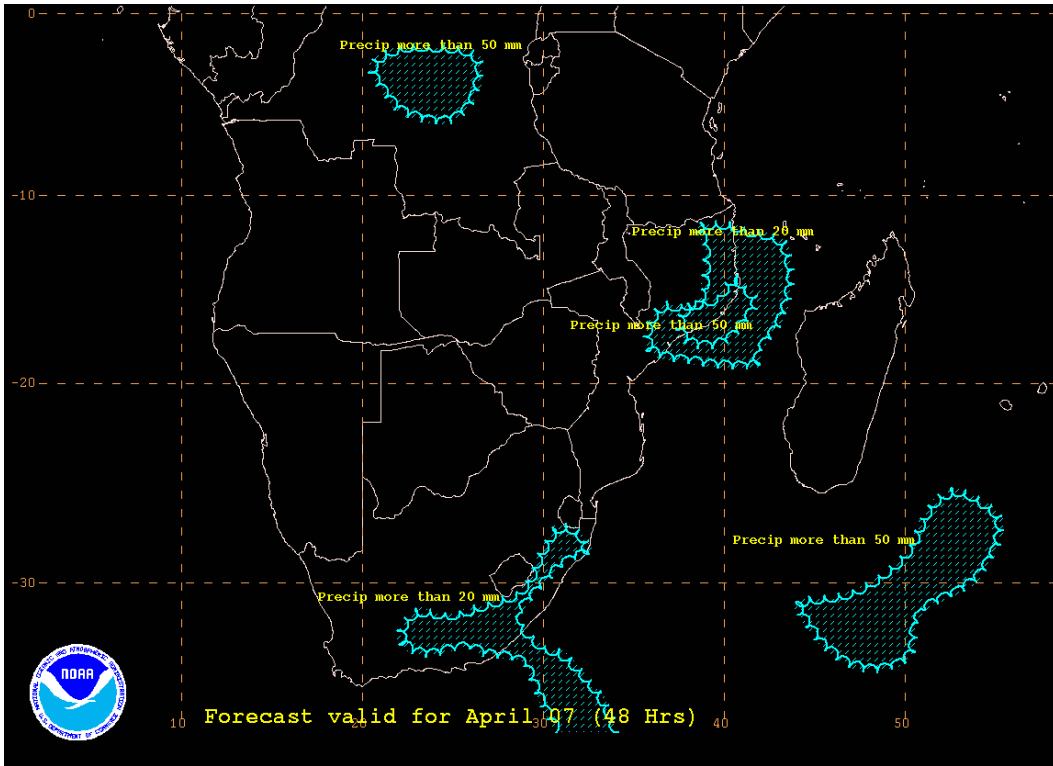
SATELLITE IMAGERY OF THE TROPICAL DEPRESSION EX-JAYA



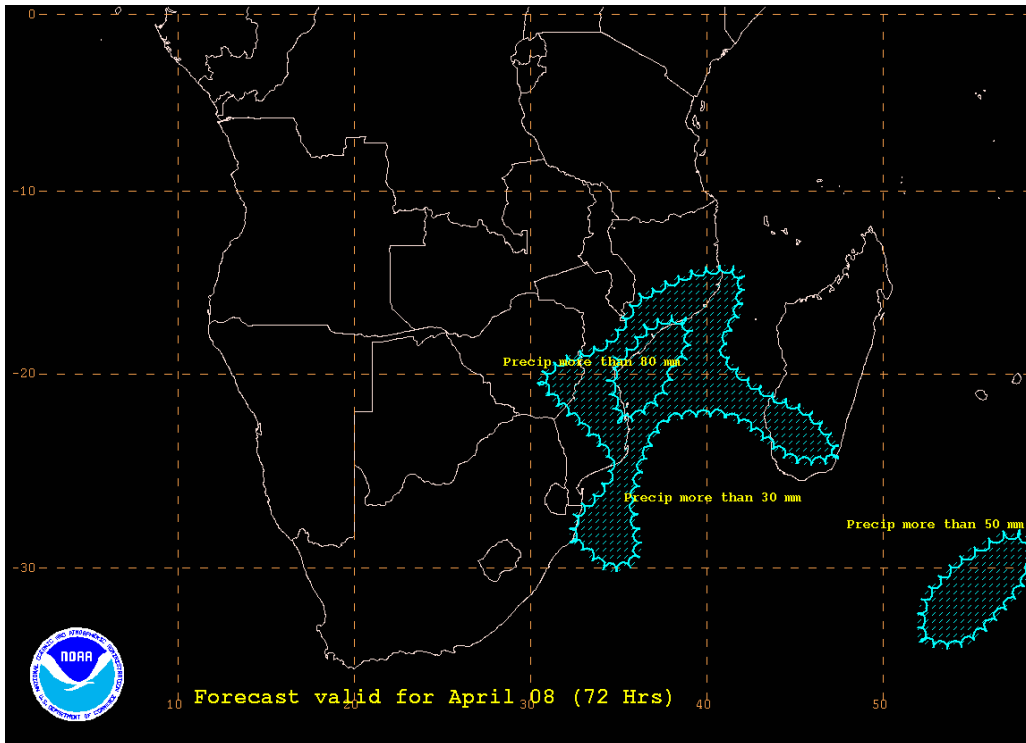
FORECAST MAP FOR DAY 1



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