Forecast guidance for Severe Weather Forecasting Demonstration Project (SWFDP)

SHORT RANGE FORECAST DISCUSSION 14H00 EST 04th April 2007

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

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Valid: 00Z 5th April 2007- 00Z 07th April 2007.

Highlights**:** *TROPICAL DEPRESSION EX-JAYA, over the northeastern Mozambican Channel at 041200Z with 1006hPa pressure at the center, moving west-southwestward at 12 kt with max sustained wind – 020 kt, gusts 0281kt.*
EX-JAYA has tracked west-northwestward at 12 knot over the past six hours, exiting northwest Madagascar, entering in to Mozambican Channel. The system is expected to continue weakening due to some dry air entrainment and the wind shear. At T+48 hrs the system is expected to slightly re- intensifying due to warmer water and the presence of a ridge at 200 mb. Ex-Jaya is expected to approach the northeastern coast of Mozambique near 15°S 40°E, experiencing a landfall and taking a south-southeastward turn. But the strong wind followed by intense rainfall will persist over the northeastern coast of Mozambique.

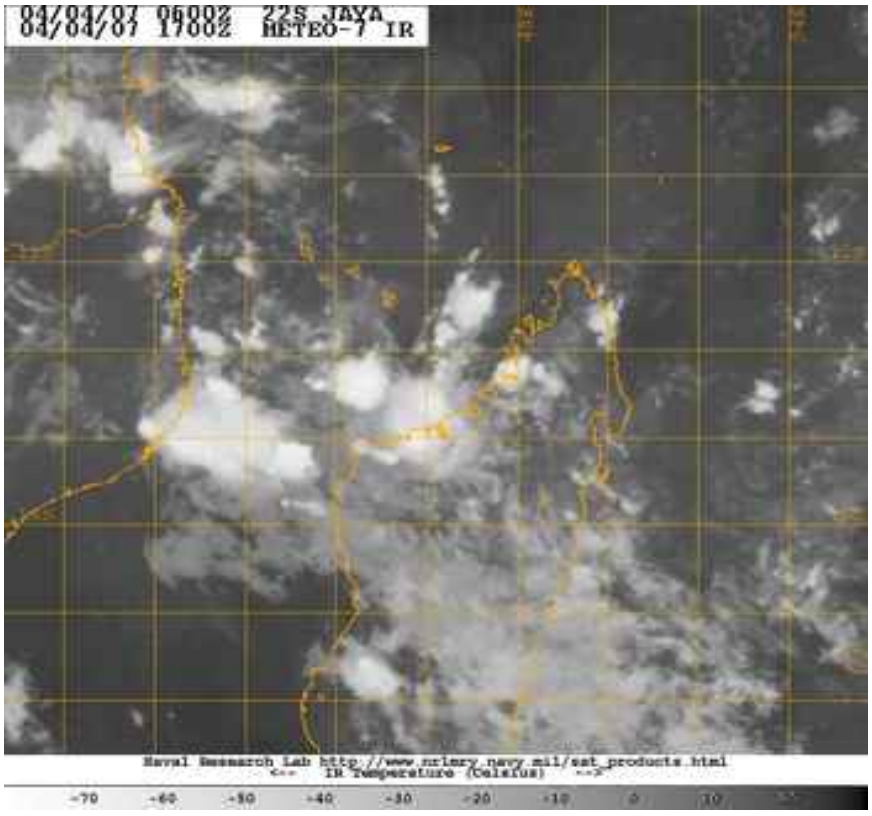
At T+24 hrs, the general flow pattern at 200hpa over Southern Africa (South of the Equator) as shown by the GFS, ECMWF and UK-MET models, is a persistent deep low system centered at 8°S 50°E, causing convergence over areas which are to the north of Madagascar. The models show a trough over the southeastern part of the sub continent, with a northwesterly flow, causing convergence over these areas. This trough has a closed circulation at 30°S 29°E. There is a high pressure system centered at 3°S 10°E throwing a ridge over the rest of the sub continent. At T+48 hrs, persistent deep low system which was centered at 8°S 50°E, has shifted further north, has there is a ridge over northwestern part of Madagascar. The trough which was over the southeastern part of the sub continent still prevails, with westerly to northwesterly winds of up to 60 KT. 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 its winds over the southwestern parts of the sub continent have weakened also. Elsewhere the general flow pattern prevails, except that the high which was to the north of Madagascar is ridging the northeastern coast of Mozambique, hence subsidence.

At 500mb, the GFS models show a trough to the northwest of Madagascar stretching into Mozambican Channel, which is associated with the tropical depression ex-Jaya. The UKMET and ECMWF models do not show a trough (but a low) over northern Mozambican Channel, but agrees with the GFS that there is a shallow trough over Botswana, stretching into northwestern Zambia, with a closed circulation at 23°S 25°E, causing convergence over these areas. The UKMET puts the center of the low associated to ex-Jaya near 16°S 45°E. The three models show the Mascarene high with two cells centered at 21°S 40°E and at 20°S 55°E, throwing a ridge over Tanzania, eastern Zambia and Mozambique. The St Helena high also has three cells with centers located at 19°S 3°W, at 26°S 9°E and at 19°S 11°E, ridging into 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 to the northeastern coast of Mozambique. The models also show that the shallow trough which was over Botswana, stretching to northwestern Zambia, has shifted westward, weakening. Otherwise 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 associated with the tropical cyclone Jaya has weakened, has the ridge reorients and the result steering is meridional. There is a shallow trough over northeastern South Africa, causing convergence over northeastern South Africa, southeastern Botswana and southern 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 huge of the 5700m and 5870m height contours to the northwest of Madagascar, 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.

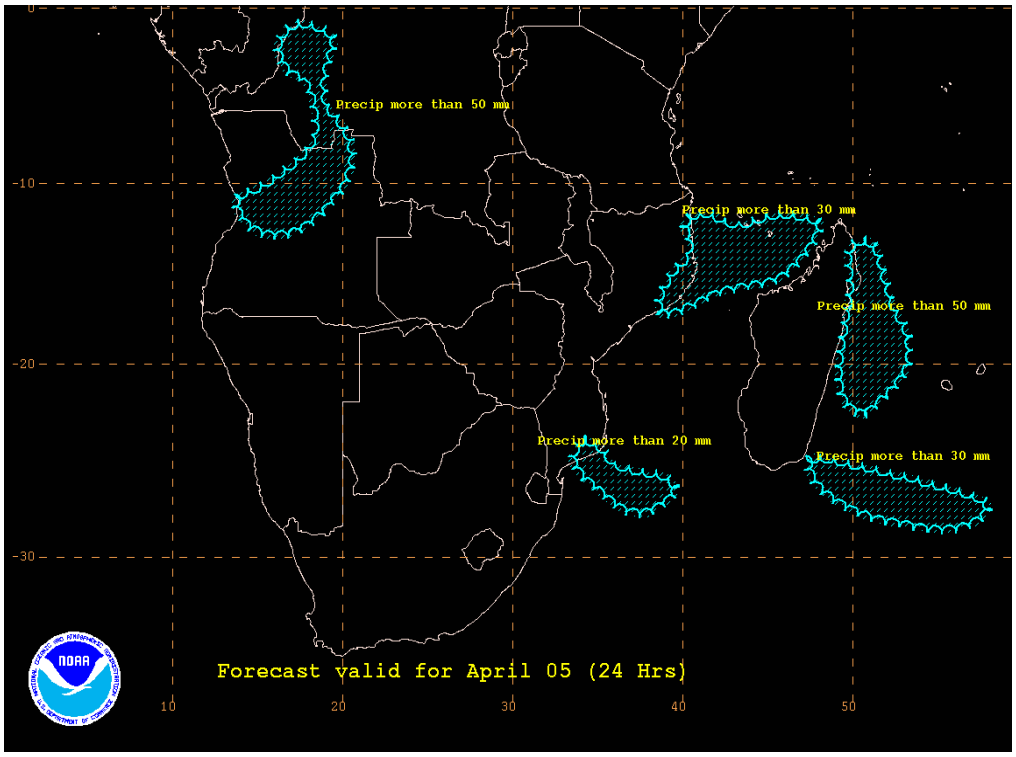
At 850mb, there is a trough associated with the Tropical depression ex-JAYA is lying over the northern part of the Mozambican Channel; hence intense thundershowers are expected to continue over northeastern coast of Mozambique and over the channel. There is a trough to the southwest of the sub continent, aligned with low over the southern coast of Namibia and northern coast of Angola, causing convergence over western South Africa, southwestern Namibia and northwestern Angola. There is convergence over northeastern D.R. Congo. The Mascarene high with its centre located at 36°S 48°E has its ridge lying over the rest of the sub continent, hence divergence. At T+48 hrs, the trough associated to ex-Jaya moves southwestward into northern Mozambique, hence intense thundershowers and strong winds are expected over northeastern Mozambique and over the channel, but some reduction over northwestern Madagascar. A low has developed just over central South Africa (29°S 24°E), which is expected to trigger some thundershowers over southern and central South Africa as the trough which was to the southwest of the sub continent has shifted eastward. Convergence over southwestern coast of Namibia and to the northwestern of the coast of Angola is maintained. The low over northeastern D.R. is shifting northeastward to the north of the Equator. The Mascarene high is ridging the most of the sub continent. The St Helene high with two cells centered at 30°S 0°longitude and at 38°S 6°E is hardly ridging the southwestern part of South Africa. At T+72 hrs, the trough associated with the tropical depression ex-Jaya shifts slightly southwestward, convergence over central South Africa and southwestern coast of Namibia is maintained. The trough which was to the southern part of the subcontinent has shifted northeastward, as the St Helene high is ridging in from the south causing onshore flow along the south

eastern coast of the sub continent. The low over D.R. Congo and to the western coast of Angola has filled up. Divergence is maintained over the rest of the sub continent.

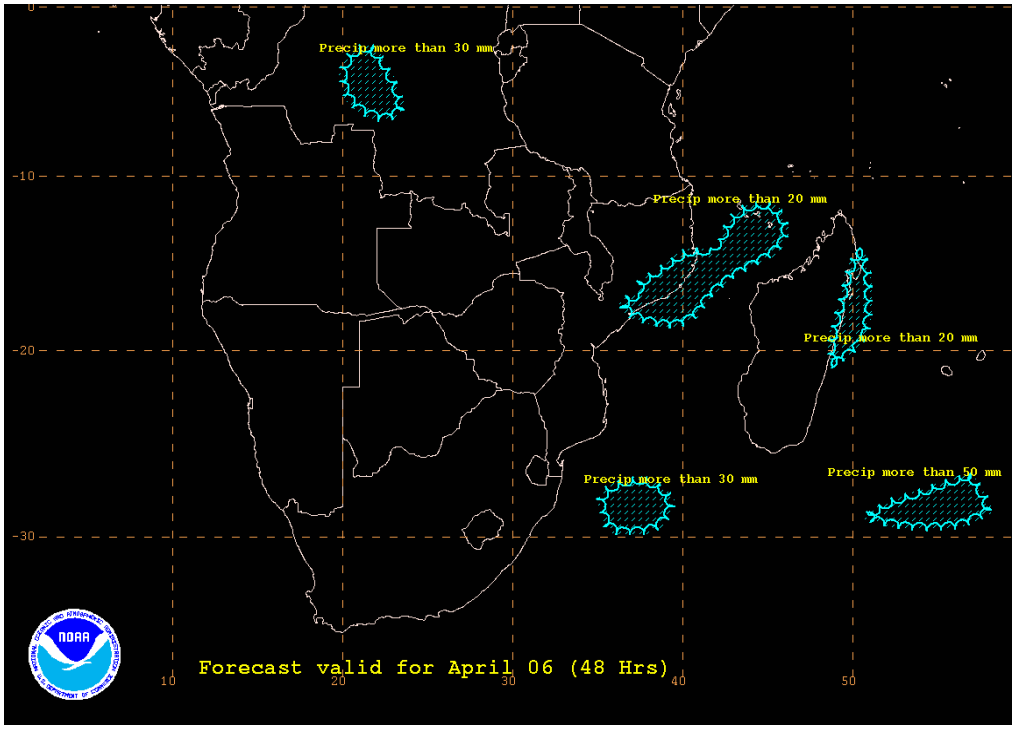
SATELLITE IMAGERY OF THE TROPICAL DEPRESSION EX-JAYA



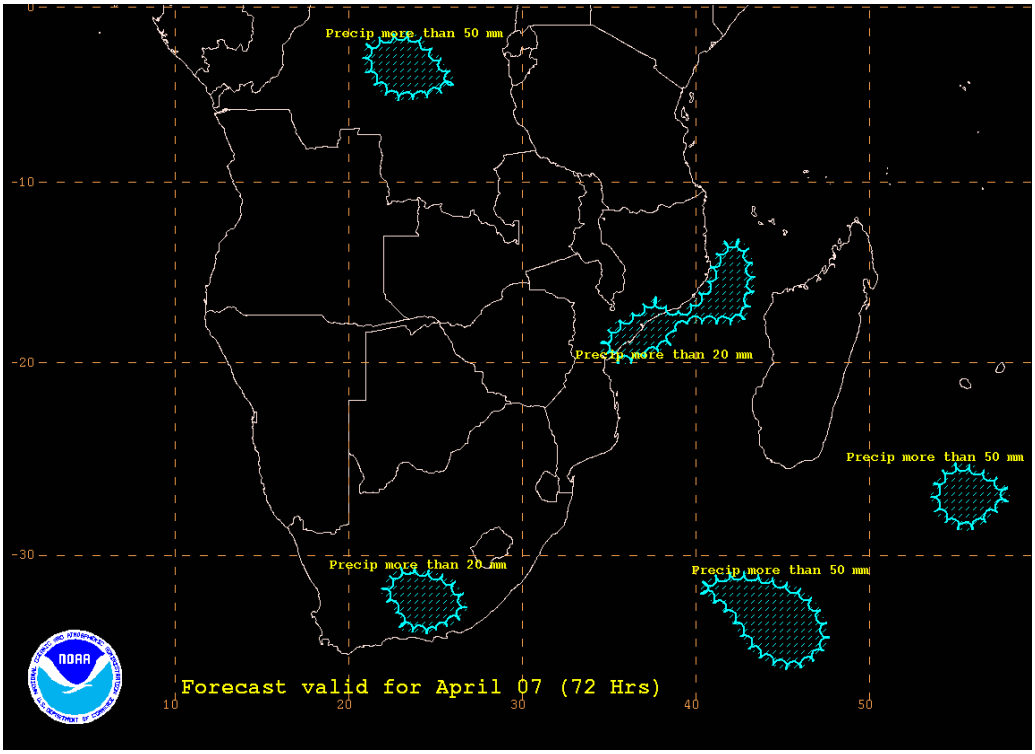
FORECAST MAP FOR DAY 1



FORECAST MAP FOR DAY 2



FORECAST MAP FOR DAY 3



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