

AWIO20 FMEE 291251

TROPICAL CYCLONE CENTER / RSMC LA REUNION / METEO-FRANCE

BULLETIN FOR CYCLONIC ACTIVITY AND SIGNIFICANT TROPICAL WEATHER IN
THE SOUTHWEST INDIAN OCEAN

DATE: 2023/12/29 AT 1200 UTC

PART 1:

WARNING SUMMARY:

Nil.

PART 2 :

TROPICAL WEATHER DISCUSSION:

The basin displays both a monsoon trough (MT) configuration to the south of the Mozambique Channel, and a near-equatorial talweg (NET). The TM is the result of the convergence between the monsoon flow along the African coasts and the trade wind blowing south of Madagascar. It is located 21°S and extends between 36° and 44°E. To the north-west of this TM lies a zone of convection whose activity is still low. The NET is located around 06°S and extends between 52° and 73°E. Convective activity to the north of this NET is weak, but has increased slightly over the past 24 hours.

In the Mozambique Channel :

The convection associated with the TM is spinning, with its center, identifiable on the image thanks to the low clouds, located around 20°S and 35°10 E southeast of Beira. Heavy rain is expected over Mozambique today. Over the next 24 hours, convergence increases and low-level circulation seems to close. Deep shear decreases as the minimum crosses the warm waters of the channel between Saturday and Monday. From Saturday, there is good phasing between the low-level, mid-tropospheric and upper-level vortices, while the divergent flow at 200hPa is fairly well marked. Subsequently, the upper-level vorticity begins to shift, signalling a shear that may prevent the system from exceeding the moderate tropical storm stage. The minimum reached the Malagasy coast on Monday, but heavy rain is expected from the end of the weekend on Madagascar's west coast. From Tuesday, deep shear will run through the system, which is slowly breaking up. Among the ensemble models, EPS is proposing some members that are digging a moderate tropical storm (TTM) into the channel. The deterministic IFS model digs a TTM on Monday. The risk of TTM formation is still very low on Saturday, but becomes low on Sunday and then moderate on Monday.

Another minimum is beginning to develop to the east of Madagascar. This is a hybrid between a tropical and a baroclinic system, but the outflow generated by the previous system is generating deep shear which is preventing it from developing.

Therefore for the next 5 days, the likelihood that a moderate tropical storm forms over the south of the Mozambique Channel is very low from Saturday, becoming low on Sunday and moderate from Monday.

In early January, as large-scale conditions improve (notably with the MJO moist phase), a monsoon trough should establish over at least the western part of the basin. The potential for cyclogenesis should then become more significant.

NOTA BENE: The likelihood is an estimate of the chance of the genesis of a moderate tropical storm over the basin and within the next five days:

<i>Very low:</i>	<i>less than 10%</i>	<i>Moderate:</i>	<i>30% to 60%</i>	<i>Very high:</i>	<i>over 90%</i>
<i>Low:</i>	<i>10% to 30%</i>	<i>High:</i>	<i>60% to 90%</i>		

The Southwestern Indian Ocean basin extends from the equator to 40S and from the african coastlines to 90E.