AWIO20 FMEE 211246
TROPICAL CYCLONE CENTER / RSMC LA REUNION / METEO-FRANCE

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

DATE: 2023/03/21 AT 1200 UTC

PART 1:
WARNING SUMMARY:

Nil.

PART 2 :
TROPICAL WEATHER DISCUSSION:

The South-West Indian Ocean basin is still in a rather poorly-defined pattern. Nevertheless, convective activity has been increasing in the eastern part of the basin thanks to the temporary return of a weak westerly component of the low-level flow near the equator combined with a trans-equatorial northerly component near the Maldives, in connection with a crossing between a Kelvin wave and a Mixed Rossby-Gravity wave (MRG). This convergence has given birth to a weak low-pressure area centered around 5°S/74°E (between the Maldives and the Chagos), with a very elongated shape and associated with scattered thunderstorm activity.

During the next few days, a near-equatorial trough (NET) pattern could develop over the eastern edge of the basin, favored by the arrival of an equatorial Rossby wave crossing the Kelvin wave. This could lead to the formation of a weak low pressure system by the end of week near the border with the Australian area of responsibility, but models do not currently forecast any significant development in this area for the next 5 days.

Over the central basin:
The weak low pressure area currently located between the Maldives and the Chagos deserves special attention. Indeed, the MRG wave mentioned above should maintain a small trans-equatorial northerly component between 60 and 70°E until Thursday, then followed by the approaching active phase of the MJO that could favour the establishment of a west-northwest flow between 5 and 10°S until the end of the week, contributing to generate convergence on the equatorial side of the low, which should become increasingly detached from the equatorial zone. Around Thursday, low-level convergence should temporarily improve on the polar side in a moist environment, but it should then decrease this weekend due to the passage of a trough south of the Mascarene Islands, bringing a more sheared context and conducive to dry air intrusions.
There is thus a narrow moderatly favorable window for tropical development of this low in the second part of the week. Models disagree about the cyclogenesis potential : the American model, backed by its ensemble, suggests the development of a compact closed circulation from Thursday, potentially evolving into a tropical storm at the end of the weekend off northeast Rodrigues. The European model is more delayed in forming this closed circulation, which is then quickly offset by decreasing convergence and increasing wind shear this weekend. Probabilities of tropical storm formation calculated by the European EPS remain very low for the next 5 days. The area of weak cyclogenesis potential would be located off the northeast of Rodrigues on Sunday but without risk of direct impact on inhabited lands in the next 5 days.

Consequently, there is a very low risk of tropical storm development over the center of the basin from Sunday, March 26.

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:

Very low:	*less than 10%*	*Moderate:*	*30% to 60%*	*Very high:*	*over 90%*
Low:	*10% to 30%*	*High:*	*60% to 90%*		

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