AWIO20 FMEE 021212
TROPICAL CYCLONE CENTER / RSMC LA REUNION / METEO-FRANCE

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

DATE: 2021/03/02 AT 1200 UTC

PART 1:
WARNING SUMMARY:

Nil.

PART 2 :
TROPICAL WEATHER DISCUSSION:

The basin is in a monsoon trough (MT) pattern. The MT is undulating between 11 and 19S, punctuated by three well-identified cyclonic vorticity areas around which most of the basin's strong convective activity is focused : from west to east, a low in the Mozambique Channel around 18S/40E, a circulation in the center of the basin near 14S/63E and finally Tropical Cyclone MARIAN located around 19S/90E, on the boundary with the Australian area of responsibility.

From the Mozambique Channel to the southeast of Madagascar :
The latest satellite images now clearly show a closed cyclonic circulation off the coast of Mozambique around 18S/40S, linked to the improved low-level convergence between the monsoon flow and a surge of southeasterly trade winds south of the Mozambique Channel. Convection nevertheless remains scattered quite far around this low pressure center, especially in the slowing down of the monsoon flow both near the Comoros and the trade winds on the south of the Channel. In the coming days, although altitude conditions remain favorable for development of a tropical system, full consolidation of the low-level circulation should take time. Nevertheless, there remains just enough time for this system to reach the threshold of a moderate tropical storm before landfall on the west coast of Madagascar around Friday. Even if the system only reaches the stage of a tropical low, heavy rainfall is likely on the western parts of Madagascar.
On Saturday, under the influence of a west-northwest steering flow, most models expect this circulation to emerge or reform in the Indian Ocean east or southeast of Madagascar, encountering then mixed environmental conditions. Advection of moist low level air on the equatorial side, good upper divergence on the polar side and a significant oceanic potential are favourable ingredients for storm development. Nevertheless, other factors seem to work against cyclogenesis, namely a probably insufficient surface convergence on the polar side of the low and the presence of moderate northwesterly vertical shear advecting dry air in the mid-troposphere along the edge of the subtropical jet stream. Ensemble and deterministic guidance show a still quite marked dispersion in terms of trajectory and intensity of this system.

The risk of formation of a moderate tropical storm in the Mozambique Channel is considered low on Thursday and moderate on Friday, before landfall over western Madagascar. After a brief track overland, the risk that this system will strengthen into a tropical storm off southeast Madagascar is considered low from Saturday.

In the center of the basin :
North of Rodrigues, around 14S/63E, we note an improvement since yesterday of the convergence between the monsoon flow and the trade winds. The low-level circulation remains still quite elongated but convection has intensified since yesterday and is more concentrated around the circulation. Main available models suggest that good surface convergence should persist through the weekend. With largely sufficient oceanic potential and good upper divergence, this suggests a potential for cyclogenesis by Thursday or Friday. Until then, the system should drift east-southeastward under the influence of the low and mid-troposphere steering flows, thus tracking on Friday between 70 and 80E and between 15 and 18S, far from inhabited land. Nevertheless, a gradual increase in deep west to northwesterly shear and dry air advection along the western boundary of the system are noted as limiting factors. Various models diverge on the intensification of this system (GFS is much more reactive than IFS, in particular).

The risk of formation of a moderate tropical storm over the center of the basin becomes moderate from Thursday onwards.

Tropical Cyclone MARIAN :
Tropical Cyclone MARIAN continues to be monitored by the Perth Tropical Cyclone Center via the BoM's Technical Bulletins IDW60281, despite its brief incursion in our basin between yesterday (Monday) and today (Tuesday) at a longitude remaining close to 90E. This system, which is expected to be around 18.7S and 89.9E at 12UTC this Tuesday according to the BoM, will move

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.