Direction Interrégionale de Météo-France pour l'Océan Indien
50 Boulevard du Chaudron
97490 Sainte-Clotilde
Tél : 0262 92 11 00

WTIO30 FMEE 310640
RSMC / TROPICAL CYCLONE CENTER / LA REUNION
TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 6/1/20232024
1.A TROPICAL DEPRESSION 1

2.A POSITION 2023/12/31 AT 0600 UTC:
WITHIN 20 NM RADIUS OF POINT 20.3 S / 38.3 E
(TWENTY DECIMAL THREE DEGREES SOUTH AND
THIRTY EIGHT DECIMAL THREE DEGREES EAST)
MOVEMENT: SOUTH-EAST 5 KT

3.A DVORAK ANALYSIS: 2.5/2.5/D 1.0/6 H

4.A CENTRAL PRESSURE: 1000 HPA
5.A MAX AVERAGE WIND SPEED (10 MN): 30 KT
RADIUS OF MAXIMUM WINDS (RMW): NIL

6.A EXTENSION OF WIND BY QUADRANTS (KM):
28 KT NE: 110 SE: 120 SW: 0 NW: 0

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1008 HPA / 600 KM
8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):
12H: 2023/12/31 18 UTC: 21.0 S / 39.9 E, VENT MAX= 035 KT, MODERATE TROPICAL STORM
28 KT NE: 155 SE: 185 SW: 0 NW: 100
34 KT NE: 75 SE: 130 SW: 0 NW: 75

24H: 2024/01/01 06 UTC: 21.5 S / 41.6 E, VENT MAX= 040 KT, MODERATE TROPICAL STORM
28 KT NE: 175 SE: 215 SW: 110 NW: 110
34 KT NE: 95 SE: 150 SW: 0 NW: 85

36H: 2024/01/01 18 UTC: 21.6 S / 43.9 E, VENT MAX= 035 KT, MODERATE TROPICAL STORM
28 KT NE: 195 SE: 230 SW: 120 NW: 110
34 KT NE: 100 SE: 165 SW: 0 NW: 85

48H: 2024/01/02 06 UTC: 21.3 S / 45.9 E, VENT MAX= 025 KT, OVERLAND DEPRESSION

60H: 2024/01/02 18 UTC: 21.6 S / 48.5 E, VENT MAX= 035 KT, MODERATE TROPICAL STORM
28 KT NE: 230 SE: 270 SW: 130 NW: 130
34 KT NE: 130 SE: 195 SW: 75 NW: 95

72H: 2024/01/03 06 UTC: 22.2 S / 50.0 E, VENT MAX= 040 KT, MODERATE TROPICAL STORM

2.B LONGER-RANGE OUTLOOK:
NIL

2.C ADDITIONAL INFORMATION:
T=CI=2.5

OVER THE LAST 6 HOURS, THE CONVECTION HAS CLEARLY IMPROVED, IN THE EASTERN SEMICIRCLE, SHOWING SIGNS OF CURVATURE SUGGESTING AN INTENSIFICATION. THIS IS ALSO CONFIRMED BY SSMIS-F17'S MICROWAVE PASS FROM 0348Z, SHOWING A HOOK SHAPE ON THE 89GHZ COLOR IMAGE, MOVING UPWARDS IN THE EASTERN SEMICIRCLE. THE POOR QUALITY OF THE 37GHZ MICROWAVE DOES NOT CLEARLY SHOW A RING AT PRESENT, SUGGESTING THAT THE SYSTEM IS STILL BEYOND THE TROPICAL STORM STAGE. THUS, GIVEN THESE ELEMENTS AND DVORAK'S SUBJECTIVE STUDY, THE SYSTEM SEEMS TO HAVE REACHED THE TROPICAL DEPRESSION STAGE.

THE SYSTEM CONTINUES TO CROSS THE MOZAMBIQUE CHANNEL, UNDER THE INFLUENCE OF A WEST-NORTH-WEST FLOW DRIVEN BY A RIDGE OF HIGH PRESSURE NEAR THE EQUATOR TO THE NORTH. ITS TRAJECTORY WILL THEREFORE BE TOWARDS THE WEST COAST OF MADAGASCAR, WHICH IT COULD REACH LATE ON MONDAY OR DURING THE NIGHT FROM MONDAY TO TUESDAY. THE DISPERSION OF NUMERICAL WEATHER FORECASTS REMAINS QUITE SIGNIFICANT FOR ITS SPEED OF MOVEMENT, WITH A BIG DIFFERENCE BETWEEN GFS AND THE OTHER MODELS. THE TRACK FORECAST BY RSMC IS CLOSE TO THE LATEST IFS AND AROME RUNS IN TERMS OF TIMING.THE AMERICAN GFS MODEL IS STILL TOO FAST, BOTH FOR LANDING AND FOR EXITING THE SOUTH-WEST INDIAN OCEAN BASIN. HOWEVER, WHEN IT COMES TO EXITING THE EASTERN COAST OF MADAGASCAR, EUROPEAN GUIDANCES ARE NOW IN AGREEMENT WITH THE AMERICAN MODEL ON THIS POSSIBILITY.THE RSMC ANALYSIS THEREFORE TAKES THIS SCENARIO INTO ACCOUNT, EVEN IF THERE IS STILL A WIDE DISPERSION IN TERMS OF TIMING, AT THE BEGINNING OF NEXT WEEK.

IN TERMS OF INTENSITY, ENVIRONMENTAL CONDITIONS ARE FAVORABLE FOR SHORT-TERM DEVELOPMENT, WITH FAIRLY GOOD LOW-LEVEL CONVERGENCE, STRONG OCEANIC POTENTIAL AND GOOD POLAR HIGH-LEVEL DIVERGENCE. HOWEVER, THESE CONDITIONS ARE OFFSET BY MODERATE WEST-SOUTH-WEST SHEAR IN THE MID-TROPSPHERE. THIS MID-LEVEL SHEAR SHOULD GRADUALLY STRENGTHEN, BRINGING DRY AIR TO THE MID-TROPOSPHERE. FROM MONDAY EVENING ONWARDS, DEEP SHEAR IS SET TO BE ADDED. THIS INFLUX OF DRY AIR COULD SLOW THE SYSTEM'S DEVELOPMENT UNTIL LANDING. THE CURRENT FORECAST THEREFORE SUGGESTS AN INTENSIFICATION THROUGH SUNDAY NIGHT INTO MONDAY, FOLLOWED BY A LEVELLING OFF IN INTENSITY DUE TO THE EFFECTS OF THE SHEAR. THE SYSTEM COULD PROBABLY REACH THE STAGE OF A MODERATE TROPICAL STORM TODAY, OR EVEN OVER THE COURSE OF THE NEXT EVENING. AFTER WEAKENING OVER MADAGASCAR, THE SYSTEM COULD TEMPORARILY STRENGTHEN OVER THE WARM WATERS OF THE INDIAN OCEAN TO TROPICAL STORM STRENGTH, BEFORE WEAKENING PERMANENTLY UNDER THE

EFFECT OF PERSISTENT NORTH-WESTERLY SHEAR.

IMPACTS ON INHABITED LAND :
MADAGASCAR (TOLIARA PROVINCE, FIANARANTSOA PROVINCE):
- GALE-FORCE WINDS LIKELY TO ARRIVE (20-40%) FROM MIDDAY MONDAY UNTIL NIGHT MONDAY TO TUESDAY.
- HEAVY RAIN FROM MONDAY ON THE WEST COAST, SPREADING TO THE EAST COAST ON TUESDAY.RAINFALL TOTALS OF 100-200MM, LOCALLY 300M.
- WAVES CLOSE TO 4M NEAR THE IMPACT ZONE AROUND MONDAY EVENING.