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

0.A WARNING NUMBER: 57/7/20222023
1.A SEVERE TROPICAL STORM 7 (FREDDY)

2.A POSITION 2023/03/05 AT 1800 UTC:
WITHIN 20 NM RADIUS OF POINT 23.2 S / 43.1 E
(TWENTY THREE DECIMAL TWO DEGREES SOUTH AND
FORTY THREE DECIMAL ONE DEGREES EAST)
MOVEMENT: EAST 8 KT

3.A DVORAK ANALYSIS: 3.5/3.5/D 0.5/6 H

4.A CENTRAL PRESSURE: 985 HPA
5.A MAX AVERAGE WIND SPEED (10 MN): 50 KT
RADIUS OF MAXIMUM WINDS (RMW): 44 KM

6.A EXTENSION OF WIND BY QUADRANTS (KM):
28 KT NE: 280 SE: 425 SW: 350 NW: 220
34 KT NE: 150 SE: 250 SW: 205 NW: 130
48 KT NE: 45 SE: 65 SW: 60 NW: 0

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1008 HPA / 1000 KM
8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):
12H: 2023/03/06 06 UTC: 23.6 S / 43.1 E, VENT MAX= 055 KT, SEVERE TROPICAL STORM
28 KT NE: 240 SE: 390 SW: 345 NW: 165
34 KT NE: 120 SE: 220 SW: 185 NW: 65
48 KT NE: 45 SE: 75 SW: 55 NW: 45

24H: 2023/03/06 18 UTC: 23.2 S / 42.6 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM
28 KT NE: 220 SE: 370 SW: 335 NW: 130
34 KT NE: 110 SE: 215 SW: 165 NW: 85
48 KT NE: 45 SE: 65 SW: 55 NW: 45

36H: 2023/03/07 06 UTC: 22.8 S / 42.3 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM
28 KT NE: 230 SE: 345 SW: 285 NW: 165
34 KT NE: 120 SE: 175 SW: 155 NW: 95
48 KT NE: 65 SE: 65 SW: 55 NW: 65

48H: 2023/03/07 18 UTC: 22.2 S / 41.8 E, VENT MAX= 065 KT, TROPICAL CYCLONE
28 KT NE: 230 SE: 335 SW: 285 NW: 185
34 KT NE: 120 SE: 185 SW: 165 NW: 110
48 KT NE: 65 SE: 75 SW: 65 NW: 65

64 KT NE: 45 SE: 45 SW: 55 NW: 35

60H: 2023/03/08 06 UTC: 21.4 S / 41.2 E, VENT MAX= 065 KT, TROPICAL CYCLONE
28 KT NE: 260 SE: 335 SW: 280 NW: 185
34 KT NE: 150 SE: 205 SW: 165 NW: 120
48 KT NE: 75 SE: 85 SW: 65 NW: 75
64 KT NE: 45 SE: 55 SW: 55 NW: 45

72H: 2023/03/08 18 UTC: 20.6 S / 40.5 E, VENT MAX= 070 KT, TROPICAL CYCLONE
28 KT NE: 250 SE: 335 SW: 285 NW: 220
34 KT NE: 140 SE: 195 SW: 165 NW: 120
48 KT NE: 75 SE: 85 SW: 65 NW: 75
64 KT NE: 45 SE: 55 SW: 55 NW: 35

2.B LONGER-RANGE OUTLOOK:
96H: 2023/03/09 18 UTC: 19.3 S / 39.7 E, VENT MAX= 085 KT, TROPICAL CYCLONE
28 KT NE: 250 SE: 315 SW: 305 NW: 175
34 KT NE: 140 SE: 185 SW: 175 NW: 100
48 KT NE: 85 SE: 85 SW: 75 NW: 65
64 KT NE: 55 SE: 55 SW: 55 NW: 55

120H: 2023/03/10 18 UTC: 18.3 S / 39.1 E, VENT MAX= 080 KT, TROPICAL CYCLONE
28 KT NE: 195 SE: 335 SW: 270 NW: 155
34 KT NE: 110 SE: 175 SW: 150 NW: 95
48 KT NE: 60 SE: 60 SW: 60 NW: 60
64 KT NE: 50 SE: 50 SW: 50 NW: 50

2.C ADDITIONAL INFORMATION:
FT=CI=3.5

DURING THE LAST 6 HOURS, FREDDY HAS TEMPORARILY ACCELERATED ITS MOVEMENT EASTWARD AND HAS COME CLOSER THAN EXPECTED TO THE COAST OF MADAGASCAR, ITS CENTER IS ESTIMATED AT 50-60 KM WEST OF TULEAR. HOWEVER, ON THE LAST IMAGES IT SEEMS TO FRANKLY SLOW DOWN ITS MOVEMENT. MEANWHILE, CONVECTION HAS INTENSIFIED WHILE TIGHTLY WRAPPING AROUND THE CENTER, WITH A CURVED BAND STRUCTURE EVOLVING INTO AN EYE PATTERN ON INFRARED IMAGERY. THE SIZE OF THE CDO HAS BECOME MORE COMPACT AND ESSENTIALLY CONCENTRATED IN A 100 KM (50-60 MN) RADIUS AROUND THE CENTER, PROBABLY DUE TO ITS APPROACH OF THE COAST WHICH HAS ACCENTUATED LOW-LEVEL WIND CONVERGENCE. ON THE LAST IMAGES, EIR DVORAK ANALYSIS REACHES 3.5 TO 4.0 (BY INERTIA, WE WILL FAVOR 3.5). FREDDY IS THUS ESTIMATED AT SEVERE TROPICAL STORM STAGE WITH WINDS OF 50KT. THE LAST MICROWAVE IMAGES AND SATELLITE IMAGERY ENABLE TO ESTIMATE A 24NM RADIUS OF MAXIMUM WINDS WHILE IT WAS CLOSE TO 40NM THIS MORNING. THE SYSTEM'S CENTER BEING ABOUT 25-30MN FROM THE MALAGASY COAST, STORM FORCE WINDS ARE THUS POSSIBLE VERY CLOSE TO THE COAST.

FREDDY'S MOVEMENT SHOULD SLOW DOWN AND BECOME QUASI-STATIONARY UNTIL MONDAY UNDER THE INFLUENCE OF CONTRADICTORY STEERING FLOWS. THUS, THE SYSTEM'S CENTER SHOULD NOT MAKE LANDFALL ON THE MALAGASY COAST BUT IT WILL PROBABLY REMAIN VERY CLOSE TO IT UNTIL MONDAY MIDDAY. A NEW SUBTROPICAL RIDGE OF HIGH PRESSURE IS SWELLING TO THE

SOUTHWEST OF FREDDY AND SHOULD STEER THE SYSTEM NORTHWESTWARD. HOWEVER, THE TIMING AND LOCATION OF FREDDY'S U-TURN REMAINS VERY UNCERTAIN. IN THE LONGER TERM, THERE ARE TWO TYPES OF SCENARIOS : ONE WITH A MORE SOUTHERLY AND FASTER TRACK AS SUGGESTED BY GFS, THE OTHER WITH A MORE NORTHERLY AND SLOWER TRACK AS SUGGESTED BY IFS. THE RSMC FORECAST IS CLOSER TO THE EUROPEAN SCENARIO, WHICH SEEMS TO BE MORE IN LINE WITH INITIAL STATE. THERE IS STILL A GREAT DEAL OF UNCERTAINTY REGARDING A POSSIBLE APPROACH TO THE COAST OF MOZAMBIQUE.

IN TERMS OF INTENSITY, CURRENT ENVIRONMENTAL CONDITIONS ARE FAVORABLE TO FREDDY'S INTENSIFICATION. INDEED, WITH WEAK WIND SHEAR, GOOD OCEANIC POTENTIAL AND GOOD UPPER DIVERGENCE, FREDDY SHOULD REMAIN AT SEVERE TROPICAL STORM WHILE INTENSIFYING SLOWLY. IN THE LONGER TERM, ALL MODELS SUGGEST INTENSIFICATION UP TO TROPICAL CYCLONE STAGE. NEVERTHELESS, SOME SOUTHERLY WIND SHEAR COULD BE PRESENT FROM WEDNESDAY ONWARDS WHEN IT MOVES NORTHWARDS, AND COULD TEMPORARILY HINDER A MORE IMPORTANT INTENSIFICATION.

IMPACTS ON INHABITED LANDS DURING THE NEXT 72 HOURS :
- MADAGASCAR
* HEAVY RAINFALL IN THE NEXT 72 HOURS OVER THE COASTAL AREAS OF THE WEST COAST OF MENABE AND ATSIMO-ANDREFANA. CUMULATIVE RAINFALL OVER 72 HOURS RANGING FROM 100 TO 200 MM WITH POTENTIALLY 200-300 MM IN THE IMMEDIATE VICINITY OF THE SYSTEM IN THE TULEAR AREA.
* GALE FORCE WINDS OVER THE ATSIMO-ANDREFANA REGION, FOR THE NEXT 24-36H, MAINLY OVER THE COASTAL AREAS, WITH THE POSSIBILITY OF STORM FORCE WINDS IN THE IMMEDIATE VICINITY OF THE SHORE IN THE TULEAR AREA UNTIL NOON ON MONDAY. IMPROVEMENT ON TUESDAY.
* VERY ROUGH SEA FROM CAPE SAINT-VINCENT TO CAPE SAINT-MARIE, GRADUALLY EASING OFF FROM MONDAY NIGHT ONWARDS.