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

0.A WARNING NUMBER: 68/7/20222023
1.A TROPICAL CYCLONE 7 (FREDDY)

2.A POSITION 2023/03/08 AT 1200 UTC:
WITHIN 30 NM RADIUS OF POINT 21.0 S / 40.1 E
(TWENTY ONE DECIMAL ZERO DEGREES SOUTH AND
FORTY DECIMAL ONE DEGREES EAST)
MOVEMENT: NORTH-WEST 5 KT

3.A DVORAK ANALYSIS: 4.5/5.0/W 0.5/12 H

4.A CENTRAL PRESSURE: 975 HPA
5.A MAX AVERAGE WIND SPEED (10 MN): 65 KT
RADIUS OF MAXIMUM WINDS (RMW): NIL

6.A EXTENSION OF WIND BY QUADRANTS (KM):
28 KT NE: 220 SE: 155 SW: 195 NW: 230
34 KT NE: 95 SE: 85 SW: 95 NW: 100
48 KT NE: 45 SE: 65 SW: 60 NW: 45
64 KT NE: 30 SE: 20 SW: 20 NW: 30

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1009 HPA / 1100 KM
8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):
12H: 2023/03/09 00 UTC: 20.6 S / 39.4 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM
28 KT NE: 240 SE: 220 SW: 195 NW: 185
34 KT NE: 130 SE: 140 SW: 130 NW: 110
48 KT NE: 65 SE: 65 SW: 55 NW: 45

24H: 2023/03/09 12 UTC: 20.0 S / 38.6 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM
28 KT NE: 230 SE: 240 SW: 205 NW: 185
34 KT NE: 120 SE: 150 SW: 130 NW: 110
48 KT NE: 45 SE: 65 SW: 55 NW: 45

36H: 2023/03/10 00 UTC: 19.2 S / 37.7 E, VENT MAX= 065 KT, TROPICAL CYCLONE
28 KT NE: 185 SE: 230 SW: 220 NW: 155
34 KT NE: 100 SE: 140 SW: 100 NW: 85
48 KT NE: 45 SE: 65 SW: 55 NW: 45
64 KT NE: 35 SE: 30 SW: 35 NW: 35

48H: 2023/03/10 12 UTC: 18.5 S / 37.2 E, VENT MAX= 075 KT, TROPICAL CYCLONE
28 KT NE: 150 SE: 165 SW: 130 NW: 110

34 KT NE: 75 SE: 95 SW: 85 NW: 85
48 KT NE: 55 SE: 55 SW: 55 NW: 65
64 KT NE: 0 SE: 30 SW: 30 NW: 30

60H: 2023/03/11 00 UTC: 17.8 S / 36.8 E, VENT MAX= 070 KT, TROPICAL CYCLONE
28 KT NE: 140 SE: 155 SW: 110 NW: 110
34 KT NE: 75 SE: 95 SW: 65 NW: 65
48 KT NE: 55 SE: 45 SW: 35 NW: 35
64 KT NE: 30 SE: 30 SW: 0 NW: 0

72H: 2023/03/11 12 UTC: 17.5 S / 36.4 E, VENT MAX= 045 KT, OVERLAND DEPRESSION
28 KT NE: 110 SE: 110 SW: 110 NW: 110
34 KT NE: 35 SE: 0 SW: 35 NW: 35

2.B LONGER-RANGE OUTLOOK:
96H: 2023/03/12 12 UTC: 17.5 S / 35.6 E, VENT MAX= 020 KT, OVERLAND DEPRESSION

2.C ADDITIONAL INFORMATION:
T=4.5 CI=5.0

DURING THE LAST 6 HOURS, FREDDY HAS CONTINUED TO BE IMPACTED BY THE MID-TROPOSPHERE SHEAR WITH A CDO PATTERN ON THE CLASSICAL IMAGERY. THE MICROWAVE IMAGE FROM 1048Z CLEARLY SHOWS CONVECTION REJECTED IN THE NORTHEAST QUADRANT OF THE SYSTEM AND DRY AIR REACHING FROM THE SOUTH. IN AGREEMENT WITH THE AVAILABLE OBJECTIVE AND SUBJECTIVE ANALYSES, THE INTENSITY OF FREDDY IS DECREASED WITH WINDS OF 70KT.

IN TERMS OF TRACK, LITTLE CHANGE. THE DISPLACEMENT OF FREDDY IS DRIVEN BY THE PRESENCE OF A SUBTROPICAL RIDGE OVER AFRICA THAT EXTENDS SOUTH OF THE MOZAMBIQUE CHANNEL AND THE MORE PRONOUNCED ESTABLISHMENT OF THE RIDGE TO THE WEST OF THE SYSTEM. WE OBSERVE A WEAK DISPERSION OF THE MODELS ON THIS TRACK TOWARDS THE NORTHWEST FOR THE NEXT 24 HOURS. THEN THE DISPERSION INCREASES AT THE TIME OF THE LANDING OF FREDDY ON THE COAST OF MOZAMBIQUE WITH DIFFERENCES IN POSITION BUT WITH LESS DIFFERENCES IN TIMING. THE RMSC FORECAST IS A CONSENSUS OF THE DIFFERENT SCENARIOS AVAILABLE WITH A LANDING ON THE MOZAMBIQUE COAST PROBABLY ON FRIDAY NIGHT BETWEEN ZAMBEZE PROVINCE AND SOFALA PROVINCE.

IN TERMS OF INTENSITY, FREDDY IS STILL IN AN AREA WITH A SHEAR CONSTRAINT OF MEDIUM TROPOSPHERE MARKED FROM SOUTH. THIS STRESS COULD CAUSE THE STRUCTURE TO TILT VERTICALLY AND ALLOW DRY AIR TO APPROACH THE CENTER. FREDDY SHOULD THEREFORE LOSE MORE INTENSITY DURING THE NEXT 24 HOURS, AND BE TEMPORARILY DOWNGRADED TO A STRONG TROPICAL STORM. THEN FROM THURSDAY EVENING, IN SPITE OF THE MAINTENANCE OF THE SHEAR, FREDDY COULD MEET WARMER WATERS WITH A BETTER DIVERGENCE OF ALTITUDE AND THUS TO INTENSIFY AGAIN AT THE STAGE OF TROPICAL CYCLONE BEFORE ITS LANDING ON THE COASTS OF MOZAMBIQUE. THEN NEXT WEEKEND, FREDDY SHOULD WEAKEN OVER LAND.

IMPACTS ON INHABITED LANDS DURING THE NEXT 72 HOURS :
FREDDY'S EFFECTS WILL BE CONTAINED DUE TO THE SMALL SIZE OF THE SYSTEM.

- MOZAMBIQUE :
* GALE FORCE WINDS ARE LIKELY TO ARRIVE IN THE MORNING OF FRIDAY OVER ZAMBEZE PROVINCE AND THE NORTHERN PART OF SOFALA PROVINCE, FOLLOWED BY STORM FORCE WINDS IN THE AFTERNOON OR EVENING.
* SEA STATE DEGRADATION WITH SEAS BECOMING VERY ROUGH TO HEAVY DURING THE DAY ON FRIDAY (H1/3 BETWEEN 4 AND 6 M). A SURGE OF ABOUT 1M TO 1M50 IS POSSIBLE NEAR THE LANDFALL AREA.
* HEAVY RAINS ARE LIKELY DURING THE DAY ON FRIDAY AND THE FOLLOWING NIGHT WITH THE ARRIVAL OF THE HEART OF THE SYSTEM ON THE COAST. EXPECTED RAINFALL OF 100 TO 150 MM, LOCALLY 200 MM NEAR THE HEART.