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

0.A WARNING NUMBER: 37/7/20222023
1.A SEVERE TROPICAL STORM 7 (FREDDY)

2.A POSITION 2023/02/23 AT 1200 UTC:
WITHIN 20 NM RADIUS OF POINT 22.6 S / 39.4 E
(TWENTY TWO DECIMAL SIX DEGREES SOUTH AND
THIRTY NINE DECIMAL FOUR DEGREES EAST)
MOVEMENT: WEST-SOUTH-WEST 10 KT

3.A DVORAK ANALYSIS: 3.5/3.5/D 1.0/12 H

4.A CENTRAL PRESSURE: 990 HPA
5.A MAX AVERAGE WIND SPEED (10 MN): 50 KT
RADIUS OF MAXIMUM WINDS (RMW): 33 KM

6.A EXTENSION OF WIND BY QUADRANTS (KM):
28 KT NE: 270 SE: 230 SW: 215 NW: 230
34 KT NE: 215 SE: 165 SW: 130 NW: 0
48 KT NE: 110 SE: 110 SW: 0 NW: 0
64 KT NE: 0 SE: 0 SW: 0 NW: 0

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1009 HPA / 600 KM
8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: MEDIUM

1.B FORECASTS (WINDS RADII IN KM):
12H: 2023/02/24 00 UTC: 21.9 S / 36.9 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM
28 KT NE: 240 SE: 295 SW: 230 NW: 230
34 KT NE: 150 SE: 185 SW: 165 NW: 140
48 KT NE: 100 SE: 110 SW: 110 NW: 95

24H: 2023/02/24 12 UTC: 21.9 S / 34.9 E, VENT MAX= 065 KT, OVERLAND DEPRESSION
28 KT NE: 220 SE: 220 SW: 140 NW: 100
34 KT NE: 155 SE: 165 SW: 95 NW: 65
48 KT NE: 95 SE: 95 SW: 45 NW: 45
64 KT NE: 35 SE: 35 SW: 0 NW: 0

36H: 2023/02/25 00 UTC: 22.0 S / 33.0 E, VENT MAX= 045 KT, OVERLAND DEPRESSION
28 KT NE: 130 SE: 205 SW: 150 NW: 95
34 KT NE: 75 SE: 130 SW: 55 NW: 65

48H: 2023/02/25 12 UTC: 22.0 S / 31.9 E, VENT MAX= 030 KT, OVERLAND DEPRESSION
28 KT NE: 130 SE: 165 SW: 0 NW: 0

60H: 2023/02/26 00 UTC: 21.2 S / 31.5 E, VENT MAX= 025 KT, OVERLAND DEPRESSION

72H: 2023/02/26 12 UTC: 20.2 S / 30.8 E, VENT MAX= 020 KT, OVERLAND DEPRESSION

2.B LONGER-RANGE OUTLOOK:
96H: 2023/02/27 12 UTC: 18.3 S / 28.7 E, VENT MAX= 015 KT, DISSIPATING

2.C ADDITIONAL INFORMATION:
T=CI=3.5

CONVECTIVE ACTIVITY HAS INCREASED DURING THE LAST HOURS, ESPECIALLY IN A LARGE NORTHEAST SEMICIRCLE, ORGANIZING ITSELF IN A CURVED BAND. THIS IMPROVEMENT IS CONFIRMED BY THE AMSR2 PASS OF 1115UTC. THE INTENSITY HAS BEEN REVISED UPWARDS WITH THE LAST SMAP DATA OF 0314UTC OF 44KT, AND ESTIMATED AT THE STAGE OF STRONG TROPICAL STORM.

DRIVEN BY THE SUBTROPICAL RIDGE TO ITS SOUTH WHICH SHOULD THEN STRENGTHEN TO ITS SOUTHWEST, FREDDY SHOULD CONTINUE ITS WESTWARD AND THEN WEST-NORTHWESTWARD MOVEMENT UNTIL LANDFALL ON THE COAST OF MOZAMBIQUE ON FRIDAY MORNING. MODEL DISPERSION HAS DECREASED AND THE LANDFALL AREA SHOULD BE BETWEEN INHAMBANE AND BEIRA, PROBABLY NEAR VILANKULO. FROM THIS WEEKEND, UNDER THE EFFECT OF A TROUGH TO THE SOUTH AND THE CONTRADICTORY EFFECT OF THE TWO REMNANT RIDGES EAST AND WEST, THE SYSTEM SHOULD SLOW DOWN AND THEN SLOWLY DRIFT NORTH-WESTWARD INLAND OF SOUTHERN AFRICA WHILE SLOWLY FILLING IN.

FREDDY'S INNER CORE IS REBUILDING, SUGGESTING REINTENSIFICATION OVER THE MOZAMBIQUE CHANNEL IN RATHER CONDUCIVE ENVIRONMENTAL CONDITIONS : GOOD OCEANIC POTENTIAL, MOIST ENVIRONMENT AND RELATIVELY WEAK SHEAR. IT SHOULD THEREFORE REACH THE STAGE OF SEVERE TROPICAL STORM BEFORE LANDFALLING OVER MOZAMBIQUE. ACCORDING TO AVAILABLE MODELS, THE SPEED OF INTENSIFICATION IS NEVERTHELESS RATHER UNCERTAIN AND WILL DEPEND ON THE SPEED OF THE INNER CORE REBUILDING. THE SYSTEM SHOULD THEN WEAKEN SIGNIFICANTLY INLAND FROM FRIDAY.

IMPACTS ON INHABITED LANDS DURING THE NEXT 72 HOURS :

- MOZAMBIQUE: LANDING PLANNED ON FRIDAY LATE MORNING PROBABLY BETWEEN BEIRA AND INHAMBANE, TOWARDS VILANCULOS.
* PROBABLE ARRIVAL OF THE GALE IN THE NIGHT OF THURSDAY TO FRIDAY AT THE COAST.
* VERY ROUGH TO HEAVY SEAS (UP TO 5-7M) NEAR THE LANDING AREA ON THURSDAY NIGHT AND FRIDAY MORNING. SURGE COULD REACH 50CM TO 1M NEAR THE LANDING ZONE.
* INTENSE RAINFALL SOUTH OF BEIRA, NOTABLY IN INHAMBANE PROVINCE, RAPIDLY SPREADING INLAND (GAZA PROVINCE) WITH ACCUMULATIONS EXCEEDING 200 TO 300 MM AND LOCALLY 400 MM IN 72H.

- NORTHEASTERN SOUTH AFRICA AND SOUTHERN ZIMBABWE : FROM SATURDAY, RISK OF INTENSE RAINS (MORE THAN 50-100 MM IN 24 HOURS) WHICH MAY CAUSE

FLOODING IN THE AREAS BORDERING GAZA PROVINCE. DETAILS STILL UNCERTAIN.