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

WTIO30 FMEE 211844
RSMC / TROPICAL CYCLONE CENTER / LA REUNION
TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 30/7/20222023
1.A OVERLAND DEPRESSION 7 (FREDDY)

2.A POSITION 2023/02/21 AT 1800 UTC:
WITHIN 20 NM RADIUS OF POINT 21.1 S / 48.1 E
(TWENTY ONE DECIMAL ONE DEGREES SOUTH AND
FORTY EIGHT DECIMAL ONE DEGREES EAST)
MOVEMENT: WEST-SOUTH-WEST 15 KT

3.A DVORAK ANALYSIS: NIL
4.A CENTRAL PRESSURE: NIL
5.A MAX AVERAGE WIND SPEED (10 MN): 60 KT
RADIUS OF MAXIMUM WINDS (RMW): NIL

6.A EXTENSION OF WIND BY QUADRANTS (KM):
28 KT NE: 315 SE: 315 SW: 75 NW: 95
34 KT NE: 165 SE: 205 SW: 45 NW: 45
48 KT NE: 100 SE: 100 SW: 0 NW: 0
64 KT NE: 0 SE: 0 SW: 0 NW: 0

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1009 HPA / 400 KM
8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):
12H: 2023/02/22 06 UTC: 21.7 S / 44.7 E, VENT MAX= 030 KT, OVERLAND DEPRESSION
28 KT NE: 140 SE: 185 SW: 0 NW: 0

24H: 2023/02/22 18 UTC: 22.0 S / 42.0 E, VENT MAX= 035 KT, MODERATE TROPICAL STORM
28 KT NE: 175 SE: 230 SW: 120 NW: 130
34 KT NE: 85 SE: 140 SW: 0 NW: 0

36H: 2023/02/23 06 UTC: 21.9 S / 39.8 E, VENT MAX= 045 KT, MODERATE TROPICAL STORM
28 KT NE: 195 SE: 280 SW: 175 NW: 95
34 KT NE: 100 SE: 165 SW: 85 NW: 0

48H: 2023/02/23 18 UTC: 21.5 S / 37.3 E, VENT MAX= 055 KT, SEVERE TROPICAL STORM
28 KT NE: 250 SE: 270 SW: 175 NW: 185
34 KT NE: 130 SE: 165 SW: 140 NW: 120
48 KT NE: 55 SE: 75 SW: 35 NW: 45

60H: 2023/02/24 06 UTC: 21.5 S / 34.9 E, VENT MAX= 060 KT, SEVERE TROPICAL STORM

28 KT NE: 240 SE: 280 SW: 130 NW: 100
34 KT NE: 130 SE: 165 SW: 0 NW: 65
48 KT NE: 65 SE: 65 SW: 0 NW: 30

72H: 2023/02/24 18 UTC: 22.0 S / 33.0 E, VENT MAX= 040 KT, OVERLAND DEPRESSION
28 KT NE: 150 SE: 215 SW: 0 NW: 0
34 KT NE: 65 SE: 130 SW: 0 NW: 0

2.B LONGER-RANGE OUTLOOK:
96H: 2023/02/25 18 UTC: 22.4 S / 31.2 E, VENT MAX= 025 KT, OVERLAND DEPRESSION

120H: 2023/02/26 18 UTC: 21.2 S / 31.6 E, VENT MAX= 020 KT, OVERLAND DEPRESSION

2.C ADDITIONAL INFORMATION:
DURING THE LAST 6 HOURS, THE EYE PATTERN HAS CONTINUED TO DEGRADE WITH A VERY WEAKENED INNER EYEWALL MAINLY IN ITS SOUTHWESTERN PART, SUGGESTING A WEAK EYEWALL CYCLE.
THE DVORAK ANALYSIS IS AGAIN DOWNGRADED. THE SYSTEM REMAINS HOWEVER AT THE STAGE OF A TROPICAL CYCLONE.

LITTLE CHANGE IN TERMS OF TRACK FORECAST UNTIL THE LANDFALL OVER MADAGASCAR: FREDDY MAINTAINS ITS COURSE TOWARDS WEST-SOUTHWEST UNTIL EVENING, SKIRTING THE NORTHERN FACADE OF THE HIGH GEOPOTENTIALS OF THE MIDDLE TROPOSPHERE. IN THE SHORT TERM, THE FORECASTS OF THE VARIOUS MODELS REMAIN LITTLE DISPERSED AND STABLE, WITH A GOOD CONFIDENCE ON A TRAJECTORY ACCELERATING IT UNTIL A LANDING IN THE EVENING ON THE MALAGASY EAST COAST, AT THE LEVEL OF THE PROVINCES OF ATSINANA AND VATOVAVY-FITOVINANY.
WHEN THE SYSTEM EMERGED OVER THE MOZAMBIQUE CHANNEL, THE DISPERSION OF THE MODELS WAS CLEARLY REDUCED ON THE LAST AVAILABLE RUNS. THE CMRS TRAJECTORY PREDICTION CAME BACK TO THE SCENARIO OF A MORE SOUTHERN TRAJECTORY AS PROPOSED BY IFS AND JOINED BY THE LAST GFS RUN AS WELL. THIS REINFORCES THE CONFIDENCE IN THIS FORECAST.
AT THE END OF THE RUN, THE SYSTEM ON LAND SLOWS DOWN, UNDER THE EFFECT OF THE PASSAGE OF A TROUGH TO THE SOUTH AND OF THE CONTRACITORY EFFECT OF THE TWO RESIDUAL RIDGES TO THE EAST AND TO THE WEST, BEFORE SLOWLY GOING BACK NORTHWARDS TO THE RECONSTRUCTION OF THE SUBTROPICAL RIDGE FROM THE SOUTH-WEST.

WITH AN INTERNAL EYEWALL STRUCTURE THAT IS CURRENTLY QUITE WEAKENED, THE RESUMPTION OF AN INTENSIFICATION PHASE NOW SEEMS TO BE EXCLUDED BEFORE LANDING IN THE NEXT FEW HOURS ON THE MALAGASY COASTS. NEVERTHELESS, THE POSSIBILITY OF A CHANGE OF STRUCTURE COULD INDUCE A MODIFICATION OF THE EXTENT OF THE IMPACT ZONE OF THE PHENOMENON DURING THE LANDING. FREDDY SHOULD MAINTAIN AT LEAST THE UPPER THRESHOLD OF A TROPICAL CYCLONE DURING ITS RAPID PATH TOWARDS MADAGASCAR.
AT THE END, AFTER A CLASSICAL WEAKENING OVER THE MALAGASY LANDS, THE CENTRAL CORE OF FREDDY SHOULD RESTRUCTURE BEFORE A REINTENSIFICATION OVER THE MOZAMBIQUE CHANNEL IN MIXED ENVIRONMENTAL CONDITIONS (OCEANIC POTENTIAL LESS RICH THAN OVER THE INDIAN OCEAN BASIN, BUT A LOCATION UNDER THE HIGH RIDGE). IT COULD THEREFORE REACH THE LOWER

STAGE OF TROPICAL CYCLONE BEFORE ITS LANDING ON THE MOZAMBIQUE COAST BY FRIDAY. ACCORDING TO THE CMRS FORECAST, THE VORTEX SHOULD THEN WEAKEN SIGNIFICANTLY OVER LAND.

IMPACTS ON INHABITED LANDS DURING THE NEXT 72 HOURS:

- MADAGASCAR :
* VERY ROUGH TO HEAVY SEAS (6 TO 9M) OVER THE LANDFALL AREA, DECREASING
(* INTENSE RAINFALL DURING THE NEXT 36 HOURS, CUMULUS THAT COULD BE AROUND 200 MM NEAR THE IMPACT AREA. WHEN THE SYSTEM CROSSES THE LAND, THE ACCUMULATIONS WILL REMAIN AROUND 100MM DURING THE EPISODE.

- MOZAMBIQUE : LANDING EXPECTED EARLY FRIDAY PROBABLY BETWEEN BEIRA AND MURRUMBENE.
* PROBABLE ARRIVAL OF THE GALE IN THE NIGHT OF THURSDAY TO FRIDAY AT THE COAST.
* VERY ROUGH TO HEAVY SEAS (4 TO 6M) NEAR THE LANDING ZONE ON THURSDAY NIGHT.
* INTENSE RAINFALL RAPIDLY SPREADING INLAND WITH ACCUMULATIONS LOCALLY EXCEEDING 300 MM IN 72 HOURS.