

WTIO30 FMEE 110052

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 78/7/20222023

1.A TROPICAL CYCLONE 7 (FREDDY)

2.A POSITION 2023/03/11 AT 0000 UTC:

WITHIN 20 NM RADIUS OF POINT 18.1 S / 37.8 E

(EIGHTEEN DECIMAL ONE DEGREES SOUTH AND  
THIRTY SEVEN DECIMAL EIGHT DEGREES EAST)

MOVEMENT: WEST-NORTH-WEST 3 KT

3.A DVORAK ANALYSIS: 5.0/5.0/D 0.5/24 H

4.A CENTRAL PRESSURE: 968 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 75 KT

RADIUS OF MAXIMUM WINDS (RMW): 28 KM

6.A EXTENSION OF WIND BY QUADRANTS (KM):

28 KT NE: 205 SE: 205 SW: 205 NW: 165

34 KT NE: 120 SE: 130 SW: 120 NW: 110

48 KT NE: 85 SE: 85 SW: 80 NW: 75

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

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1005 HPA / 700 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: DEEP

1.B FORECASTS (WINDS RADII IN KM):

12H: 2023/03/11 12 UTC: 18.0 S / 37.3 E, VENT MAX= 090 KT, INTENSE TROPICAL  
CYCLONE

28 KT NE: 185 SE: 240 SW: 185 NW: 120

34 KT NE: 110 SE: 140 SW: 120 NW: 85

48 KT NE: 65 SE: 75 SW: 85 NW: 65

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

24H: 2023/03/12 00 UTC: 17.9 S / 36.8 E, VENT MAX= 050 KT, OVERLAND DEPRESSION

28 KT NE: 185 SE: 240 SW: 185 NW: 110

34 KT NE: 110 SE: 140 SW: 130 NW: 75

48 KT NE: 65 SE: 75 SW: 85 NW: 55

36H: 2023/03/12 12 UTC: 17.8 S / 36.4 E, VENT MAX= 035 KT, OVERLAND DEPRESSION

28 KT NE: 150 SE: 270 SW: 260 NW: 0

34 KT NE: 85 SE: 185 SW: 130 NW: 0

48H: 2023/03/13 00 UTC: 17.5 S / 35.8 E, VENT MAX= 030 KT, OVERLAND DEPRESSION

28 KT NE: 0 SE: 270 SW: 0 NW: 0

60H: 2023/03/13 12 UTC: 17.0 S / 35.3 E, VENT MAX= 025 KT, OVERLAND DEPRESSION

72H: 2023/03/14 00 UTC: 16.8 S / 35.4 E, VENT MAX= 025 KT, OVERLAND DEPRESSION

#### 2.B LONGER-RANGE OUTLOOK:

96H: 2023/03/15 00 UTC: 17.5 S / 37.7 E, VENT MAX= 020 KT, ZONE OF DISTURBED WEATHER

120H: 2023/03/16 00 UTC: 19.4 S / 39.6 E, VENT MAX= 025 KT, ZONE OF DISTURBED WEATHER

#### 2.C ADDITIONAL INFORMATION:

T=CI=5.0-

DURING THE LAST 6 HOURS, THE FREDDY CLOUD PATTERN IMPROVED WITH THE APPEARANCE OF A WARM SPOT WITHIN THE CDO IN INFRARED IMAGERY. THE RECENT 2307Z AMSR2 PASS SHOWS THE PRESENCE OF A WELL DEFINED EYE IN 37GHZ AS WELL AS ONE IN 89GHZ EVEN IF IT IS LESS DEFINED. IN AGREEMENT WITH THE SUBJECTIVE DVORAK ANALYSIS, THE INTENSITY IS THEREFORE ANALYZED AT 75KT. THE 00Z LOCATION COULD BE READJUSTED TO THE SOUTH-WEST WITHIN THE 20NN RANGE DUE TO THE LATE ARRIVAL OF AMSR2 DATA.

AT SHORT RANGE THE DIFFERENT MODELS AGREE ON A SLOW DRIFT TOWARDS THE WEST-NORTH-WEST, UNDER THE INFLUENCE OF CONTRADICTIONARY STEERING FLOWS. THEY DIFFER HOWEVER ON THE MOTION SPEED INDUCING BIG DIFFERENCES ON THE TIMING OF THE LANDING. ACCORDING TO THIS NEW FORECAST, FREDDY SHOULD LAND ON SATURDAY OR ITS EVENING ON THE COAST OF MOZAMBIQUE IN THE ZAMBEZIA PROVINCE NEAR QUELIMANE. BUT THE UNCERTAINTY IS STILL VERY HIGH AT THE MOMENT, ON THIS LANDFALL. IN THE LONG TERM, THE NORTH-WESTERLY FLOW DRIVEN BY THE NEAR EQUATORIAL RIDGE, COULD TAKE OVER AND FAVOR A COMEBACK OVER SEA OF FREDDY'S CIRCULATION.

IN TERMS OF INTENSITY, THE DECREASE IN THE MEAN TROPICAL SHEAR, THE WARMER WATERS AND A BETTER UPPER LEVEL DIVERGENCE SHOULD CONTINUE FAVORING THE INTENSIFICATION OF FREDDY UP TO THE LANDFALL. FREDDY COULD THEREFORE REACH THE INTENSE TROPICAL CYCLONE STAGE BEFORE ITS LANDFALL ON THE COAST OF MOZAMBIQUE. THIS PREDICTION REMAINS UNCERTAIN AND WILL DEPEND ON THE TIMING OF THE LANDFALL. IF FREDDY SLOWS DOWN TOO MUCH BEFORE ITS LANDFALL, IT MAY WEAKEN DUE TO THE INDUCED COOLING OF THE WATER BENEATH. THEREAFTER OVER THE COMING WEEKEND, FREDDY IS EXPECTED TO WEAKEN AS IT PASSES OVER THE MOZAMBIQUE LANDS.

#### IMPACTS ON INHABITED LANDS OVER THE NEXT 72 HOURS:

FREDDY'S EFFECTS WILL BE CONTAINED DUE TO THE SMALL SIZE OF THE SYSTEM, BUT THE SLOW MOTION WILL AMPLIFY THE IMPACTS NEAR THE LANDING ZONE - MOZAMBIQUE:

\* IMMINENT ARRIVAL OF STORM FORCE WINDS. HURRICANE FORCE WINDS LIKELY IN THE IMMEDIATE VICINITY OF THE LANDFALL.

\* CURRENTLY BIG SEA 6M, BECOMING VERY ROUGH (4 TO 6M), ON SUNDAY. A SURGE OF ABOUT 2M50 TO 3M50 IS POSSIBLE NEAR THE LANDING ZONE AT QUELIMANE LEVEL.

\* ONGOING HEAVY RAIN OVER ZAMBZE PROVINCE. IN THE NEXT 72 HOURS, MORE THAN 100 TO 200 MM ARE EXPECTED OVER ZAMBEZE PROVINCE AND NORTHERN SOFALA, AND LOCALLY MORE THAN 400-500 MM OVER THE AREA NEAR THE CENTER OF THE PHENOMENON.

-MALAWI:

\* POSSIBLE ARRIVAL OF HEAVY RAINS RELATED TO FREDDY OVER THE EXTREME SOUTH OF THE COUNTRY DURING SATURDAY INCREASING ON SUNDAY AND MONDAY. ACCUMULATED RAINFALL OF MORE THAN 100 TO 200MM IN 48H ARE EXPECTED.