

WTIO30 FMEE 300710

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 1/1/20232024

1.A TROPICAL DISTURBANCE 1

2.A POSITION 2023/12/30 AT 0600 UTC:

WITHIN 30 NM RADIUS OF POINT 19.6 S / 36.0 E

(NINETEEN DECIMAL SIX DEGREES SOUTH AND
THIRTY SIX DECIMAL ZERO DEGREES EAST)

MOVEMENT: EAST-SOUTH-EAST 5 KT

3.A DVORAK ANALYSIS: NIL

4.A CENTRAL PRESSURE: 1004 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 25 KT

RADIUS OF MAXIMUM WINDS (RMW): NIL

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

NIL

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1010 HPA / 700 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: MEDIUM

1.B FORECASTS (WINDS RADII IN KM):

12H: 2023/12/30 18 UTC: 20.0 S / 37.1 E, VENT MAX= 025 KT, TROPICAL DISTURBANCE

24H: 2023/12/31 06 UTC: 20.3 S / 38.3 E, VENT MAX= 030 KT, TROPICAL DEPRESSION

28 KT NE: 175 SE: 250 SW: 240 NW: 130

36H: 2023/12/31 18 UTC: 21.0 S / 39.7 E, VENT MAX= 035 KT, MODERATE TROPICAL
STORM

28 KT NE: 195 SE: 270 SW: 240 NW: 150

34 KT NE: 120 SE: 150 SW: 140 NW: 85

48H: 2024/01/01 06 UTC: 21.4 S / 41.4 E, VENT MAX= 040 KT, MODERATE TROPICAL
STORM

28 KT NE: 215 SE: 285 SW: 240 NW: 155

34 KT NE: 140 SE: 155 SW: 140 NW: 95

60H: 2024/01/01 18 UTC: 21.2 S / 43.5 E, VENT MAX= 040 KT, MODERATE TROPICAL
STORM

28 KT NE: 230 SE: 305 SW: 240 NW: 175

34 KT NE: 150 SE: 150 SW: 140 NW: 110

72H: 2024/01/02 06 UTC: 20.9 S / 44.2 E, VENT MAX= 035 KT, MODERATE TROPICAL
STORM

28 KT NE: 185 SE: 0 SW: 240 NW: 195
34 KT NE: 0 SE: 0 SW: 110 NW: 110

2.B LONGER-RANGE OUTLOOK:
NIL

2.C ADDITIONAL INFORMATION:
FIRST ADVISORY ON SYSTEM 01-20232024

A WARM-CORE LOW ASSOCIATED WITH DEEP CONVECTION HAS BEEN BUILDING UP OVER CENTRAL MOZAMBIQUE SINCE FRIDAY, IN A LOW-LEVEL CONVERGENCE AREA BETWEEN A MONSOON FLOW SURGE FROM THE NORTH AND A TRADE FLOW SURGE SOUTH OF THE MOZAMBIQUE CHANNEL. THE SURFACE CENTER SEEMS TO HAVE BEEN MOSTLY POSITIONED OVER LAND OR NEAR THE COAST ON FRIDAY EVENING, NORTHEAST OF BEIRA, BUT ACCORDING TO THE LATEST SATELLITE AND MICROWAVE IMAGES, IT SEEMS TO HAVE MOVED OUT OVER THE MOZAMBIQUE CHANNEL SINCE AROUND 00UTC THIS SATURDAY. THE GOOD CURVATURE OF LOW-LEVEL CLOUDS INDICATES THE FORMATION OF A CLOSED CIRCULATION AND INTENSE CONVECTION IS TAKING PLACE IN THE VICINITY OF THE LLCC. THE LATEST ASCAT PASSES SUGGEST WINDS AT 20/25KT. ALTHOUGH IT'S A LITTLE TOO EARLY FOR AN INITIAL DVORAK CLASSIFICATION, WE CAN CLASSIFY THIS SYSTEM AS A TROPICAL DISTURBANCE WITH MAXIMUM WINDS ESTIMATED AT 25KT.

THE SYSTEM WILL DRIFT ACROSS THE MOZAMBIQUE CHANNEL UNDER THE INFLUENCE OF A WESTERLY TO WEST-NORTHWESTERLY STEERING FLOW BETWEEN A NEAR-EQUATORIAL RIDGE TO THE NORTH AND A WEAK SUBTROPICAL RIDGE ATTENUATED BY A TROUGH TO THE SOUTH. IT WILL THEREFORE HEAD TOWARDS MADAGASCAR BETWEEN MONDAY AND TUESDAY. THE SPREAD AMONG VARIOUS NWP MODEL FORECASTS IS FAIRLY SIGNIFICANT CONCERNING ITS SPEED OF MOVEMENT, PARTLY DEPENDENT ON ITS INTENSITY, WHICH IS ALSO UNCERTAIN. THE FORECAST TRACK IS CLOSE TO THE LATEST IFS AND AROME RUNS.

ENVIRONMENTAL CONDITIONS ARE CONDUCIVE FOR SHORT-TERM DEVELOPMENT, WITH FAIRLY GOOD LOW-LEVEL CONVERGENCE, ESPECIALLY FROM THE TRADE FLOW TO THE SOUTH, STRONG OCEANIC POTENTIAL, AND RELATIVELY LOW VERTICAL SHEAR. FROM SUNDAY EVENING OR MONDAY, THE MID-LEVEL WEST TO SOUTH-WESTERLY SHEAR IS SET TO STRENGTHEN, BRINGING DRY AIR INTO THE MID-TROPOSPHERE, WHICH COULD SLOW DEVELOPMENT, DESPITE IMPROVING LOW-LEVEL CONVERGENCE AND MOISTURE FEED FROM THE MONSOON FLOW. THE CURRENT FORECAST SUGGESTS AN INTENSIFICATION UNTIL MONDAY MORNING, FOLLOWED BY A LEVELLING OFF OF INTENSITY DUE TO SHEAR EFFECTS. THIS SHOULD BRING THE SYSTEM TO AT LEAST MODERATE TROPICAL STORM STAGE (A HIGHER STAGE CANNOT BE RULED OUT) BEFORE IT REACHES MADAGASCAR.

IMPACTS ON INHABITED LANDS :

MOZAMBIQUE: HEAVY RAIN LOCALLY, ESPECIALLY BETWEEN BEIRA AND QUELIMANE THIS SATURDAY, 100-200MM ADDING UP TO THE RAINFALL FROM THE LAST FEW DAYS. IMPROVING FROM SUNDAY ONWARDS.

MADAGASCAR (SOUTHERN MORONDAVA PROVINCE, NORTHERN TOLIARA

PROVINCE):

- GALE FORCE WINDS LIKELY FROM MIDDAY MONDAY TO TUESDAY MORNING.
- HEAVY RAIN ON MONDAY AND TUESDAY, TOTALS OF 100-200MM, LOCALLY 300M.
- WAVES CLOSE TO 4M NEAR THE IMPACT ZONE FROM MONDAY EVENING.