

WTIO30 FMEE 290040

RSMC / TROPICAL CYCLONE CENTER / LA REUNION

TROPICAL CYCLONE FORECAST WARNING (SOUTH-WEST INDIAN OCEAN)

0.A WARNING NUMBER: 32/4/20222023

1.A MODERATE TROPICAL STORM 4 (DARIAN)

2.A POSITION 2022/12/29 AT 0000 UTC:

WITHIN 30 NM RADIUS OF POINT 22.4 S / 74.0 E

(TWENTY TWO DECIMAL FOUR DEGREES SOUTH AND  
SEVENTY FOUR DECIMAL ZERO DEGREES EAST)

MOVEMENT: WEST-SOUTH-WEST 14 KT

3.A DVORAK ANALYSIS: 2.5/3.0/W 0.5/6 H

4.A CENTRAL PRESSURE: 991 HPA

5.A MAX AVERAGE WIND SPEED (10 MN): 45 KT

RADIUS OF MAXIMUM WINDS (RMW): NIL

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

28 KT NE: 240 SE: 535 SW: 425 NW: 220

34 KT NE: 150 SE: 280 SW: 240 NW: 0

7.A FIRST CLOSED ISOBAR (PRESSURE / AVERAGE DIAM): 1011 HPA / 900 KM

8.A VERTICAL EXTENSION OF CYCLONE CIRCULATION: MEDIUM

1.B FORECASTS (WINDS RADII IN KM):

12H: 2022/12/29 12 UTC: 24.7 S / 71.5 E, VENT MAX= 045 KT, MODERATE TROPICAL  
STORM

28 KT NE: 260 SE: 465 SW: 370 NW: 215

34 KT NE: 165 SE: 285 SW: 230 NW: 120

24H: 2022/12/30 00 UTC: 26.6 S / 69.8 E, VENT MAX= 045 KT, POST-TROPICAL  
DEPRESSION

28 KT NE: 280 SE: 490 SW: 380 NW: 220

34 KT NE: 175 SE: 305 SW: 240 NW: 120

36H: 2022/12/30 12 UTC: 28.6 S / 68.4 E, VENT MAX= 040 KT, POST-TROPICAL  
DEPRESSION

28 KT NE: 305 SE: 510 SW: 400 NW: 230

34 KT NE: 195 SE: 335 SW: 250 NW: 120

48H: 2022/12/31 00 UTC: 30.6 S / 67.5 E, VENT MAX= 040 KT, POST-TROPICAL  
DEPRESSION

28 KT NE: 325 SE: 530 SW: 405 NW: 230

34 KT NE: 205 SE: 350 SW: 260 NW: 130

60H: 2022/12/31 12 UTC: 32.5 S / 68.0 E, VENT MAX= 035 KT, POST-TROPICAL DEPRESSION

28 KT NE: 345 SE: 555 SW: 425 NW: 240

34 KT NE: 220 SE: 370 SW: 270 NW: 130

72H: 2023/01/01 00 UTC: 34.5 S / 69.3 E, VENT MAX= 035 KT, POST-TROPICAL DEPRESSION

28 KT NE: 370 SE: 575 SW: 435 NW: 250

34 KT NE: 230 SE: 400 SW: 270 NW: 140

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

96H: 2023/01/02 00 UTC: 38.8 S / 76.4 E, VENT MAX= 035 KT, EXTRATROPICAL DEPRESSION

28 KT NE: 405 SE: 620 SW: 465 NW: 270

34 KT NE: 260 SE: 445 SW: 285 NW: 140

#### 2.C ADDITIONAL INFORMATION:

T=2.5 CI=3.0

DURING THE LAST 6 HOURS, THE CONVECTIVE ACTIVITY HAS WEAKENED AGAIN. IT IS MAINLY LOCALIZED IN THE SOUTHERN QUADRANT OF DARIAN, GETTING CLOSER TO THE CENTER. THE LAST MICROWAVE IMAGES SHOW A LESS WELL DEFINED STRUCTURE WHICH DOES NOT FACILITATE THE PRECISE LOCALIZATION OF THE CENTER. IN SUCH CONDITIONS, THE DVORAK ANALYSIS IS REVISED DOWNWARDS BUT THE HISTORY OF THE MICROWAVE ESTIMATES AS WELL AS THE SAR DATA FROM 1327UTC PLEAD FOR A WIND ESTIMATE OF THE ORDER OF 45KT. DARIAN IS THEREFORE UPGRADED TO A MODERATE TROPICAL STORM.

IN THE LAST MOMENTS, A MORE SOUTH-WESTERLY TREND IS NOTICEABLE ON THE TRACK. IN TERMS OF FORECAST, LITTLE CHANGE : DARIAN WILL CONTINUE TO MOVE MORE SOUTH-WESTWARD UNTIL FRIDAY IN CONNECTION WITH THE WEAKENING OF THE SUBTROPICAL RIDGE ON ITS WESTERN EDGE. FROM SATURDAY ONWARDS, IT SHOULD BEGIN A SOUTHEASTERLY TURN ALONG THE EDGE OF A MID-LATITUDE TROUGH APPROACHING FROM THE WEST, SHOWING A MORE MARKED ACCELERATION THAN IN THE PREVIOUS FORECAST. ON THIS TRACK, DARIAN MAY PASS IN CLOSE PROXIMITY TO AMSTERDAM ISLAND AROUND JANUARY 2.

THE ABSENCE OF OCEANIC POTENTIAL IS CURRENTLY NOTICEABLE WITH A MARKED WEAKENING OF THE CONVECTIVE ACTIVITY. UNDER THESE CONDITIONS, THE SYSTEM COULD LOSE ITS PURELY TROPICAL CHARACTERISTICS MORE QUICKLY AND THUS SWITCH TO POST-TROPICAL IN LESS THAN 24 HOURS. THEREAFTER, INCREASED MID-TROPOSPHERE SHEAR AND DRY AIR IN THE NORTH AND THEN WEST SHOULD HELP TO FURTHER WEAKEN DARIAN. THE SYSTEM SHOULD THEN MIGRATE INTO AN EXTRA-TROPICAL SYSTEM EARLY NEXT WEEK, WITH A CONTINUATION OF A GRADUAL WEAKENING OF THE WINDS WITHIN THE DEPRESSIONAL CIRCULATION.