REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI

TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 20.10.2023

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0600 UTC OF 20.10.2023 BASED ON 0300 UTC OF 20.10.2023.

SUB: (A) DEPRESSION OVER SOUTHWEST ARABIAN SEA AND (B) LOW PRESSURE AREA OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL

(A) DEPRESSION OVER SOUTHWEST ARABIAN SEA

YESTERDAY'S LOW PRESSURE AREA OVER SOUTHEAST & ADJOINING SOUTHWEST ARABIAN SEA MOVED NEARLY WESTWARDS, BECAME A WELL MARKED LOW PRESSURE AREA OVER SOUTHWEST ARABIAN SEA IN THE MIDNIGHT (1800 UTC OF YESTERDAY).

IT CONCENTRATED INTO A DEPRESSION AND LAY CENTERED AT 0300 UTC OF TODAY, THE 20TH OCTOBER OVER SOUTHWEST ARABIAN SEA NEAR LATITUDE 9.3°N AND LONGITUDE 61.7°E ABOUT 920 KM EAST-SOUTHEAST OF SOCOTRA (YEMEN, 41494), 1190 KM SOUTHEAST OF SALALAH AIRPORT (OMAN, 41316) AND 1280 KM EAST-SOUTHEAST OF AL GHAIDAH (YEMEN, 41398).

IT IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM OVER SOUTHWEST ARABIAN SEA DURING NEXT 24 HOURS. CONTINUING TO MOVE WEST-NORTHWESTWARDS, IT IS LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM AROUND 1200 UTC OF 22ND OCTOBER. THEREAFTER, IT WOULD MOVE NORTH-NORTHWESTWARDS FROM 24TH MORNING (0000 UTC) TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS.

AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 1.5. SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHWEST ARABIAN SEA BETWEEN LATTITUDE 7.0N & 11.5N AND LONGITUDE 60.0E & 63.5E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 83^0C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 30 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1004 HPA. SEA CONDITION IS ROUGH TO VERY ROUGH OVER SOUTHWEST ARABIAN SEA AND ADJOINING WESTCENTRAL ARABIAN SEA. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN NORTHWEST SECTOR. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM CORE.

(B) LOW PRESSURE AREA OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL

UNDER THE INFLUENCE OF YESTERDAY'S CYCLONIC CIRCULATION OVER SOUTHEAST BAY OF BENGAL, A LOW PRESSURE AREA FORMED OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL IN THE MORNING (0000 UTC) AND LAY OVER THE SAME REGION AT 0300 UTC OF TODAY, THE 20TH OCTOBER, 2023. IT IS LIKELY TO INTENSIFY FURTHER INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 23RD OCTOBER.

BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL BETWEEN LATTITUDE 10.0N & 14.0N AND LONGITUDE 84.0E & 90.0E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 66^0C.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	LOW	MOD	HIGH	-	-	-

"-" INDICATE THAT CYCLOGENESIS HAS ALREADY OCCURRED. THE ABOVE TABLE INDICATES PROBABILITY OF CYCLOGENESIS ONLY (FORMATION OF DEPRESSION).

Remarks:

ARABIAN SEA:

MADDEN JULIAN OSCILLATION INDEX IS IN PHASE 1 WITH AMPLITUDE LESS THAN 1. IT WOULD MOVE TO PHASE 8 FROM TOMORROW ONWARDS. SEA SURFACE TEMPERATURE IS 29-30°C OVER SOUTH & WEST ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS 60-80KJ/CM^2 OVER SOUTHEAST & ADJOINING SOUTHWEST ARABIAN SEA. IT WOULD DECREASE BECOMING 20-30 KJ/CM^2 OVER SOUTHWEST & WESTCENTRAL ARABIAN SEA.

THE ENVIROMENTAL FEATURES INDICATE INCREASE IN POSITIVE LOW LEVEL VORTICITY TO 100 X$10^{-6}S^{-1}$ DURING PAST 24 HOURS AND IT LAY TO THE SOUTHEAST OF SYSTEM AREA WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE IS SAME AND ABOUT 10X$10^{-5}S^{-1}$ TO THE SOUTH OF SYSTEM AREA. POSITIVE UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT 30 X10^{-5} S^{-1} TO THE SOUTHEAST OF SYSTEM AREA. STRONG EQUATORWARD OUTFLOW IS INDICATED WHICH WOULD SUPPORT FURTHER INTENSIFICATION OF SYSTEM. WIND SHEAR IS MODERATE (10--20) OVER SYSTEM AREA AND ALONG THE EXPECTED TRACK. UPPER TROPOSPHERIC RIDGE RUNS NEAR 14^0N. EAST-SOUTHEASTERLY IN THE UPPER TROPOSPHERIC LEVELS ARE STEERING THE SYSTEM WEST-NORTHWESTWARDS.

THE MULTI MODEL GUIDANCE IS INDICATING THE SYSTEM TO MOVE WEST-NORTHWESTWARDS TOWARDS OMAN-YEMEN COASTS AND GRADUAL NORTH-NORTHEASTWARDS RECURVATURE THEREAFTER. MOST OF THE MODELS ARE

INDICATING THE SYSTEM TO CROSS OMAN COAST (EXCEPT ECMWF WHICH IS INDICATING CROSSING OVER YEMEN). MODELS ARE ALSO SUGGESTING SLIGHT WEAKENING PRIOR TO LANDFALL. THIS IS SUPPORTED BY DECREASING OCEAN THERMAL ENERGY AND INCREASING WIND SHEAR OVER WESTCENTRAL ARABIAN SEA ALONG & OFF OMAN-YEMEN COASTS.

CONSIDERING ALL THESE, THE DEPRESSION OVER SOUTHWEST ARABIAN SEA IS LIKELY TO MOVE WEST-NORTHWESTWARDS AND INTENSIFY INTO A CYCLONIC STORM OVER THE SAME REGION DURING NEXT 24 HOURS. CONTINUING TO MOVE WEST-NORTHWESTWARDS, IT IS LIKELY TO INTENSIFY INTO A SEVERE CYCLONIC STORM AROUND 1200 UTC OF 22ND OCTOBER. THEREAFTER, IT WOULD MOVE NORTH-NORTHWESTWARDS FROM 24TH MORNING (0000 UTC) TOWARDS SOUTH OMAN AND ADJOINING YEMEN COASTS.

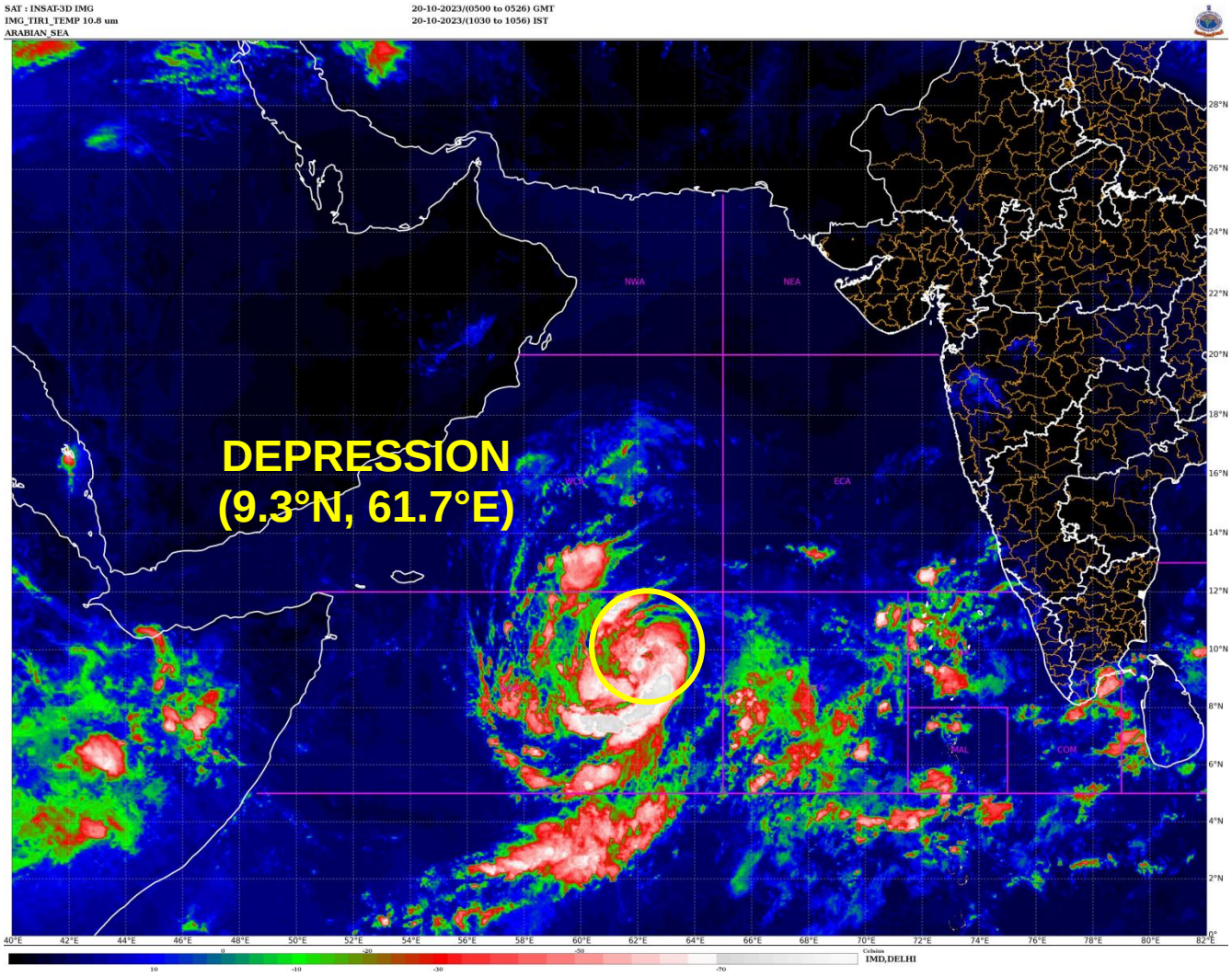
Bay of Bengal:

MJO IS NOT SUPPORTIVE FOR CYCLOGENESIS OVER BOB. HOWEVER, WARM SST AND LOW TO MODERATE VERTICAL WIND SHEAR OVER SOUTH & CENTRAL BOB ARE LIKELY TO SUPPORT THE DEVELOPMENT OF CYCLONIC CIRCULATION OVER SOUTHEAST BOB INTO A DEPRESSION.

THE GLOBAL MODELS ARE IN AGREEMENT THAT THE CYCLONIC CIRCULATION OVER SOUTHEAST BAY OF BENGAL IS LIKELY TO INTENSIFY FURTHER INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 23^{RD}. HENCE MODERATE TO HIGH PROBABILITY OF FORMATION OF DEPRESSION IS ASSIGNED TO FORMATION OF DEPRESSION OVER BOB DURING 22^{ND} – 23^{RD} OCTOBER. THERE IS CONSENSUS AMONG VARIOUS MODELS ABOUT THE MOVEMENT TOWARDS BANGLADESH COAST. PEAK INTENSIFICATION IS LIKELY UPTO DEEP DEPRESSION STAGE ONLY.

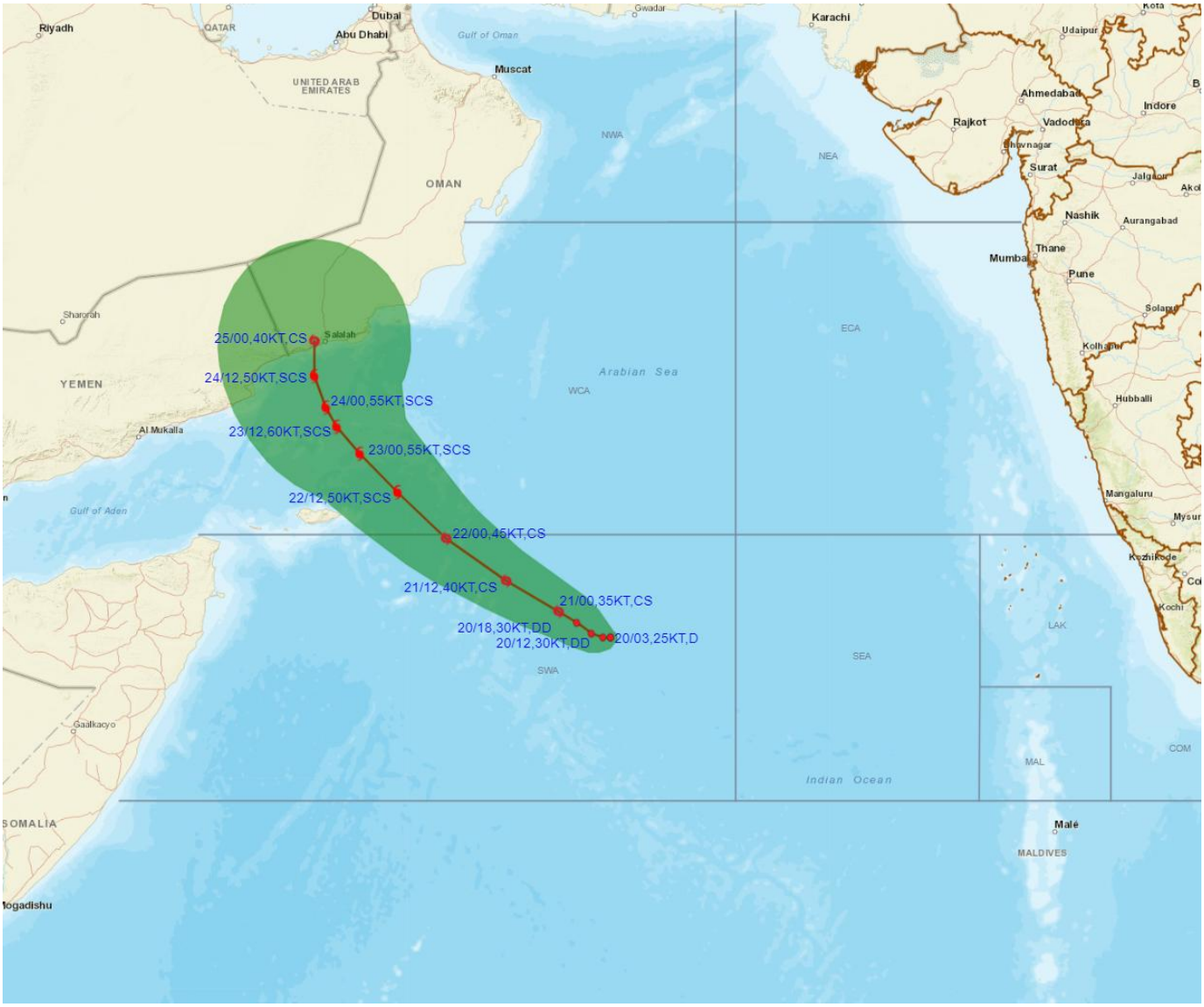
CONSIDERING ALL THESE, THE LOW PRESSURE AREA OVER SOUTHWEST AND ADJOINING SOUTHEAST BAY OF BENGAL IS LIKELY TO INTENSIFY FURTHER INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 23RD OCTOBER.

(M SHARMA)
SCIENTIST-D
RSMC NEW DELHI



Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF DEPRESSION OVER SOUTHWEST ARABIAN SEA BASED ON 0300 UTC (0830 IST) OF 20TH OCTOBER 2023.



DATE/TIME IN UTC
IST=UTC + 0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

LESS THAN 34 KT
34-47 KT
≥ 48 KT
OBSERVED TRACK
FORECAST TRACK
CONE OF UNCERTAINTY

Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
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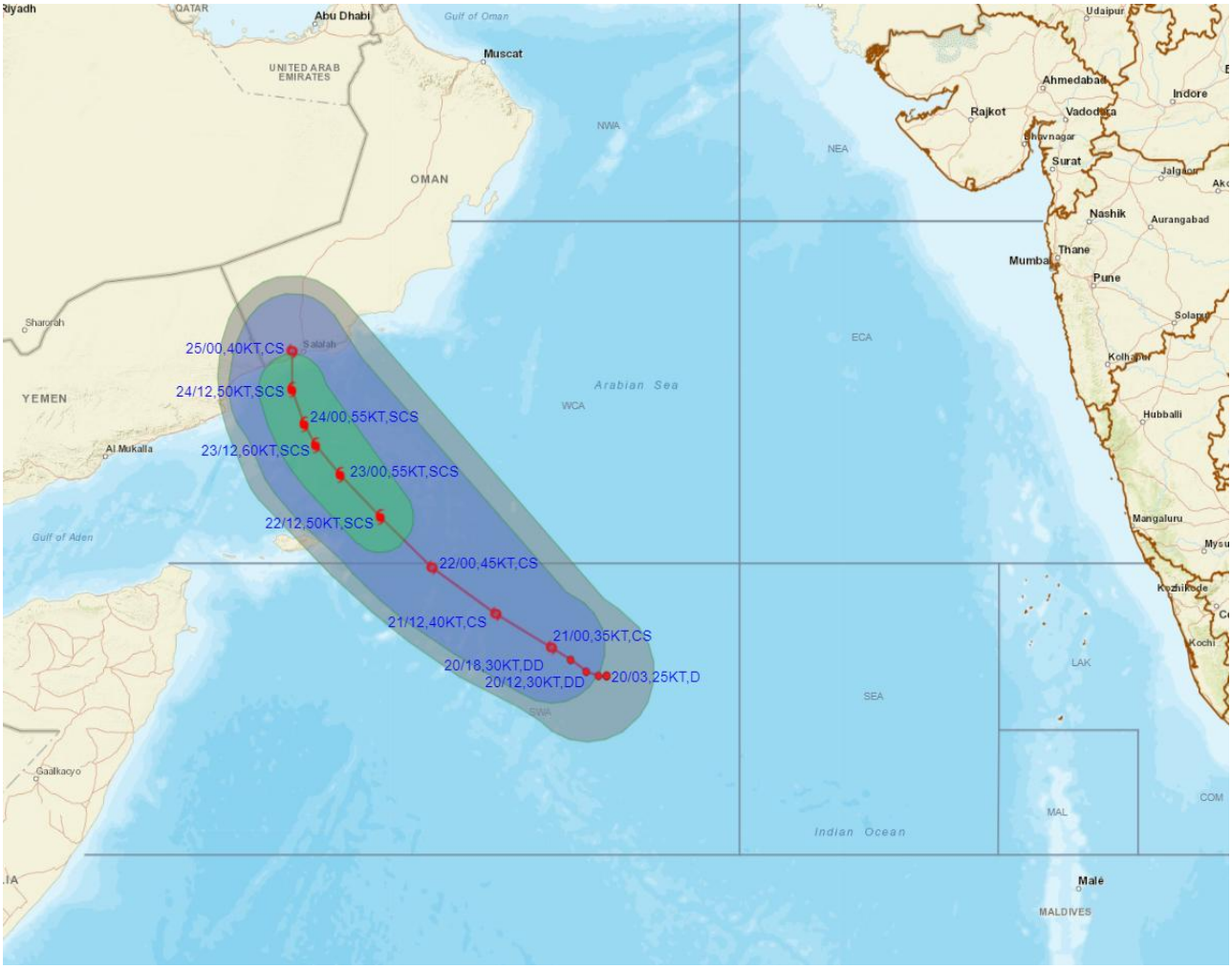
OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEPRESSION OVER SOUTHWEST ARABIAN SEA BASED ON 0300 UTC (0830 IST) OF 20TH OCTOBER 2023.



DATE/TIME IN UTC
IST=UTC +0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
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VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

AREA OF MAXIMUM SUSTAINED WIND SPEED:
- 28-33 KT (52-61 KMPH)
- 34-49 KT (62-91 KMPH)
- 50-63 KT (92-117 KMPH)
- ≥ 64 KT (≥118 KMPH)

IMPACT OVER THE SEA

MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

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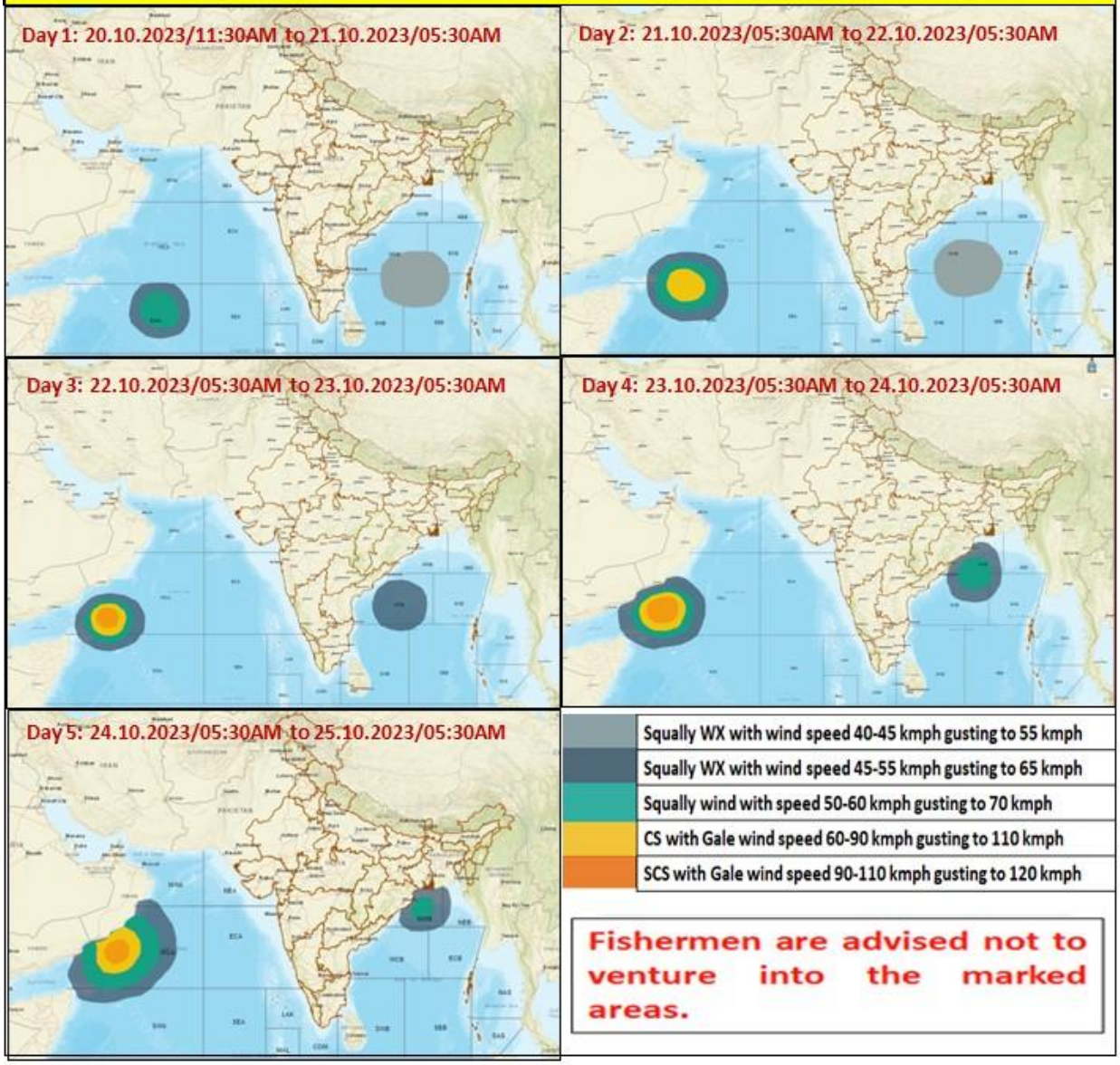
Fishermen warning graphics



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