REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL WEATHER OUTLOOK

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 21.10.2023

FROM: RSMC –TROPICAL CYCLONES, NEW DELHI

TO: STORM WARNING CENTRE, NAYPYI TAW (MYANMAR)
STORM WARNING CENTRE, BANGKOK (THAILAND)
STORM WARNING CENTRE, COLOMBO (SRILANKA)
STORM WARNING CENTRE, DHAKA (BANGLADESH)
STORM WARNING CENTRE, KARACHI (PAKISTAN)
METEOROLOGICAL OFFICE, MALE (MALDIVES)
OMAN METEOROLOGICAL DEPARTMENT, MUSCAT (THROUGH RTH JEDDAH)
YEMEN METEOROLOGICAL SERVICES, REPUBLIC OF YEMEN (THROUGH RTH JEDDAH)
NATIONAL CENTRE FOR METEOROLOGY, UAE (THROUGH RTH JEDDAH)
PRESIDENCY OF METEOROLOGY AND ENVIRONMENT, SAUDI ARABIA (THROUGH RTH JEDDAH)
IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)
QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 06 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1800 UTC OF 21.10.2023 BASED ON 1500 UTC OF 21.10.2023.

SUB: (A) SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) INTENSIFIED INTO A VERY SEVERE CYCLONIC STORM OVER SOUTHWEST ARABIAN SEA AND (B) WELL MARKED LOW PRESSURE AREA OVER WESTCENTRAL AND ADJOINING SOUTH BAY OF BENGAL

(A) VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) OVER SOUTHWEST ARABIAN SEA

THE SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) OVER SOUTHWEST ARABIAN SEA MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 23 KMPH DURING PAST 6 HOURS, INTENSIFIED INTO A VERY SEVERE CYCLONIC STORM AND LAY CENTERED AT 1500 UTC OF 21ST OCTOBER OVER THE SAME REGION, NEAR LATITUDE 11.1°N AND LONGITUDE 57.0°E ABOUT 380 KM EAST-SOUTHEAST OF SOCOTRA (YEMEN, 41494), 730 KM SOUTH-SOUTHEAST OF SALALAH (OMAN, 41316) AND 770 KM SOUTHEAST OF AL GHAIDAH (YEMEN).

IT IS VERY LIKELY TO INTENSIFY FURTHER INTO AN EXTREMELY SEVERE CYCLONIC STORM AROUND 0600 UTC OF 22ND OCTOBER. IT IS LIKELY TO MOVE NORTHWESTWARDS TILL 0000 UTC OF 24TH OCTOBER. & THEN NORTH-NORTHWESTWARDS THEREAFTER. IT IS LIKELY TO CROSS YEMEN-OMAN COASTS BETWEEN AL GHAIDAH (YEMEN) & SALALAH (OMAN, 41398) AROUND 2100 UTC OF 24TH OCTOBER.

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%
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FORECAST TRACK AND INTENSITY OF THE SYSTEM IS GIVEN BELOW:

DATE/TIME(UTC)	POSITION (LAT.^{0}N/LONG.^{0}E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
21.10.23/1500	11.1/57.0	115-125 GUSTING TO 140	VERY SEVERE CYCLONIC STORM
21.10.23/1800	11.4/56.7	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
22.10.23/0000	11.8/56.2	145-155 GUSTING TO 170	VERY SEVERE CYCLONIC STORM
22.10.23/0600	12.2/55.7	165-175 GUSTING TO 195	EXTREMELY SEVERE CYCLONIC STORM
22.10.23/1200	12.7/55.2	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
23.10.23/0000	13.5/54.4	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
23.10.23/1200	14.4/53.7	150-160 GUSTING TO 175	VERY SEVERE CYCLONIC STORM
24.10.23/0000	15.1/53.2	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
24.10.23/1200	15.9/52.8	105-115 GUSTING TO 125	SEVERE CYCLONIC STORM
25.10.23/0000	16.6/52.5	90-100 GUSTING TO 110	SEVERE CYCLONIC STORM
25.10.23/1200	17.2/52.3	40-50 GUSTING TO 60	DEPRESSION

AS PER INSAT 3D IMAGERY, THE ASSOCIATED CLOUD MASS HAS FURTHER ORGANISED. SATELLITE IMAGERY DEPICTS RAGGED EYE. INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 4.0. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHWEST & ADJOINING WESTCENTRAL ARABIAN SEA BETWEEN LAT 6.0N TO 15.5N LONG 53.0E TO 63.0E. MINIMUM CTT MINUS 93 DEG CEL. EYE TEMPERATURE IS MINUS 93^{0}C. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN NORTHEAST & ADJOINING NORTHWEST SECTOR. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM CORE.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 65 KNOTS GUSTING TO 75 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 988 HPA.

SEA CONDITION:

- **SOUTHWEST ARABIAN SEA:**
  PHENOMENAL SEA CONDITION IS PREVAILING AND WILL CONTINUE TILL 0000 UTC OF 23RD OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY BECOMING **VERY HIGH** FROM 0000 UTC OF 24TH AND CONTINUE TILL 0000 UTC OF 25TH. THEREAFTER, IT WOULD IMPROVE GRADUALLY.
- **WESTCENTRAL ARABIAN SEA:**
  PHENOMENAL SEA CONDITION IS PREVAILING AND WILL CONTINUE TILL 1200 UTC OF 24TH OCTOBER. IT WOULD IMPROVE GRADUALLY THEREAFTER BECOMING **VERY HIGH TO HIGH** FROM 1800 UTC OF 24TH. THEREAFTER, IT WOULD IMPROVE GRADUALLY.

(B) WELL MARKED LOW PRESSURE AREA OVER WESTCENTRAL AND ADJOINING SOUTH BAY OF BENGAL

THE WELL MARKED LOW PRESSURE AREA OVER WESTCENTRAL AND ADJOINING SOUTH BAY OF BENGAL MOVED SLOWLY NORTHWESTWARDS AND LAY OVER THE SAME REGION AT 1500 UTC OF 21ST OCTOBER, 2023. IT IS VERY LIKELY TO MOVE FURTHER NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL DURING NEXT 03 HOURS. THEREAFTER, IT IS

LIKELY TO MOVE NORTH-NORTHEASTWARDS TOWARDS BANGLADESH AND ADJOINING WEST BENGAL COASTS AND INTENSIFY FURTHER DURING SUBSEQUENT 3 DAYS.

INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 1.0. FURTHER ORGANISATION IS SEEN IN CLOUD IMAGERY. SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL AND ADJOINING SOUTH BAY OF BENGAL BETWEEN LATTITUDE 12.0 & 17.0 N AND LONGITUDE 84.0 E & 90. E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 93^0C.

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
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 8 WITH AMPLITUDE LESS THAN 1. IT WOULD CONTINUE IN SAME PHASE DURING NEXT 5 DAYS. SEA SURFACE TEMPERATURE IS 29-30°C OVER SOUTH & WESTCENTRAL ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS AROUND 100 KJ/CM^2 OVER SOUTHWEST ARABIAN SEA NEAR THE SYSTEM LOCATION. IT WOULD DECREASE GRADUALLY BECOMING 30-40 KJ/CM^2 OVER WESTCENTRAL ARABIAN SEA & ALONG & OFF OMAN-YEMEN COASTS.

THE LOW LEVEL POSITIVE IS AROUND 150 $X10^{-6}S^{-1}$ TO THE SOUTHWEST OF SYSTEM CENTER WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE IS ABOUT $20X10^{-5}S^{-1}$ TO THE SOUTHWEST OF SYSTEM AREA. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 30 $X10^{-5}$ S^{-1} TO THE SOUTHWEST OF THE SYSTEM AREA. STRONG OUTFLOW IS SEEN IN UPPER LEVELS. WIND SHEAR IS MODERATE (15—20 KNOTS) OVER SYSTEM AREA AND ALONG THE EXPECTED TRACK AND IT IS MODERATE TO HIGH OVER WSTERN PARTS OF WESTCENTRAL ARABIAN SEA. UPPER TROPOSPHERIC RIDGE RUNS NEAR 14^0N IN ASSOCIATION WITH ANTICYCLONIC CIRCULATION OVER SOUTHEAST & ADJOINING EASTCENTRAL ARABIAN SEA. AS SUCH, TC TEJ LIES ON THE PERIPHERY OF THIS ANTICYCLONE AND HENCE, ACCORDINGLY SHOWS WEST-NORTHWESTWARDS MOVEMENT. AS IT MOVES AWAY FROM THIS ANTICYCLONE, ALONG THE PERIPHERY, IT'S DIRECTION OF MOVEMENT WOULD GRADUALLY CHANGE FROM WEST-NORTHWESTWARDS TO NORTHWESTWARDS TO NORTH-NORTHWESTWARDS LEADING TO LANDFALL OVER YEMEN AND ADJOINING OMAN.

FURTHER DURING NEXT 24 HOURS, HIGHER SST, HIGHER OCEAN THERMAL ENERGY, LOW-MODERATE VERTICAL WIND SHEAR, STRONG OUTFLOW IN UPPER LEVELS WOULD MAKE CONDITIONS FAVOURABLE FOR RAPID INTENSIFICATION.

TEMPORARILY, IT MAY ALSO INTENSIFY INTO AN EXTREMELY SEVERE CYCLONIC STORM OVER WESTCENTRAL ARABIAN SEA WITH WIND SPEED REACHING UPTO 90-95 KNOTS AROUND 22ND /0600 UTC. AS IT MOVES CLOSER TO COAST, IT WILL ENCOUNTER DRY AIR INCURSION AND COLDER SST AND HENCE MAY EXHIBIT WEAKENING PRIOR TO LANDFALL.

THE MULTI MODEL GUIDANCE IS INDICATING THE SYSTEM TO MOVE WEST-NORTHWESTWARDS TILL 0000 UTC OF 22ND, NORTHWESTWARDS THEREAFTER TILL 0000 UTC OF 24TH & THEN NORTH-NORTHWESTWARDS. MOST OF THE MODELS ARE INDICATING THE SYSTEM TO CROSS OMAN – YEMEN COASTS (ECMWF, NCEP, CMC, IMD GFS TOWARDS YEMEN AND IMD MME, NCUM, IMD HWRF SLIGHTLY TOWARDS OMAN). BUT THERE IS CONSENSUS THAT CROSSING WOULD BE OVER YEMEN & ADJOINING OMAN COASTS. 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.

IN VIEW OF ABOVE, THE VERY SEVERE CYCLONIC STORM “TEJ” (PRONOUNCED AS TEJ) IS VERY LIKELY TO INTENSIFY FURTHER INTO AN EXTREMELY SEVERE CYCLONIC STORM AROUND 0600 UTC OF 22ND OCTOBER. IT IS LIKELY TO MOVE NORTHWESTWARDS TILL 0000 UTC OF 24TH OCTOBER. & THEN NORTH-NORTHWESTWARDS THEREAFTER. IT IS LIKELY TO CROSS YEMEN-OMAN COASTS BETWEEN AL GHAIDAH (YEMEN) & SALALAH (OMAN, 41398) AROUND 2100 UTC OF 24TH OCTOBER.

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 DEPRESSION OVER BOB.

THE GLOBAL MODELS ARE IN AGREEMENT THAT THE LOW PRESSURE AREA OVER SOUTHEAST BAY OF BENGAL IS LIKELY TO INTENSIFY FURTHER INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL AROUND 1800 UTC OF 21ST OCT. HENCE MODERATE TO HIGH PROBABILITY OF FORMATION OF DEPRESSION DURING NEXT 03 HOURS. THERE IS CONSENSUS AMONG VARIOUS MODELS WRT MOVEMENT TOWARDS BANGLADESH COAST. MOST OF THE MODELS ARE INDICATING INTENSIFICATION UPTO DEPRESSION/DEEP DEPRESSION STAGE, HOWEVER NCUM (R) NCEP GFS IS INDICATING HIGHER INTENSITY.

CONSIDERING ALL THESE, THE WELL MARKED LOW PRESSURE AREA OVER WESTCENTRAL AND ADJOINING SOUTH BAY OF BENGAL IS VERY LIKELY TO MOVE FURTHER NORTHWESTWARDS AND INTENSIFY INTO A DEPRESSION OVER WESTCENTRAL BAY OF BENGAL DURING NEXT 03 HOURS. THEREAFTER, IT IS LIKELY TO MOVE NORTH-NORTHEASTWARDS TOWARDS BANGLADESH AND ADJOINING WEST BENGAL COASTS AND INTENSIFY FURTHER DURING SUBSEQUENT 3 DAYS.

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(ARULALAN T)
SCIENTIST-C
RSMC, NEW DELHI

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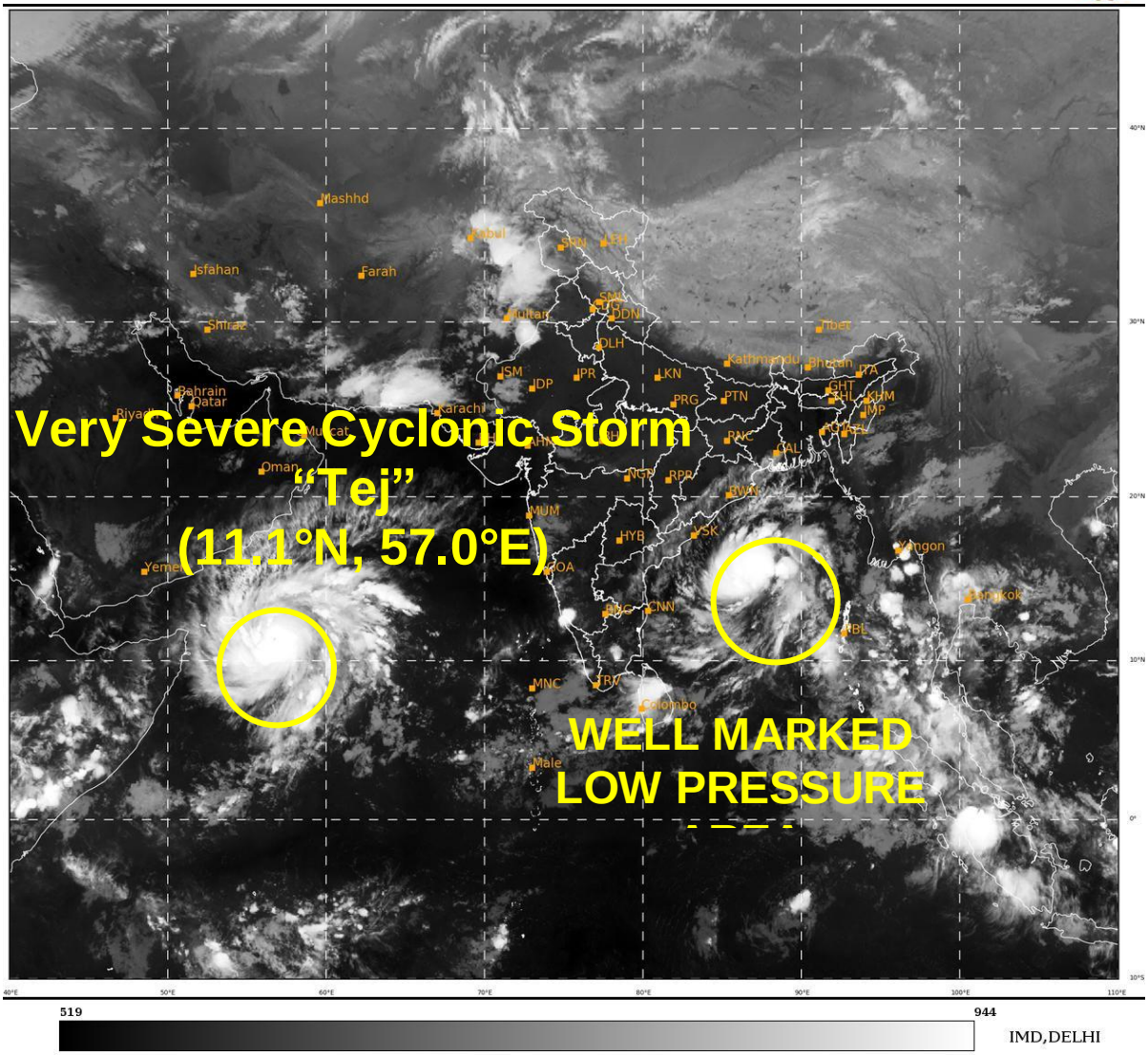
SAT : INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator

21-10-2023/(1600 to 1626) GMT
21-10-2023/(2130 to 2156) IST



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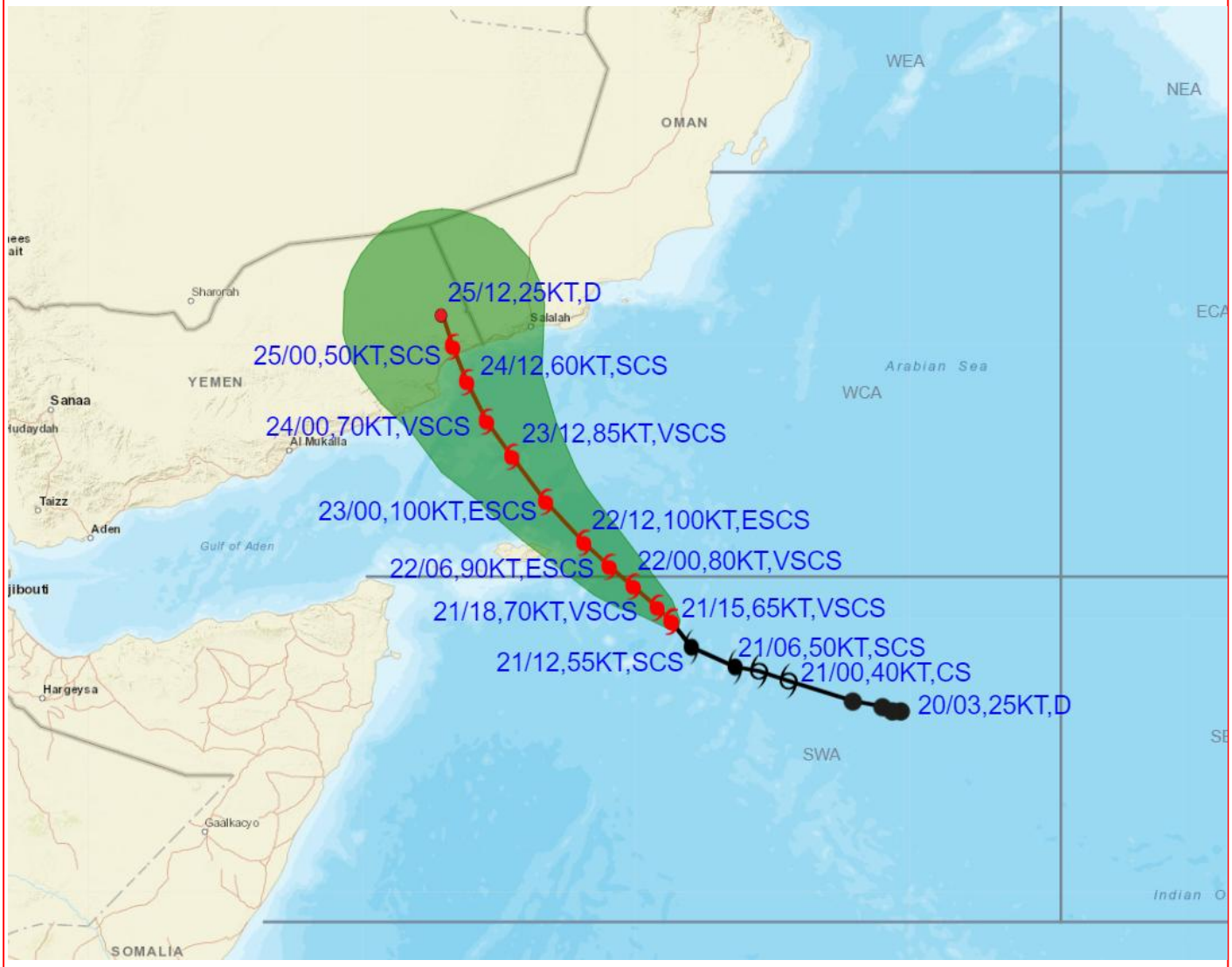
OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF CYCLONIC STORM "TEJ" OVER SOUTHWEST ARABIAN SEA BASED ON 1500 UTC OF 21st OCTOBER 2023.



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

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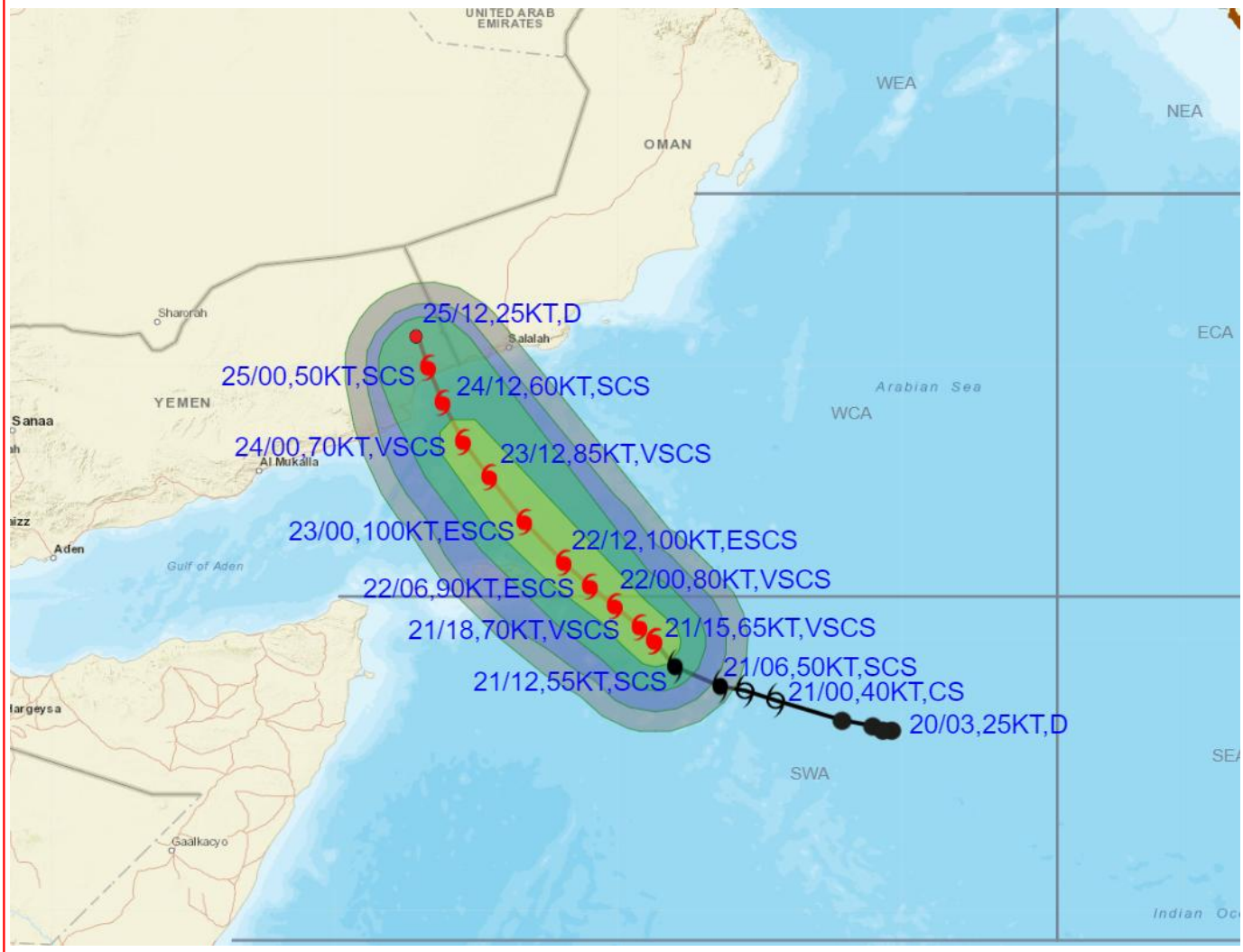
OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM "TEJ" OVER SOUTHWEST ARABIAN SEA BASED ON 1500 UTC OF 21st OCTOBER 2023.



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- 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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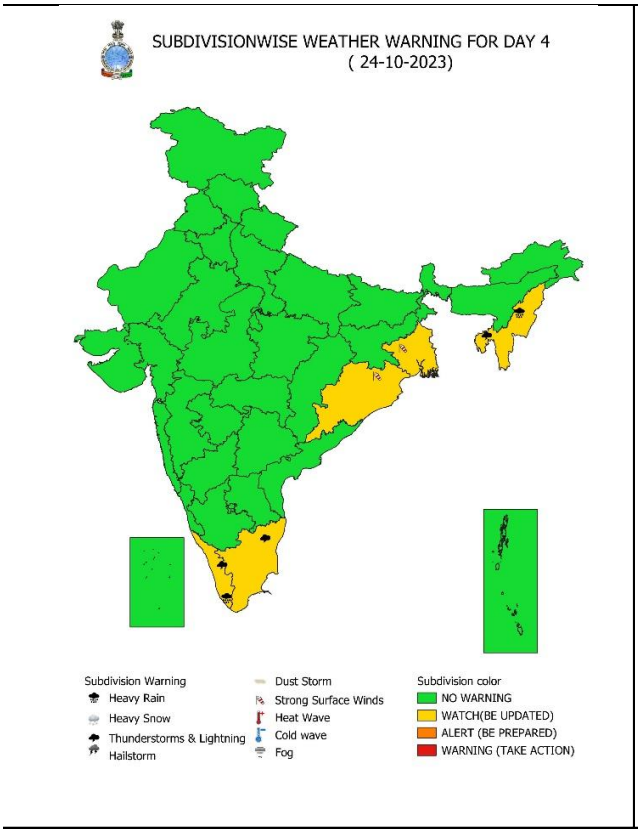
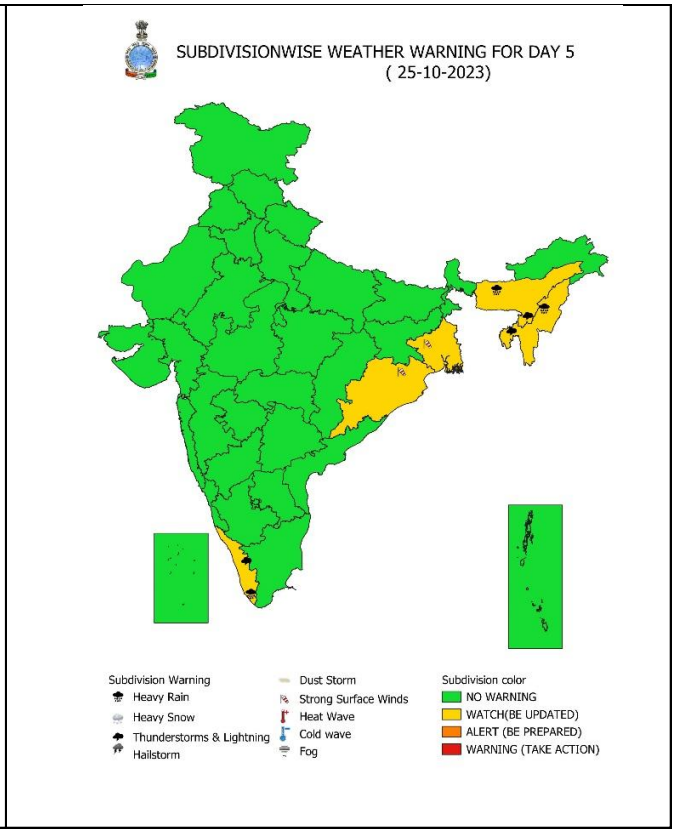
WEATHER WARNING GRAPHICS





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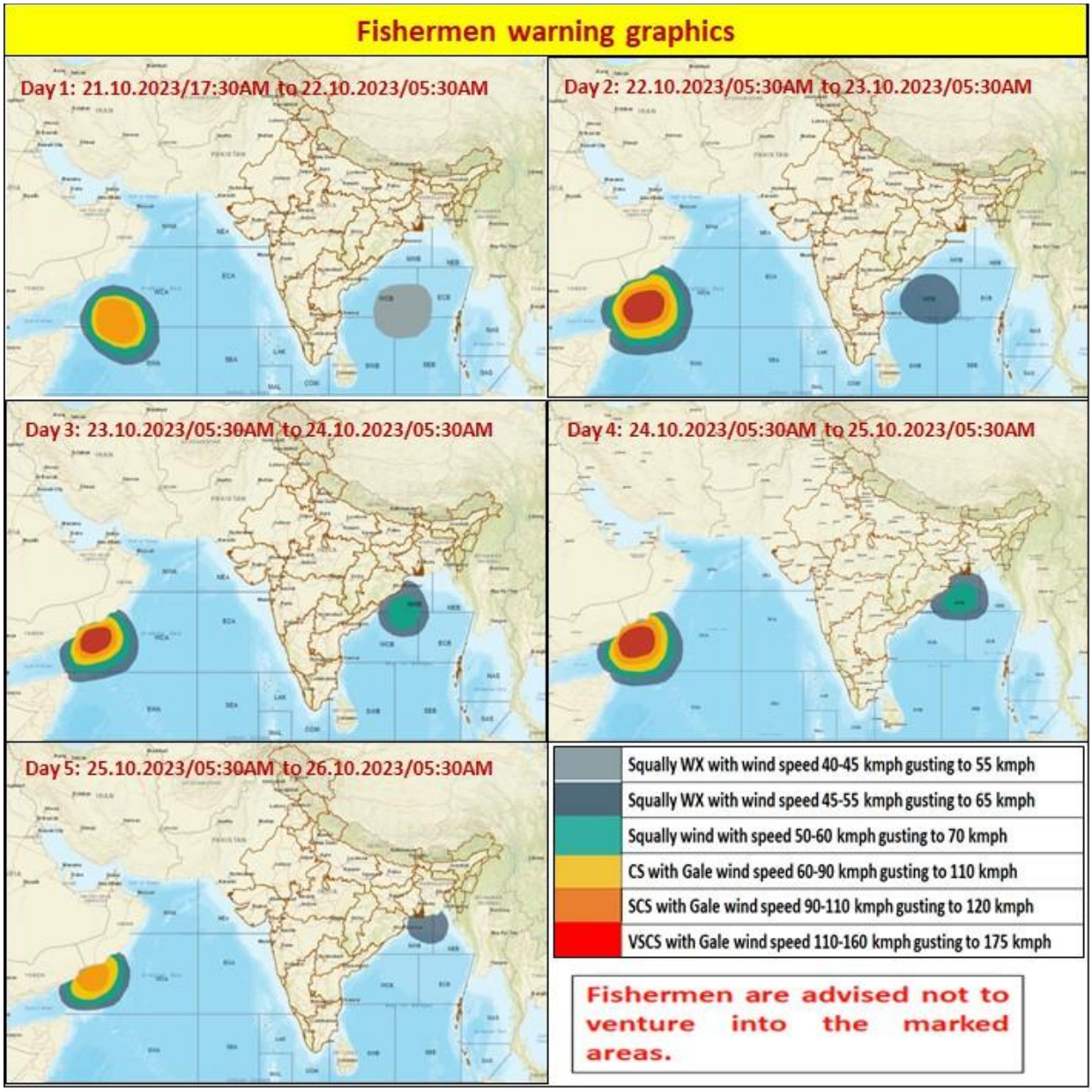

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