



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

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 23.10.2023

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)

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IRAN METEOROLOGICAL ORGANISATION, (THROUGH RTH JEDDAH)

QATAR METEOROLOGICAL DEPARTMENT (THROUGH RTH JEDDAH)

TROPICAL CYCLONE ADVISORY NO. 20 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1100 UTC OF 23.10.2023 BASED ON 0900 UTC OF 23.10.2023.

SUB: (A) VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) OVER WESTCENTRAL ARABIAN SEA AND (B) DEEP DEPRESSION OVER **WESTCENTRAL BAY OF BENGAL**

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

THE VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) OVER WESTCENTRAL ARABIAN SEA CONTINUED TO MOVE NORTHWESTWARDS WITH A SPEED OF 12 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 0900 UTC OF TODAY, THE 23RD OCTOBER OVER THE SAME REGION, NEAR LATITUDE 15.1°N AND LONGITUDE 52.8°E, ABOUT 250 KM SOUTH-SOUTHWEST OF SALALAH (OMAN, 41316) AND 130 KM SOUTH-SOUTHEAST OF AL GHAIDAH (YEMEN, 413198).

IT IS VERY LIKELY TO CONTINUE TO MOVE NORTHWESTWARDS AND CROSS YEMEN COAST CLOSE TO AL- GHAIDAH DURING 1800-2100 UTC OF 23RD OCTOBER AS A VERY SEVERE CYCLONIC STORM WITH WIND SPEED OF 125-135 KMPH **GUSTING TO 150 KMPH.**

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)	POSITION (LAT. ºN/ LONG. ºE)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC
	,	. ,	DISTURBANCE
23.10.23/0900	15.1/52.8	145-155 gusting to 170	Very Severe Cyclonic Storm
23.10.23/1200	15.3/52.6	135-145 gusting to 160	Very Severe Cyclonic Storm
23.10.23/1800	15.6/52.3	125-135 gusting to 150	Very Severe Cyclonic Storm
24.10.23/0000	15.9/51.9	90-100 gusting to 110	Severe Cyclonic Storm
24.10.23/0600	16.2/51.5	45-55 gusting to 65	Depression
24.10.23/1200	16.4/51.1	25-35 gusting to 45	Well Marked Low

AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 4.0/4.5. SYSTEM SHOWS CURVED BAND PATTERN WITH THE OUTER CLOUD BANDS SEEN OVER EAST YEMEN AND S OMAN. THE OUTER SPIRAL BANDS ARE SEEN OVER EAST YEMEN AND SOUTH OMAN AND HENCE THE LAND INTERACTION HAS COMMENCED. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER WESTCENTRAL ARABIAN SEA BETWEEN LATITUDE 13.0°N TO 17.0°N AND LONGITUDE 50.5°E TO 55.5°E & EAST YEMEN & OMAN. MINIMUM CLOUD TOP TEMPRATURE HAS INCREASED AND IS MINUS 72°C. THE SATELLITE IMAGERY SHOWS GRADUAL WEAKENING OF SYSTEM. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN THE NORTHEASTERN SECTOR. TOTAL PRECIPITABLE WATER IMAGERY SHOWS DRY AIR INCURSION IS TAKING PLACE REACHING UPTO THE CORE FROM WESTERN SECTOR.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 80 KNOTS GUSTING TO 95 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 976 HPA.

STORM SURGE GUIDANCE FOR YEMEN COAST:

STORM SURGE OF ABOUT 2 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS BETWEEN AL GHAYDAH AND AL FAYDAMI NEAR THE LANDFALL POINT AT THE TIME OF LANDFALL.

SEA CONDITION:

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

(B) DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL

THE DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHEASTWARDS WITH A SPEED OF 18 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 0900 UTC OF TODAY, THE 23RD OCTOBER OVER THE SAME

REGION, NEAR LATITUDE 17.9°N AND LONGITUDE 87.2°E, ABOUT 270 KM SOUTH-SOUTHEAST OF PARADIP (ODISHA, 42976), 410 KM SOUTH OF DIGHA (WEST BENGAL, 42901) AND 550 KM SOUTH-SOUTHWEST OF KHEPUPARA (BANGLADESH, 41984).

IT IS LIKELY TO INTENSIFY INTO A *CYCLONIC STORM* DURING NEXT 3 HOURS. IT IS VERY LIKELY TO MOVE NEARLY NORTH-NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA AND CHITTAGONG AROUND 1200 UTC OF 25TH OCTOBER AS A *DEEP DEPRESSION*.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME(UTC)		MAXIMUM SUSTAINED	CATEGORY OF CYCLONIC
	LAT. ⁰N/ LONG. ºE		DISTURBANCE
		WIND SPEED (KMPH)	
23.10.23/0900	17.9/87.2	55-65 gusting to 75	Deep Depression
23.10.23/1200	18.1/87.3	60-70 gusting to 80	Cyclonic Storm
23.10.23/1800	18.7/87.7	70-80 gusting to 90	Cyclonic Storm
24.10.23/0000	19.3/88.1	80-90 gusting to 100	Cyclonic Storm
24.10.23/0600	19.9/88.7	70-80 gusting to 90	Cyclonic Storm
24.10.23/1800	20.7/89.4	55-65 gusting to 75	Deep Depression
25.10.23/0600	21.5/90.0	50-60 gusting to 70	Deep Depression
25.10.23/1800	22.4/90.5	25-35 gusting to 45	Well Marked Low

AS PER INSAT 3D IMAGERY, INTENSITY OF THE SYSTEM IS CHARACTERISED AS T 2.0. SHEAR PATTERN IS SEEN IN CLOUD IMAGERY. CLOUDS ARE SHEARED IN NORTHEAST SECTOR. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL AND ADJOINING NORTH BAY OF BENGAL BETWEEN LATITUDE 15.50N TO 21.0N AND LONGITUDE 84.50E TO 91.50E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 920C. OUTFLOW CLOUD BANDS ARE OBSERVED OVER ODISHA, JHARKHAND EAST BIHAR, WEST BENGAL, NORTHEAST STATES OF INDIA. CONVECTIVE CLOUDS ARE ALSO OBSERVED OVER WEST CENTRAL & ADJOINING NORTH BAY OF BENGAL. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN EASTERN SECTOR. TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE SYSTEM CORE.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1001 HPA.

WIND GUIDANCE (WARNING MAP ENCLOSED):

- WESTCENTRAL BAY OF BENGAL: SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH IS PREVAILING AND LIKELY TO INCREASE BECOMING 55-65 KMPH GUSTING TO 75 KMPH FROM 1200 UTC OF 23RD TILL 0000 UTC OF 24TH OCTOBER. IT IS LIKELY TO DECREASE GRADUALLY FROM 0600 UTC OF 24TH BECOMING SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING 60 KMPH BY 1200 UTC OF 24TH.
- ADJOINING EASTCENTRAL BAY OF BENGAL: SQUALLY WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH IS LIKELY TO INCREASE GRADUALLY BECOMING 50-60 KMPH GUSTING TO 70 KMPH ON 24TH AND DECREASE FROM 25TH ONWARDS.
- NORTH BAY OF BENGAL:

SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS PREVAILING AND LIKELY TO BECOME 50-60 KMPH GUSTING TO 70 KMPH FROM 1200 UTC OF TODAY. IT WOULD BECOME GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH FROM 0000 UTC OF 24TH OCTOBER AND 80-90 KMPH GUSTING 100 KMPH DURING 0000 – 0600 UTC OF 24TH. IT WOULD DECREASE GRADUALLY THEREAFTER.

 ALONG & OFF ODISHA, WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS:

SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY FROM 1200 UTC OF $23^{\rm RD}$ TO $24^{\rm TH}$ along & off odisha coast. Squally wind speed reaching 40-50 kmph Gusting to 60 kmph is likely to commence along & off west bengal, bangladesh and north myanmar coasts from 0000 UTC of $24^{\rm TH}$. It would gradually increase becoming 55-65 kmph Gusting to 75 kmph along & off bangladesh coast, 50-60 kmph Gusting to 70 kmph along & off north myanmar coast and 45-55 kmph Gusting to 65 along & off west bengal coast on $25^{\rm TH}$ october.

 MIZORAM, TRIPURA, SOUTH ASSAM AND MANIPUR: SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL OVER MIZORAM AND TRIPURA AND STRONG WIND SPEED REACHING 30-40 KMPH GUSTING TO 50 KMPH OVER SOUTH ASSAM & MANIPUR ON 25TH OCTOBER.

STORM SURGE GUIDANCE FOR BANGLADESH COAST:

STORM SURGE OF ABOUT 1.0-1.5 METRE HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS BETWEEN KHEPUPARA AND CHITTAGONG AROUND THE TIME OF LANDFALL.

SEA CONDITION:

- WESTCENTRAL BAY OF BENGAL: ROUGH TO VERY ROUGH SEA CONDITION IS PREVAILING AND WILL CONTINUE TILL 25TH OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY THEREAFTER.
- ADJOINING EASTCENTRAL BAY OF BENGAL: MODERATE TO ROUGH SEA CONDITION IS PREVAILING AND LIKELY TO CONTINUE TILL 24TH OCTOBER AND ROUGH TO VERY ROUGH ON 25TH OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY THEREAFTER.
- NORTH BAY OF BENGAL: ROUGH SEA CONDITION IS LIKELY ON 23RD AND VERY ROUGH TO HIGH ON 24TH AND VERY ROUGH ON 25TH OCTOBER.
- ALONG & OFF ODISHA, WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS: ROUGH SEA CONDITION IS LIKELY ON 23RD AND ROUGH TO VERY ROUGH ON 24TH AND 25TH OCTOBER.

REMARKS:

ARABIAN SEA:

MADDEN JULIAN OSCILLATION INDEX IS IN PHASE 8 WITH AMPLITUDE LESS THAN 1. IT WOULD CONTINUE IN SAME PHASE DURING NEXT 3 DAYS. SEA SURFACE TEMPERATURE IS 27-28°C OVER WESTCENTRAL ARABIAN SEA. THE TROPICAL CYCLONE HEAT POTENTIAL IS AROUND 20-30 KJ/CM² OVER WESTCENTRAL ARABIAN SEA NEAR THE SYSTEM LOCATION AND ALSO ALONG & OFF OMAN-YEMEN

COASTS. THE LOW LEVEL POSITIVE VORTICITY IS AROUND 200 X10⁻⁶S⁻¹ TO THE SOUTH OF THE SYSTEM CENTER WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 30X10⁻⁵S⁻¹ TO THE SOUTHWEST OF SYSTEM CENTER. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 30 X10⁻⁵ S⁻¹ TO THE SOUTHWEST OF SYSTEM CENTRE. WIND SHEAR IS LOW TO MODERATE (10-15 KNOTS) OVER SYSTEM AREA AND ALONG THE EXPECTED TRACK.

EXISTING FEATURES INDICATE THAT THE SYSTEM HAS ENTERED OVER COLDER SEA, AN AREA OF LOWER OCEAN THERMAL ENERGY AND IS EXPERIENCING DRY COLD AIR INCURSION INTO THE CORE FROM ARABIAN PENINSULAR REGION. UNDER SUCH ENVIRONMENTAL CONDTIONS, THE SYSTEM HAS WEAKENED GRADUALLY AND IS LIKELY TO WEAKEN FURTHER BEFORE LANDFALL.

IN VIEW OF ABOVE, THE VERY SEVERE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS YEMEN COAST CLOSE TO AL GHAIDAH (YEMEN) DURING 1800 – 2100 UTC OF 23RD OCTOBER AS A VERY SEVERE CYCLONIC STORM WITH WIND SPEED OF 125-135 KMPH GUSTING TO 150 KMPH (70 KNOTS GUSTING 80 KNOTS).

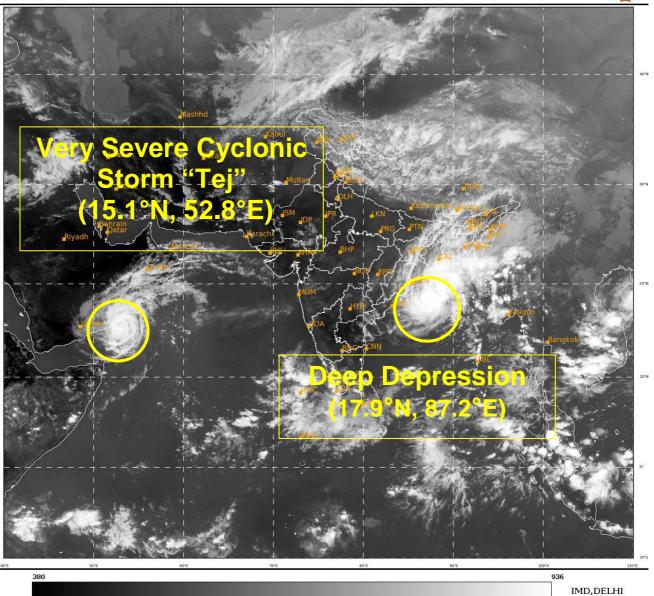
BAY OF BENGAL:

MODELS ARE IN AGREEMENT THAT THE DEEP DEPRESSION WOULD CROSS BANGLADESH COAST. MOST OF THE MODELS ARE INDICATING FURTHER INTENSIFICATION OF SYSTEM INTO CYCLONIC STORM AROUND 1200 UTC OF 23RD OCTOBER 2023.

CONSIDERING ALL THESE, THE DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL IS VERY LIKELY TO INTENSIFY INTO A *CYCLONIC STORM* DURING NEXT 6 HOURS. IT WILL INTENSIFY FURTHER AND PEAK INTENSITY (45 KNOTS GUSTING TO 55 KNOTS) WILL OCCUR AROUND 0000 UTC OF 24TH. THEREAFTER, IT IS EXPECTED TO WEAKEN SLIGHTLY WHILE MOVING TOWARDS BANGLADESH COAST. IT IS LIKELY TO WEAKEN UNDER THE INFLUENCE OF HIGH VERTICAL WIND SHEAR IN ASSOCIATION WITH THE UPPER AIR TROUGH IN WESTERLY WITH EMBEDDED JET STREAM OVER THE REGION. IT IS VERY LIKELY TO MOVE NEARLY NORTH-NORTHEASTWARDS AND CROSS BANGLADESH COAST BETWEEN KHEPUPARA AND CHITTAGONG AROUND 1200 UTC OF 25TH OCTOBER AS A *DEEP DEPRESSION* WITH WIND SPEED OF 55-65 GUSTING TO 75 KMPH (30 GUSTING TO 40 KNOTS).

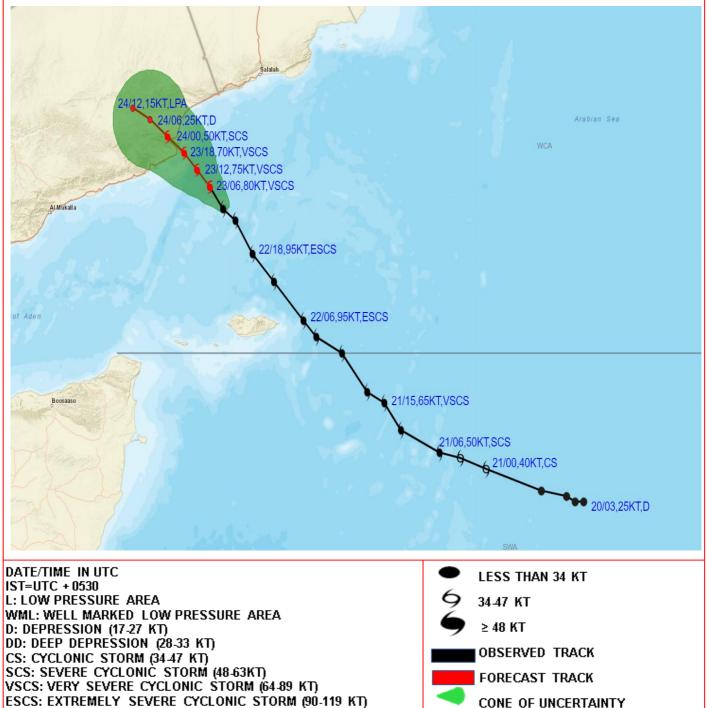
(M . SHARMA) SCIENTIST-D RSMC, NEW DELHI







OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF VERY SEVERE CYCLONIC STORM "TEJ" OVER WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC (1130 IST) OF 23RD OCTOBER 2023.



Forecast	DISTANC	DISTANCE(KM) AND DIRECTION FROM STATIONS		
Date and Time	SOCOTRA	SALALAH	AL-GHAIDAH	
24.10.23/0000	420, NNW	270, WSW	30, SW	

Sucs: SUPER CYCLONIC STORM € 120 KT)

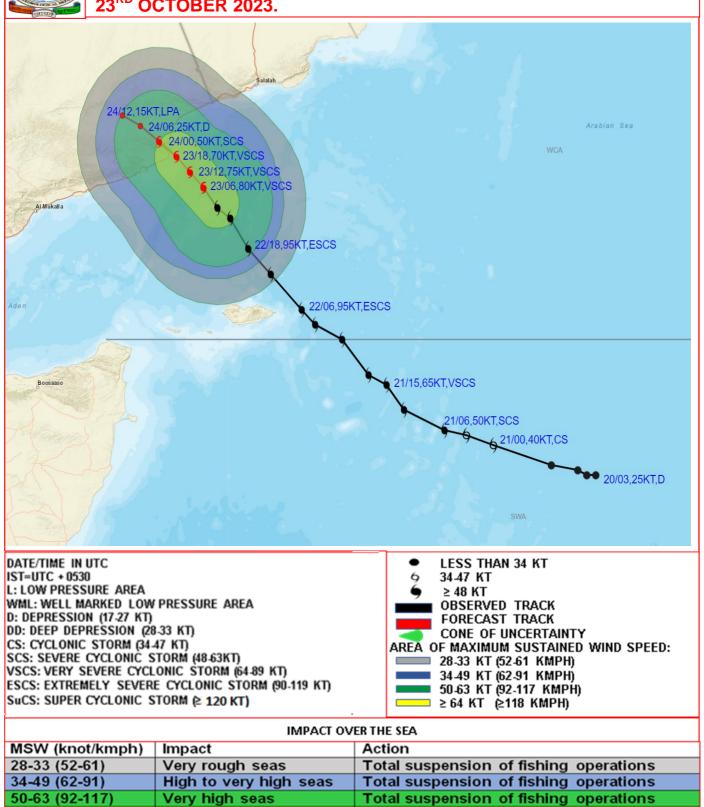
CONE OF UNCERTAINTY



≥ 64 (≥118)

Phenomenal

OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM "TEJ" OVER WESTCENTRAL ARABIAN SEA BASED ON 0600 UTC (1130 IST) OF 23RD OCTOBER 2023.

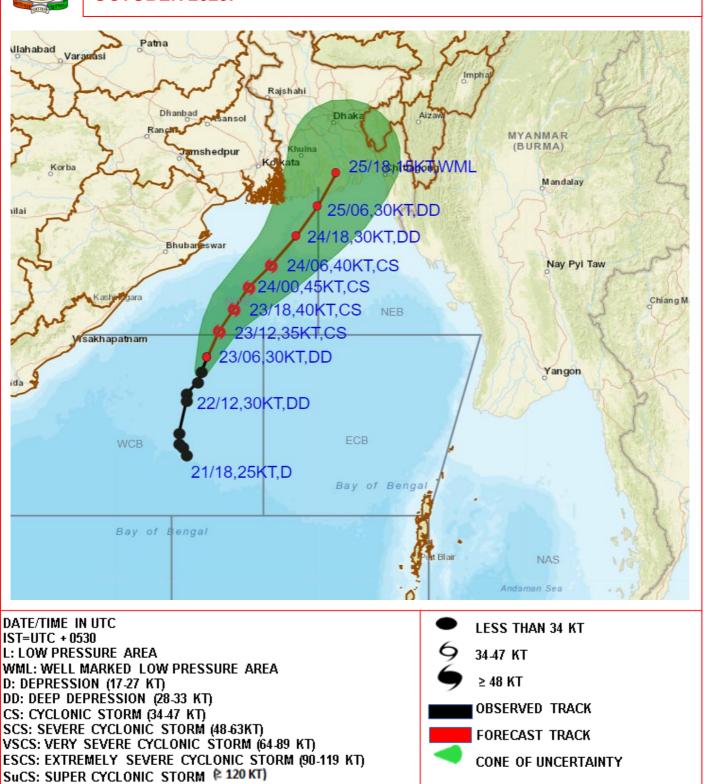


Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top
Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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Total suspension of fishing operations

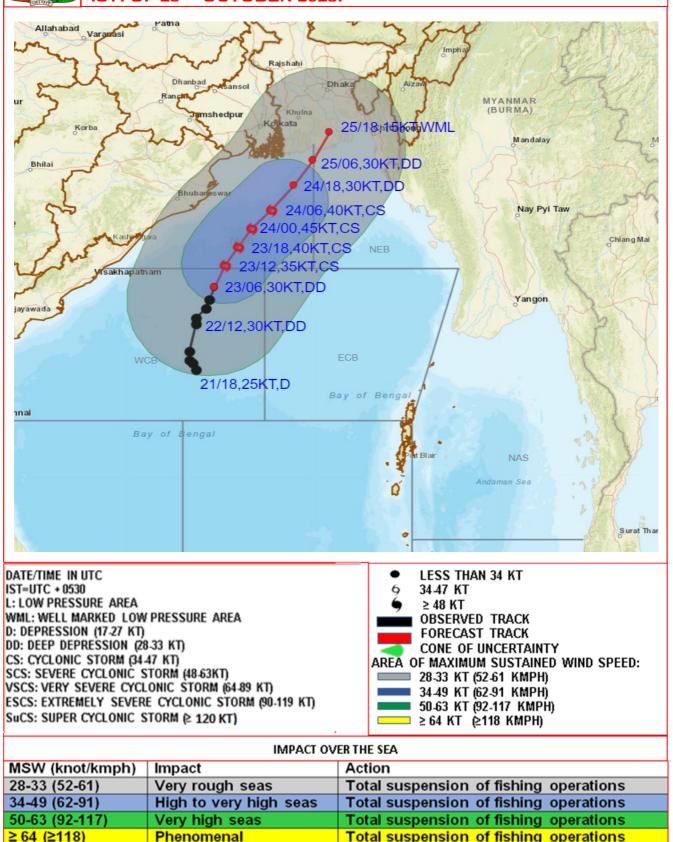


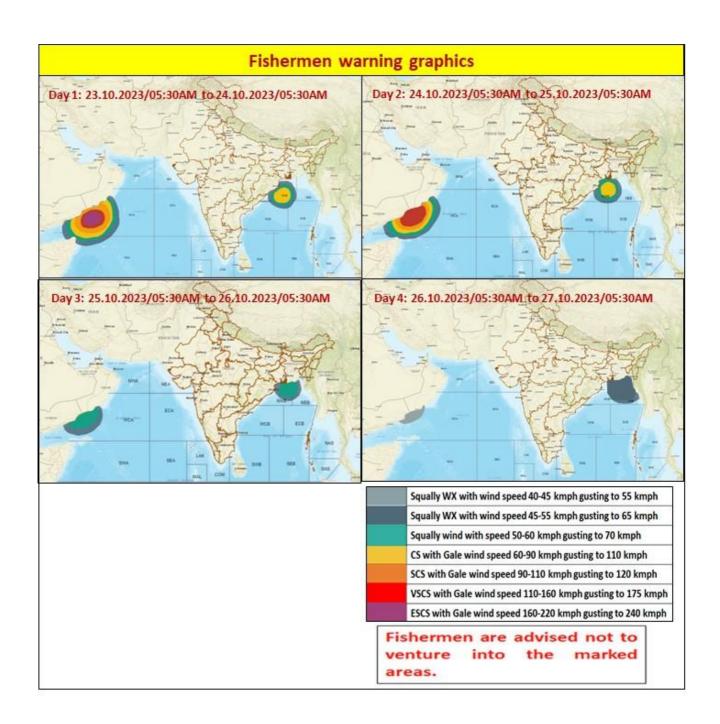
OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 0600 UTC (1130 IST) OF 23RD OCTOBER 2023.





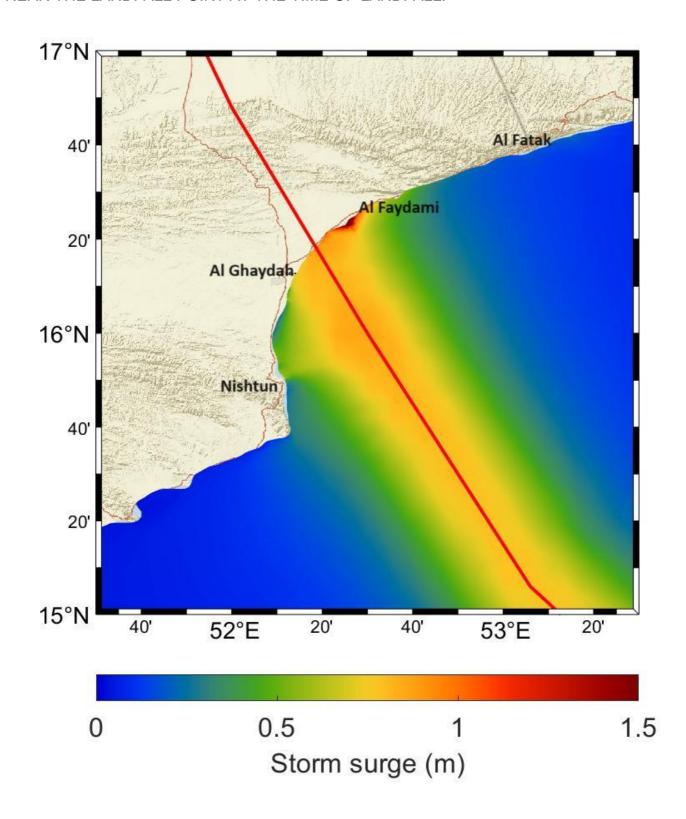
OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF DEEP DEPRESSION OVER WESTCENTRAL BAY OF BENGAL BASED ON 0600 UTC (1130 IST) OF 23RD OCTOBER 2023.





STORM SURGE GUIDANCE FOR YEMEN:

STORM SURGE OF ABOUT 2 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS BETWEEN AL GHAYDAH AND AL FAYDAMI NEAR THE LANDFALL POINT AT THE TIME OF LANDFALL.



STORM SURGE GUIDANCE FOR BANGLADESH:

STORM SURGE OF ABOUT 1.0-1.5 METRE HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS BETWEEN KHEPUPARA AND CHITTAGONG AROUND THE TIME OF LANDFALL.

