



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

#### DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 24.10.2023

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. 28 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 24.10.2023 BASED ON 0900 UTC OF 24.10.2023.

SUB: (A) CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) WEAKENED INTO DEEP DEPRESSION OVER YEMEN AND
(B) VERY SEVERE CYCLONIC STORM "HAMOON" (PRONOUNCED AS HAMOON) OVER NORTHEAST & ADJOINING NORTHWEST BAY OF BENGAL.

(A) CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) WEAKENED INTO A DEEP DEPRESSION OVER YEMEN

THE CYCLONIC STORM "TEJ" (PRONOUNCED AS TEJ) OVER COASTAL YEMEN MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 09 KMPH DURING PAST 6 HOURS, WEAKENED INTO A DEEP DEPRESSION AND LAY CENTERED AT 0900 UTC OF TODAY, THE 24<sup>TH</sup> OCTOBER OVER YEMEN, NEAR LATITUDE 16.1°N AND LONGITUDE 51.3°E, ABOUT 80 KM WEST OF AL GHAIDAH (YEMEN, 41398) AND 310 KM WEST-SOUTHWEST OF SALALAH (OMAN, 41316).

IT IS VERY LIKELY TO MOVE FURTHER WEST-NORTHWESTWARDS AND WEAKEN INTO A DEPRESSION DURING NEXT 03 HOURS.

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
24.10.23/0900	16.1/51.3	50-60 GUSTING TO 70	DEEP DEPRESSION
24.10.23/1200	16.2/51.2	30-40 GUSTING TO 50	DEPRESSION

AS PER INSAT 3D IMAGERY, CLOUD MASS HAS FURTHER DISORGANISED. INTENSE CONVECTION LIES OVER EAST YEMEN, OMAN AND ADJOINING SOUTHEAST SAUDI ARABIA AND WESTCENTRAL ARABIAN SEA.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1002 HPA.

### **SEA CONDITION:**

**WESTCENTRAL ARABIAN SEA: ROUGH TO VERY ROUGH** SEA CONDITION IS LIKELY FROM 0900 UTC OF 24<sup>TH</sup> OCTOBER. IT WOULD BECOME ROUGH AFTER 06 HOURS.

### (B) VERY SEVERE CYCLONIC STORM "HAMOON" (PRONOUNCED AS HAMOON) OVER NORTHEAST AND ADJOINING NORTHWEST BAY OF BENGAL

THE VERY SEVERE CYCLONIC STORM "HAMOON" (PRONOUNCED AS HAMOON) OVER NORTHWEST AND ADJOINING NORTHEAST BAY OF BENGAL MOVED EAST-NORTHEASTWARDS WITH A SPEED OF 17 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 0900 UTC OF TODAY, THE 24<sup>TH</sup> OCTOBER OVER THE NORTHEAST AND ADJOINING NORTHWEST BAY OF BENGAL, NEAR LATITUDE 20.6°N AND LONGITUDE 90.2°E, ABOUT 300 KM EAST-SOUTHEAST OF DIGHA (WEST BENGAL, 42901), 150 KM SOUTH OF KHEPUPARA (BANGLADESH, 41984) AND 250 KM SOUTHWEST OF CHITTAGONG (BANGLADESH, 41977).

IT IS LIKELY TO WEAKEN GRADUALLY INTO A SEVERE CYCLONIC STORM DURING NEXT 06 HOURS. IT IS LIKELY TO FURTHER WEAKEN WHILE MOVING NORTHEASTWARDS AND CROSS BANGLADESH COAST, SOUTH OF CHITTAGONG AROUND 2100 UTC OF 24TH OCTOBER AS A CYCLONIC STORM WITH WIND SPEED OF 80 TO 90 KMPH GUSTING TO 100 KMPH.

DATE/TIME (UTC)	POSITION (LAT. ºN/ LONG. ºE)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	DISTURBANCE
24.10.23/0900	20.6/90.2	120-130 gusting to 145	VERY SEVERE CYCLONIC STORM
24.10.23/1200	20.8/90.6	105-115 gusting to 125	SEVERE CYCLONIC STORM
24.10.23/1800	21.3/91.3	100-110 gusting to 120	SEVERE CYCLONIC STORM
25.10.23/0000	21.9/92.0	80-90 gusting to 100	CYCLONIC STORM
25.10.23/0600	22.4/92.5	65-75 gusting to 85	CYCLONIC STORM
25.10.23/1800	23.6/93.5	40-50 gusting to 60	DEPRESSION

#### FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

AS PER INSAT 3D IMAGERY, THE INTENSITY OF THE SYSTEM IS CHARACTERISED AS T4.0. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHWEST AND ADJOINING NORTHEAST BAY OF BENGAL BETWEEN LATITUDE 19.0N TO 21.5N AND LONGITUDE 85.0E TO 90.5E. MINIMUM CLOUD TOP TEMPRATURE IS MINUS 93

DEGREE CELSIUS. INTENSE CONVECTIVE CLOUD MASS EMBEDDED WITH MULTIPLE VERY INTENSE CONVECTIVE CELLS CONTINUES TO APPEAR TO THE NORTHEAST OF THE SYSTEM INTERACTING WITH BANGLADESH COAST. THE OUTFLOW BANDS WITH MODERATE CONVECTION IS SEEN OVER MIZORAM MANIPUR MEGHALAYA. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN EASTERN SECTOR.

## WIND GUIDANCE (MAP ENCLOSED):

## • NORTHEAST BAY OF BENGAL:

**GALE WIND** SPEED REACHING **120-130 KMPH GUSTING TO 145 KMPH** IS PREVAILING AND LIKELY TO CONTINUE DURING NEXT 03 HOURS. IT WOULD DECREASE GRADUALLY THEREAFTER BECOMING **GALE WIND** SPEED REACHING **100-110 KMPH GUSTING TO 120 KMPH** BY 1800 UTC OF 24<sup>TH</sup> AND 80-90 **KMPH GUSTING TO 90 KMPH** BY 0000 UTC OF 25<sup>TH</sup> AND WOULD DECREASE THEREAFTER.

- NORTHWEST BAY OF BENGAL: GALE WIND SPEED REACHING 120-130 KMPH GUSTING 145 KMPH IS PREVAILING AND LIKELY TO CONTINUE DURING NEXT 03 HOURS. IT WOULD DECREASE GRADUALLY THEREAFTER BECOMING GALE WIND SPEED REACHING 80-90 KMPH GUSTING TO 100 KMPH BY 1800 UTC OF 24<sup>TH</sup>, AND SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH BY 1200 UTC OF 25<sup>TH</sup> AND WOULD DECREASE THEREAFTER.
- ADJOINING EASTCENTRAL BAY OF BENGAL: SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH IS PREVAILING AND WOULD GRADUALLY INCREASE BECOMING 80-90 KMPH GUSTING TO 100 KMPH FROM 1800 UTC OF 24<sup>TH</sup> AND BECOME 60-70 GUSTING TO 80 KMPH FROM 0300 UTC OF 25<sup>TH</sup> AND 45-55 GUSTING TO 65 KMPH FROM 0600 UTC OF 25<sup>TH</sup>.
- ALONG & OFF ODISHA, WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS: SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY PREVAILING ALONG & OFF ODISHA COAST ON 24<sup>TH</sup>. SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS PREVAILING ALONG & OFF WEST BENGAL, BANGLADESH AND NORTH MYANMAR COASTS FROM 0000 UTC OF 24<sup>TH</sup>. IT WOULD GRADUALLY INCREASE BECOMING 80-90 KMPH GUSTING TO 100 KMPH ALONG & OFF BANGLADESH AND ADJOINING NORTH MYANMAR COAST AND 55-65 KMPH GUSTING TO 75 KMPH ALONG & OFF REMAINING PARTS OF NORTH MYANMAR COAST FROM 1800 UTC OF 24<sup>TH</sup> OCTOBER FOR SUBSEQUENT 06 HOURS AND DECREASE THEREAFTER. SQUALLY WINDS SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH ALONG & OFF WEST BENGAL COAST TILL 0000 UTC OF 25<sup>TH</sup> 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 25<sup>TH</sup> 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:

 NORTHEAST BAY OF BENGAL AND ALONG & OFF BANGLADESH & ADJOINING NORTH MYANMAR COASTS: PHENOMENAL SEA CONDITIONS ARE PREVAILING AND LIKELY TO CONTINUE TILL 1200

**PHENOMENAL SEA CONDITIONS A**RE PREVAILING AND LIKELY TO CONTINUE TILL 1200 UTC OF 24<sup>TH</sup> AND WOULD BECOME VERY HIGH TO HIGH THEREAFTER TILL 0000 UTC OF 25<sup>TH</sup> AND VERY ROUGH TO ROUGH TILL 1200 UTC OF 25<sup>TH</sup> OCTOBER.

## • NORTHWEST BAY OF BENGAL:

**PHENOMENAL SEA CONDITIONS A**RE PREVAILING AND LIKELY TO CONTINUE TILL 1200 UTC OF 24<sup>TH</sup> AND WOULD BECOME VERY HIGH TO HIGH THEREAFTER TILL 1800 UTC OF 24<sup>TH</sup> AND THEN VERY ROUGH TO ROUGH BY 0000 UTC OF 25<sup>TH</sup> OCTOBER.

- ADJOINING EASTCENTRAL BAY OF BENGAL: VERY ROUGH TO ROUGH TILL 0000 UTC OF 25<sup>TH</sup> OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY THEREAFTER.
- ALONG & OFF WEST BENGAL COASTS: ROUGH TO VERY ROUGH SEA CONDITIONS TILL 0000 UTC OF 25<sup>TH</sup> OCTOBER.

#### **REMARKS**:

#### ARABIAN SEA:

THE LOW LEVEL POSITIVE VORTICITY IS ABOUT 100 X10<sup>-6</sup>S<sup>-1</sup> AROUND SYSTEM CENTER WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 30X10<sup>-5</sup>S<sup>-1</sup> TO THE SOUTHWEST OF SYSTEM CENTER. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 20 X10<sup>-5</sup>S<sup>-1</sup>. SYSTEM HAS NOW ENTERED A ZONE OF HIGH VERTICAL WIND SHEAR. COLD DRY AIR INCURSION IS TAKING PLACE INTO THE CORE FROM WEST AND SOUTHWEST SECTOR. UNDER THESE CONDITIONS, THE SYSTEM WOULD WEAKEN RAPIDLY DURING NEXT 06 HOURS.

MOST OF THE MODELS ARE INDICATING WEAKENING OF THE SYSTEM BY 0000 UTC OF 25<sup>TH</sup> OVER CENTRAL PARTS OF YEMEN.

CONSIDERING ALL THESE, THE DEEP DEPRESSION OVER YEMEN IS VERY LIKELY TO MOVE FURTHER WEST-NORTHWESTWARDS AND WEAKEN INTO A DEPRESSION DURING SUBSEQUENT 03 HOURS.

## **BAY OF BENGAL:**

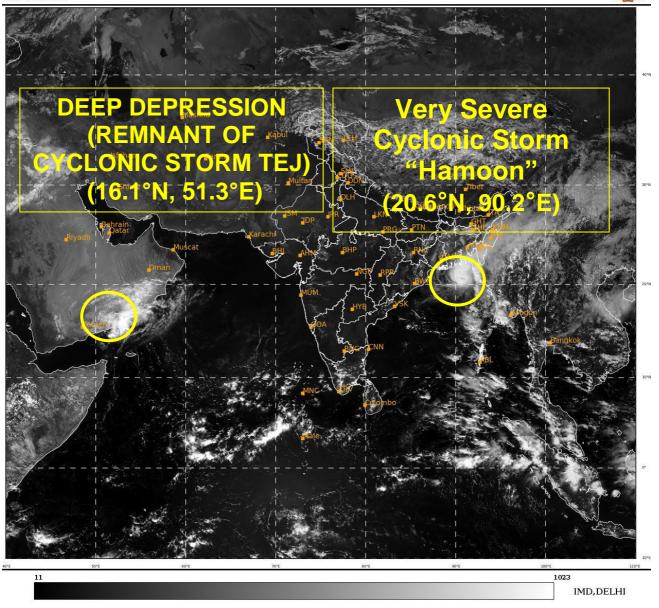
SEA SURFACE TEMPERATURE IS 28-30°C OVER NORTH BAY OF BENGAL. THE LOW LEVEL POSITIVE VORTICITY IS AROUND 200 X10<sup>-6</sup>S<sup>-1</sup> AROUND SYSTEM CENTER. THE POSITIVE LOW LEVEL CONVERGENCE IS ABOUT 30X10<sup>-5</sup>S<sup>-1</sup> TO THE SOUTHEAST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE IS ABOUT 20 X10<sup>-5</sup> S<sup>-1</sup> ALONG THE FORECAST TRACK OF SYSTEM. IT IS NORTHEAST-SOUTHWEST ORIENTED. THE SYSTEM HAS ENTERED INTO A ZONE OF HIGH (> 30 KNOTS) WIND SHEAR. THE SYSTEM WOULD THUS ENCOUNTER UNFAVOURABLE ENVIRONMENT CONDITIONS AFTER NEXT 06 HOURS AND WOULD START WEAKENING GRADUALLY. THE SYSTEM IS MOVING FASTER AND ALSO EXPECTED TO MOVE FAST UNDER THE INFLUENCE OF UPPER TROPOSPHERIC WESTERLY TROUGH LYING TO THE WEST OF THE SYSTEM OVER CENTRAL AND NORTH INDIA AND EMBEDDED JET STREAM WITH CORE WIND SPEED OF 100-120 KNOTS OVER THE HEAD BAY OF BENGAL AND ADJOINING NORTHEAST INDIA AND BANGLADESH. UNDER THE INFLUENCE OF ABOVE TROUGH AND ASSOCIATED JET STREAM ALONGWITH OTHER FAVOURABLE ENVIRONMENTAL CONDITIONS LIKE LOW LEVEL VORTICITY AND MODERATE VERTICAL WIND SHEAR AND WARM SEA, THE SYSTEM INTENSIFIED RAPIDLY DURING 0300 UTC OF 23RD TO 0300 UTC OF 24TH. HOWEVER, AS THE SYSTEM HAS ENTERED INTO HIGH VERTICAL WIND SHEAR ZONE UNDER THE INFLUENCE OF ABOVE TROUGH, INTENSIFICATION HAS BEEN RESTRICTED SINCE THEN. AND IT IS EXPECTED TO WEAKEN GRADUALLY. UPPER TROPOSPHERIC RIDGE RUNS ALONG 20<sup>0</sup>N. AS THE SYSTEM LIES TO THE NORTH OF RIDGE, IT IS LIKELY TO MOVE NORTHEASTWARDS.

MODELS ARE IN AGREEMENT THAT THE VERY SEVERE CYCLONIC STORM "HAMOON" WOULD CROSS BANGLADESH COAST. THERE IS ALSO CONSENSUS AMONG VARIOUS MODELS WITH RESPECT TO WEAKENING BEFORE LANDFALL.

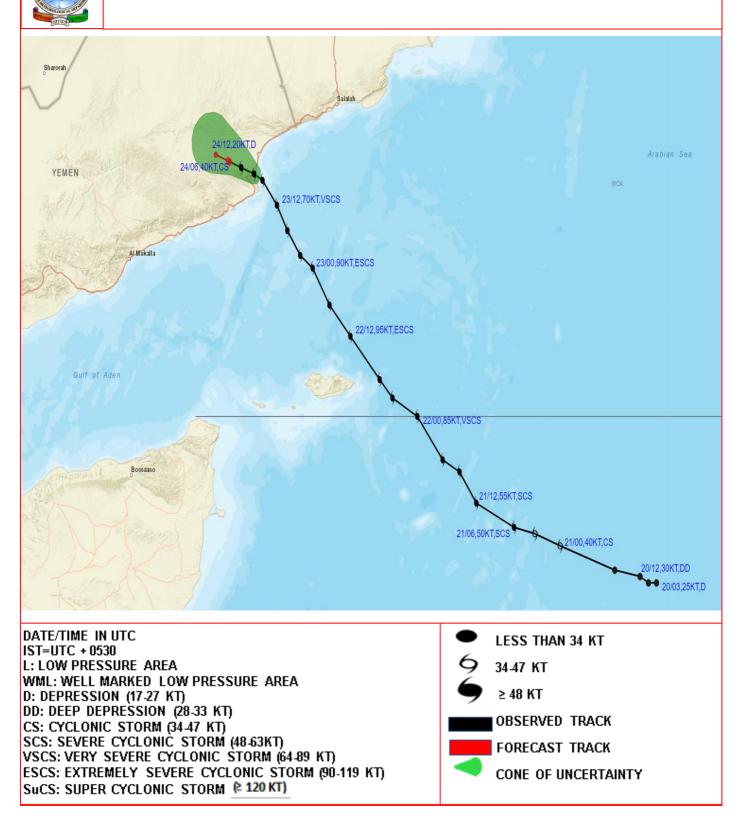
CONSIDERING ALL THESE, THE VERY SEVERE CYCLONIC STORM "HAMOON" OVER NORTHEAST & ADJOINING NORTHWEST BAY OF BENGAL IS VERY LIKELY TO WEAKEN FURTHER WHILE MOVING NORTHEASTWARDS AND CROSS BANGLADESH COAST TO THE SOUTH OF CHITTAGONG AROUND 2100 UTC OF 25<sup>TH</sup> OCTOBER AS A **CYCLONIC STORM WITH WIND SPEED OF 80-90 KMPH GUSTING TO 100 KMPH.** 

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

SAT : INSAT-3D IMG Visible Count 0.65 um L1C Mercator 24-10-2023/(0730 to 0756) GMT 24-10-2023/(1300 to 1326) IST



# OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF CYCLONIC STORM "TEJ" OVER COASTAL YEMEN BASED ON 0600 UTC (1130 IST) OF 24<sup>TH</sup> OCTOBER 2023.

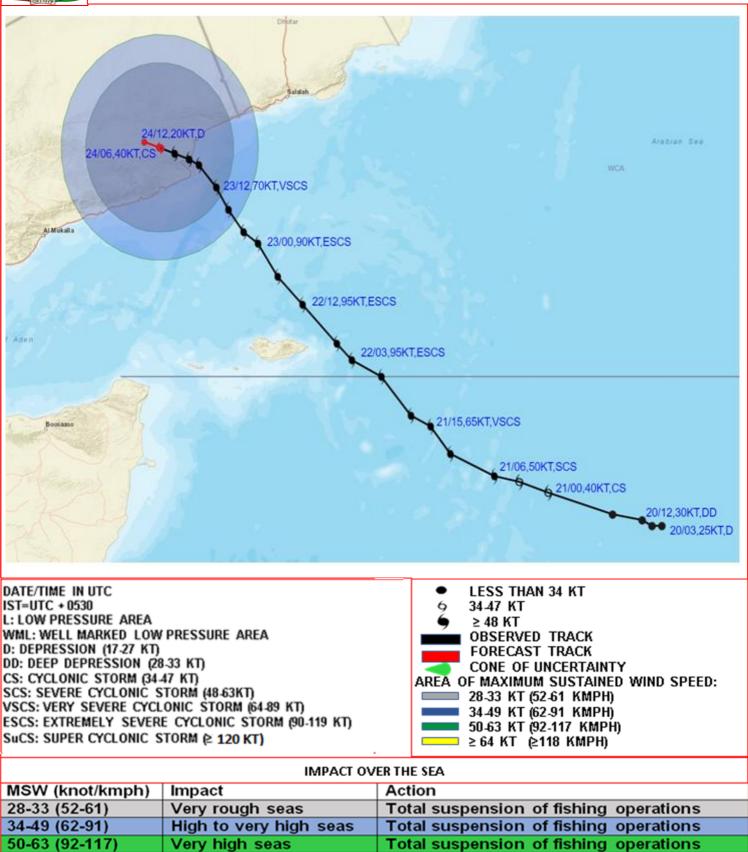




≥ 64 (≥118)

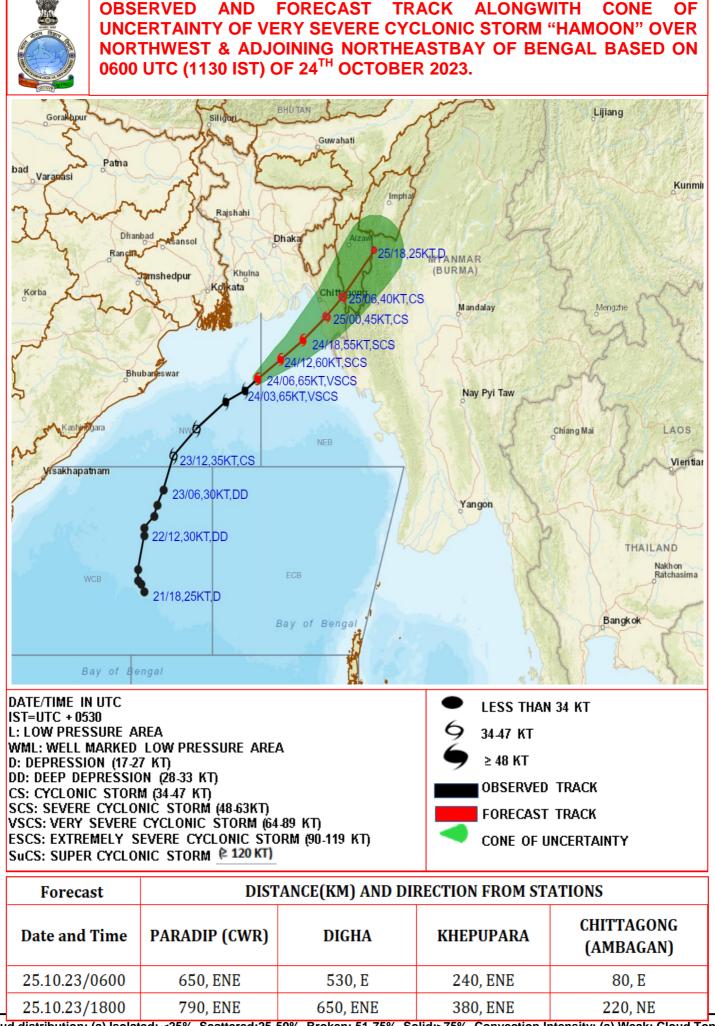
Phenomenal

# OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM "TEJ" OVER COASTAL YEMEN BASED ON 0600 UTC (1130 IST) OF 24<sup>TH</sup> 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% This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

Total suspension of fishing operations





OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM "HAMOON" OVER NORTHWEST & ADJOINING NORTHEASTBAY OF BENGAL BASED ON 0600 UTC (1130 IST) OF 24<sup>TH</sup> OCTOBER 2023.

Gular	Constant Provide Antonio Constant Antonio Constant Antonio Constant Antonio Constant Antonio Constant Antonio C					
Lucknow Gorak Kanpur Allahabad Varanasi Jabalpur Bhilai Varangal	pur Slight Patha Patha Dhanbad Sansol Randh Bhubareswar 23/12,35KT,CS apatham 23/06,30KT,DD 22/12,30KT,DD 21/18,25KT,D B	Guwahati Guwahati Jaka Azaw 25/18,25KTPANMAR BURMA) Chur 25/06,40KT,CS 24/18,55KT,SCS 24/18,55KT,SCS 24/12,60KT,SCS 5KT/VSCS May Pyl Taw Chiang Mai FEB FED FED FED FED FED FED				
100	Bay of Bengal					
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 (≥20 KT) CS: SUPER CYCLONIC STORM (≥20 KT) D: DEPRESSION (≥20 KT) D: DEPRESSION (≥20 KT) LESS THAN 34 KT SUPER CYCLONIC STORM (20-119 KT) SUCS: SUPER CYCLONIC STORM (≥20 KT) D: DEPRESSION (≥20 KT) D: DEPRESSION (≥20 KT) CS: SUPER CYCLONIC STORM (≥20 KT) CS: SUPER CYCLONIC STORM (≥20 KT) D: DEPRESSION (≥20 KT) D: DEPRESSIO						
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				

