



**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. 29 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 24.10.2023 BASED ON 1200 UTC OF 24.10.2023.

**SUB: (A) DEEP DEPRESSION [REMNANT OF CYCLONIC STORM “TEJ” (PRONOUNCED AS TEJ)] WEAKENED INTO A DEPRESSION OVER YEMEN
(B) VERY SEVERE CYCLONIC STORM “HAMOON” (PRONOUNCED AS HAMOON) WEAKENED INTO A SEVERE CYCLONIC STORM OVER NORTHEAST BAY OF BENGAL.**

(A) DEEP DEPRESSION [REMNANT OF CYCLONIC STORM “TEJ”] WEAKENED INTO A DEPRESSION OVER YEMEN

THE DEEP DEPRESSION OVER YEMEN MOVED WEST-NORTHWESTWARDS WITH A SPEED OF 09 KMPH DURING PAST 6 HOURS, WEAKENED INTO A DEPRESSION AND LAY CENTERED AT 1200 UTC OF TODAY, THE 24TH OCTOBER OVER YEMEN, NEAR LATITUDE 16.2°N AND LONGITUDE 51.0°E, ABOUT 110 KM WEST OF AL GHAIHAH (YEMEN, 41398) AND 340 KM WEST-SOUTHWEST OF SALALAH (OMAN, 41316).

IT IS VERY LIKELY TO MOVE FURTHER WEST-NORTHWESTWARDS AND WEAKEN INTO A WELL MARKED LOW PRESSURE AREA DURING NEXT 06 HOURS.

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

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 25 KNOTS GUSTING TO 35 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 1004 HPA.

SEA CONDITION:

WESTCENTRAL ARABIAN SEA: ROUGH SEA CONDITION IS LIKELY DURING NEXT 06 HOURS.

(B) VERY SEVERE CYCLONIC STORM “HAMOON” (PRONOUNCED AS HAMOON) WEAKENED INTO A SEVERE CYCLONIC STORM OVER NORTHEAST BAY OF BENGAL

THE VERY SEVERE CYCLONIC STORM “HAMOON” (PRONOUNCED AS HAMOON) OVER THE NORTHEAST AND ADJOINING NORTHWEST BAY OF BENGAL MOVED NORTHEASTWARDS WITH A SPEED OF 19 KMPH DURING PAST 6 HOURS, WEAKENED INTO A SEVERE CYCLONIC STORM AND LAY CENTERED AT 1200 UTC OF TODAY, THE 24TH OCTOBER OVER NORTHEAST BAY OF BENGAL, NEAR LATITUDE 20.9°N AND LONGITUDE 90.8°E, ABOUT 350 KM EAST-SOUTHEAST OF DIGHA (WEST BENGAL, 42901), 130 KM SOUTH-SOUTHEAST OF KHEPUPARA (BANGLADESH, 41984) AND 190 KM SOUTH-SOUTHWEST OF CHITTAGONG (BANGLADESH, 41977).

IT IS LIKELY TO WEAKEN GRADUALLY INTO A CYCLONIC STORM DURING NEXT 12 HOURS. IT IS LIKELY TO MOVE 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.

FORECAST TRACK AND INTENSITY ARE GIVEN BELOW:

DATE/TIME (UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
24.10.23/1200	20.9/90.8	105-115 GUSTING TO 125	SEVERE CYCLONIC STORM
24.10.23/1800	21.6/91.6	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
25.10.23/0000	22.2/92.2	80-90 GUSTING TO 100	CYCLONIC STORM
25.10.23/0600	22.8/92.7	60-70 GUSTING TO 80	CYCLONIC STORM
25.10.23/1200	23.4/93.2	40-50 GUSTING TO 60	DEPRESSION
26.10.23/0000	24.6/94.2	25-35 GUSTING TO 45	WELL MARKED LOW PRESSURE AREA

AS PER INSAT 3D IMAGERY, THE INTENSITY OF THE SYSTEM IS CHARACTERISED AS T3.5/C.I.4.0. IT SHOWS SHEAR PATTERN. CONVECTIVE CLOUDS ARE SHEARED TOWARDS NORTHEAST AND LIE OVER NORTHEAST BAY OF BENGAL, SOUTHEAST BANGLADESH AND ADJOINING MYANMAR, MIZORAM AND TRIPURA. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN EASTERN SECTOR.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 60 KNOTS GUSTING TO 70 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 988 HPA.

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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WIND GUIDANCE (MAP ENCLOSED):

- **NORTHEAST BAY OF BENGAL:**

GALE WIND SPEED REACHING **105-115 KMPH GUSTING TO 125 KMPH** IS PREVAILING AND LIKELY TO CONTINUE DURING NEXT 03 HOURS. IT WOULD DECREASE GRADUALLY THEREAFTER BECOMING **GALE WIND** SPEED REACHING **95-105 KMPH GUSTING TO 115 KMPH** BY 1800 UTC OF 24TH AND **80-90 KMPH GUSTING TO 90 KMPH** BY 0000 UTC OF 25TH AND WOULD DECREASE THEREAFTER.

- **NORTHWEST BAY OF BENGAL:**

GALE WIND SPEED REACHING **105-115 KMPH GUSTING 125 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 24TH, AND **SQUALLY WIND** SPEED REACHING **40-50 KMPH GUSTING TO 60 KMPH** BY 1200 UTC OF 25TH 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 DECREASE FROM 0300 UTC OF 25TH.

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

SQUALLY WIND SPEED REACHING **40-50 KMPH GUSTING TO 60 KMPH** WOULD CONTINUE TO PREVAIL ALONG & OFF WEST BENGAL COAST TILL 0000 UTC OF 25TH.

GALE WIND SPEED REACHING **70-80 KMPH GUSTING TO 90 KMPH** IS PREVAILING **ALONG & OFF** BANGLADESH COAST. IT WOULD GRADUALLY INCREASE BECOMING **80-90 KMPH GUSTING TO 100 KMPH** ALONG & OFF BANGLADESH AND ADJOINING NORTH MYANMAR COAST FROM 1800 UTC OF 24TH AND **55-65 KMPH GUSTING TO 75 KMPH** ALONG & OFF REMAINING PARTS OF NORTH MYANMAR COAST FROM 1800 UTC OF TODAY, THE 24TH OCTOBER TILL 0000 UTC OF 25TH OCTOBER. **SQUALLY WINDS** SPEED REACHING **55-65 KMPH GUSTING TO 75 KMPH** IS LIKELY DURING THE SAME PERIOD AND DECREASE THEREAFTER.

- **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 OF SOUTHEAST BANGLADESH BETWEEN KHEPUPARA AND COX'S BAZAR WITH PEAK SURGE OVER CHITTAGONG – COX'S BAZAR AREA AROUND THE TIME OF LANDFALL.

SEA CONDITION:

- **NORTHEAST BAY OF BENGAL AND ALONG & OFF BANGLADESH & ADJOINING NORTH MYANMAR COASTS:**

VERY HIGH SEA CONDITIONS ARE PREVAILING AND LIKELY TO CONTINUE TILL 1800 UTC OF 24TH AND WOULD BECOME HIGH THEREAFTER TILL 0300 UTC OF 25TH AND VERY ROUGH TO ROUGH TILL 1200 UTC OF 25TH OCTOBER.

- **NORTHWEST BAY OF BENGAL:**

HIGH TO VERY HIGH CONDITIONS ARE PREVAILING AND LIKELY TO CONTINUE TILL 1800 UTC OF 24TH AND WOULD BECOME VERY ROUGH TO ROUGH

THEREAFTER TILL 0300 UTC OF 25TH AND WOULD GRADUALLY IMPROVE THEREAFTER.

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

REMARKS:

ARABIAN SEA:

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 25TH OVER CENTRAL PARTS OF YEMEN.

CONSIDERING ALL THESE, THE DEPRESSION OVER YEMEN IS VERY LIKELY TO MOVE FURTHER WEST-NORTHWESTWARDS AND WEAKEN INTO A WELL MARKED LOW PRESSURE AREA DURING SUBSEQUENT 06 HOURS.

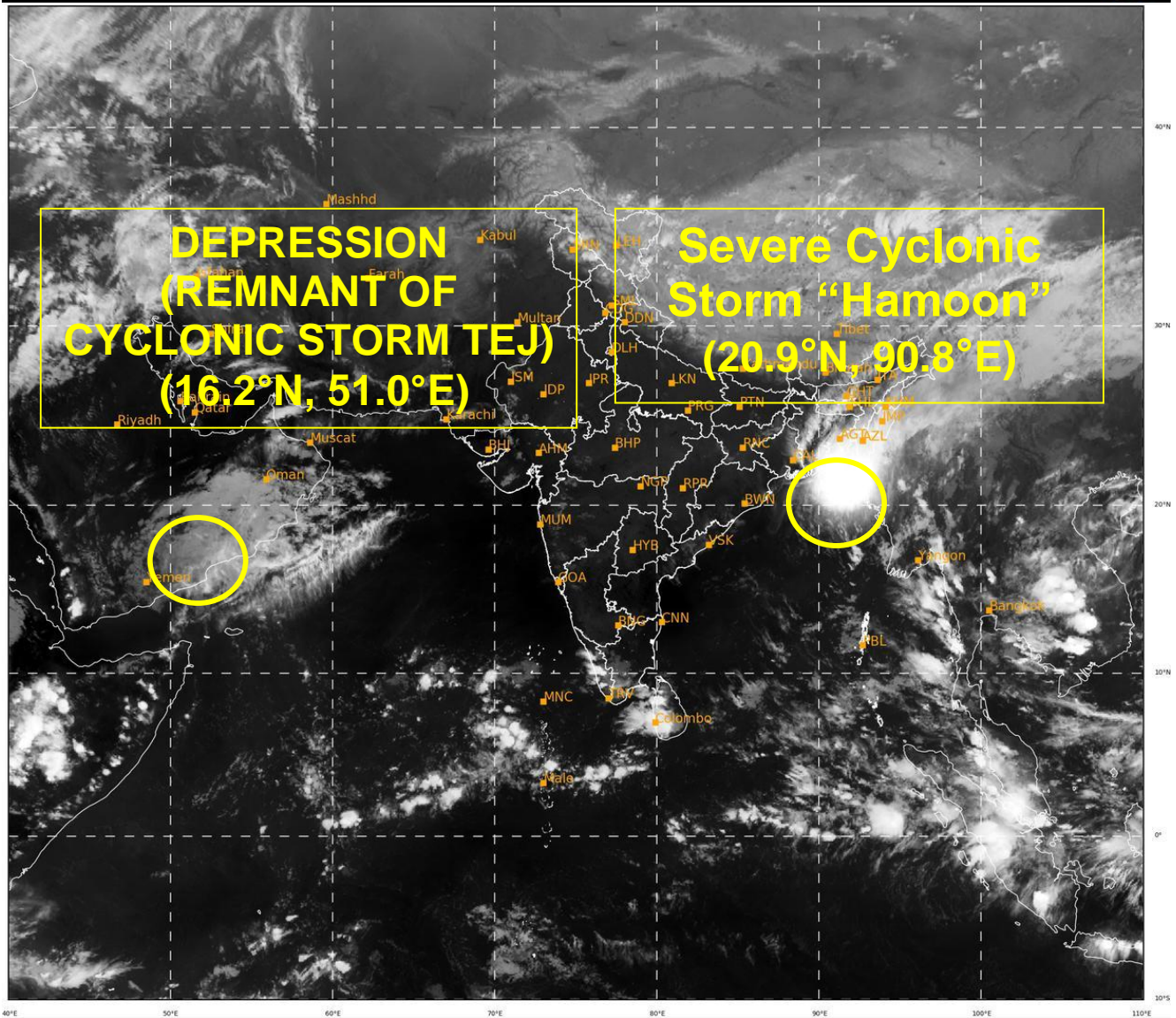
BAY OF BENGAL:

SEA SURFACE TEMPERATURE IS 28-30°C OVER NORTH BAY OF BENGAL. THE LOW LEVEL POSITIVE VORTICITY HAS DECREASED IN PAST 03 HOURS AND IS AROUND $150 \times 10^{-6} \text{S}^{-1}$ TO THE SOUTH OF SYSTEM CENTER. THE POSITIVE LOW LEVEL CONVERGENCE HAS DECREASED FURTHER AND IS ABOUT $05-10 \times 10^{-5} \text{S}^{-1}$ TO THE SOUTHEAST OF SYSTEM CENTRE. POSITIVE UPPER LEVEL DIVERGENCE IS HAS DECREASED AND IS ABOUT $10 \times 10^{-5} \text{S}^{-1}$ 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 HAS THUS ENTERED INTO UNFAVOURABLE ENVIRONMENT CONDITIONS AND IS THUS GRADUALLY WEAKENING. 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°N. AS THE SYSTEM LIES TO THE NORTH OF RIDGE, IT IS LIKELY TO MOVE NORTHEASTWARDS.

MODELS ARE IN AGREEMENT THAT 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 SEVERE CYCLONIC STORM "HAMOON" OVER NORTHEAST 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 24TH OCTOBER AS A **CYCLONIC STORM WITH WIND SPEED OF 80-90 KMPH GUSTING TO 100 KMPH.**

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



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IMD, DELHI



OBSERVED AND FORECAST TRACK OF DEPRESSION (REMNANT OF VERY SEVERE CYCLONIC STORM "TEJ") OVER YEMEN BASED ON 1200 UTC (1730 IST) OF 24TH OCTOBER 2023.

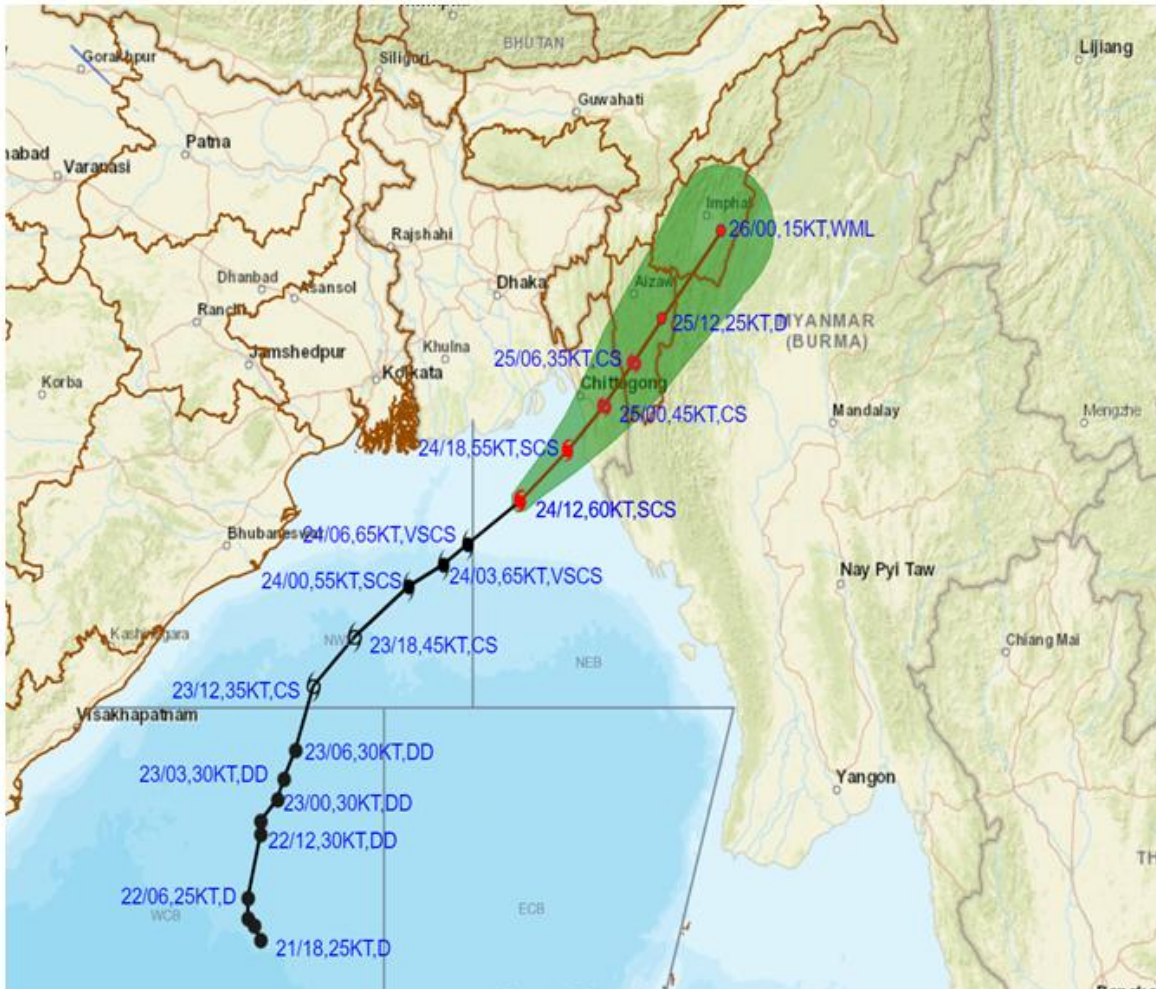


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM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

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



OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF SEVERE CYCLONIC STORM "HAMOON" OVER NORTHEAST BAY OF BENGAL BASED ON 1200 UTC (1730 IST) OF 24TH 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)
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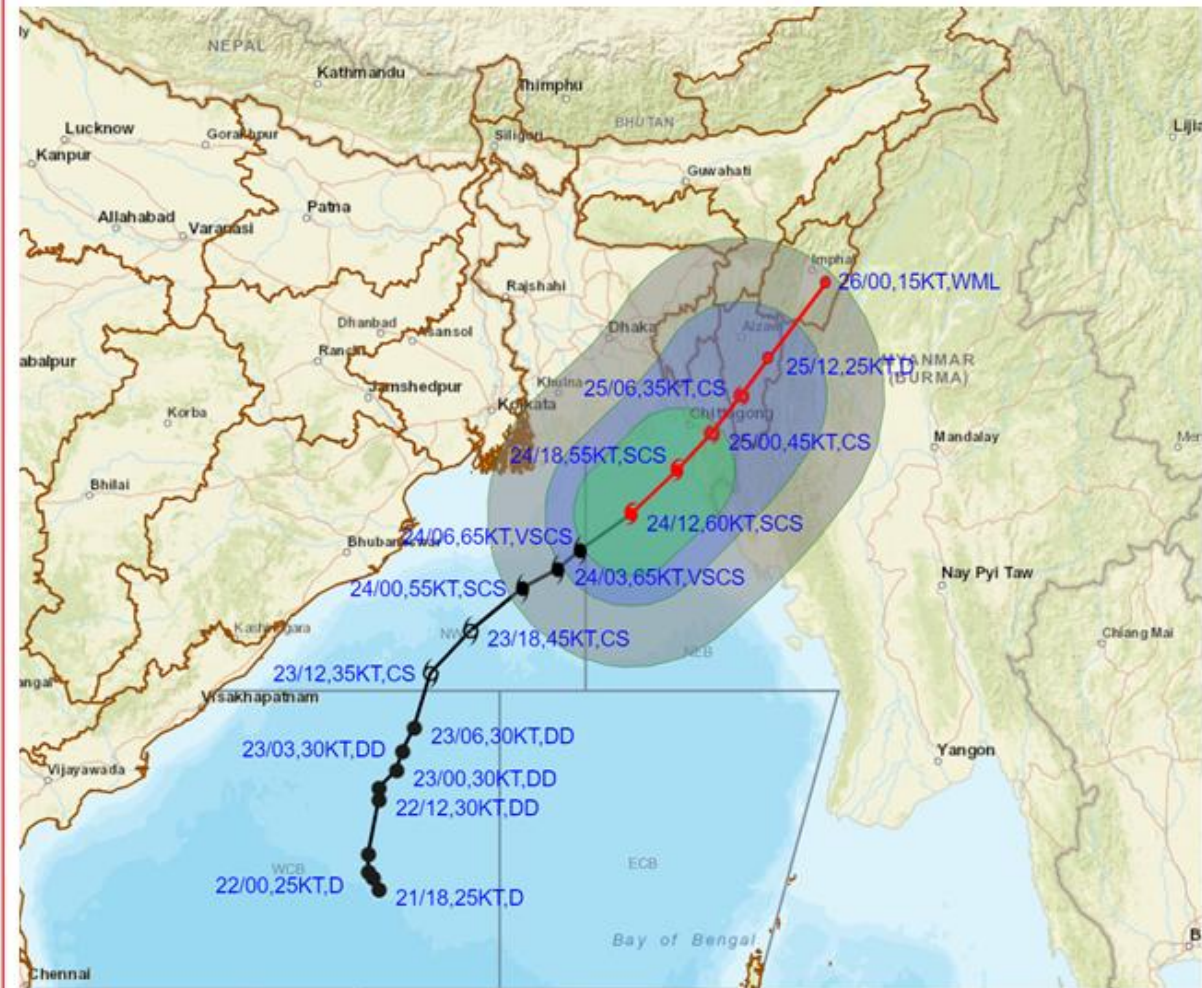
- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

Forecast	DISTANCE(KM) AND DIRECTION FROM STATIONS			
	PARADIP (CWR)	DIGHA	KHEPUPARA	CHITTAGONG (AMBAGAN)
25.10.23/1200	760, ENE	620, ENE	350, ENE	190, NE
26.10.23/0000	910, ENE	760, ENE	500, NE	350, NE

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 PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF SEVERE CYCLONIC STORM "HAMOON" OVER NORTHEAST BAY OF BENGAL BASED ON 1200 UTC (1730 IST) OF 24TH 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 (≥20 KT)

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

AREA OF MAXIMUM SUSTAINED WIND SPEED:

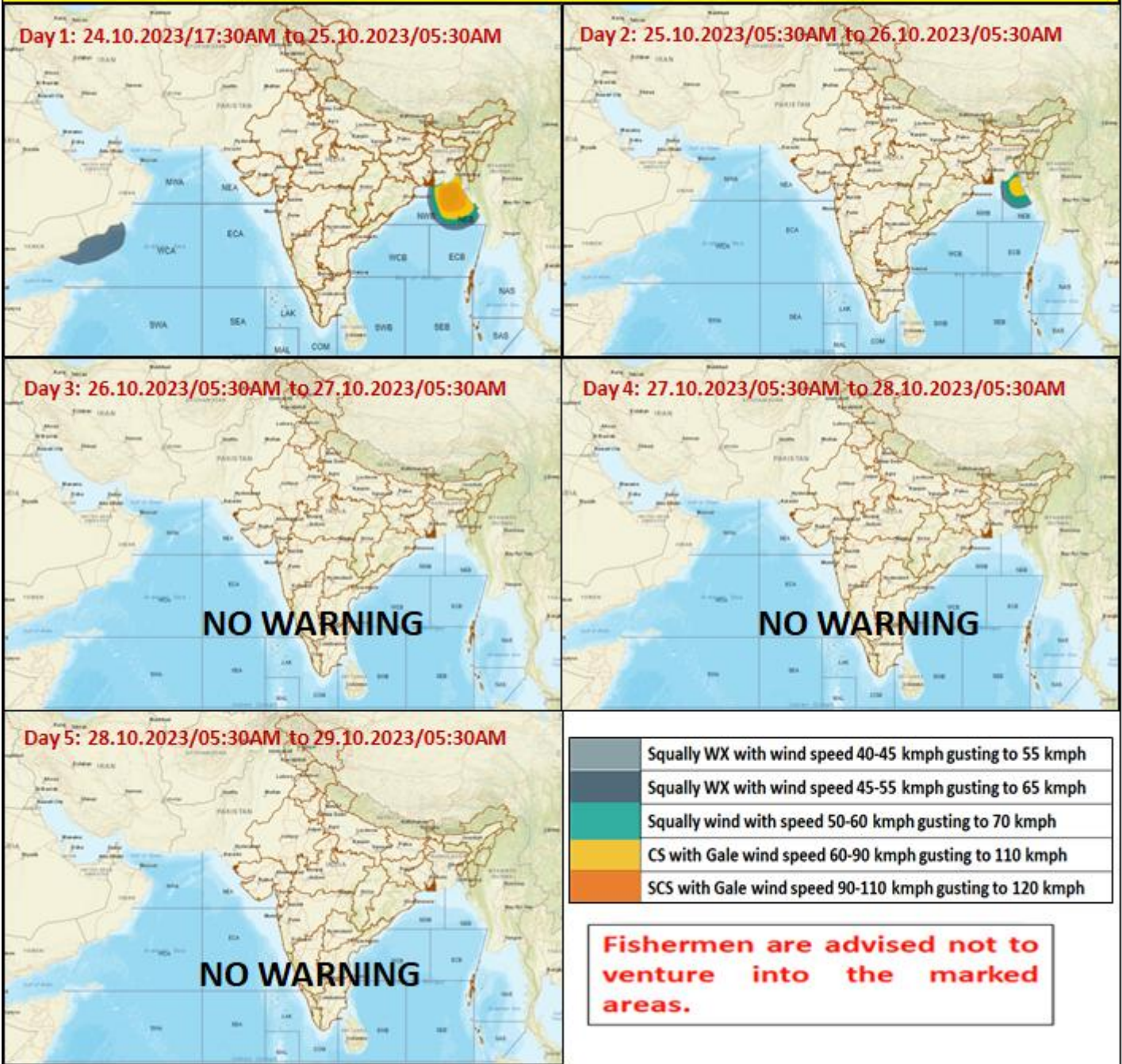
- 28-33 KT (52-61 KMPH)
- 34-49 KT (62-91 KMPH)
- 50-63 KT (92-117 KMPH)
- ≥ 64 KT (≥118 KMPH)

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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