REGIONALSPECIALISED METEOROLOGICALCENTRE-TROPICAL CYCLONES,NEW DELHI
TROPICAL CYCLONE ADVISORY NO . 05

DEMS-RSMCSPECIAL TROPICAL CYCLONES NEW DELHI DATED 26.05.2024

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. 5 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 26.05.2024 BASED ON 0000 UTC OF 26.05.2024

SUB: SEVERE CYCLONIC STORM "REMAL" PRONOUNCED AS "RE-MAL" OVER NORTH BAY OF BENGAL

THE CYCLONIC STORM "REMAL" (PRONOUNCED AS "RE-MAL") OVER NORTH BAY OF BENGAL MOVED NEARLY NORTHWARDS WITH A SPEED OF 06 KMPH DURING PAST 06 HOURS, **INTENSIFIED INTO SEVERE CYCLONIC STORM** AND LAY CENTERED AT 0000 UTC OF TODAY, THE 26 TH MAY, 2024 OVER NORTH BAY OF BENGAL NEAR LATITUDE 19.5°N AND LONGITUDE 89.3°E ABOUT 290 KM SOUTH-SOUTHWEST OF KHEPUPARA (41984, BANGLADESH), 330 KM SOUTH OF MONGLA (41958, BANGLADESH), 270 KM SOUTH-SOUTHEAST OF SAGAR ISLANDS (42731, WEST BENGAL), 390 KM SOUTH-SOUTHEAST OF DIGHA (42901, WEST BENGAL) AND 310 KM SOUTH-SOUTHEAST OF CANNING (42812, WEST BENGAL).

IT IS VERY LIKELY TO CONTINUE TO MOVE NEARLY NORTHWARDS AND INTENSIFY FURTHER AND CROSS BANGLADESH AND ADJOINING WEST BENGAL COASTS BETWEEN SAGAR ISLAND (42731) AND KHEPUPARA (41984), CLOSE TO SOUTHWEST OF MONGLA (41958, BANGLADESH) BY 1800 UTC OF TODAY, THE 26TH MAY AS A SEVERE CYCLONIC STORM WITH WIND SPEED OF 110-120 GUSTING TO 135 KMPH.
FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME (UTC)	POSITION (LAT. ^{0}N/ LONG. ^{0}E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
26.05.24/0000	19.5/89.3	85-95 GUSTING TO 105	SEVERE CYCLONIC STORM
26.05.24/0600	20.2/89.2	100-110 GUSTING TO 120	SEVERE CYCLONIC STORM

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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26.05.24/1200	20.9/89.2	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
26.05.24/1800	21.8/89.3	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
27.05.24/0000	22.7/89.5	70-80 GUSTING TO 90	CYCLONIC STORM
27.05.24/1200	24.2/90.1	50-60 GUSTING TO 70	DEEP DEPRESSION
28.05.24/0000	25.5/90.9	30-40 GUSTING TO 50	DEPRESSION

AS PER INSAT-3D IMAGERY, CLOUDS ARE ORGANISED IN CURVED BAND PATTERN. INTENSITY OF THE SYSTEM IS T3.0. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH AND ADJOINING CENTRAL & NORTH ANDAMAN SEA (MINIMUM CLOUD TOP TEMPERATURE IS -93 DEG CESIUS). AS PER MULTISATELLITE WINDS, STRONGER WINDS ARE SEEN IN SOUTHERN EASTERN SECTOR. THE TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION INTO THE CORE OF THE SYSTEM. MULTISATELLITE WINDS INDICATE STRONGER WINDS IN EASTERN SECTOR.

AS PER LATEST OBSERVATIONS, ESTIMATED CENTRAL PRESSURE IS 982 HPA AT 0000 UTC. ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 50 KNOTS GUSTING TO 60 KNOTS. SEA CONDITION IS HIGH TO VERY HIGH OVER NORTH BAY OF BENGAL AND VERY ROUGH CENTRAL BAY OF BENGAL.

SHIP/BOUY OBSERVATION AT 0000 UTC IS GIVEN BELOW:

BOUY & SHIP (LAT°N/LONG°E)	***WIND DIRECTION°/ SPEED (KNOTS)***	***MSLP(hPa)***
BOUY 17.8/89.2	278/19.5 KT	990.1
BOUY 17.5/89.2	245/5 KT	992.9

WIND WARNING:

(A) BAY OF BENGAL:

- **GALE WIND SPEED REACHING 80-90 KMPH GUSTING TO 100 KMPH** IS LIKELY TO PREVAIL OVER CENTRAL BAY OF BENGAL TILL 0600 UTC AND DECREASE BECOMING SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH TILL 0000 UTC OF 27 TH MAY.
- **GALE WIND SPEED REACHING 85-95 KMPH GUSTING TO 105 KMPH** PREVAILING OVER NORTH BAY OF BENGAL IS LIKELY TO INCREASE BECOMING 100-120 KMPH GUSTING TO 135 KMPH FROM 06 UTC TILL 18 UTC OF 26 TH MAY. IT IS LIKELY DECREASE THEREAFTER BECOMING 70-80 KMPH GUSTING TO 90 KMPH BY 0000 UTC ON 27 TH MAY AND SQUALLY WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH BY 12 UTC OF 27 TH MAY.

(B) ALONG & OFF BANGLADESH AND WEST BENGAL COASTS:

- **SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH** IS PREVAILING ALONG OFF BANGLADESH AND WEST BENGAL & ADJOINING NORTH ODISHA COASTS. IT IS LIKELY TO INCREASE BECOMING GALE WIND SPEED REACHING 70-80 KMPH GUSTING TO 90 KMPH FROM 09 UTC OF 26 TH MAY AND 100-120 KMPH GUSTING TO 135 KMPH ALONG & OFF BANGLADESH AND ADJOINING WEST BENGAL COASTS FROM 12 UTC OF 26 TH MAY TILL 0000 UTC OF 27 TH MAY. IT IS LIKELY DECREASE THEREAFTER TO BECOME 60-70 KMPH GUSTING TO 80 KMPH BY 0900 UTC AND SQUALLY WIND 50-60 KMPH GUSTING TO 70 KMPH BY NIGHT OF 27 TH MAY.
- **SQUALLY WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH** IS LIKELY TO COMMENCE OVER HOWRAH, HOOGLY, KOLKATA AND EAST MEDINIPUR DISTRICTS FROM 1200 UTC OF 26 TH MAY. IT WILL INCREASE GRADUALLY BECOMING GALE WIND SPEED REACHING 70-80 KMPH GUSTING TO 90 KMPH OVER THESE DISTRICTS AROUND 1500 UTC OF 26 TH MAY EXCEPT EAST MEDINIPUR WHERE THE WIND SPEED MAY REACH UP TO 60-70 KMPH GUSTING TO 80 KMPH DURING THE SAME PERIOD.

(C) ALONG & OFF NORTH ODISHA COASTS:

- SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH IS LIKELY TO PREVAIL TILL 27 TH MAY 0000 UTC.

(D) NORTHEASTERN STATES:

- **SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH** IS LIKELY OVER MIZORAM TRIPURA SOUTH MANIPUR ON 26 TH 27 TH MAY AND 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY OVER SOUTH ASSAM AND MEGHALAYA ON 27 TH MAY.

STORM SURGE WARNING:

STORM SURGE OF ABOUT 1 METER HEIGHT ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS OF COASTAL WEST BENGAL AND 3-4 M ABOVE ASTRONOMICAL TIDE LIKELY TO INUNDATE LOW LYING AREAS OF COASTAL BANGLADESH AROUND THE TIME OF LANDFALL.

SEA CONDITION WARNING:

(A) CENTRAL AND NORTH BAY OF BENGAL:

VERY ROUGH TO HIGH SEA CONDITION IS LIKELY TO PREVAIL OVER CENTRAL BAY OF BENGAL ON 26 TH MAY AND HIGH TO VERY HIGH OVER NORTH BAY OF BENGAL TILL 27 TH MAY 0000 UTC.

(B) ALONG OFF BANGLADESH AND WEST BENGAL COASTS

VERY ROUGH SEA CONDITION IS PREVAILING ALONG OFF BANGLADESH AND WEST BENGAL COASTS. IT WOULD BECOME HIGH TO VERY HIGH ALONG OFF BANGLADESH AND WEST BENGAL COASTS FROM 26 TH 0000 UTC ONWARDS TILL 27 TH MAY 0000 UTC.

(C) ALONG OFF NORTH ODISHA COAST:

VERY ROUGH SEA CONDITION IS LIKELY ALONG OFF NORTH ODISHA COAST TILL 27 TH MAY 0000 UTC.

FISHERMEN WARNING (GRAPHICS ATTACHED):

FISHERMEN ARE ADVISED NOT TO VENTURE INTO CENTRAL BAY OF BENGAL TILL 26TH MAY AND NORTH BAY OF BENGAL TILL 27TH MAY. FISHERMEN OUT AT SEA ARE ADVISED TO RETURN TO THE COAST.

REMARKS:

THE MADDEN JULIAN INDEX (MJO) CURRENTLY LIES IN PHASE 4 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE DURING NEXT 3 DAYS. THUS, MJO PHASE & AMPLITUDE ARE HIGHLY CONDUCIVE FOR CYCLOGENESIS AND FURTHER INTENSIFICATION OVER THE BAY OF BENGAL (BOB) DURING NEXT 3 DAYS.

STRONG EASTERLY WINDS (5-7 MPS) ARE LIKELY TO PREVAIL OVER NORTH BOB DURING 3 DAYS IN THE LOWER TROPOSPHERIC LEVELS. STRONG WESTERLY WINDS (5-7 MPS) ARE LIKELY TO PREVAIL OVER THE SOUTH & CENTRAL BAY OF BENGAL AND ANDAMAN SEA DURING NEXT 3 DAYS. IN ADDITION, KELVIN WAVES, EQUATORIAL ROSSBY WAVES ARE ALSO PREVAILING OVER SOUTH BAY OF BENGAL & COUPLED WITH MJO. THESE WAVES WILL PROVIDE A CONDUCIVE ENVIRONMENT FOR FURTHER INTENSIFICATION OF DEEP DEPRESSION OVER BOB.

THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS MORE THAN 100 KJ/CM2 OVER MAJOR PARTS OF BAY OF BENGAL. IT IS INDICATING SLIGHTLY DECREASING TENDENCY TOWARDS NORTH BOB AND ALONG THE COASTS. SEA SURFACE TEMPERATURE (SST) IS AROUND 30-32°C OVER ENTIRE BOB, BEING MORE THAN 32°C OVER SOME PARTS OF NORTH BOB. THE SEA CONDITIONS OVER BOB ARE ALSO CONDUCIVE FOR FURTHER INTENSIFCATION OF SYSTEM.

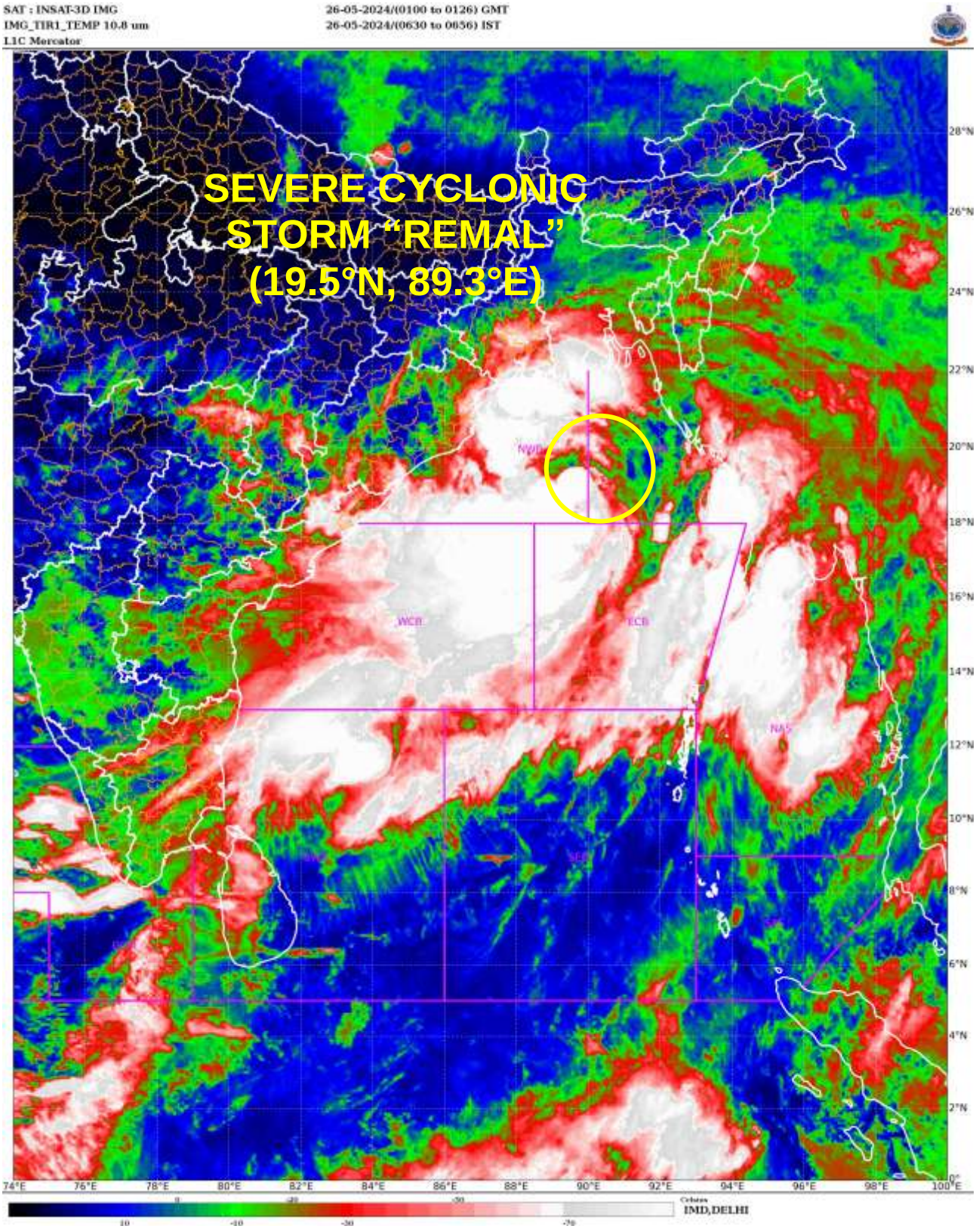
CONSIDERING THE ENVIRONMENTAL CONDITIONS, LOW LEVEL VORTICITY IS ABOUT $250x10^{-5}S^{-1}$ TO THE OVER EASTCENTRAL AND NORTH BAY OF BENGAL WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. LOW LEVEL CONVERGENCE IS ABOUT $30x10^{-5}$ S^{-1} TO THE WEST OF THE SYSTEM CENTER. STRONG EQUATORWARD OUTFLOW IS SEEN. UPPER

LEVEL DIVERGENCE IS ABOUT $20x10^{-5}S^{-1}$ AROUND THE SOUTHWEST OF THE SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS MODERATE (AROUND 15-20 KT) ALONG THE FORECAST TRACK. MID LEVEL WIND SHEAR IS ANTICYCLONIC OVER THE SYSTEM AREA WHICH WILL SUPPORT FURTHER INTENSIFICATION OF THE SYSTEM. CURRENTLY, THE SYSTEM IS MOVING NEARLY NORTHWARDS ALONG THE PERIPHERY OF THE UPPER TROPOSPHERIC RIDGE AT 200 HPA LOCATED NEAR 18.0^{0}N.

THE GUIDANCE FROM VARIOUS NUMERICAL MODELS IS INDICATING CROSSING OVER BANGLADESH. THE MODELS LIKE IMD GFS, GEFS HAVE ALSO SHIFTED TRACK EASTWARDS. ECMWF IS CONSISTENTLY INDICATING CROSSING OVER WEST BENGAL & ADJOINING BANGLADESH COASTS. IMD MME IS INDICATING CROSSING OVER BANGLADESH COAST. THE LANDFALL TIME IS VARYING BETWEEN 1500-2100 UTC OF 26^{TH} MAY. MOST OF THE MODELS ARE INDICATING THE SYSTEM TO CROSS AS A SEVERE CYCLONIC STORM (50-60 KT).

THE CYCLONIC STORM “REMAL” IS VERY LIKELY TO CONTINUE TO MOVE NEARLY NORTHWARDS AND INTENSIFY INTO A SEVERE CYCLONIC STORM BY 0000 UTC OF 26TH MAY OVER NORTH BAY OF BENGAL AND CROSS BANGLADESH AND ADJOINING WEST BENGAL COASTS BETWEEN SAGAR ISLAND (42731) AND KHEPUPARA (41984) CLOSE TO SOUTHWEST OF MONGLA (BANGLADESH) BY 1800 UTC OF 26TH MAY AS A SEVERE CYCLONIC STORM WITH WIND SPEED OF 110-120 GUSTING TO 135 KMPH.

D. R. PATTANAIK
SCIENTIST
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%
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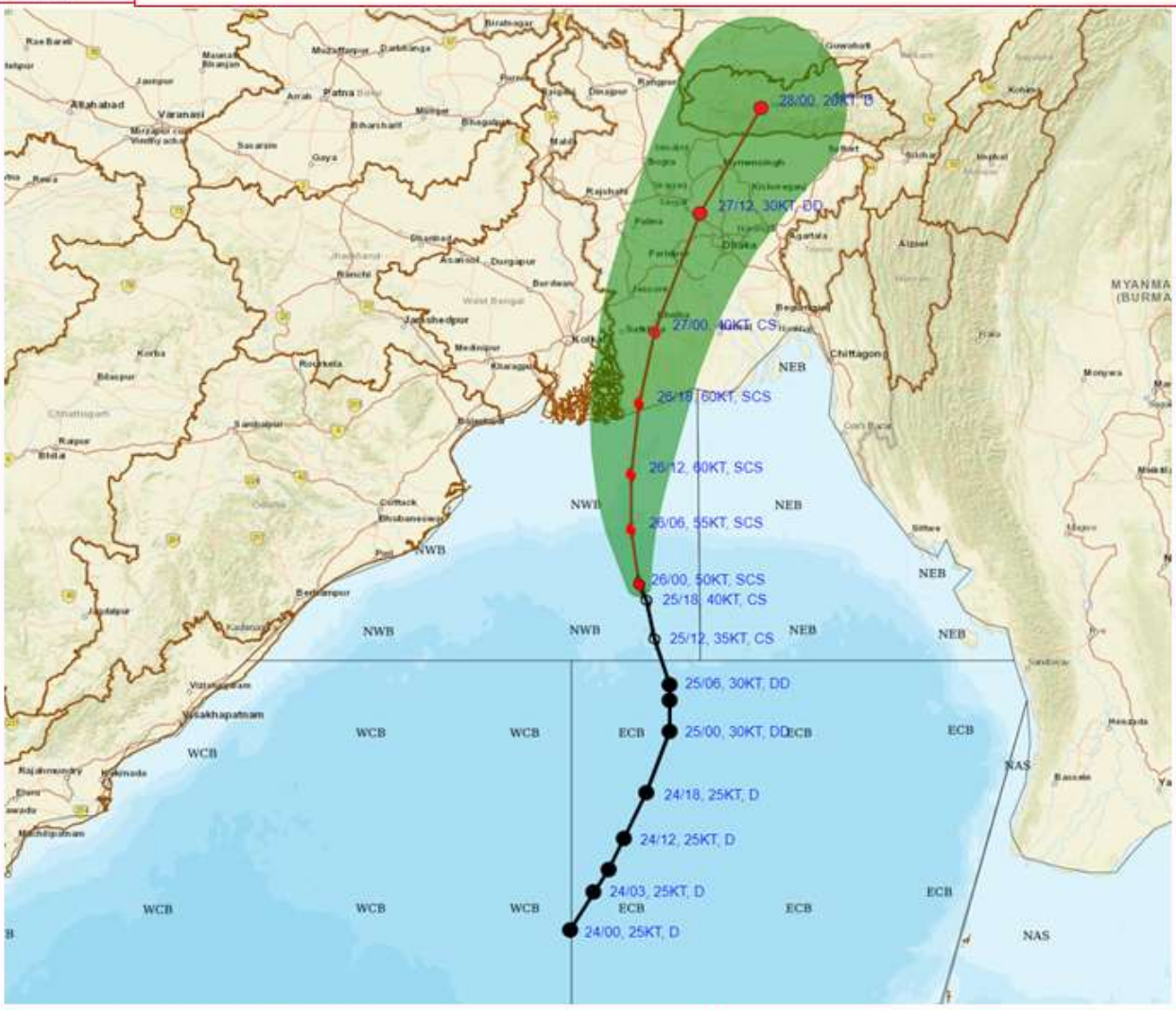
FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY IN ASSOCIATION WITH SEVERE CYCLONIC STORM 'REMAL' OVER NORTH BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 26TH MAY 2024.



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

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS		
Date and Time (UTC)	Canning	Khepupara	SAGAR ISLAND
26.05.24/0000	310, SSE	290, SSW	270, SSE
26.05.24/1200	150, SSE	160, SSW	140, SE
26.05.24/1800	80, SSE	90, W	120, E
27.05.24/0000	100, ENE	110, NW	190, NE

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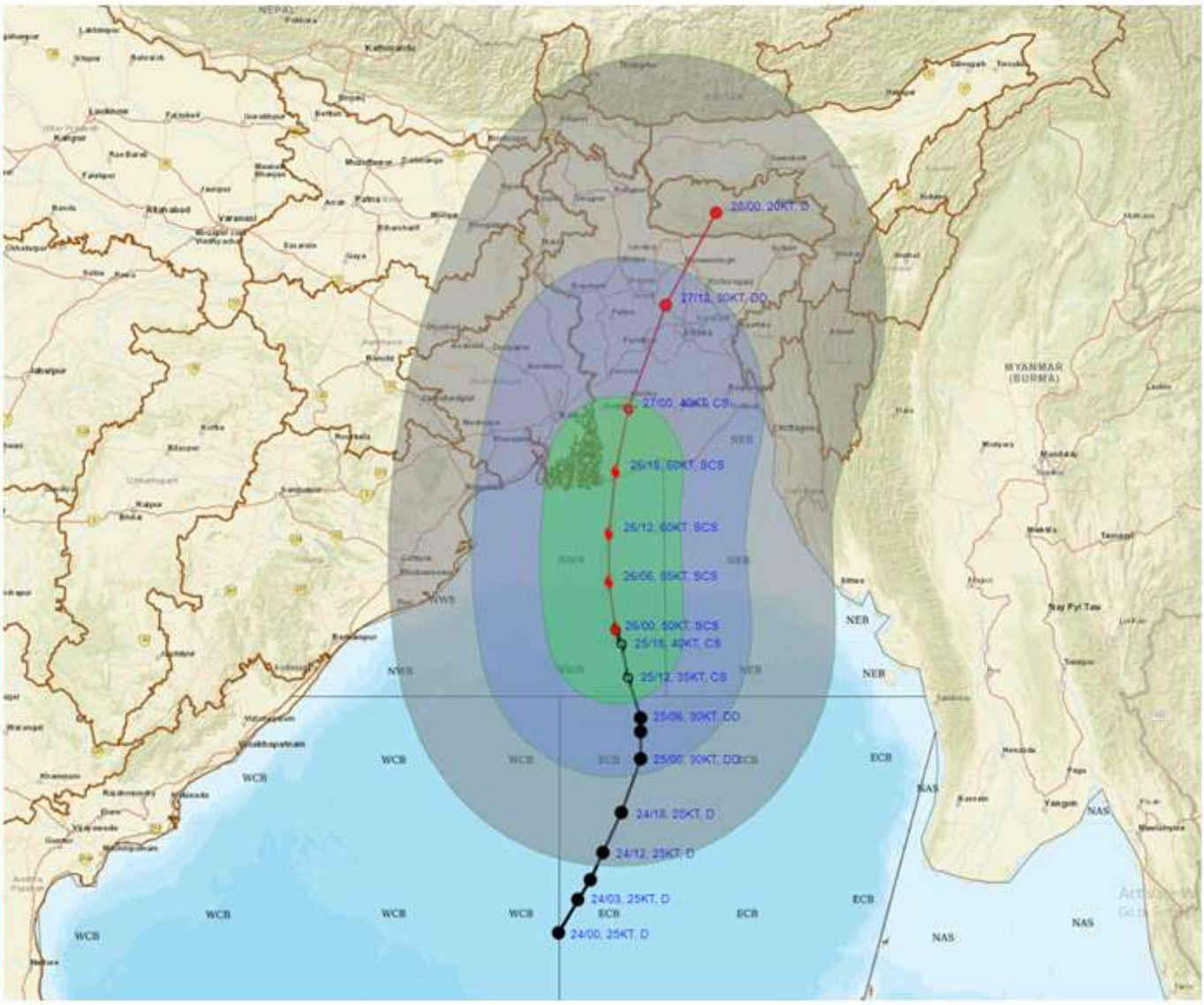
FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH SEVERE CYCLONIC STORM 'REMAL' OVER NORTH BAY OF BENGAL BASED ON 0000 UTC (0530 IST) OF 26TH MAY 2024.



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
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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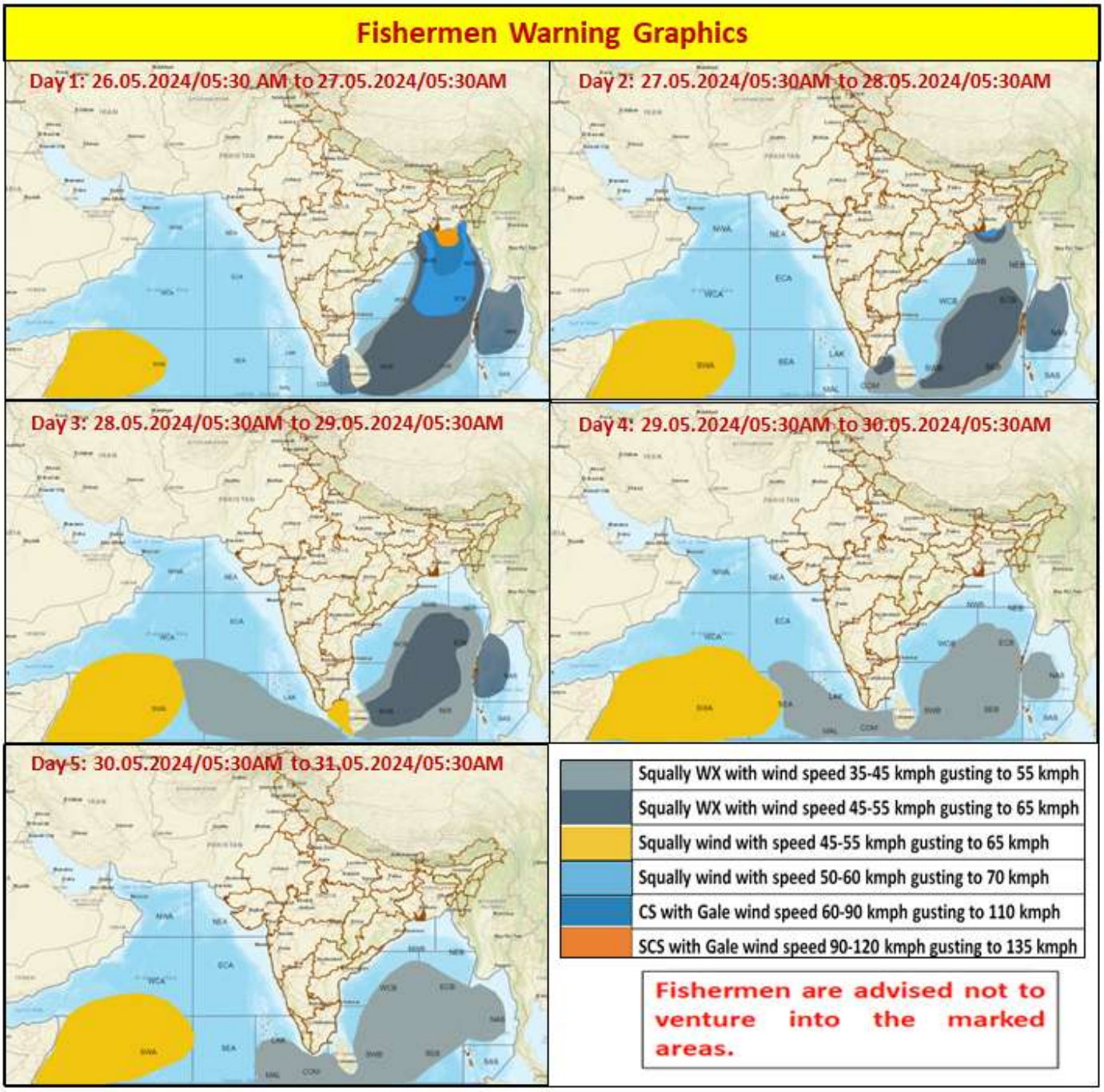
Fishermen Warning Graphics



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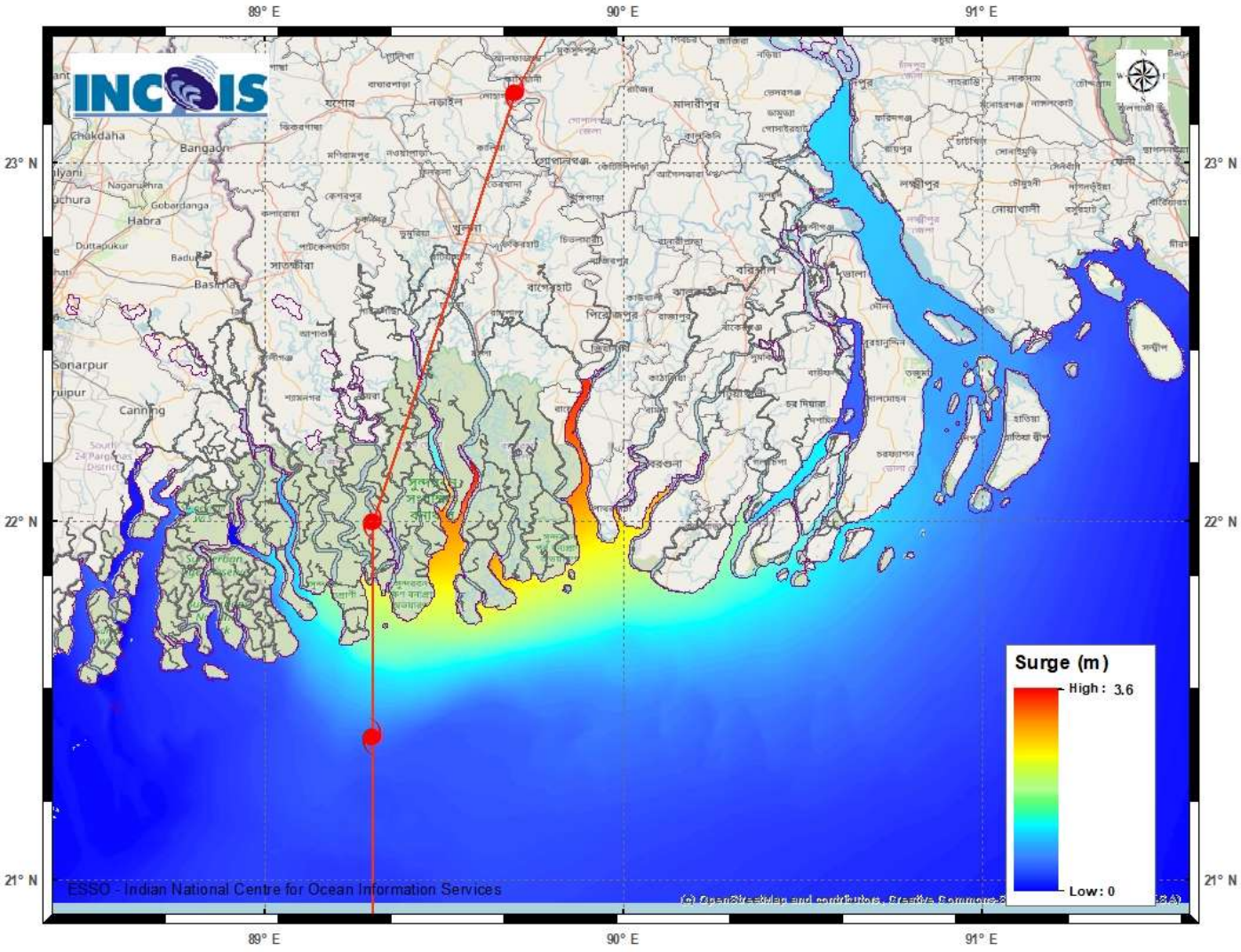
Storm Surge Warning Graphics



PROBABILITY OF EXCEEDANCE OG STORM SURGE >3.0M

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