



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI  
TROPICAL CYCLONE ADVISORY NO. 13**

**DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 27.05.2024**

**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. 13 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 27.05.2024 BASED ON 0000 UTC OF 27.05.2024**

**SUB: CYCLONIC STORM “REMAL” PRONOUNCED AS “RE-MAL” OVER COASTAL BANGLADESH AND ADJOINING COASTAL WEST BENGAL**

THE SEVERE CYCLONIC STORM “REMAL” (PRONOUNCED AS “RE-MAL”) OVER COASTAL BANGLADESH AND ADJOINING COASTAL WEST BENGAL MOVED NEARLY NORTHWARDS, WITH A SPEED OF 15 KMPH DURING PAST 06 HOURS, WEAKENED INTO A CYCLONIC STORM AND LAY CENTERED AT 0000 UTC OF TODAY, THE 27TH MAY, 2024 OVER THE SAME REGION, NEAR LATITUDE 22.5°N AND LONGITUDE 89.3°E ABOUT 150 KM NORTHEAST OF SAGAR ISLANDS (41984, WEST BENGAL), 110 KM NORTHWEST OF KHEPUPARA (41984, BANGLADESH), 70 KM NORTHEAST OF CANNING (42812, WEST BENGAL) AND 30 KM WEST-SOUTHWEST OF MONGLA (41958, BANGLADESH).

THE SYSTEM IS INITIALLY LIKELY TO MOVE NORTH-NORTHEASTWARDS, SUBSEQUENTLY NORTHEASTWARDS AND GRADUALLY WEAKEN FURTHER.

CURRENTLY MAXIMUM SUSTAINED WIND SPEED OF 80-90 KMPH GUSTING TO 100 KMPH SIMILAR WINDSPEED LIKELY TO CONTINUE FOR NEXT 3 HOURS AND DECREASE THEREAFTER. THE CYCLONE IS UNDER THE CONTINUOUS SURVEILLANCE OF KOLKATA DOPPLER WEATHER RADAR.

**FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:**

<b>DATE/TIME (UTC)</b>	<b>POSITION (LAT. °N/ LONG. °E)</b>	<b>MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)</b>	<b>CATEGORY OF CYCLONIC DISTURBANCE</b>
27.05.24/0000	22.5/89.3	80-90 GUSTING TO 100	CYCLONIC STORM
27.05.24/0600	23.4/89.8	60-70 GUSTING TO 80	CYCLONIC STORM
27.05.24/1200	24.2/90.4	50-60 GUSTING TO 70	DEEP DEPRESSION
27.05.24/1800	25.0/91.1	40-50 GUSTING TO 60	DEPRESSION
28.05.24/0000	25.7/91.9	35-45 GUSTING 55	DEPRESSION
28.05.24/1200	26.3/92.8	20-30 GUSTING 40	WELL MARKED LOW PRESSURE AREA

AS PER INSAT-3D IMAGERY, CLOUDS ARE ORGANISED IN CURVED BAND PATTERN. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH BAY SOUTH GANGETIC WEST BENGAL, SOUTH MANIPUR, MIZORAM, TRIPURA, SOUTH GANGETIC WEST BENGAL, SOUTH MANIPUR, MIZORAM, TRIPURA, ADJOINING ASSAM AND BANGLADESH (MINIMUM CLOUD TOP TEMPERATURE IS -93 DEG CESIUS). AS PER MULTISATELLITE WINDS, STRONGER WINDS ARE SEEN IN SOUTHEAST SECTOR. THE TOTAL PRECIPITABLE WATER IMAGERY INDICATES WARM MOIST AIR INCURSION FROM NORTH WEST SECTOR INTO THE CORE OF THE SYSTEM.

AS PER LATEST OBSERVATIONS, ESTIMATED CENTRAL PRESSURE IS 979 HPA AT 0000 UTC OF 27 MAY. ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 45 KNOTS GUSTING TO 50 KNOTS. SEA CONDITION IS HIGH TO VERY HIGH OVER NORTH BAY OF BENGAL AND VERY ROUGH OVER CENTRAL BAY OF BENGAL.

THE CYCLONE IS UNDER THE CONTINUOUS SURVEILLANCE OF KOLKATA DOPPLER WEATHER RADAR. RADAR ECHO SUGGESTS THAT THE A PART OF WALL CLOUD ZONE ALREADY ENTERED INTO OVER LAND BUT STILL CENTRE OF THE EYE IS LOCATED OUTER SEA NEAR COASTLINE.

**WARNINGS (GRAPHICS ATTACHED):**

**HEAVY RAINFALL WARNING:**

**(A) WEST BENGAL:** LIGHT TO MODERATE RAINFALL AT MOST PLACES WITH HEAVY TO VERY HEAVY RAINFALL AT A FEW PLACES IS LIKELY OVER COASTAL DISTRICTS OF WEST BENGAL AND EASTERN DISTRICTS OF GANGETIC WEST BENGAL ADJACENT TO BANGLADESH ON 27TH MAY. THE PEAK RAINFALL ACTIVITY IS LIKELY TILL 0900 UTC OF 27TH MAY.

LIGHT TO MODERATE RAINFALL AT MOST PLACES WITH HEAVY TO VERY HEAVY RAINFALL AT ISOLATED PLACES LIKELY OVER EASTERN DISTRICTS OF SUB-HIMALAYAN WEST BENGAL ON 27TH AND 28TH MAY.

**(B) NORTHEASTERN STATES:** LIGHT TO MODERATE RAINFALL AT MOST PLACES WITH HEAVY TO VERY HEAVY RAINFALL AT ISOLATED PLACES IS LIKELY OVER ASSAM, MEGHALAYA, ARUNACHAL PRADESH, NAGALAND, MIZORAM, MANIPUR & TRIPURA ON 27TH & 28TH MAY. ISOLATED EXTREMELY HEAVY RAINFALL ( $\geq 20$  CM) IS ALSO LIKELY OVER ASSAM, MEGHALAYA ON 27TH & 28TH MAY, ARUNACHAL PRADESH ON 28TH MAY AND MIZORAM & TRIPURA ON 27TH MAY.

## **WIND WARNING:**

### **(A) BAY OF BENGAL**

GALE WIND SPEED REACHING 80-90 KMPH GUSTING TO 100 KMPH IS PREVAILING OVER NORTH BAY OF BENGAL. IT IS LIKELY TO DECREASE BECOMING 60-70 KMPH GUSTING TO 80 KMPH BY 0900 UTC OF 27TH MAY AND SQUALLY WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH BY 1200 UTC OF 27TH MAY.

SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH WILL CONTINUE TO PREVAIL OVER ADJOINING CENTRAL BAY OF BENGAL TILL 0900 UTC OF 27TH MAY.

### **(B) ALONG & OFF BANGLADESH AND WEST BENGAL COASTS**

GALE WIND SPEED REACHING 80-90 KMPH GUSTING TO 100 KMPH WILL CONTINUE TO PREVAIL ALONG & OFF BANGLADESH AND ADJOINING WEST BENGAL COASTS DURING NEXT 3 HOURS. IT IS LIKELY TO DECREASE BECOMING 60-70 KMPH GUSTING TO 80 KMPH BY 0900 UTC, SQUALLY WIND 50-60 KMPH GUSTING TO 70 KMPH BY EVENING OF 27TH MAY AND DECREASE GRADUALLY THEREAFTER.

GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH WILL CONTINUE TO PREVAIL OVER HOWRAH, HOOGLY & KOLKATA, OVER EAST MEDINIPUR DURING NEXT 6 HOURS AND DECREASE GRADUALLY THEREAFTER.

### **(C) ALONG & OFF NORTH ODISHA COASTS**

SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL DURING NEXT 6 HOURS AND DECREASE GRADUALLY THEREAFTER.

### **(D) NORTHEASTERN STATES**

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

## **SEA CONDITION WARNING:**

### **(A) NORTH BAY OF BENGAL**

HIGH SEA CONDITION IS LIKELY OVER NORTH BAY OF BENGAL TILL 0900 UTC AND GRADUALLY IMPROVE BECOMING VERY ROUGH TO ROUGH BY 1200 UTC OF 27TH MAY AND GRADUALLY IMPROVE THEREAFTER.

### **(B) ALONG & OFF BANGLADESH AND WEST BENGAL COASTS**

HIGH SEA CONDITION IS LIKELY ALONG & OFF BANGLADESH AND WEST BENGAL COASTS TILL 0900 UTC AND GRADUALLY IMPROVE BECOMING VERY ROUGH TO ROUGH BY 1200 OF 27TH MAY AND GRADUALLY IMPROVE THEREAFTER.

### **(C) ALONG & OFF NORTH ODISHA COAST**

ROUGH SEA CONDITION IS LIKELY ALONG & OFF NORTH ODISHA COAST DURING NEXT 6 HOURS AND IMPROVE THEREAFTER.

### **(D) CENTRAL BAY OF BENGAL**

ROUGH SEA CONDITION IS LIKELY TO PREVAIL OVER CENTRAL BAY OF BENGAL DURING NEXT 6 HOURS AND IMPROVE THEREAFTER.

## **FISHERMEN WARNING (GRAPHICS ATTACHED):**

FISHERMEN ARE ADVISED NOT TO VENTURE INTO CENTRAL BAY OF BENGAL ON 26<sup>TH</sup> MAY AND NORTH BAY OF BENGAL TILL 27<sup>TH</sup> MAY.

**REMARKS:**

LOW LEVEL VORTICITY IS ABOUT  $300 \times 10^{-5} \text{S}^{-1}$  OVER NORTH BAY OF BENGAL WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. LOW LEVEL CONVERGENCE IS ABOUT  $30 \times 10^{-5} \text{S}^{-1}$  TO THE SOUTH OF THE SYSTEM CENTER. STRONG EQUATORWARD OUTFLOW IS SEEN. UPPER LEVEL DIVERGENCE IS ABOUT  $10 \times 10^{-5} \text{S}^{-1}$  TO THE SOUTHWEST OF THE SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS ANTICYCLONIC AND LOW (05-10 KT) ALONG THE FORECAST TRACK.

THE SYSTEM CROSSED THE BANGLADESH AND ADJOINING WEST BENGAL COASTS BETWEEN SAGAR ISLANDS AND KHEPUPARA CLOSE TO SOUTHWEST OF MONGLA BETWEEN 1700 UTC OF 26TH MAY TO 1900 UTC OF 26TH MAY 2024 DUE TO LAND INTERACTION AND FRICTION INTENSITY OF THE SYSTEM IS LIKELY TO DECREASE GRADUALLY. AFTER CROSSING THE COAST THE SYSTEM WEAKEN SLOWLY DUE TO LAND INTERACTION AND FRICTION BUT DUE TO WEAK STERING OF DEEP LAYER MEAN WIND. THE SYSTEM MOVES SLOWLY AND REMAIN IN THE CLOSE VICINITY OF BANGLADESH AND WEST BENGAL COAST. THE TPWV MAP SUGGESTS ABUNDANCE OF MOISTURE IN THE MID ATMOSHRERE WHICH IS HELPING THE SYSTEM TO MAINTAIN IT INTENSITY OF CYCLONIC STORM FOR SOME TIME. DUE TO LOCAL GEOGRAPHY AND OROGRAPHIC FEATURES ALONG THE PROPOSED TRACK OF THE SYSTEM, IT MAYNOT WEAKEN SO RAPIDALY OVER LAND.

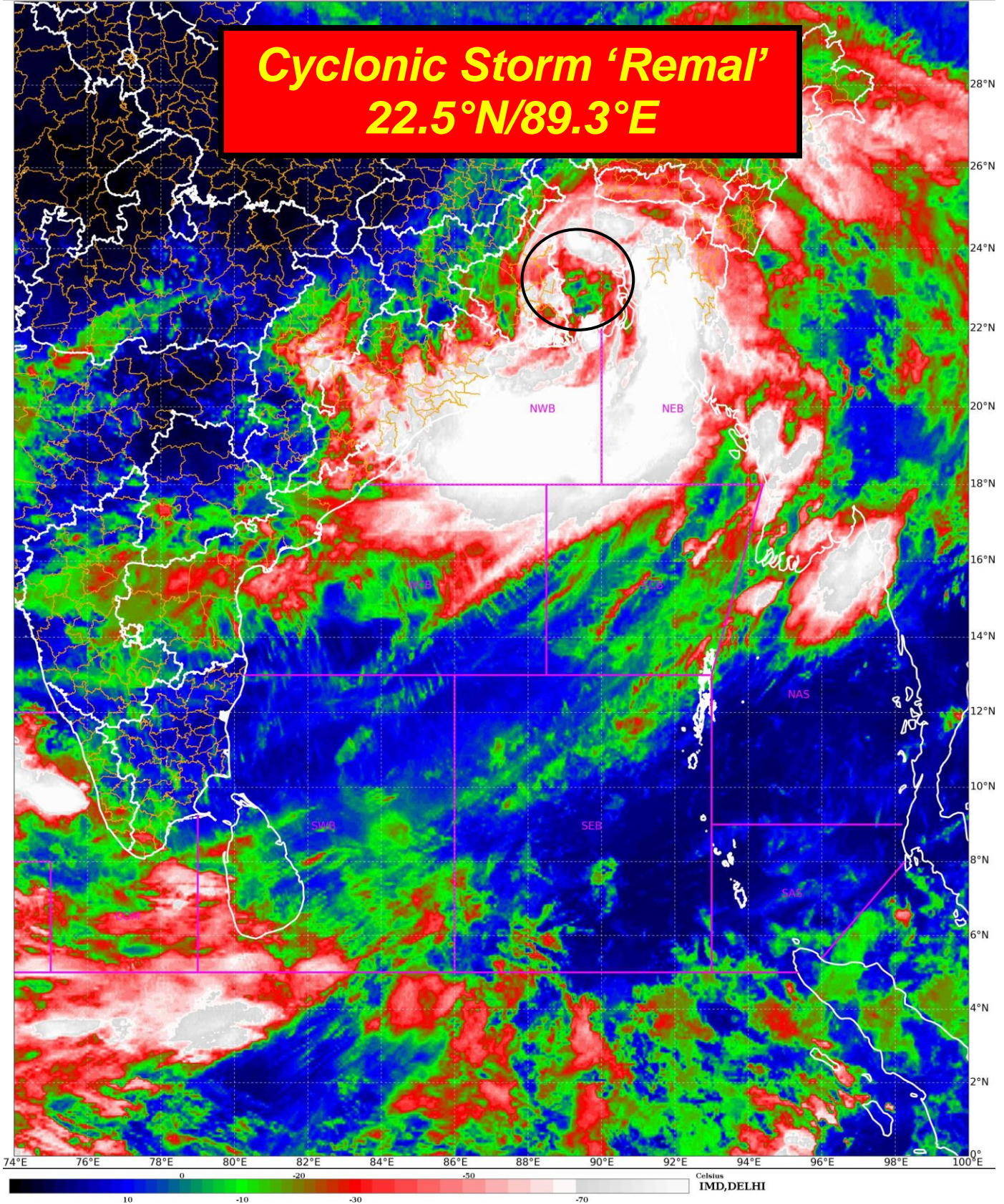
VARIOUS NWP MODEL INDICATES THE SYSTEM IS LIKELY TO MAINTAIN ITS INTENSITY UPTO DEPRESSION AND NEARLY NORTHEASTWARD MOVEMENT DURING NEXT 24 HOURS. UNDER ITS INFLUENCE, HEAVY TO VERY HEAVY RAINFALL LIKELY OVER INTERIOR DISTRICTS OF EASTERN PARTS OF GANGETIC WEST BENGAL ADJACENT TO BANGLADESH TILL NOON OF 27TH MAY. SQUALLY WIND IS LIKELY OVER THESE DISTRICTS DURING THE SAME PERIOD.

TRISANU BANIK  
SCIENTIST D  
RSMC NEW DELHI



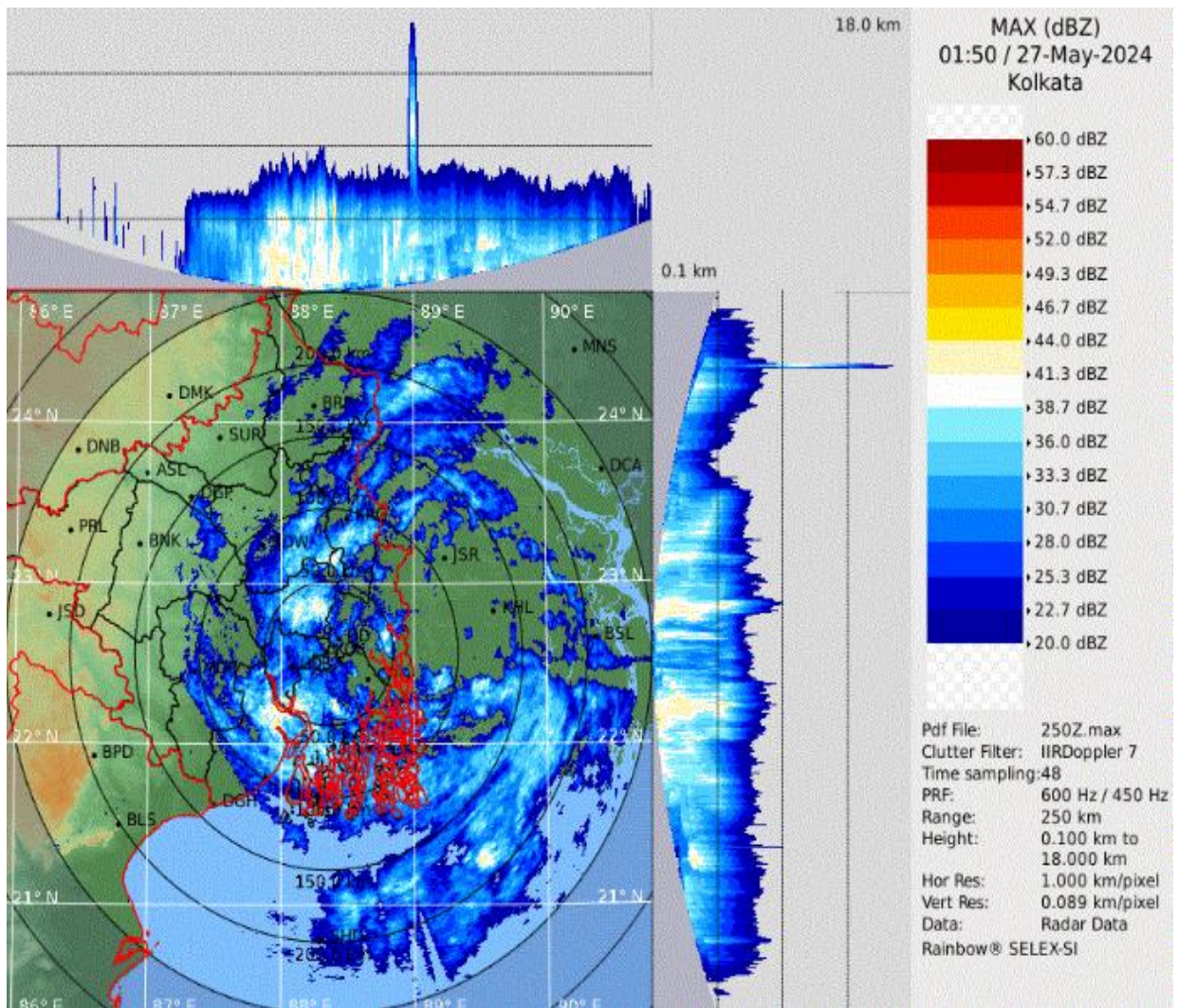


# Cyclonic Storm 'Remal' 22.5°N/89.3°E



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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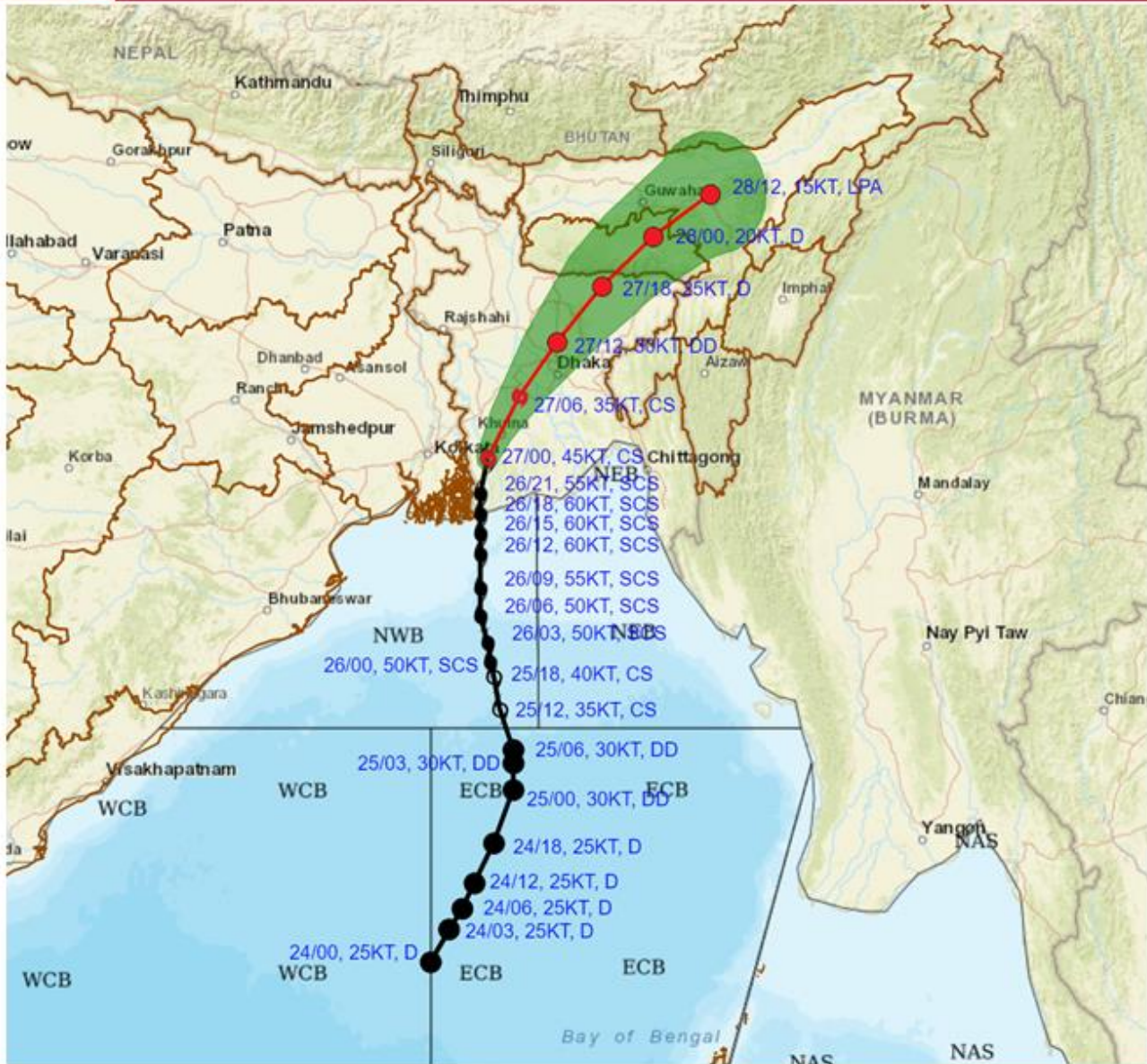


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**FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH CYCLONIC STORM 'REMAL' OVER COASTAL BANGLADESH AND ADJOINING COASTAL WEST BENGAL BASED ON 0000 UTC (0530 IST) OF 27<sup>TH</sup> MAY 2024.**



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 ( $\geq$  120 KT)

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

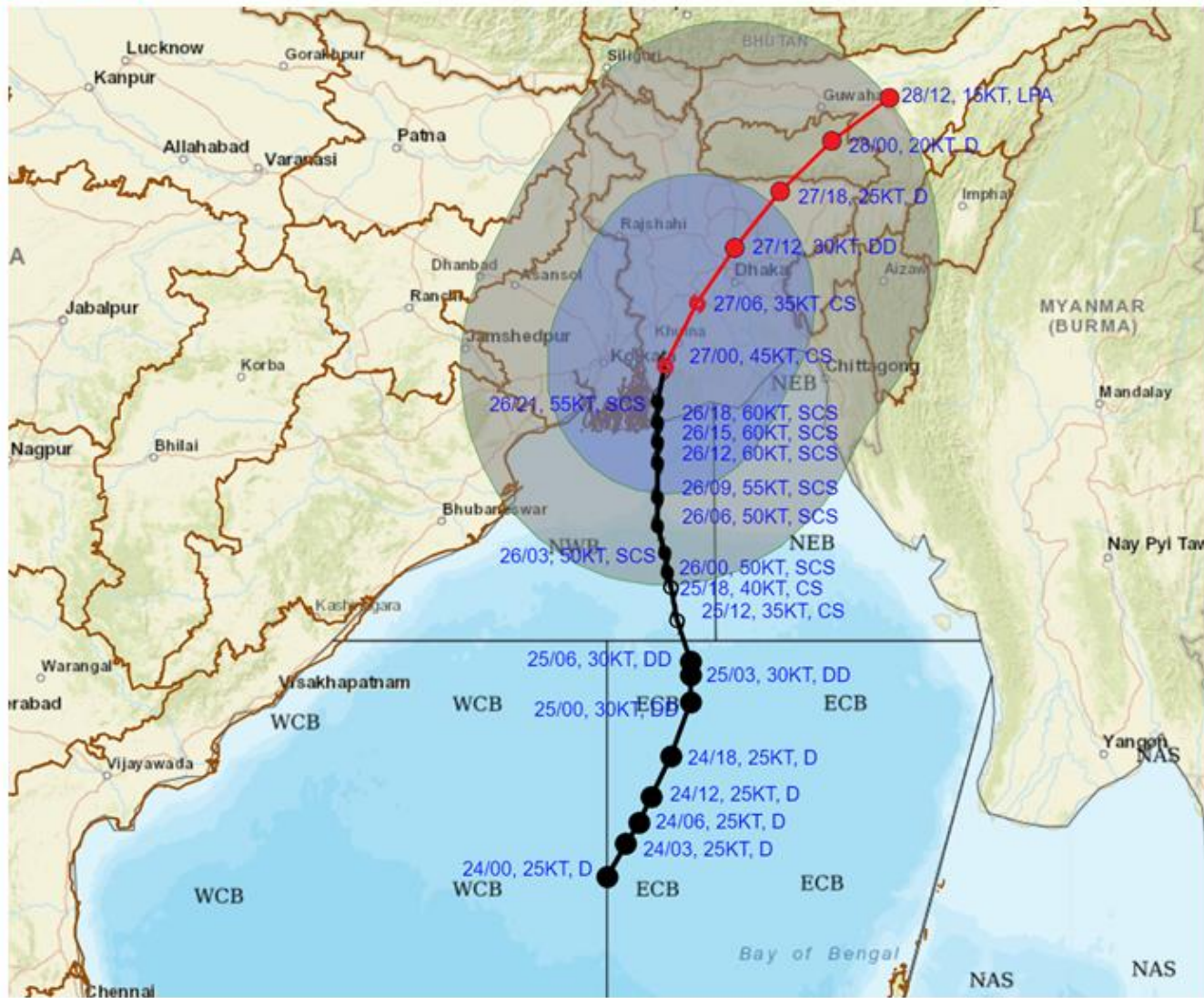
Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS			
Date and Time (UTC)	Canning	Khepupara	Sagar Island	Mongla
27.05.24/0000	70, NE	110, NW	150, NE	30, WSW
27.05.24/0600	165, NE	160, NNW	250, NE	94, NNE

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**FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH CYCLONIC STORM 'REMAL' OVER COASTAL BANGLADESH AND ADJOINING COASTAL WEST BENGAL BASED ON 0000 UTC (0530 IST) OF 27<sup>TH</sup> 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

**Day 1: 27.05.2024/05:30 AM to 28.05.2024/05:30AM**



**Day 2: 28.05.2024/05:30AM to 29.05.2024/05:30AM**



**Day 3: 29.05.2024/05:30AM to 30.05.2024/05:30AM**



**Day 4: 30.05.2024/05:30AM to 31.05.2024/05:30AM**



**Day 5: 31.05.2024/05:30AM to 01.06.2024/05:30AM**



	Squally WX with wind speed 35-45 kmph gusting to 55 kmph
	Squally WX with wind speed 45-55 kmph gusting to 65 kmph
	Squally wind with speed 45-55 kmph gusting to 65 kmph
	Squally wind with speed 50-60 kmph gusting to 70 kmph
	CS with Gale wind speed 60-90 kmph gusting to 110 kmph

**Fishermen are advised not to venture into the marked areas.**

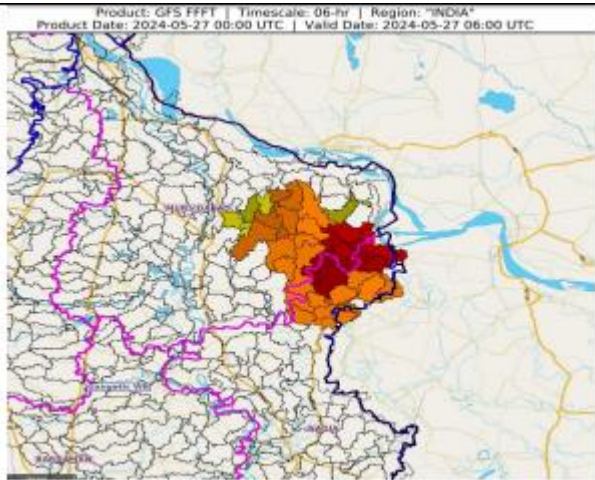
**24 hours Flash Flood Risk Outlook till 1200 UTC of 27.05.2024 FOR BANGLADESH:**

**Persistent Flash Flood Threat (PFFT) till 1130 IST of 27-05-2024 :**

Low flash flood threat likely over few watersheds & neighbourhoods of following Met Sub-divisions during next 6 hours.

**Gangetic West Bengal - Mursidabad and Nadia districts.**

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 6 hours.

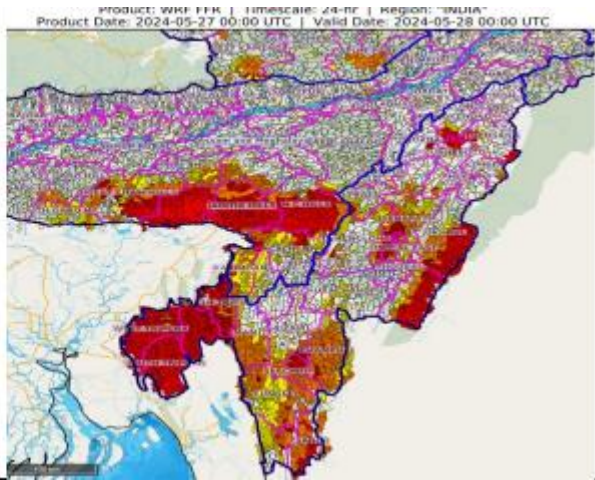








**24 hours Flash Flood Risk Outlook till 1730 UTC of 27.05.2024 FOR WEST BENGAL**

**24 hours Outlook for the Flash Flood Risk (FFR) till 0530 IST of 28-05-2024 :**

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Assam & Meghalaya and NMMT Met Sub-divisions during next 24 hours.

Surface runoff/ Inundation may occur on low lying areas due to persistent rainfall under the influence of impending Cyclonic Storm "Remal" in next 24 hours.



Flash Flood Threat	Flash Flood Risk
 High Threat (Take Action)	 High Risk (Take Action)
 Moderate threat (Be Prepared)	 Moderate Risk (Be Prepared)
 Low Threat (Be Updated)	 Low Risk (Be Updated)

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