



REGIONALSPECIALISED METEOROLOGICALCENTRE-TROPICALCYCLONES,NEW DELHI TROPICAL CYCLONE ADVISORY

DEMS-RSMCSPECIAL TROPICAL CYCLONES NEW DELHI DATED 25.05.2024

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. 1 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1500 UTC OF 20.05.2024 BASED ON 1200 UTC OF 20.05.2024

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

THE DEEP DEPRESSION OVER EASTCENTRAL BAY OF BENGAL MOVED NEARLY NORTHWARDS WITH A SPEED OF 12 KMPH DURING PAST 06 HOURS, INTENSIFIED INTO A CYCLONIC STORM "REMAL" (PRONOUNCED AS "RE-MAL") AND LAY CENTERED AT 1200 UTC OF TODAY, THE 25TH MAY, 2024 OVER THE NORTH & ADJOINING EASTCENTRAL BAY OF BENGAL NEAR LATITUDE 18.8°N AND LONGITUDE 89.5°E, ABOUT 360 KM SOUTH-SOUTHEAST OF KHEPUPARA (41984, BANGLADESH), 350 KM SOUTH-SOUTHEAST OF SAGAR ISLANDS (42731, WEST BENGAL) AND 390 KM SOUTH-SOUTHEAST OF CANNING (42812, WEST BENGAL).

IT 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) BY 1800 UTC OF 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. ºN/ LONG. ºE)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
25.05.24/1200	18.8/89.5	60-70 GUSTING TO 80	CYCLONIC STORM
25.05.24/1800	19.4/89.4	75-85 GUSTING TO 95	CYCLONIC STORM

26.05.24/0000	20.0/89.4	95-105 GUSTING TO 115	SEVERE CYCLONIC STORM
26.05.24/0600	20.7/89.4	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
26.05.24/1200	21.4/89.4	110-120 GUSTING TO 135	SEVERE CYCLONIC STORM
27.05.24/0000	22.6/89.6	70-80 GUSTING TO 90	CYCLONIC STORM
27.05.24/1200	23.8/90.0	50-60 GUSTING TO 70	DEEP DEPRESSION
28.05.24/0000	24.9/90.5	30-40 GUSTING TO 50	DEPRESSION

AS PER INSAT-3D IMAGERY, THE CONVECTION HAS INTENSIFIED. CLOUDS ARE ORGANISED IN CURVED BAND PATTERN. INTENSITY OF THE SYSTEM IS T2.5. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL AND ADJOINING SOUTH BAY OF BENGAL AND 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 986 HPA AT 1200 UTC. ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 35 KNOTS GUSTING TO 45 KNOTS. SEA CONDITION IS HIGH OVER CENTRAL & ADJOINING NORTH BAY OF BENGAL.

SHIP/BOUY OBSERVATION AT 1200 IS GIVEN BELOW:

BOUY & SHIP (LAT°N/LONG°E)	WIND DIRECTION°/ SPEED (KNOTS)	MSLP(hPa)
BOUY 17.8/89.2	170/6.0 KT	988.9
BOUY 17.5/89.2	251/15 KT	988.9

WIND WARNING:

(A) BAY OF BENGAL:

- ❖ GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH IS LIKELY TO PREVAIL OVER CENTRAL BAY OF BENGAL TILL 0000 UTC OF 26TH MAY AND DECREASE THEREAFTER BECOMING SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH TILL 0000 UTC OF 27TH MAY.
- ❖ GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH PREVAILING OVER NORTH BAY OF BENGAL IS LIKELY TO INCREASE BECOMING 95-105 KMPH GUSTING TO 115 KMPH FROM 0000 UTC AND 110-120 KMPH GUSTING TO 135 KMPH FROM 0600 UTC TILL 1800 UTC OF 26TH MAY. IT IS LIKELY DECREASE THEREAFTER BECOMING 70-80 KMPH GUSTING TO 90 KMPH BY 0000 UTC OF 27TH MAY AND SQUALLY WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH BY 1200 UTC OF 27TH MAY.

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

- ❖ SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL ALONG & OFF BANGLADESH AND WEST BENGAL & ADJOINING NORTH ODISHA COASTS FROM 1500 UTC OF 25TH MAY. IT IS LIKELY TO INCREASE BECOMING GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH FROM 0000 UTC OF 26TH MAY AND 100-120 KMPH GUSTING TO 135 KMPH ALONG & OFF BANGLADESH AND ADJOINING WEST BENGAL COASTS FROM 1200 UTC OF 26TH MAY TILL 0000 UTC OF 27TH MAY. IT IS LIKELY DECREASE THEREAFTER TO BECOME 60-70 KMPH GUSTING TO 80 KMPH BY 0600 UTC AND SQUALLY WIND 50-60 KMPH GUSTING TO 70 KMPH BY 1500 UTC OF 27TH MAY.
- ❖ SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO COMMENCE OVER HOWRAH, HOOGLY, KOLKATA AND EAST MEDINIPUR DISTRICTS FROM 1200 UTC OF 26TH MAY. IT WILL INCREASE GRADUALLY BECOMING GALE WIND SPEED REACHING 70-80 KMPH GUSTING TO 90 KMPH OVER THESE DISTRICTS DURING 1500 OF 26TH

MAY TILL 0000 UTC OF 27TH 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 ODISHA COASTS:

SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL TILL 0000 UTC OF 27TH MAY.

(D) SOUTH BAY OF BENGAL, ANDAMAN ISLANDS AND ANDAMAN SEA:

SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY OVER ANDAMAN ISLANDS AND NORTH ANDAMAN SEA DURING NEXT 12 HOURS.

(E) NORTHEASTERN STATES:

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

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 25^{TH} MAY & 26^{TH} MAY AND HIGH TO VERY HIGH OVER NORTH BAY OF BENGAL FROM $25^{TH}/1200$ UTC TILL 27^{TH} MAY/0000 UTC.

(B) ALONG & OFF BANGLADESH AND WEST BENGAL COASTS

ROUGH TO 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 0000 UTC OF 26^{TH} ONWARDS TILL 0000 UTC OF 27^{TH} MAY.

(C) ALONG &OFF NORTH ODISHA COAST:

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

(D) ALONG & OFF ANDAMAN ISLANDS:

ROUGH TO VERY ROUGH SEA CONDITION IS LIKELY OVER ANDAMAN ISLANDS AND NORTH ANDAMAN SEA DURING NEXT 12 HOURS.

STORM SURGE:

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 HEIGHT ABOVE ASTRONOMICAL TIDE LIKELY TO INUNDATE LOW LYING AREAS OF COASTAL BANGLADESH AROUND THE TIME OF LANDFALL. THERE IS A PROBABILITY OF 80% FOR THE STORM SURGE HEIGHT EXCEEDING 3 M ALONG & OFF BANGLADESH COAST BETWEEN 90° E & 90.8° E. THERE COULD BE COASTAL INUNDATION ALONG THE RIVERS AND CREEKS INCLUDING MEGHNA RIVER.

FISHERMEN WARNING (GRAPHICS ATTACHED):

FISHERMEN ARE ADVISED NOT TO VENTURE INTO SOUTH BAY OF BENGAL AND ANDAMAN SEA TILL 27^{TH} MAY, CENTRAL BAY OF BENGAL TILL 26^{TH} MAY AND NORTH BAY OF BENGAL FROM 25^{TH} MAY TILL 27^{TH} 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.

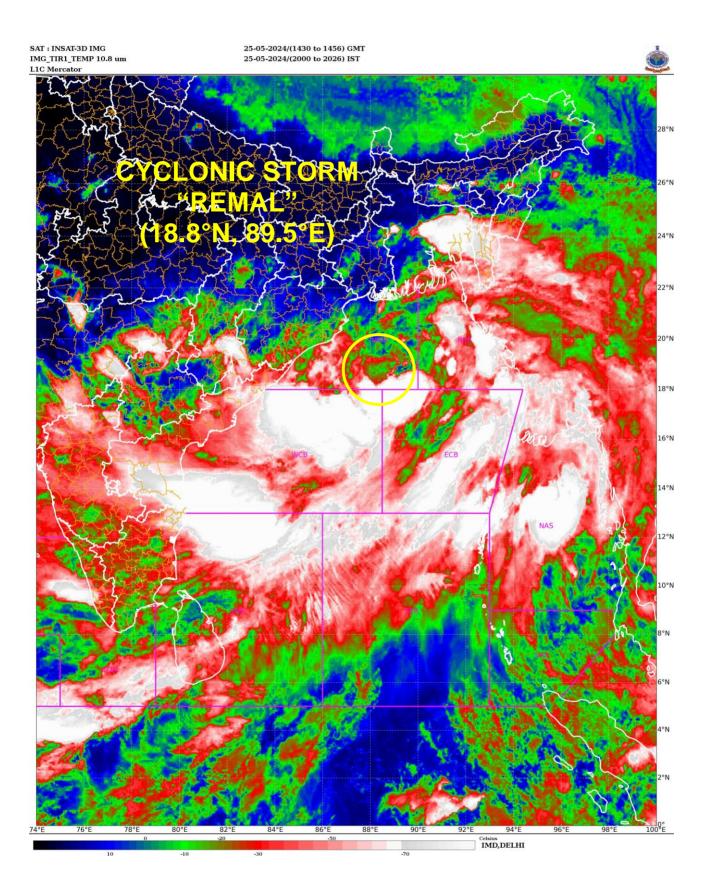
THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS MORE THAN 100 KJ/CM2 OVER MAJOR PARTS OF BAY OF BENGAL. IT IS INDICATING SLIGHTLY DECREASING TENDENCY TOWARDS NORTH BOB AND ALONG THE COASTS. SEA SURFACE TEMPERATURE (SST) IS AROUND 30-32°C OVER ENTIRE BOB, BEING MORE THAN 32°C OVER SOME PARTS OF NORTH BOB.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

CONSIDERING THE ENVIRONMENTAL CONDITIONS, LOW LEVEL VORTICITY HAS INCREASED AND IS ABOUT 200x10⁻⁵S⁻¹ TO THE SOUTH OF SYSTEM CENTRE OVER EASTCENTRAL BAY OF BENGAL WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. LOW LEVEL CONVERGENCE IS ABOUT 20x10⁻⁵S⁻¹ TO THE SOUTHEAST OF THE SYSTEM CENTER. STRONG EQUATORWARD OUTFLOW IS SEEN. UPPER LEVEL IS ABOUT 30x10⁻⁵S⁻¹ TO THE SOUTHEAST OF SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS MODERATE (AROUND 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°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).

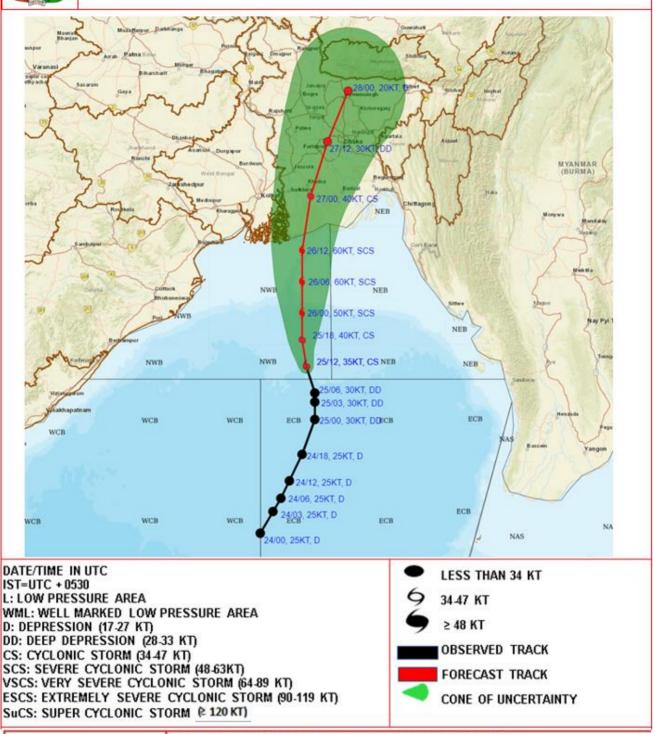
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M SHARMA SCIENTIST D RSMC NEW DELHI





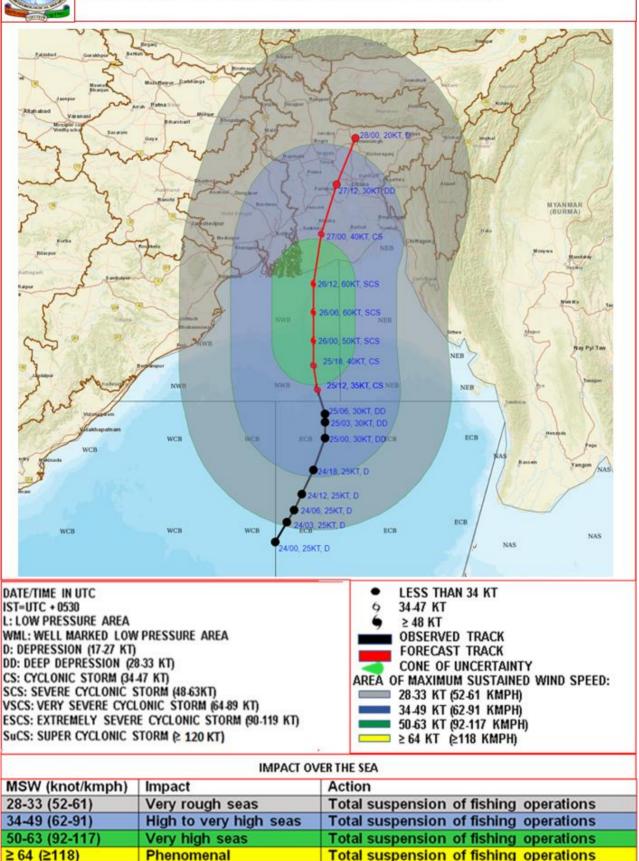
FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY IN ASSOCIATION WITH CYCLONIC STORM 'REMAL' OVER NORTH AND ADJOINING EASTCENTRAL BAY OF BENGAL BASED ON 1200 UTC (1730 IST) OF 25TH MAY 2024.



Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS			
Date and Time (UTC)	Canning	Khepupara	SAGAR ISLAND	
25.05.24/1200	390, SSE	360, SSW	350, SSE	
26.05.24/1200	130, SE	110, SW	150, E	
27.05.24/1200	230, NE	210, N	320, NE	



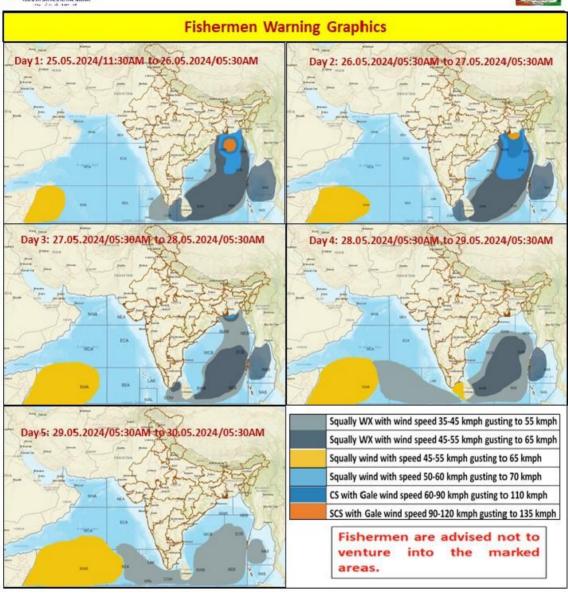
FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH CYCLONIC STORM 'REMAL' OVER NORTH AND ADJOINING EASTCENTRAL BAY OF BENGAL BASED ON 1200 UTC (1730 IST) OF 25TH MAY 2024.



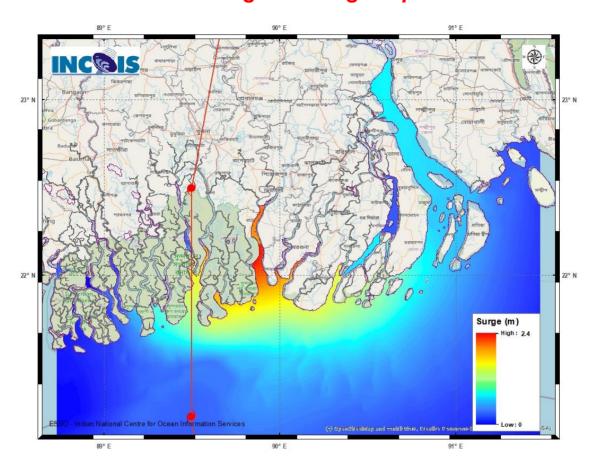
Fishermen Warning Graphics







Storm Surge Warning Graphics



PROBABILITY OF EXCEEDANCE OG STORM SURGE > 3.0M

