



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 24**

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. 24 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 19.05.2020 BASED ON 0900 UTC OF 19.05.2020.

SUB: SUPER CYCLONIC STORM 'AMPHAN' (PRONOUNCED AS UM-PUN) OVER WEST CENTRAL BAY OF BENGAL

THE SUPER CYCLONIC STORM 'AMPHAN' (PRONOUNCED AS UM-PUN) OVER WESTCENTRAL BAY OF BENGAL MOVED NEARLY NORTHWARDS WITH A SPEED OF 18 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 0900 UTC OF 19TH MAY, 2020 AS AN EXTREMELY SEVERE CYCLONIC STORM NEAR LATITUDE 17.0°N AND LONGITUDE 86.9°E OVER **WESTCENTRAL BAY OF BENGAL** ABOUT 360 KM NEARLY SOUTH OF PARADIP (42976), 510 KM SOUTH-SOUTHWEST OF DIGHA (42901) AND 650 KM SOUTH-SOUTHWEST OF KHEPUPARA (41984).

IT IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS ACROSS NORTHWEST BAY OF BENGAL AND CROSS WEST BENGAL – BANGLADESH COASTS BETWEEN DIGHA (42901) AND HATIYA ISLANDS (41963) CLOSE TO SUNDARBANS DURING 0900-1200 UTC OF 20TH MAY 2020 WITH MAXIMUM SUSTAINED WIND SPEED OF 155-165 KMPH GUSTING TO 185 KMPH.

THE SUPER CYCLONIC STORM 'AMPHAN' IS BEING TRACKED BY THE DOPPLER WEATHER RADARS AT VISHAKHAPATNAM (43149) ALONG WITH OTHER OBSERVING PLATFORMS.

FORECAST TRACK AND INTENSITY ARE GIVEN IN THE FOLLOWING TABLE:

DATE/TIME(UTC)	POSITION (LAT. °N/ LONG. °E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
19.05.20/0900	17.0/86.9	200-210 GUSTING TO 230	EXTREMELY SEVERE CYCLONIC STORM
19.05.20/1200	17.1/87.1	200-210 GUSTING TO 230	EXTREMELY SEVERE CYCLONIC STORM
19.05.20/1800	18.0/87.3	190-200 GUSTING TO 220	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/0000	19.3/87.7	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/0600	20.9/88.2	160-170 GUSTING TO 190	VERY SEVERE CYCLONIC STORM
20.05.20/1800	22.7/88.7	95-105 GUSTING TO 115	CYCLONIC STORM
21.05.20/0600	24.3/89.3	50-60 GUSTING TO 70	DEPRESSION
21.05.20/1800	25.6/90.2	20-30 GUSTING TO 40	LOW PRESSURE AREA

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

REMARKS:

AS PER INSAT-3D SATELLITE IMAGERY BASED ON 0900 UTC OF 19TH MAY, THE SYSTEM INTENSITY IS **T5.5/6.0** AND EYE IS NOT CLEARLY VISIBLE IN THIS OBSERVATION AND PRESENTLY IT HAS CDO PATTERN WITH WALL CLOUD TEMPERATURE IS - 93.1 DEG C. MAIN CONVECTIVE BANDS LIES IN THE SOUTHERN PARTS OF THE CYCLONE. ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION PREVAILS BETWEEN LAT 13.0°N TO 19.5°N LONG 83.5°E TO 90.0°E.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 110 KNOTS GUSTING TO 120 KNOTS. THE SEA CONDITION IS PHENOMENAL AROUND THE SYSTEM CENTER. THE ESTIMATED CENTRAL PRESSURE IS **950** HPA.

THE CYCLONE IS TRACKED BY THE DOPPLER WEATHER RADAR (DWR) AT VISHAKHAPATANAM (43149). THE SYSTEM IS AT DISTANCE OF 395 KM FROM THE RADAR AND THE EYE DIAMETER IS MEASURED AS 27 KM.

AT 0900 UTC OF 19TH MAY, THE BOUY (**23092**) AT 17.2°N/89.1°E REPORTED MEAN SEA LEVEL PRESSURE OF 987.8 HPA AND WIND DIRECTION AND SPEED 180°/37 KNOTS, BOUY (**23459**) LOCATED AT 13.6°N/87.0°E REPORTED MEAN SEA LEVEL PRESSURE OF 974.5 HPA AND WIND DIRECTION/SPEED AS 140°/27KNOTS AND ANOTHER BOUY (**23094**) AT 13.3°N/84.1°E REPORTED MEAN SEA LEVEL PRESSURE OF 996.6 HPA.

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS IN PHASE 2 WITH AMPLITUDE MORE THAN 1 FOR NEXT TWO DAYS. IT WILL REMAIN IN PHASE 3 WITH AMPLITUDE MORE THAN 1 DURING SUBSEQUENT THREE DAYS. THUS MJO PHASE AND AMPLITUDE WILL SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER BAY OF BENGAL DURING NEXT 5 DAYS.

CONSIDERING THE SEA CONDITIONS, THE SEA SURFACE TEMPERATURE (SST) IS 30-31°C OVER ENTIRE BAY OF BENGAL, BUT SYSTEM IS ENTERING TO LOWER TROPICAL CYCLONE HEAT POTENTIAL OF 70-90 KJ/CM² AND IT IS FURTHER DECREASING TOWARDS NORTH BAY OF BENGAL ALONG THE SYSTEM TRACK.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, THE POSITIVE VORTICITY IS AROUND (250-300)X10⁻⁶ SEC⁻¹ AROUND THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE ZONE IS 50X10⁻⁵ SEC⁻¹ LOCATED SOUTH OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE HAS DECREASED FURTHER TO 10X10⁻⁵ SEC⁻¹ AND LIES AROUND THE SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS MODERATE TO HIGH (20-25 KTS) AROUND THE SYSTEM CENTRE. IT IS INCREASING TO 25-30 KTS TO THE NORTH BETWEEN 15-20°N ALONG THE EXPECTED TRACK. THE UPPER TROPOSPHERIC RIDGE HAS SHIFTED NORTH AND NOW LIES NEAR 19.0°N OVER BAY OF BENGAL. AT PRESENT THE SYSTEM IS MOVING NORTH-NORTHEASTWARD ALONG THE PERIPHERY OF THE ANTICYCLONE.

VARIOUS NUMERICAL MODELS INCLUDING ECMWF, IMD GFS, NCEP GFS, GEFS, NEPS AND NCUM ARE INDICATING THE SYSTEM IS LIKELY TO MOVE TOWARDS WEST BENGAL AND BANGLADESH COASTS AS AN EXTREMELY SEVERE CYCLONIC STORM DURING 0900-1200 UTC OF 20TH MAY 2020. THE FORECAST IS BASED ON THE CONCENSUS FROM VARIOUS MODELS.

STORM SURGE GUIDANCE

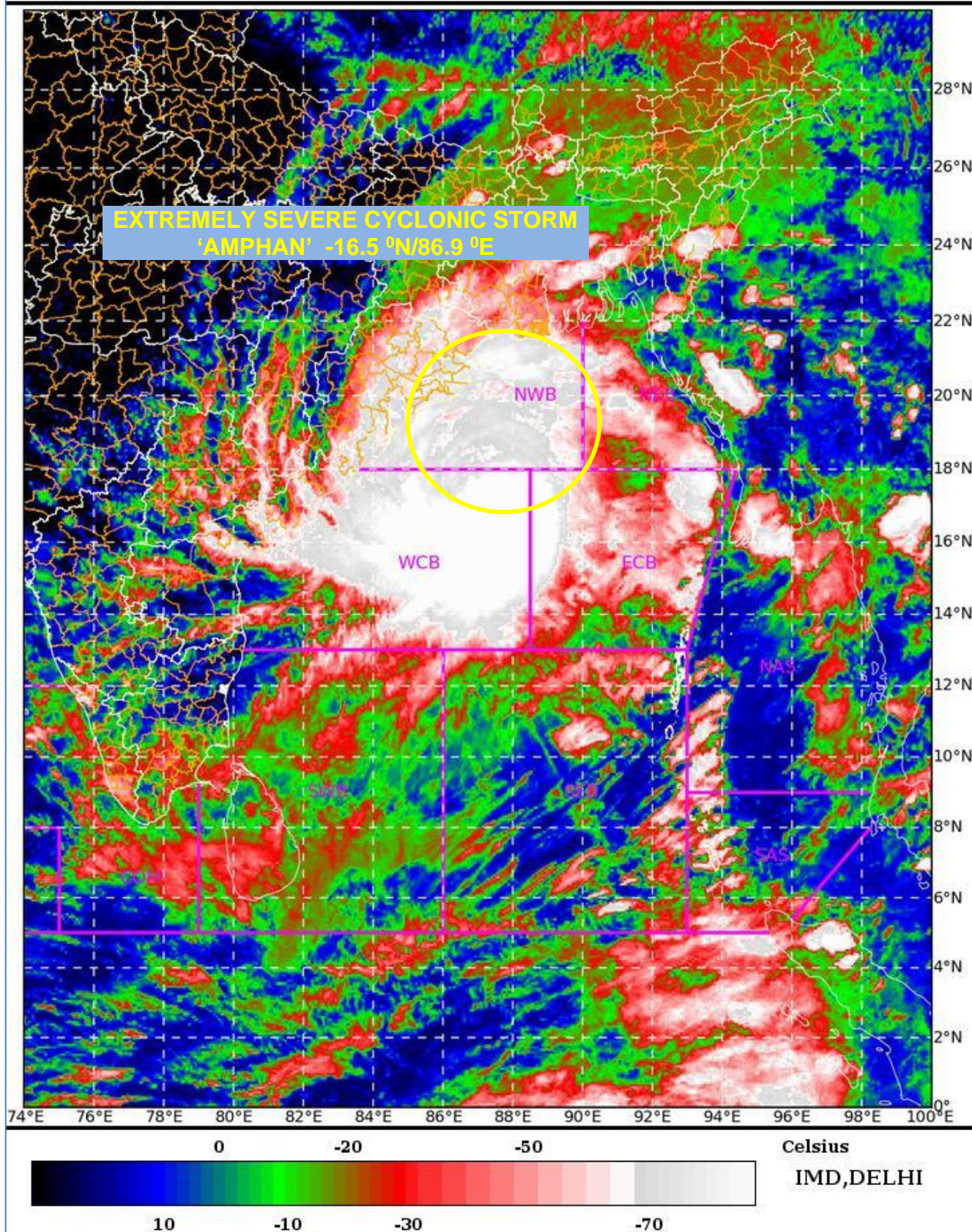
- STORM SURGE OF ABOUT 4-5 METERS ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS OF SOUTH & NORTH 24 PARGANAS AND ABOUT 3-4 METERS OVER THE LOW LYING AREAS OF EAST MEDINIPUR DISTRICT OF WEST BENGAL DURING THE TIME OF LANDFALL.(FIGURE ENCLOSED)

(RK JENAMANI)
SCIENTIST-F, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT : INSAT-3D IMG 19-05-2020/(0900 to 0926) GMT
IMG_TIR1_TEMP 10.8 um 19-05-2020/(1430 to 1456) IST
L1C Mercator

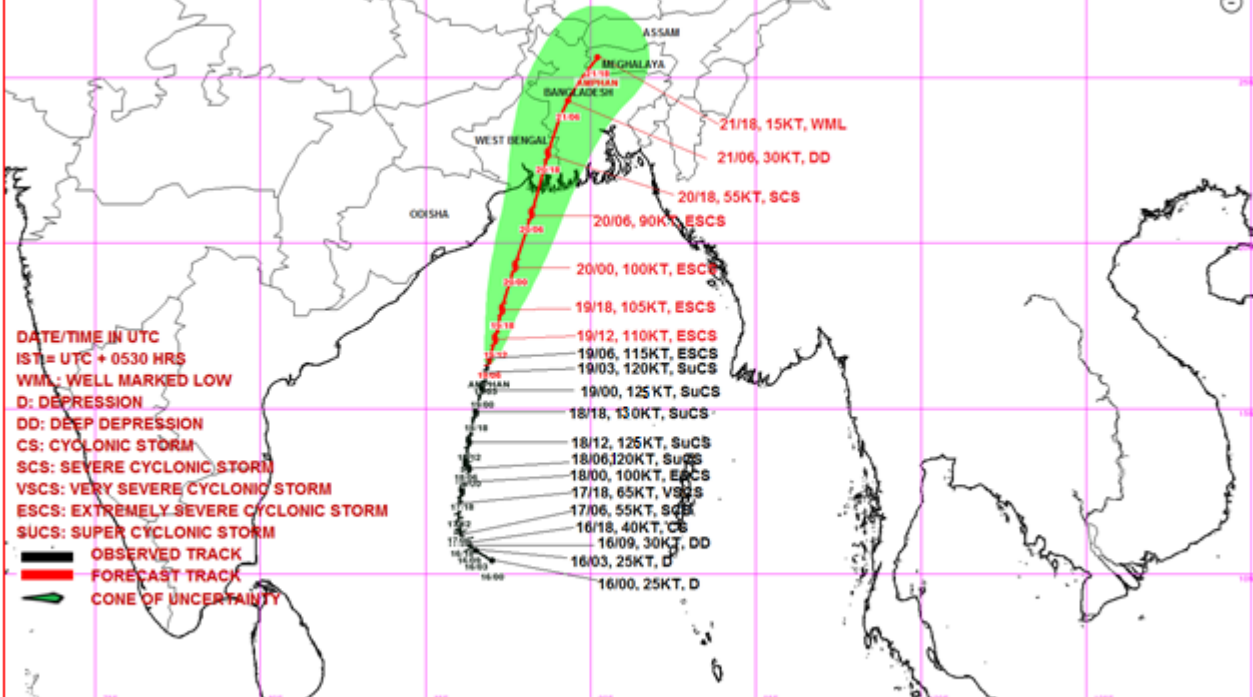


Legend: WCB – Westcentral Bay of Bengal

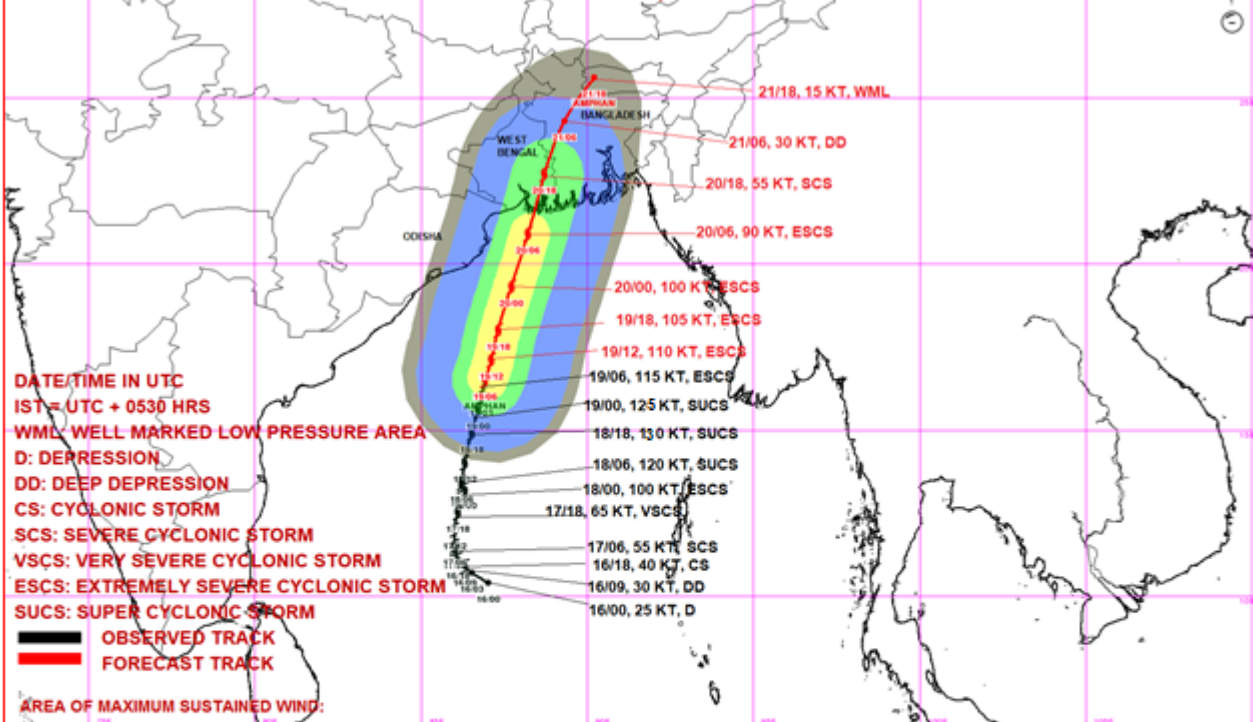
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF EXTREMELY SEVERE CYCLONIC STORM 'AMPHAN' OVER WEST CENTRAL BAY OF BENGAL BASED ON 0600 UTC OF 19TH MAY, 2020



OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF EXTREMELY SEVERE CYCLONIC STORM 'AMPHAN' OVER WESTCENTRAL BAY OF BENGAL BASED ON 0600 UTC OF 19TH MAY, 2020

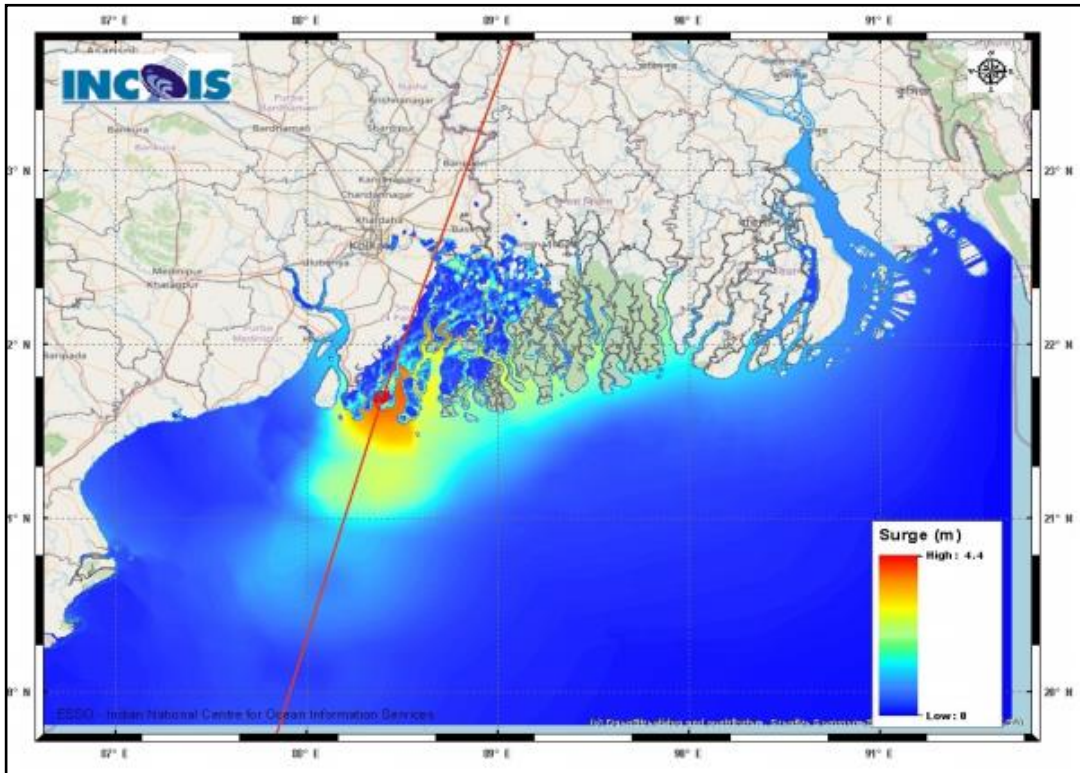


MSW(knot)/kmph)	Impact	Action
28-33 (52-61)	Very rough seas.	Total suspension of fishing operations
34-40(62-74)	High to very high seas	Total suspension of fishing operations
41-63/(75-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

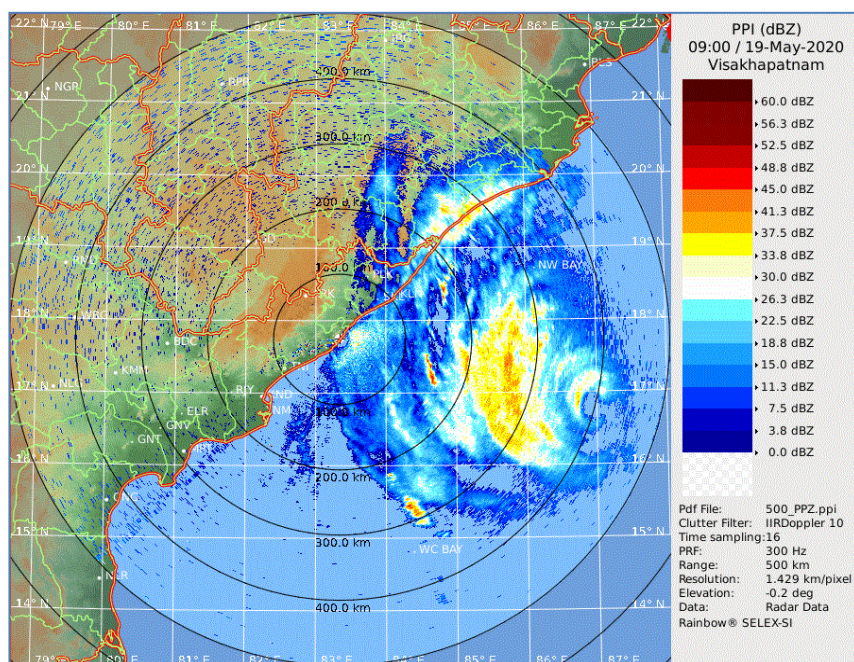
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

Figure: Storm Surge forecast from INCOIS issued at 1245 IST of 19th May 2020



Storm Surge of about 4-5 meters above Astronomical Tide is likely to inundate low lying areas of south & north 24 Parganas and about 3-4 meters over the low lying areas of East Medinipur District of West Bengal during the time of Landfall.

Figure: Reflectivity of Vishakhapatnam Doppler Weather Radar at 1430 hrs IST of 19th May 2020



PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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