



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 16

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. 16 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1200 UTC OF 18.05.2020 BASED ON 0900 UTC OF 18.05.2020.

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

THE **SUPER CYCLONIC STORM 'AMPHAN'** (PRONOUNCED AS **UM-PUN**) OVER WEST-CENTRAL AND ADJOINING CENTRAL PARTS OF SOUTH BAY OF BENGAL MOVED NEARLY NORTHWARDS WITH A SPEED OF 07 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 0900UTC OF TODAY, THE 18TH MAY, 2020 OVER **WESTCENTRAL AND ADJOINING CENTRAL PARTS OF SOUTH BAY OF BENGAL** NEAR LATITUDE 13.7°N AND LONGITUDE 86.2 °E., ABOUT 730 KM NEARLY SOUTH OF PARADIP (42976), 890 KM SOUTH-SOUTHWEST OF DIGHA (42901) AND 1010 KM SOUTH-SOUTHWEST OF KHEPUPARA (41984). IT IS VERY LIKELY TO MOVE NEARLY NORTHWARDS FOR SOME MORE TIME AND THEN 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 AS AN EXTREMELY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 165-175 KMPH GUSTING TO 195 KMPH.

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
18.05.20/0900	13.7/86.2	220-230 GUSTING TO 255	SUPER CYCLONIC STORM
18.05.20/1200	14.6/86.4	230-240 GUSTING TO 265	SUPER CYCLONIC STORM
18.05.20/1800	15.2/86.5	230-240 GUSTING TO 265	SUPER CYCLONIC STORM
19.05.20/0000	15.9/86.7	230-240 GUSTING TO 265	SUPER CYCLONIC STORM
19.05.20/0600	17.1/87.0	220-230 GUSTING TO 255	SUPER CYCLONIC STORM
19.05.20/1800	18.3/87.3	200-210 GUSTING TO 230	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/0600	20.8/88.1	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/1800	22.8/88.8	145-155 GUSTING TO 170	VERY SEVERE CYCLONIC STORM
21.05.20/0600	24.8/89.4	80-90 GUSTING TO 100	CYCLONIC STORM
21.05.20/1200	25.9/89.8	40-50 GUSTING TO 60	DEPRESSION

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 18TH MAY, THE SYSTEM CONTINUED TO MAINTAIN CURRENT INTENSITY **T6.5. EYE CONTINUED TO BE CLEARLY VISIBLE WITH CIRCULAR PATTERN WITH DIAMETER OF 15 KM.** EYE HAS BECOME FURTHER COLLER WITH TEMPERATURE -27.0 DEG CEL. WALL CLOUD TEMPEARTURE IS -93 DEG C. MINIMUM CLOUD TOP TEMPERATURE IS -93 DEG CELCIUS. ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION PREVAILS BETWEEN LAT 10.0°N TO 18.5°N LONG 81.0°E TO 90.0°E. THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 120 KNOTS GUSTING TO 135 KNOTS. THE SEA CONDITION IS PHENOMENAL AROUND THE SYSTEM CENTER. THE ESTIMATED CENTRAL PRESSURE IS **925 HPA.**

AT 0900 UTC OF 18TH MAY, A BOUY (**23094**) LOCATED AT 13.3°N/84.1°E REPORTED MEAN SEA LEVEL PRESSURE OF 992.5 HPA AND ANOTHER BOUY (**23459**) LOCATED AT 13.5°N/86.6.0°E A MEAN SURFACE WIND SPEED OF 120°/43 KNOTS.

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS IN PHASE 2 WITH AMPLITUDE MORE THAN 1 DURING 18TH-20TH MAY. IT WILL REMAIN IN PHASE 3 WITH AMPLITUDE MORE THAN 1 DURING NEXT 3 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 BOB. THE TROPICAL CYCLONE HEAT POTENTIAL IS MORE THAN 100 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BOB. IT IS ABOUT 60-80 KJ/CM² OVER BOB TO THE NORTH OF 17°N AND IS DECREASING TOWARDS EXTREME NORTH BOB. 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 AROUND (50-60)X10⁻⁵SEC⁻¹ LOCATED AROUND SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT 40X10⁻⁵SEC⁻¹ TO THE WEST OF THE SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS LOW TO MODERATE (10-15 KTS) AROUND THE SYSTEM CENTRE. IT IS INCREASING TO 20-30 KTS TO THE NORTH BETWEEN 15-20DEGN ALONG THE EXPECTED TRACK. THE UPPER TROPOSPHERIC RIDGE LIES NEAR 17.0 N OVER BOB. AT PRESENT THE SYSTEM IS MOVING NEAR NORTHWARD ALONG THE PERIPHERY OF THE ANTICYCLONE AND IT IS LIKELY TO CONTINUE IN THE SAME DIRECTION FOR SOME MORE TIMES. THEREAFTER, THE SYSTEM LIKELY TO MOVE IN THE NORTH-NORTHEASTWARD DIRECTION.

TOTAL PRECIPITABLE WATER IMAGERY OF 18TH MAY INDICATES CONTINUED WARM MOIST AIR INCURSION OVER THE SYSTEM AREA, MAINLY IN ITS NORTHWESTERN SECTOR.

VARIOUS NUMERICAL MODELS INCLUDING ECMWF, IMD GFS, NCEP GFS, GEFS, NEPS AND NCUM ARE INDICATING THE SYSSTEM 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 CONSENSUS 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..

(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

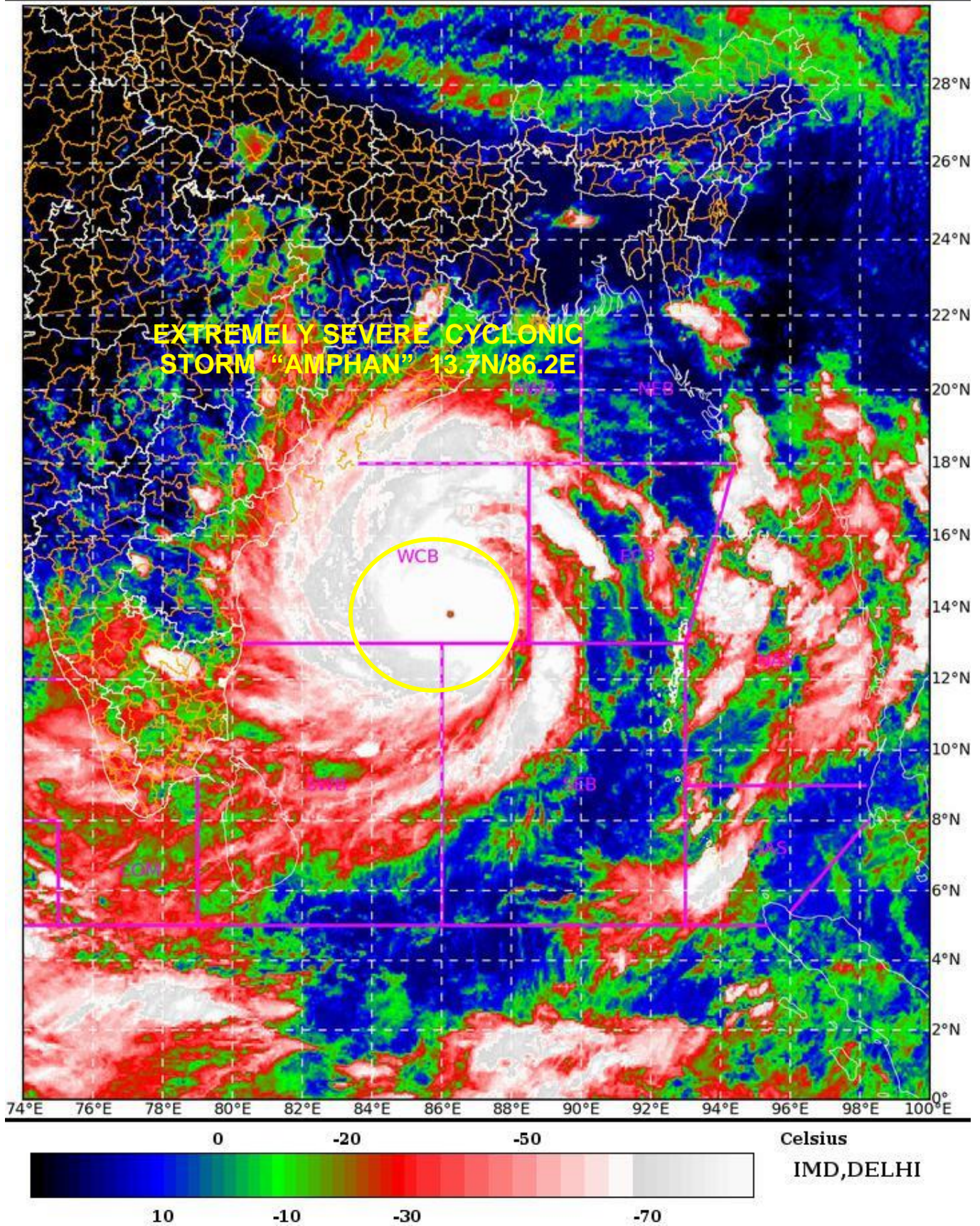
18-05-2020/(1000 to 1026) GMT

IMG_TIR1_TEMP 10.8 um

18-05-2020/(1530 to 1556) IST



L1C Mercator






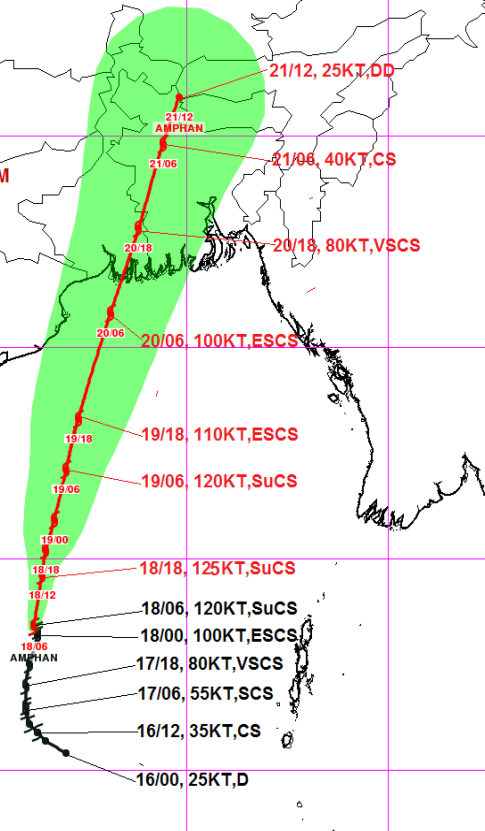
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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**OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF
SUPER CYCLONIC STORM 'AMPHAN' OVER WEST CENTRAL BAY OF BENGAL
BASED ON 0600 UTC OF 18TH MAY, 2020**




DATE/TIME IN UTC
IST = UTC + 0530 HRS
D: DEPRESSION
DD: DEEP DEPRESSION
CS: CYCLONIC STORM
SCS: SEVERE CYCLONIC STORM
VSCS: VERY SEVERE CYCLONIC STORM
ESCS: EXTREMELY SEVERE CYCLONIC STORM
SuCS: SUPER CYCLONIC STORM

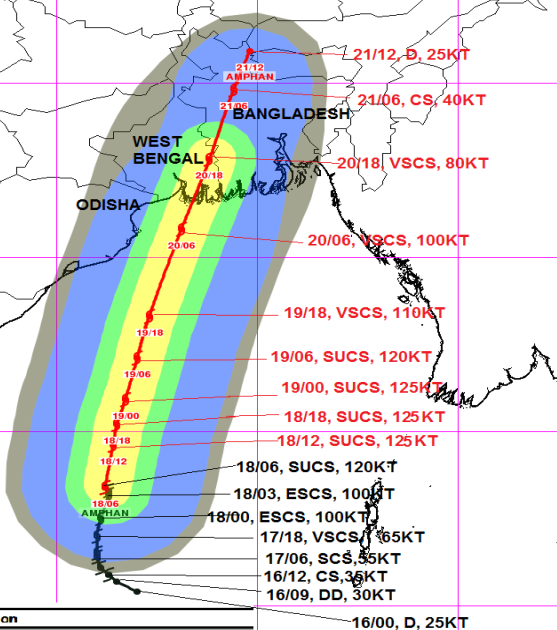
 OBSERVED TRACK
 FORECAST TRACK
 CONE OF UNCERTAINTY



**OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF
SUPER CYCLONIC STORM 'AMPHAN' OVER WESTCENTRAL BAY OF BENGAL BASED
ON 0600 UTC OF 18TH MAY, 2020**

DATE/TIME IN UTC
IST = UTC + 0530 HRS
D: DEPRESSION
DD: DEEP DEPRESSION
CS: CYCLONIC STORM
SCS: SEVERE CYCLONIC STORM
VSCS: VERY SEVERE CYCLONIC STORM
ESCS: EXTREMELY SEVERE CYCLONIC STORM
SuCS: SUPER CYCLONIC STORM

 OBSERVED TRACK
 FORECAST TRACK
 AREA OF MAXIMUM SUSTAINED WIND



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
41-53 (75-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

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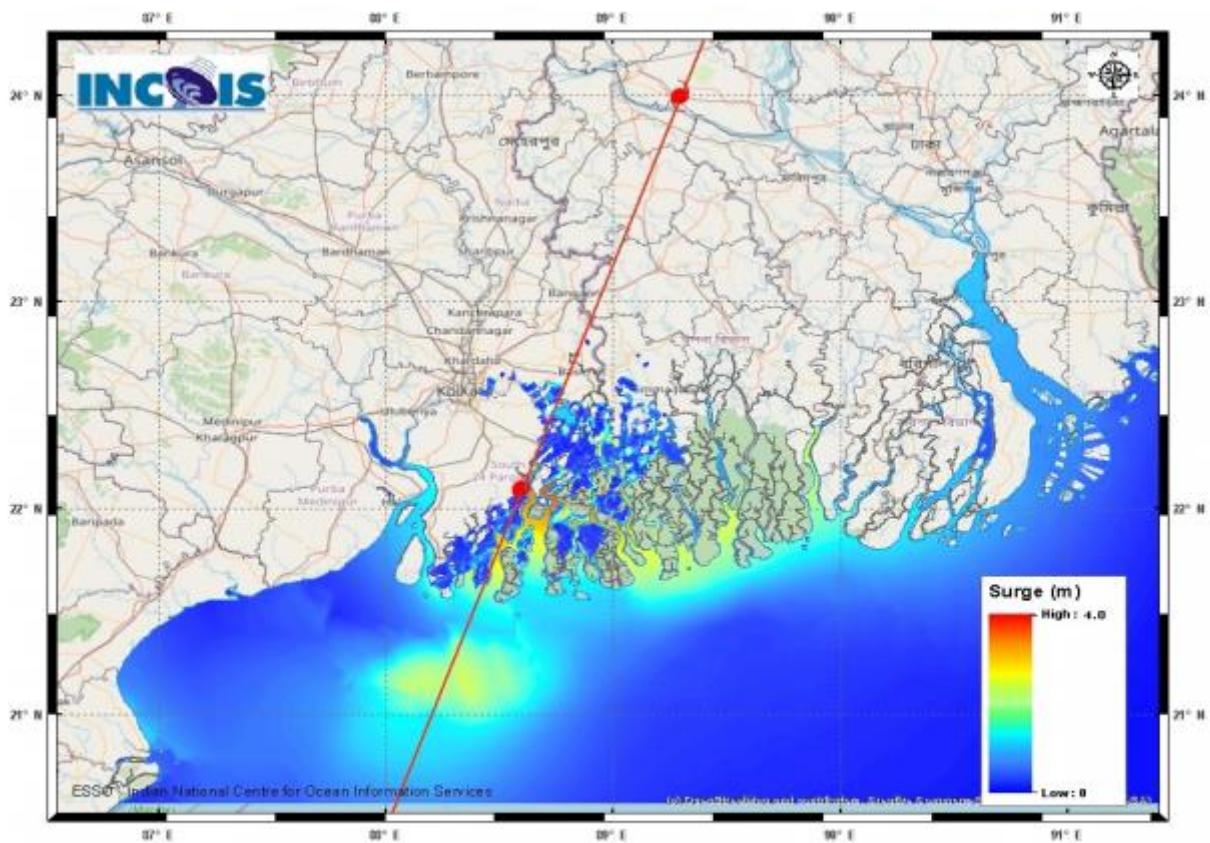


Figure: Storm Surge forecast from INCOIS

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