



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 18

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. 18 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1730 UTC OF 18.05.2020 BASED ON 1500 UTC OF 18.05.2020.

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 AND ADJOINING CENTRAL PARTS OF SOUTH BAY OF BENGAL MOVED NEARLY NORTHWARDS WITH A SPEED OF 15 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1500 UTC OF TODAY, THE 18TH MAY, 2020 NEAR LATITUDE 14.5°N AND LONGITUDE 86.4°E OVER **WESTCENTRAL BAY OF BENGAL** ABOUT 640 KM NEARLY SOUTH OF PARADIP (42976), 800 KM SOUTH-SOUTHWEST OF DIGHA (42901) AND 920 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 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. ⁰ N/ LONG. ⁰ E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
18.05.20/1500	14.5/86.4	230-240 GUSTING TO 265	SUPER CYCLONIC STORM
18.05.20/1800	15.2/86.5	240-250 GUSTING TO 275	SUPER CYCLONIC STORM
19.05.20/0000	15.9/86.7	240-250 GUSTING TO 275	SUPER CYCLONIC STORM
19.05.20/0600	17.1/87.0	230-240 GUSTING TO 265	SUPER CYCLONIC STORM
19.05.20/1200	17.7/87.2	200-210 GUSTING TO 230	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/0000	19.6/87.7	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/1200	21.8/88.5	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
21.05.20/0000	23.8/89.1	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 1500 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 IS COLDER WITH TEMPERATURE -17°C THAN THE SURROUNDING. WALL CLOUD TEMPERATURE IS -93°C. ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION PREVAILS BETWEEN LAT 10.6°N TO 21.5°N LONG 80.5°E TO 92.5°E. THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 125 KNOTS GUSTING TO 145 KNOTS. THE SEA CONDITION IS PHENOMENAL AROUND THE SYSTEM CENTER. THE ESTIMATED CENTRAL PRESSURE IS **925 HPA.**

AT 1500 UTC OF 18TH MAY, THE BOUY (**23094**) LOCATED AT 9.6°N/85.5°E REPORTED MEAN SEA LEVEL PRESSURE OF 995.3 HPA, BOUY (23092) AT 16.5°N/89.6°E REPORTED MEAN SEA LEVEL PRESSURE OF 999.3 HPA AND MEAN SURFACE WIND SPEED OF 50/21 KNOTS, BOUY(23459) AT 11.7°N/86.6°E REPORTED MEAN SURFACE WIND SPEED OF 180/55 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 SUBSEQUENT 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 BAY OF BENGAL AND THE TROPICAL CYCLONE HEAT POTENTIAL IS MORE THAN 100 KJ/CM² OVER MAJOR PARTS OF SOUTH & CENTRAL BAY OF BENGAL. IT IS ABOUT 60-80 KJ/CM² OVER BOB TO THE NORTH OF 17°N AND IS DECREASING TOWARDS EXTREME NORTH BAY OF BENGAL.

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 (30 TO 40)X10⁻⁵ SEC⁻¹ LOCATED AROUND SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT 20X10⁻⁵ SEC⁻¹ AROUND THE SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) IS LOW TO MODERATE (10-15 KTS) AROUND THE SYSTEM CENTRE. IT IS INCREASING TO 20-25 KTS TO THE NORTH BETWEEN 15-20°N ALONG THE EXPECTED TRACK. THE UPPER TROPOSPHERIC RIDGE LIES NEAR 17.0°N OVER BAY OF BENGAL. 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 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 CONSENSUS FROM VARIOUS MODELS.

STORM SURGE GUIDANCE

- STORM SURGE OF ABOUT 4-6 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)

(ANANDA KUMAR DAS)
SCIENTIST-E, RSMC, NEW DELHI

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

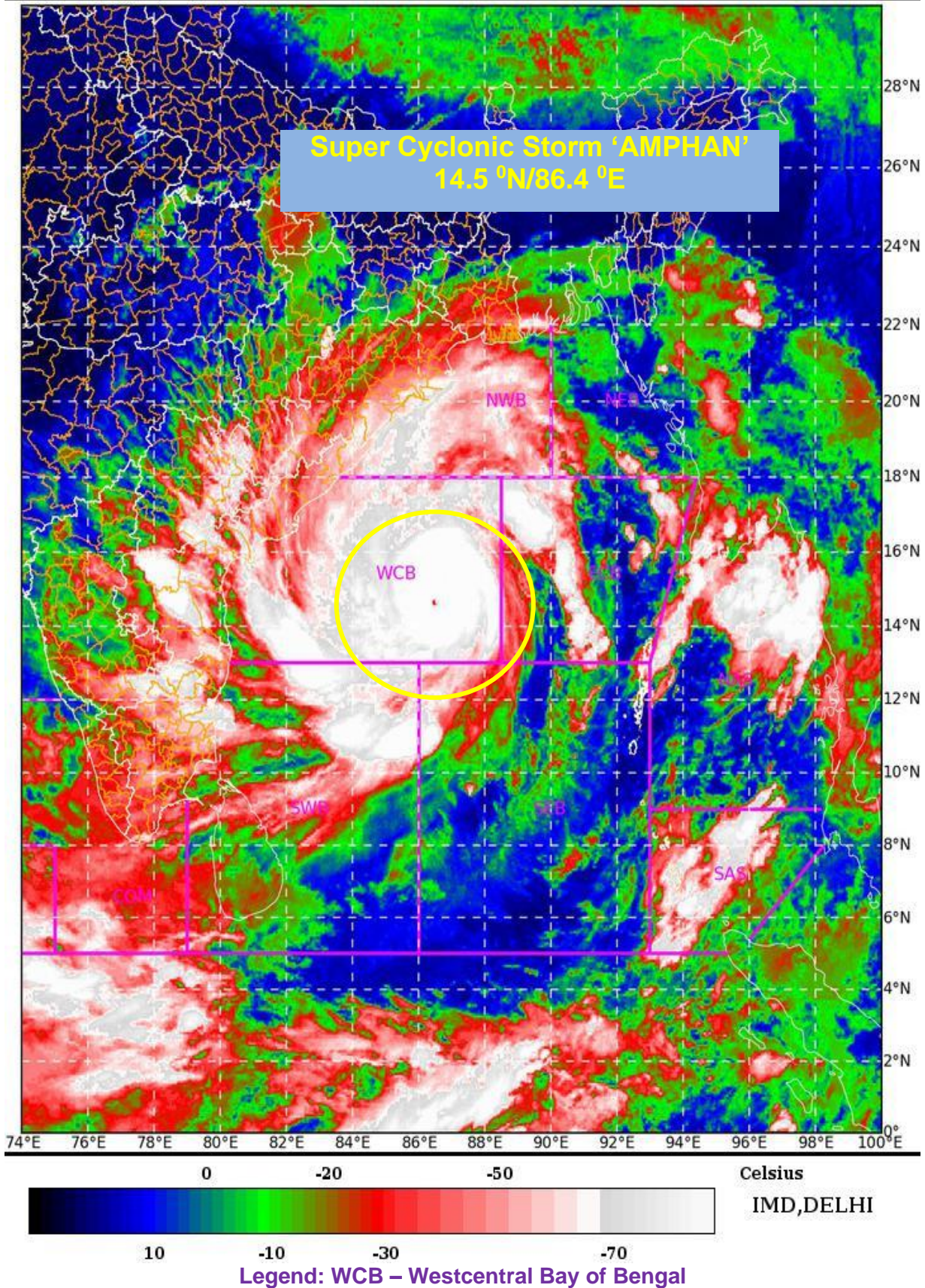
NIL: 0%, LOW: 1-25%, FAIR: 26-50%, MODERATE: 51-75% AND HIGH: 76-100%

SAT : INSAT-3D IMG 18-05-2020/(1530 to 1556) GMT

IMG_TIR1_TEMP 10.8 um 18-05-2020/(2100 to 2126) IST

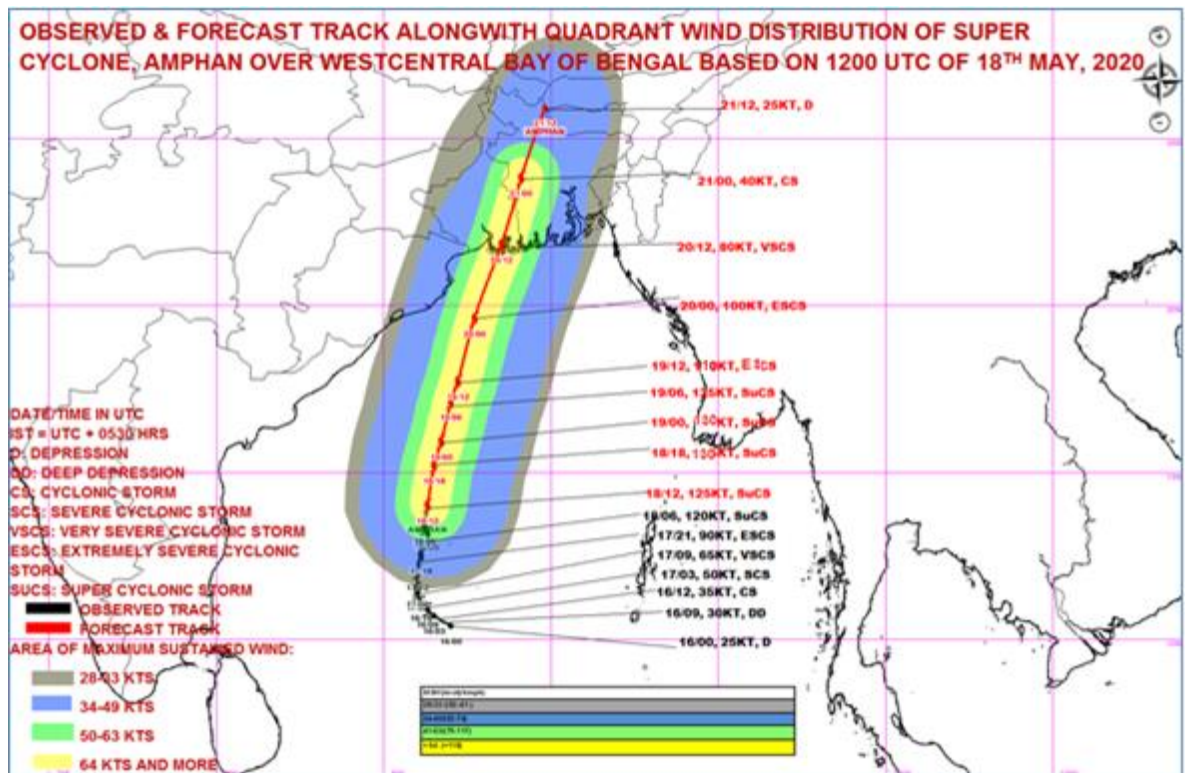
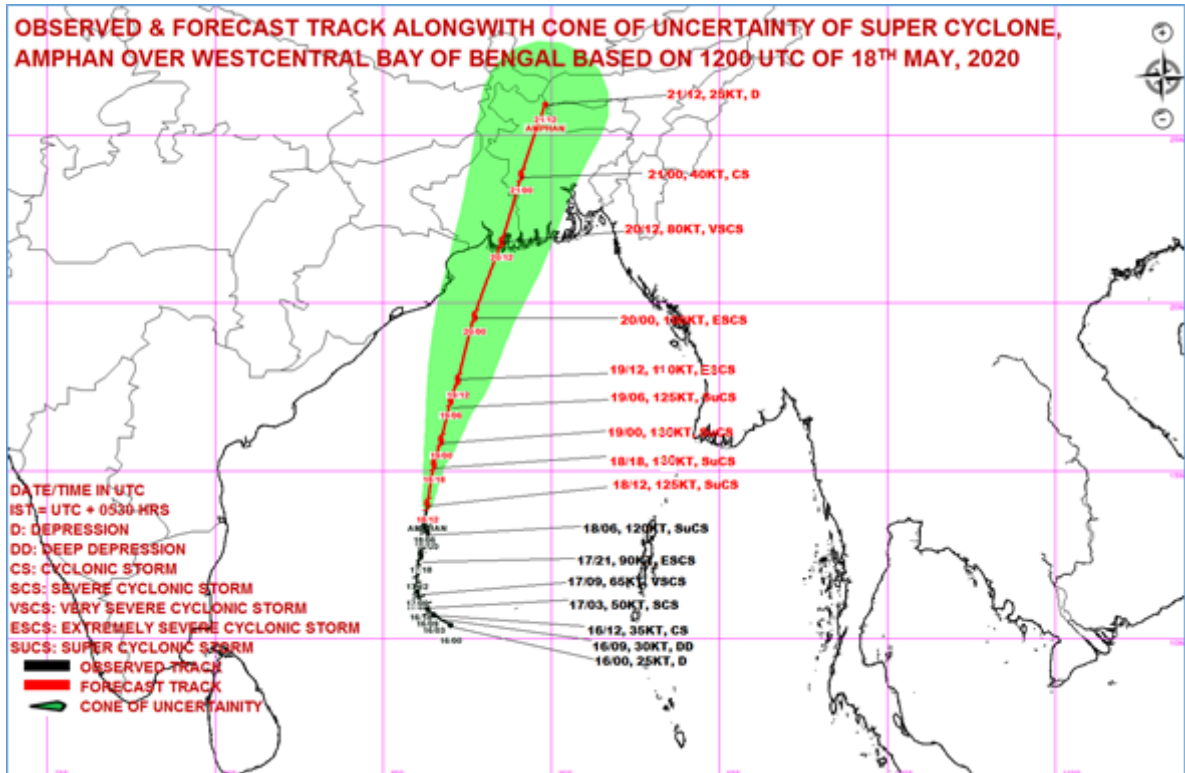


L1C Mercator



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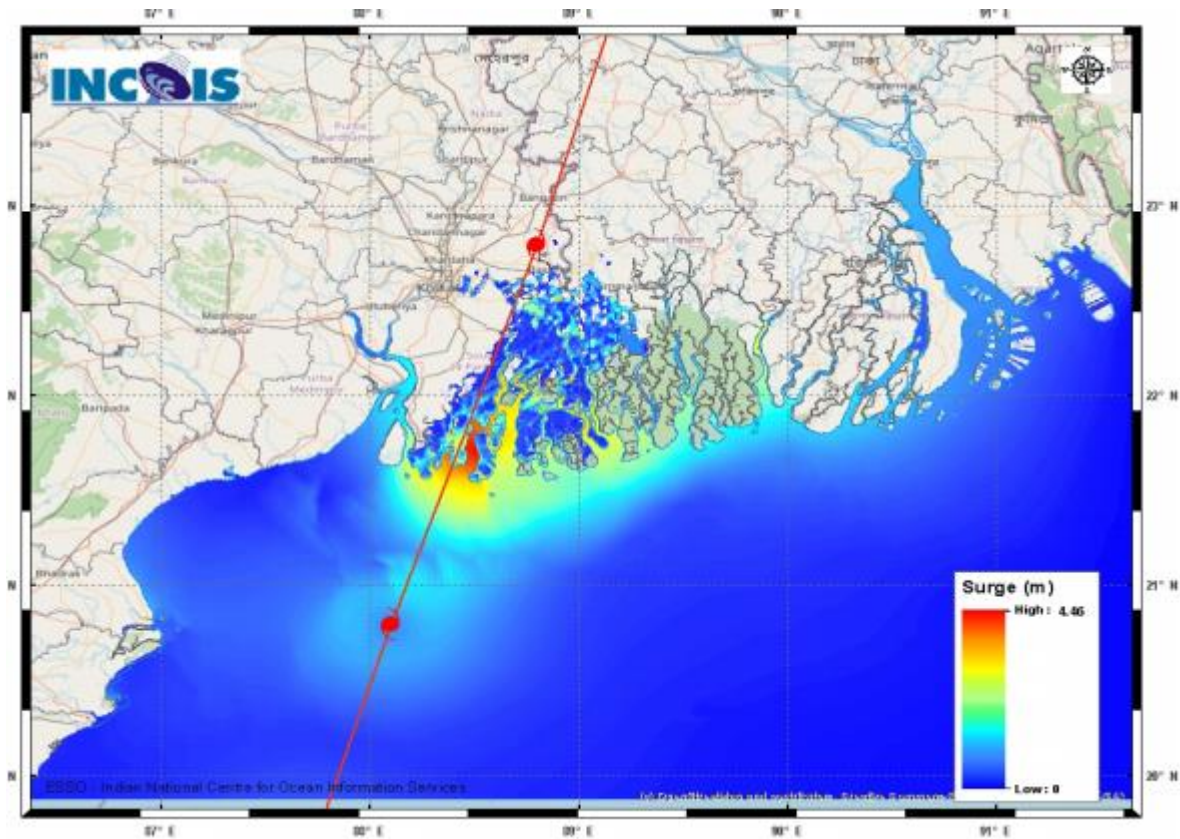


Figure: Storm Surge forecast from INCOIS issued at 1837 IST of 18th May 2020

Storm Surge of about 4-6 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.

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