



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI**  
**TROPICAL CYCLONE ADVISORY BULLETIN NO. 15**

**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. 15 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0930 UTC OF 18.05.2020 BASED ON 0600 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 **EXTREMELY SEVERE 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 4 KMPH DURING PAST 06 HOURS, INTENSIFIED FURTHER INTO A **SUPER CYCLONIC STORM** AND LAY CENTRED AT 0600 UTC OF TODAY, THE 18<sup>TH</sup> MAY, 2020 OVER **WEST CENTRAL AND ADJOINING CENTRAL PARTS OF SOUTH BAY OF BENGAL** NEAR LATITUDE NEAR 13.4°N AND LONGITUDE 86.2°E, ABOUT 770 KM NEARLY SOUTH OF PARADIP (42976), 920 KM SOUTH-SOUTHWEST OF DIGHA (42901) AND 1040 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 20<sup>TH</sup> MAY 2020 AS AN EXTREMELY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 165-175 KMPH GUSTING TO 185 KMPH.

**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>
18.05.20/0600	13.4/86.2	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 0600 UTC OF 18<sup>TH</sup> MAY, THE SYSTEM HAS FURTHER INTENSIFIED AND THE CURRENT INTENSITY OF THE SYSTEM IS **T6.5. EYE CLEARLY VISIBLE WITH CIRCULAR PATTERN AND IT IS CONTINUING WITH A DIAMETER OF 15 KM.** EYE HAS BECOME COLLER WITH TEMPERATURE -21.0 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 18.0°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 **930 HPA.**

AT 0600 UTC OF 18<sup>TH</sup> MAY, A BOUY (**23094**) LOCATED AT 13.3°N/84°E REPORTED A MEAN SEA LEVEL PRESSURE OF 994 HPA AND ANOTHER BOUY (**23459**) LOCATED AT 14°N/86.6.0°E REPORTED A MEAN SURFACE WIND SPEED OF 110°/40.8 KNOTS.

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS IN PHASE 2 WITH AMPLITUDE MORE THAN 1 DURING 18<sup>TH</sup>-20<sup>TH</sup> 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/CM<sup>2</sup> OVER MAJOR PARTS OF SOUTH & CENTRAL BOB. IT IS ABOUT 60-80 KJ/CM<sup>2</sup> 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<sup>-6</sup> SEC<sup>-1</sup> AROUND THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE ZONE IS AROUND (50-60)X10<sup>-5</sup>SEC<sup>-1</sup> LOCATED AROUND SOUTHWEST OF THE SYSTEM CENTRE. THE UPPER LEVEL DIVERGENCE IS ABOUT 30X10<sup>-5</sup>SEC<sup>-1</sup> 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 18<sup>TH</sup> 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 20<sup>TH</sup> 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 3-4 METERS OVER THE LOW LYING AREAS OF EAST MEDINIPUR DISTRICT OF WEST BENGAL DURING THE TIME OF LANDFALL.
- STORM SURGE OF ABOUT 3-4 METERS ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS OF BANGLADESH DURING THE TIME OF LANDFALL.

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

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**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

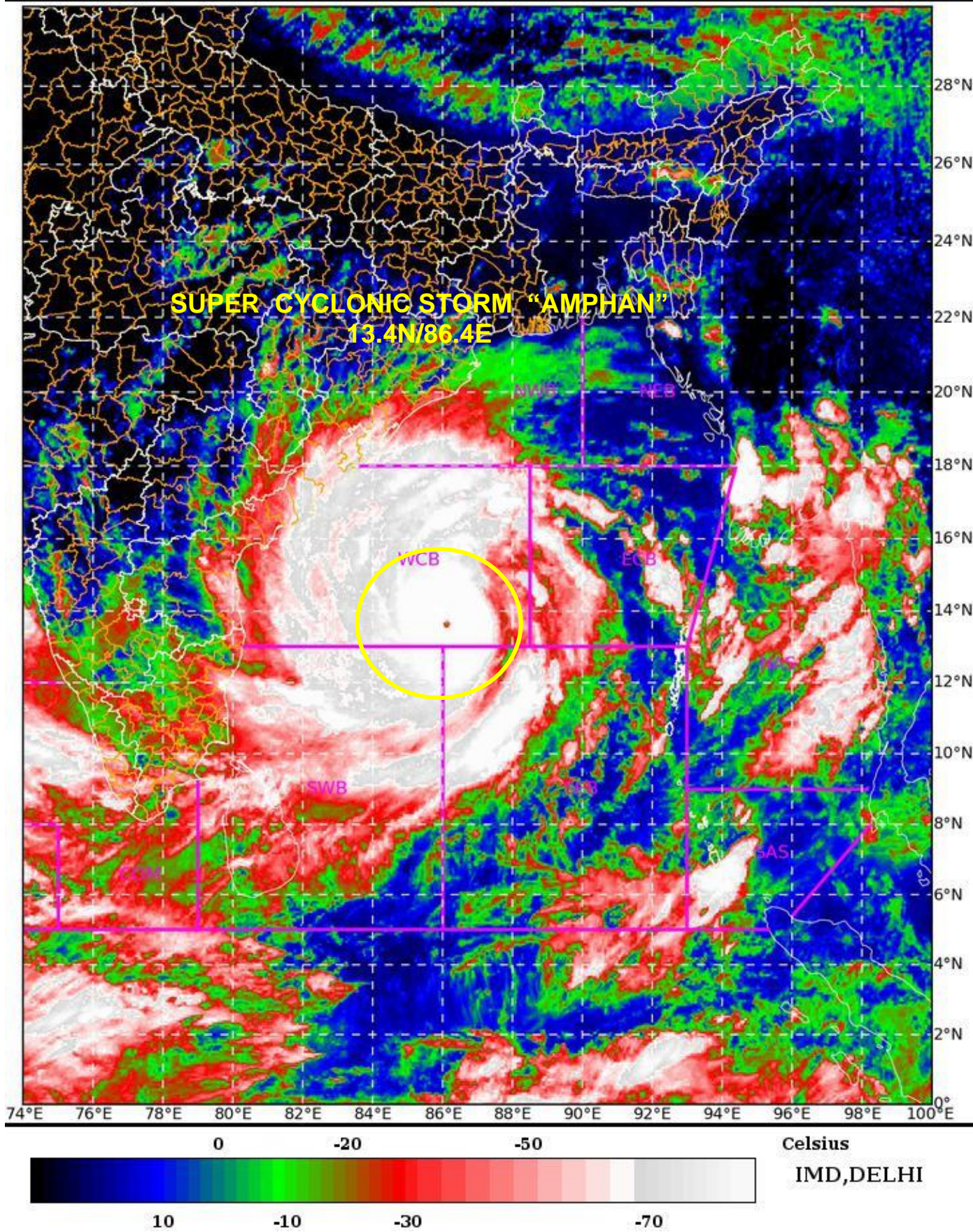
18-05-2020/(0800 to 0827) GMT

IMG\_TIR1\_TEMP 10.8 um

18-05-2020/(1330 to 1357) IST



L1C Mercator



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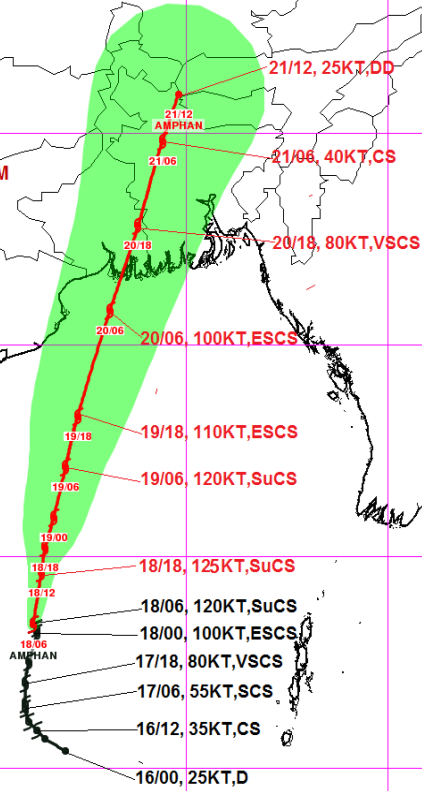


**OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF  
SUPER CYCLONIC STORM 'AMPHAN' OVER WEST CENTRAL BAY OF BENGAL  
BASED ON 0600 UTC OF 18<sup>TH</sup> MAY, 2020**

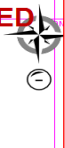


DATE/TIME IN UTC  
IST = UTC + 0530 HRS  
D: DEPRESSION  
DD: DEEP DEPRESSION  
CS: CYCLONIC STORM  
SCS: SEVERE CYCLONIC STORM  
VSCS: VERY SEVERE CYCLONIC STORM  
ESCS: EXTREMELY SEVERE CYCLONIC STORM  
SuCS: SUPER CYCLONIC STORM

OBSERVED TRACK  
 FORECAST TRACK  
 CONE OF UNCERTAINTY



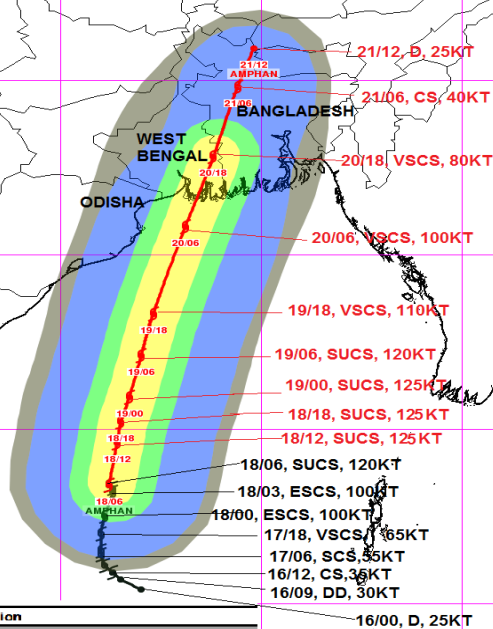
**OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF  
SUPER CYCLONIC STORM 'AMPHAN' OVER WESTCENTRAL BAY OF BENGAL BASED  
ON 0600 UTC OF 18<sup>TH</sup> MAY, 2020**



DATE/TIME IN UTC  
IST = UTC + 0530 HRS  
D: DEPRESSION  
DD: DEEP DEPRESSION  
CS: CYCLONIC STORM  
SCS: SEVERE CYCLONIC STORM  
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ESCS: EXTREMELY SEVERE CYCLONIC STORM  
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OBSERVED TRACK  
 FORECAST TRACK

AREA OF MAXIMUM SUSTAINED WIND

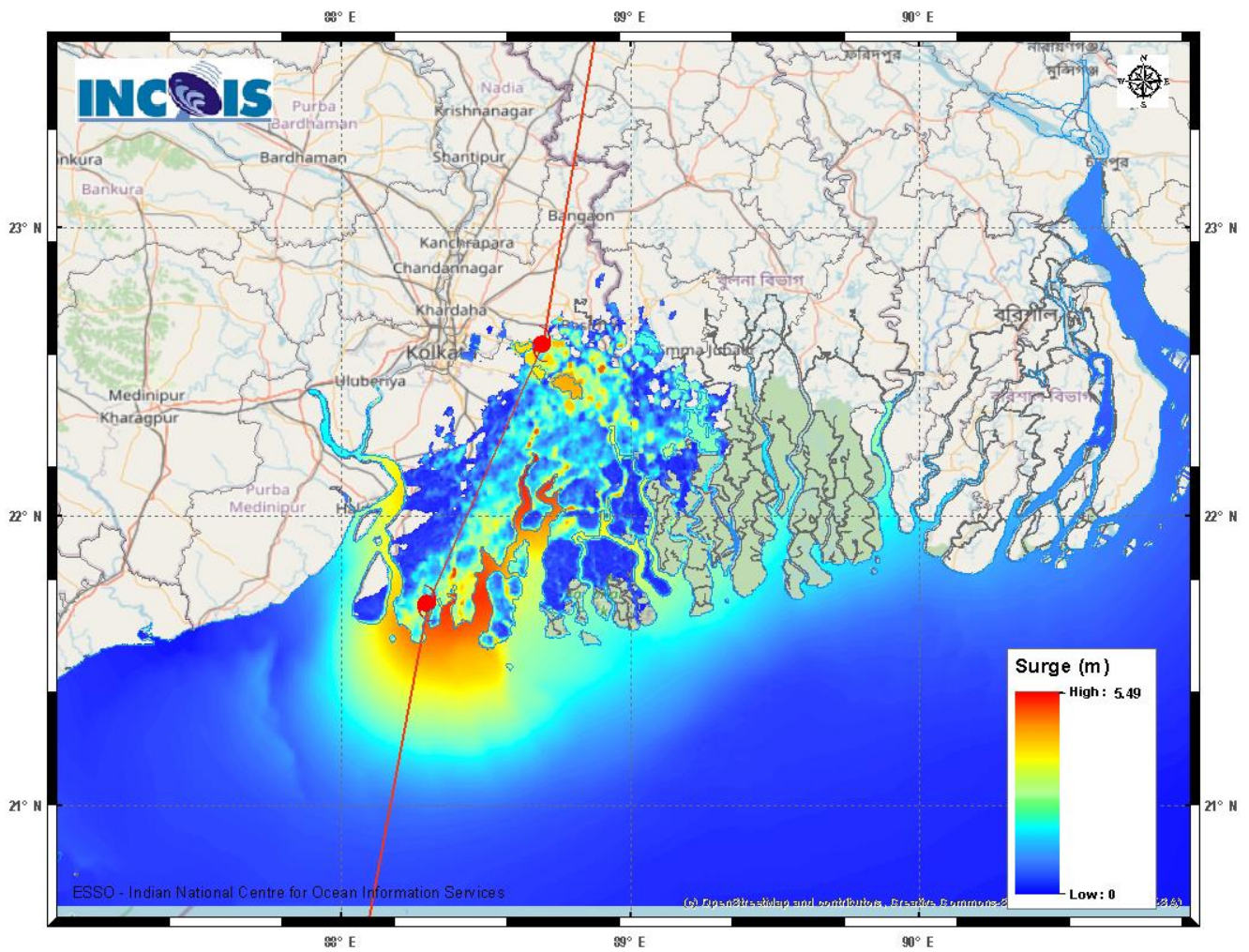


MSW(knot)/kmph	Impact	Action
28-33 (62-61)	Very rough seas.	Total suspension of fishing operations
34-40(62-74)	High to very high seas	Total suspension of fishing operations
41-53(75-117)	Very High seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

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Figure: Storm Surge forecast from INCOIS



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