



REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY BULLETIN NO. 11

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. 11 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2030 UTC OF 17.05.2020 BASED ON 1800 UTC OF 17.05.2020.

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

THE **VERY SEVERE CYCLONIC STORM 'AMPHAN'** (PRONOUNCED AS **UM-PUN**) OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL MOVED NORTHWARDS WITH A SPEED OF 11 KMPH DURING PAST 06 HOURS AND LAY CENTRED AT 1800 UTC OF TODAY, THE 17TH MAY, 2020 OVER **CENTRAL PARTS OF SOUTH BAY OF BENGAL** NEAR LATITUDE 12.5°N AND LONGITUDE 86.4°E, ABOUT 870 KM NEARLY SOUTH OF PARADIP (42976), 1020 KM SOUTH-SOUTHWEST OF DIGHA (42901) AND 1130 KM SOUTH-SOUTHWEST OF KHEPUPARA (41984). IT IS VERY LIKELY TO INTENSIFY FURTHER INTO AN EXTREMELY SEVERE CYCLONIC STORM DURING NEXT 06 HOURS. IT IS VERY LIKELY TO MOVE NEARLY NORTHWARDS SLOWLY DURING NEXT 06 HOURS AND THEN RE-CURVE NORTH-NORTHEASTWARDS AND MOVE FAST ACROSS NORTHWEST BAY OF BENGAL AND CROSS WEST BENGAL AND BANGLADESH COASTS BETWEEN DIGHA (42901) AND HATIYA ISLANDS (41963) DURING 0900-1200 UTC OF 20TH MAY 2020 AS A VERY SEVERE CYCLONIC STORM.

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
17.05.20/1800	12.5/86.4	145-155 GUSTING TO 170	VERY SEVERE CYCLONIC STORM
18.05.20/0000	13.5/86.5	160-170 GUSTING TO 185	EXTREMELY SEVERE CYCLONIC STORM
18.05.20/0600	14.0/86.6	170-180 GUSTING TO 200	EXTREMELY SEVERE CYCLONIC STORM
18.05.20/1200	14.6/86.7	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
18.05.20/1800	15.2/86.8	190-200 GUSTING TO 220	EXTREMELY SEVERE CYCLONIC STORM
19.05.20/0600	16.7/87.2	190-200 GUSTING TO 220	EXTREMELY SEVERE CYCLONIC STORM
19.05.20/1800	18.5/87.7	180-190 GUSTING TO 210	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/0600	21.7/88.3	170-180 GUSTING TO 200	EXTREMELY SEVERE CYCLONIC STORM
20.05.20/1800	22.6/88.7	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
21.05.20/0600	23.8/88.9	85-95 GUSTING TO 105	SEVERE CYCLONIC STORM
21.05.20/1800	26.0/89.3	50-60 GUSTING TO 70	DEEP 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 1800 UTC OF 17TH MAY, THE CURRENT INTENSITY OF THE SYSTEM IS **T4.5. IT SHOWS RAGGED EYE FEATURES.** IN THE WESTERN SECTOR. MINIMUM CLOUD TOP TEMPERATURE IS -93 DEG CELCIUS. ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION OVER BAY BETWEEN LAT 8°N TO 14.0°N LONG 80.0°E TO 87.0°E.

THE ESTIMATED MAXIMUM SUSTAINED WIND SPEED IS 70 KNOTS GUSTING TO 80 KNOTS. THE SEA CONDITION IS VERY HIGH AROUND THE SYSTEM CENTER. THE ESTIMATED CENTRAL PRESSURE IS 970 HPA.

AT 1800 UTC OF 17TH MAY, A BOUY (23094) LOCATED AT 13.3°N/84°E REPORTED A MEAN SEA LEVEL PRESSURE OF 997.4 HPA AND ANOTHER BOUY (23459) LOCATED AT 13.6°N/86.6°E REPORTED A MEAN SEA LEVEL PRESSURE OF 991 HPA AND MEAN SURFACE WIND SPEED OF 80°/36.9 KNOTS.

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS IN PHASE 2 WITH AMPLITUDE MORE THAN 1 DURING 17TH-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 ENHANCED POSITIVE VORTICITY ZONE IS BEING MAINTAINED DURING PAST 6 HOURS (MORE THAN $200 \times 10^{-6} \text{SEC}^{-1}$) AROUND THE SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. THE LOWER LEVEL CONVERGENCE ZONE IS AROUND $30 \times 10^{-5} \text{SEC}^{-1}$ LOCATED OVER SOUTHEAST OF THE SYSTEM CENTRE. THE UPPER LEVEL HAS FURTHER DECREASED AND IS ABOUT $20 \times 10^{-5} \text{SEC}^{-1}$ LOCATED AROUND THE SYSTEM CENTRE. VERTICAL WIND SHEAR (VWS) HAS REDUCED TO LOW TO MODERATE (15-20 KTS) AROUND THE SYSTEM CENTRE. IT IS INCREASING TO THE NORTH OF LAT. 15N ALONG THE EXPECTED TRACK. THE UPPER TROPOSPHERIC RIDGE LIES NEAR 15.0 N OVER BOB. AT PRESENT THE SYSTEM IS MOVING NEAR NORTHWARD ALONG THE AXIS OF THE RIDGE AND WILL CONTINUE THE SAME MOVEMENT FOR NEXT 24 HOURS. SUBSEQUENTLY, THE SYSTEM WILL MOVE TO THE NORTH OF THE RIDGE AXIS AND WILL START RECURVING NORTH/NORTHEASTWARDS AND MOVE FASTER.

TOTAL PRECIPITABLE WATER IMAGERY OF 17TH 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 FURTHER INTENSIFICATION OF THE SYSTEM INTO AN EXTREMELY SEVERE CATEGORY AND MOVEMENT TOWARDS WEST BENGAL AND BANGLADESH COASTS. THE FORECAST IS BASED ON THE CONSENSUS FROM VARIOUS MODELS.

PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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

STORM SURGE GUIDANCE

- STORM SURGE OF ABOUT 3 METERS ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS OF SOUTH & NORTH 24 PARGANAS AND 2-3 METERS OVER THE LOW LYING AREAS OF EAST MEDINIPUR DISTRICT OF WEST BENGAL DURING THE TIME OF LANDFALL.
- STORM SURGE OF ABOUT 2-3 METERS ABOVE ASTRONOMICAL TIDE IS LIKELY TO INUNDATE LOW LYING AREAS OF BANGLADESH DURING THE TIME OF LANDFALL.

**(V R DURAI)
SCIENTIST-E, RSMC, NEW DELHI**

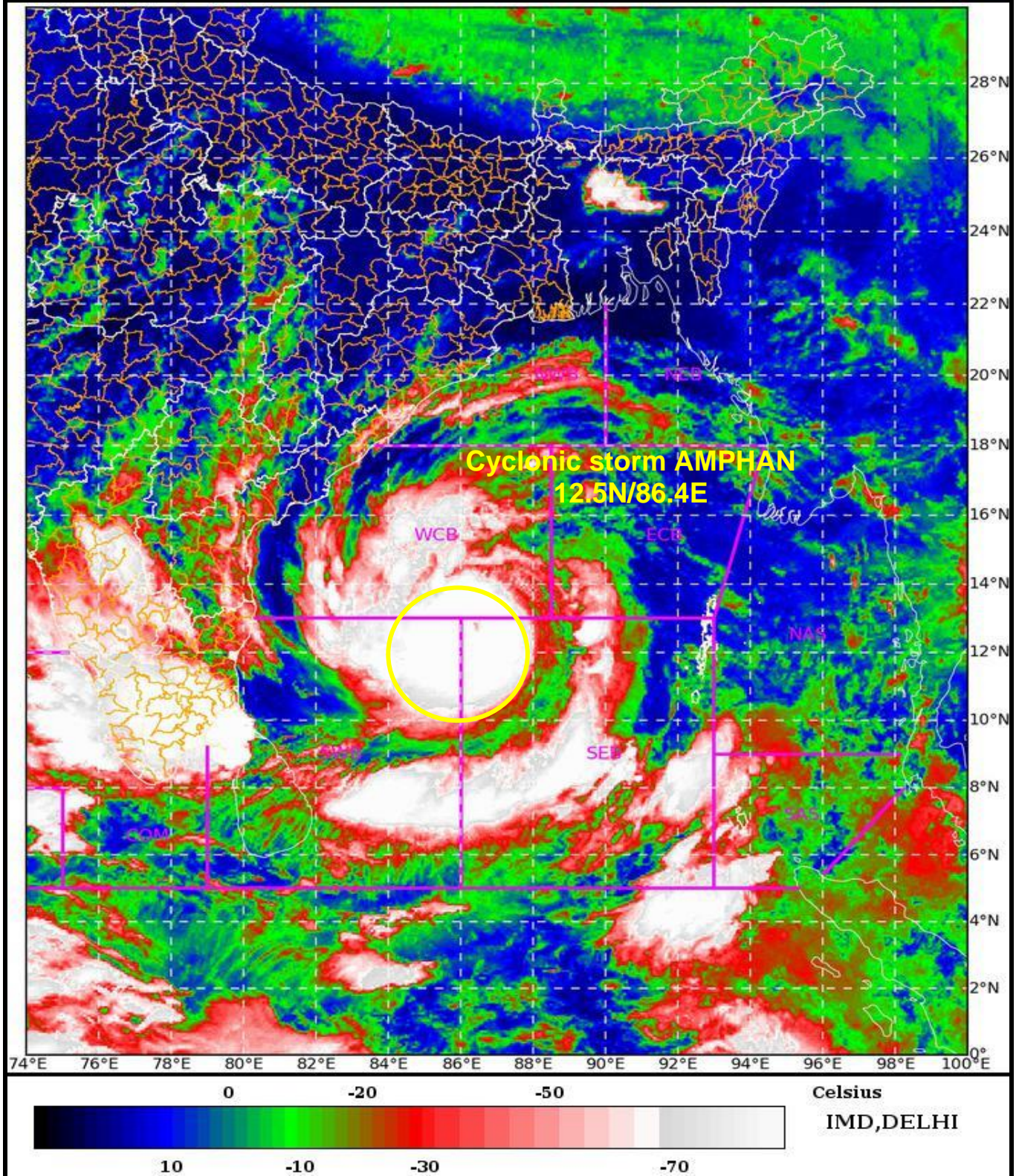
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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

SAT : INSAT-3D IMG 17-05-2020/(1900 to 1926) GMT

IMG_TIR1_TEMP 10.8 um 18-05-2020/(0030 to 0056) IST

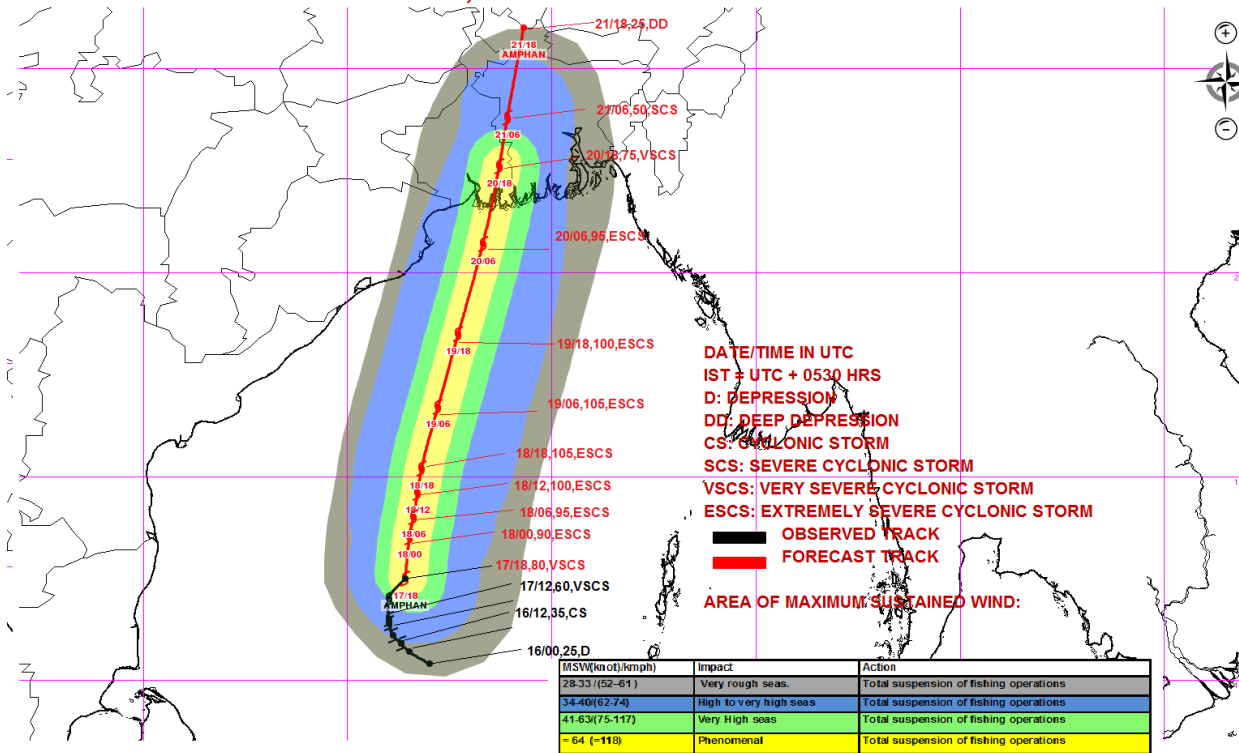
L1C Mercator



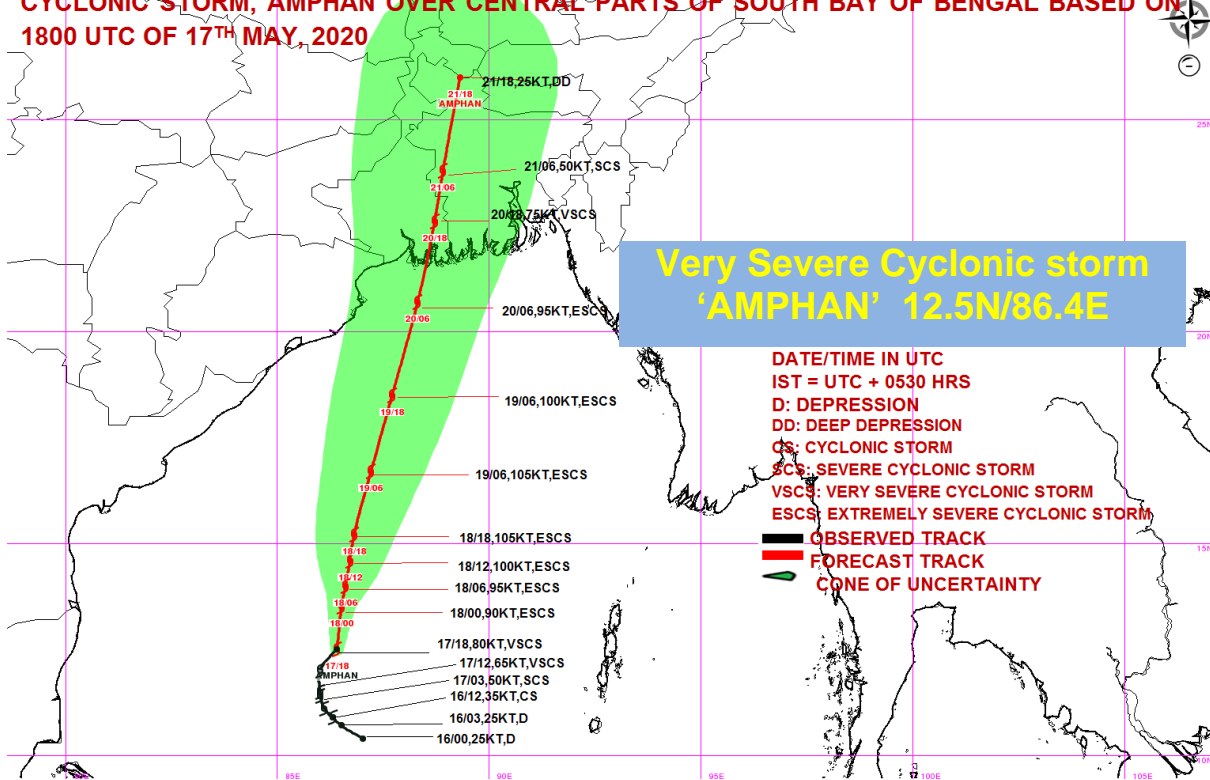
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION)

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

OBSERVED & FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM, AMPHAN OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL BASED ON 1800 UTC OF 17TH MAY, 2020



OBSERVED & FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM, AMPHAN OVER CENTRAL PARTS OF SOUTH BAY OF BENGAL BASED ON 1800 UTC OF 17TH 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%