REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI SPECIAL TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 16.11.2023

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2100 UTC OF 16.11.2023 BASED ON 1800 UTC OF 16.11.2023.

BAY OF BENGAL:

SUB: DEEP DEPRESSION OVER NORTHWEST BAY OF BENGAL

THE DEEP DEPRESSION OVER NORTHWEST AND ADJOINING WESTCENTRAL BAY OF BENGAL MOVED NORTH-NORTHEASTWARDS WITH A SPEED OF 10 KMPH DURING PAST 6 HOURS AND LAY CENTRED AT 1800 UTC OF 16TH NOVEMBER OVER NORTHWEST BAY OF BENGAL NEAR LATITUDE 19.1°N AND LONGITUDE 88.0°E, ABOUT 190 KM SOUTHEAST OF PARADIP (42976, ODISHA), 280 KM SOUTH-SOUTHEAST OF DIGHA (42901, WEST BENGAL) AND 390 KM SOUTH-SOUTHWEST OF KHEPUPARA (41984, BANGLADESH).

IT IS LIKELY TO CONTINUE TO MOVE NORTH-NORTHEASTWARDS, INTENSIFY FURTHER INTO A CYCLONIC STORM DURING NEXT 12 HOURS AND CROSS BANGLADESH COAST BETWEEN MONGLA AND KHEPUPARA WITH WIND SPEED OF 60-70 KMPH GUSTING TO 80 KMPH BY THE EARLY HOURS OF 18TH NOVEMBER, 2023 (21 UTC OF 17TH NOVEMBER 2023).

FORECAST TRACK & INTENSITY IS GIVEN BELOW:

DATE/TIME (UTC)	POSITION (LAT. ^{0}N/ LONG. ^{0}E)	MAXIMUM SUSTAINED SURFACE WIND SPEED (KMPH)	CATEGORY OF CYCLONIC DISTURBANCE
16.11.23/1800	19.1/88.0	55-65 KMPH GUSTING TO 75 KMPH	DEEP DEPRESSION
17.11.23/0000	19.8/88.3	60-70 KMPH GUSTING TO 80 KMPH	CYCLONIC STORM
17.11.23/0600	20.4/88.6	65-75 KMPH GUSTING TO 85 KMPH	CYCLONIC STORM
17.11.23/1200	21.0/89.0	65-75 KMPH GUSTING TO 85 KMPH	CYCLONIC STORM
17.11.23/1800	21.6/89.5	60-70 KMPH GUSTING TO 80 KMPH	CYCLONIC STORM
18.11.23/0600	22.7/90.2	50-60 KMPH GUSTING TO 70 KMPH	DEEP DEPRESSION
18.11.23/1800	23.8/90.8	40-50 KMPH GUSTING TO 60 KMPH	DEPRESSION

THE ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 30 KNOTS GUSTING TO 40 KNOTS. THE WINDS ARE RELATIVELY STRONGER IN NORTHEAST SECTOR DUE TO NORTHEAST MONSOON CONDITIONS. THE ESTIMATED CENTRAL PRESSURE IS 1004 HPA. SEA CONDITIONS ARE LIKELY TO BE ROUGH TO VERY ROUGH OVER WESTCENTRAL BAY OF BENGAL ON 17TH, OVER NORTH BAY OF BENGAL TILL MORNING OF 17TH BECOMING VERY ROUGH TO HIGH THERFATER TILL 18TH MORNING. SEA CONDITION WOULD BE ROUGH TO VERY ROUGH ALONG AND OFF ODISHA COAST DURING ON 17TH, WEST BENGAL AND BANGLADESH COASTS ON 17TH & 18TH NOVEMBER 2023.

Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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INTENSITY OF THE SYSTEM IS CHARACTERISED AS T2.0. CLOUDS ASSOCIATED WITH THE DEEP DEPRESSION ARE ORGANISED IN SHEAR PATTERN. BROKEN LOW & MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH BAY OF BENGAL BETWEEN 18.0N & 22.0N AND LONGITUDE 87.5E & 93.0E, COASTAL GANGETIC WEST BENGAL, SOUTH BANGLADESH (MINIMUM CLOUD TOP TEMPERATURE IS -93^0C) AND MODERATE TO INTENSE CONVECTION OVER REST GANGETIC WEST BENGAL, NORTHEAST STATES AND NORTH BANGLADESH.

STORM SURGE GUIDANCE:

STORM SURGE OF ABOUT 1-2 METER HEIGHT ABOVE THE ASTRONOMICAL TIDE IS LIKE TO INUNDATE OVER LOW LYING AREAS OF BANGLADESH NEAR THE LANDFALL POINT AT THE TIME OF LANDFALL.

Remarks:

MADDEN JULIAN OSCILLATION INDEX IS IN PHASE 1 WITH AMPLITUDE CLOSE TO 1. IT WOULD MOVE TO PHASE 2 FROM 19^{TH} NOVEMBER ONWARDS, WITH AMPLITUDE BECOMING MORE THAN 1. SEA SURFACE TEMPERATURE IS AROUND 28-29°C OVER THE SYSTEM AREA. THE TROPICAL CYCLONE HEAT POTENTIAL IS 70-80 KJ/CM^2 OVER SYSTEM AREAS AND TOWARDS THE TRACK OVER NORTH BAY OF BANGAL. THE LOW LEVEL RELATIVE POSITIVE VORTICITY IS SAME AND IS AROUND 150 X10^{-6} S^{-1} TO THE SOUTHEAST OF SYSTEM CENTRE WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. THE POSITIVE LOW LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT IS ABOUT 40X$10^{-5}S^{-1}$ TO THE EAST OF SYSTEM AREA. POSITIVE UPPER LEVEL DIVERGENCE REMAINS SAME AND IS ABOUT 40 X10^{-5} S^{-1} TO THE NORTHEAST OF SYSTEM AREA. WIND SHEAR IS HIGH (AROUND 30 KNOTS) OVER SYSTEM AREA AND ALSO ALONG & OFF WEST BENGAL-BANGLADESH COASTS. UPPER TROPOSPHERIC RIDGE RUNS ALONG 15^0N.

A TROUGH IN MIDDLE TROPOSPHERIC LEVELS RUN ALONG LONGITUDE 78^0E TO THE NORTH OF LATITUDE 18^0N LEADING TO COLD & DRY AIR INCURSION IN THE NORTH BAY OF BENGAL. AN ANTICYCLONIC CIRCULATION IN LOWER TO MIDDLE TROPOSPHERIC LEVELS LIES OVER SOUTH MYANMAR AND ADJOINING THAILAND COAST LEADING TO WARM MOIST AIR INCURSION IN NORTH BAY OF BENGAL. THUS, THERE IS CONFLUELCE OF COLD AND DRY AIR FROM THE WEST WITH WARM AND MOIST AIR FROM THE SOUTHEAST OVER NORTH BAY OF BENGAL. IT WOULD SUPPORT DEVELOPMENT OF DEEP CONVECTION OVER THE REGION AND HENCE INTENSIFICATION OF THE SYSTEM. THIS CONFLUENCE WOULD ALSO LEAD TO INCREASE IN WIND SHEAR OVER THE NORTH BAY OF BENGAL AND MAY LEAD TO WEAKENING OF THE SYSTEM. INTENSIFICATION/WEAKENING OF THE SYSTEM MAY DEPEND UPON WHICH FACTOR (WIND SHEAR OR UPPER LEVEL DIVERGENCE) IS PROMINENT.

THE GUIDANCE FROM VARIOUS NUMERICAL MODELS (IMD GFS, NCEP GFS, ECMWF AND IMD MME) IS INDICATING NORTH-NORTHEASTWARDS MOVEMENT TOWARDS BANGLADESH COASTS. GRADUAL INTENSIFICATION INTO A CYCLONIC STORM IS LIKELY DURING NEXT 12 HOURS.

IT IS LIKELY TO CONTINUE TO MOVE NORTH-NORTHEASTWARDS, INTENSIFY FURTHER INTO A CYCLONIC STORM DURING NEXT 12 HOURS AND CROSS BANGLADESH COAST BETWEEN MONGLA AND KHEPUPARA WITH WIND SPEED OF 60-70 KMPH GUSTING TO 80 KMPH AROUND 2100 UTC OF 17TH NOVEMBER, 2023.

(SHASHI KANT)
SCIENTIST-D, RSMC

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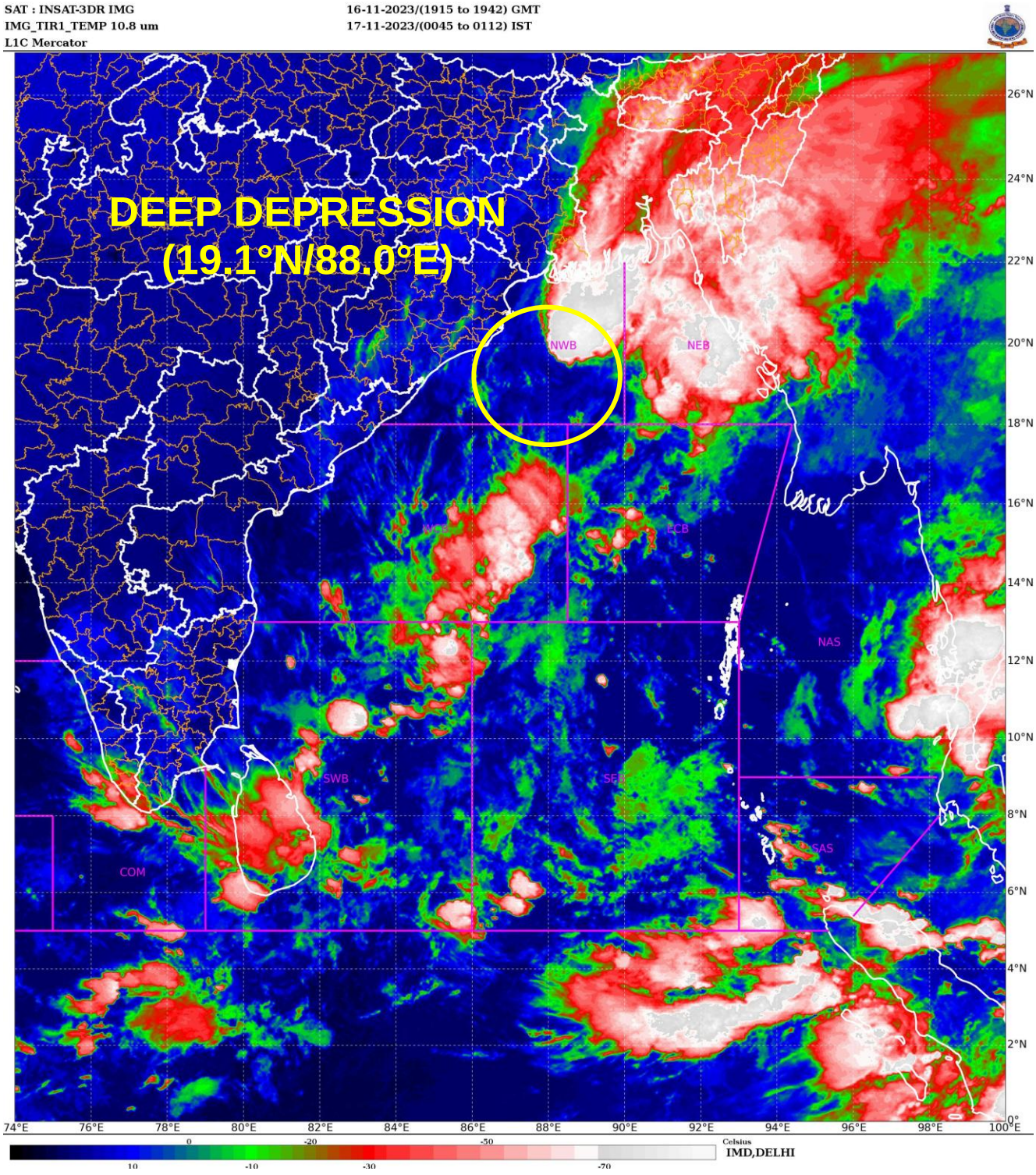

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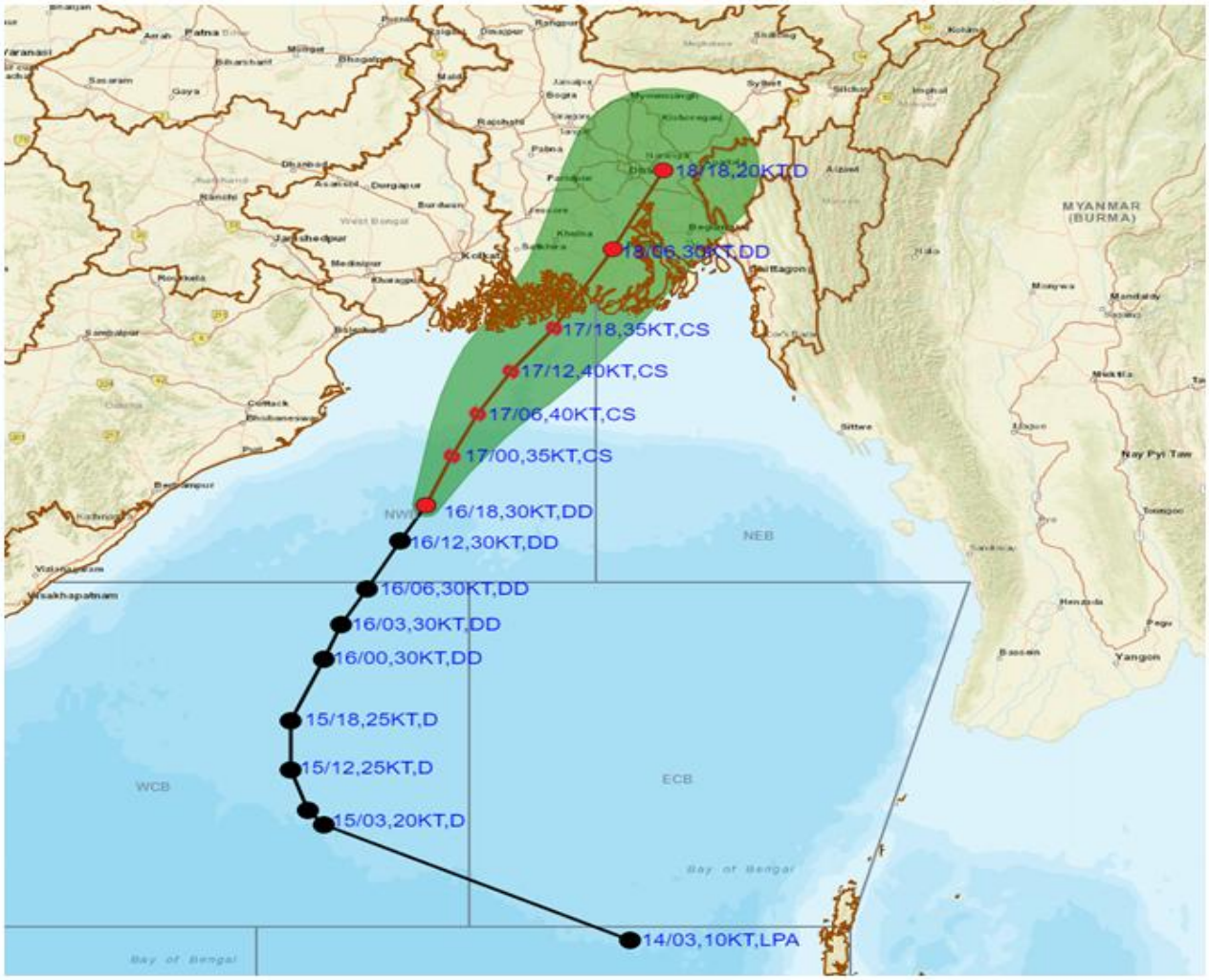
OBSERVED AND FORECAST TRACK AND INTENSITY ALONGWITH CONE OF UNCERTAINTY IN ASSOCIATION WITH DEEP DEPRESSION OVER NORTHWEST BAY OF BENGAL BASED ON 1800 UTC (2330 IST) OF 16TH NOVEMBER 2023.



DATE/TIME IN UTC
IST=UTC + 0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

LESS THAN 34 KT
34-47 KT
≥ 48 KT
OBSERVED TRACK
FORECAST TRACK
CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS			
Date and Time (UTC)	RADIP (CW	DIGHA	KHEPUPARA	CHITTAGONG (AMBAGAN)
16.11.23/1800	270, SSE	410, S	540, SSW	680 SW
17.11.23/1800	330, ENE	210, E	80, WSW	250, WSW
18.11.23/0600	460, NE	310, ENE	80, N	180, WNW
18.11.23/1800	580, NE	420, NE	210, NNE	190, NNW

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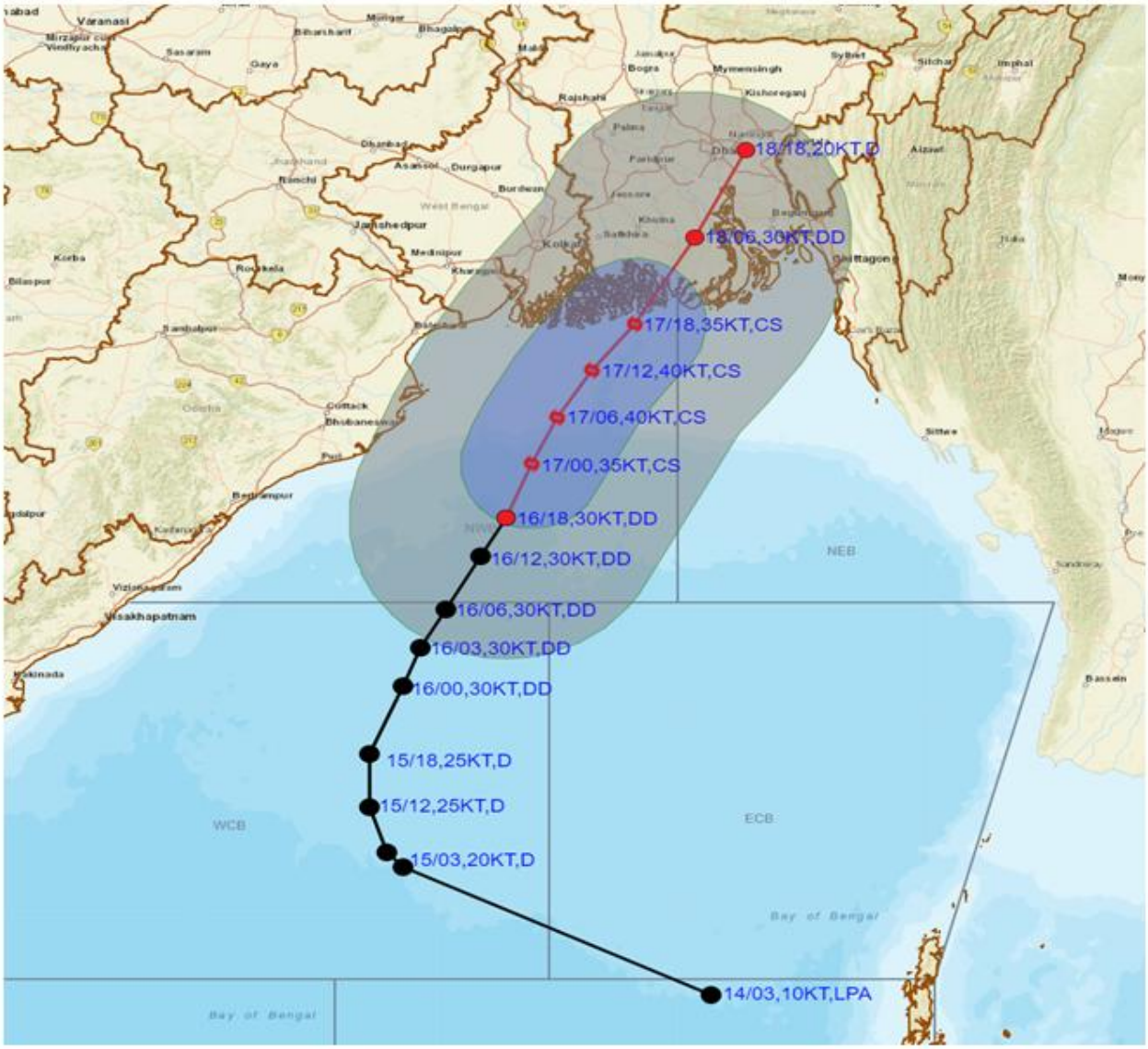
OBSERVED AND FORECAST TRACK AND INTENSITY ALONG WITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH DEEP DEPRESSION OVER NORTHWEST BAY OF BENGAL BASED ON 1800 UTC (2330 IST) OF 16TH NOVEMBER 2023.



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SuCS: SUPER CYCLONIC STORM (≥ 120 KT)

LESS THAN 34 KT
34-47 KT
≥ 48 KT
OBSERVED TRACK
FORECAST TRACK
CONE OF UNCERTAINTY
AREA OF MAXIMUM SUSTAINED WIND SPEED:
28-33 KT (52-61 KMPH)
34-49 KT (62-91 KMPH)
50-63 KT (92-117 KMPH)
≥ 64 KT (≥118 KMPH)

IMPACT OVER THE SEA

MSW (knot/kmph)	Impact	Action
28-33 (52-61)	Very rough seas	Total suspension of fishing operations
34-49 (62-91)	High to very high seas	Total suspension of fishing operations
50-63 (92-117)	Very high seas	Total suspension of fishing operations
≥ 64 (≥118)	Phenomenal	Total suspension of fishing operations

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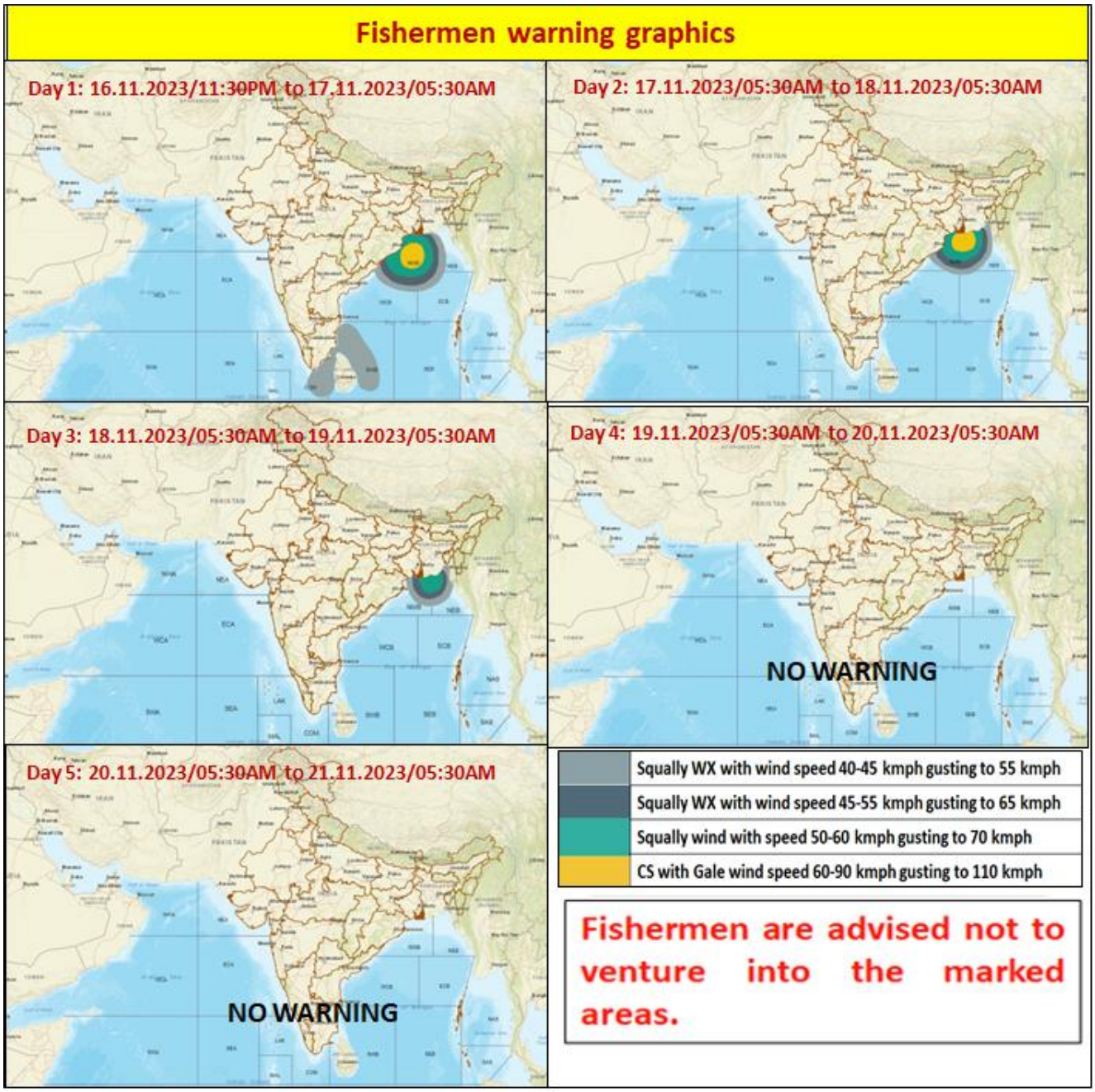
Fishermen warning graphics



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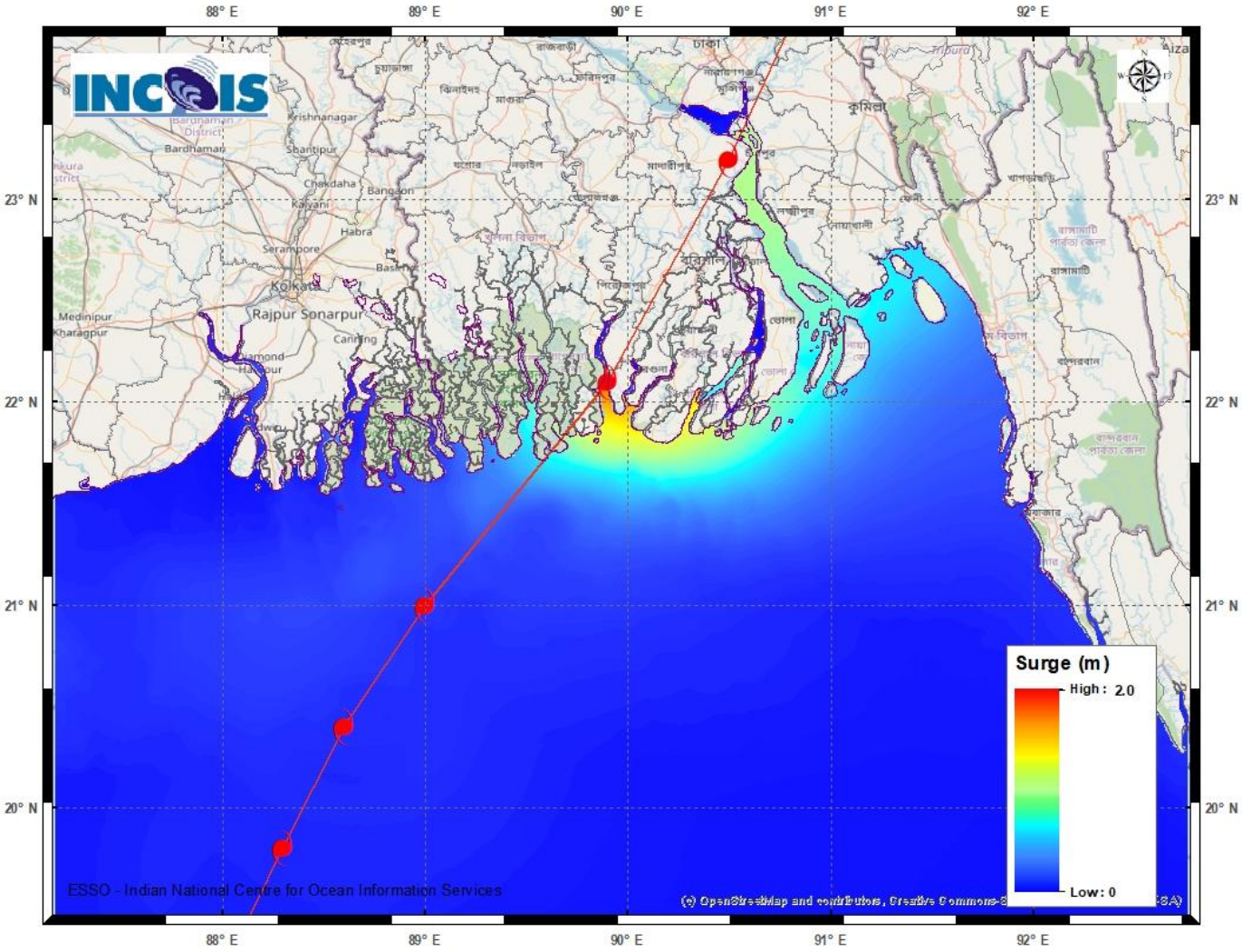
Storm Surge Guidance



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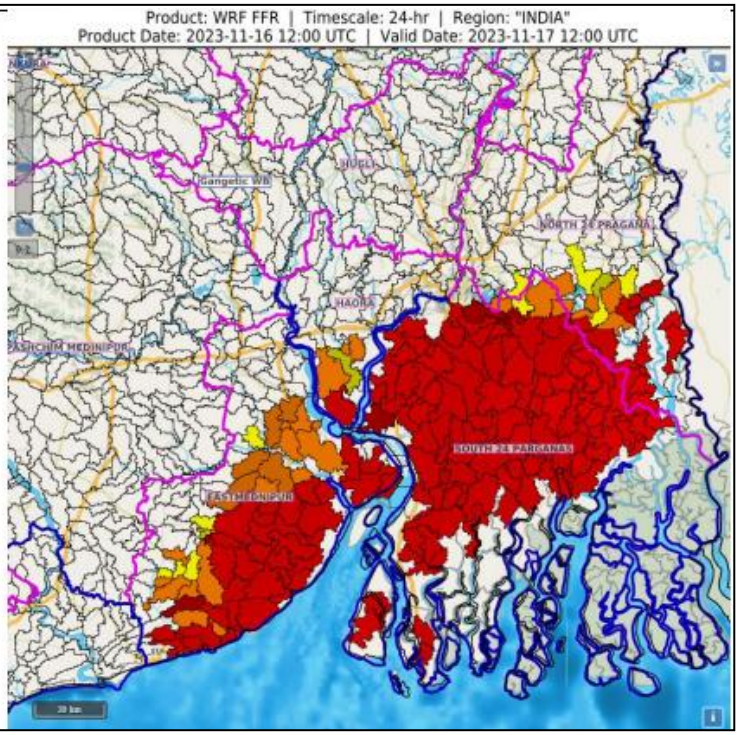
Flash Flood Guidance

24 hours Outlook for the Flash Flood Risk (FFR) till 1730 IST of 17-11-2023 :

Moderate flash flood risk likely over few watersheds & neighbourhoods of **Southern parts of Gangetic West Bengal** Met Sub-divisions during next 24 hours.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



Flash Flood Risk
High Risk (Take Action)
Moderate Risk (Be Prepared)
Low Risk (Be Updated)

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