



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 09**

DEMS-RSMCSPECIAL TROPICAL CYCLONES NEW DELHI DATED 24.10.2024

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. 09 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 24.10.2024 BASED ON 0000 UTC OF 24.10.2024

SUB: SEVERE CYCLONIC STORM “DANA” (PRONOUNCED AS DANA) OVER NORTHWEST AND ADJOINING CENTRAL BAY OF BENGAL

THE SEVERE CYCLONIC STORM “DANA” (PRONOUNCED AS DANA) OVER NORTHWEST AND ADJOINING CENTRAL BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF 12 KMPH DURING PAST 6 HOURS AND LAY CENTRED AT 0000 UTC OF TODAY, THE 24TH OCTOBER, OVER THE SAME REGION NEAR LATITUDE 18.5° N AND LONGITUDE 88.2°E, ABOUT 260 KM SOUTHEAST OF PARADIP (42976, ODISHA), 290 KM SOUTH-SOUTHEAST OF DHAMARA (ODISHA) AND 350 KM SOUTH OF SAGAR ISLAND (42903, WEST BENGAL).

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS NORTH ODISHA AND WEST BENGAL COASTS BETWEEN PURI (43053, ODISHA) AND SAGAR ISLAND (42903, WEST BENGAL) CLOSE TO BHITARKANIKA AND DHAMARA (ODISHA) DURING 1800 UTC OF 24TH TO 0000 UTC OF 25TH OCTOBER, 2024 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 100-110 KMPH GUSTING 120 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
24.10.24/0000	18.5/88.2	95-105 gusting to 115	Severe Cyclonic Storm
24.10.24/0600	19.2/87.9	100-110 gusting to 120	Severe Cyclonic Storm
24.10.24/1200	19.9/87.6	105-115 gusting to 125	Severe Cyclonic Storm
24.10.24/1800	20.4/87.4	100-110 gusting to 120	Severe Cyclonic Storm
25.10.24/0000	20.8/87.0	100-110 gusting to 120	Severe Cyclonic Storm
25.10.24/1200	21.1/86.2	70-80 gusting to 90	Cyclonic Storm
26.10.24/0000	21.2/85.3	30-40 gusting to 50	Depression

THERE IS HIGH CONFIDENCE IN DETERMINATION OF CURRENT LOCATION AND CENTRE.

SEVERE CYCLONIC STORM "DANA" INTENSITY T3.5 WITH ASSOCIATED SCATTERED TO BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION OVER CENTRAL & NORTH BAY OF BENGAL BETWEEN LATITUDE 15.0N & 21.0N AND LONGITUDE 85.0E TO 90.0E. MINIMUM CTT IS MINUS 93°C.

ESTIMATED CENTRAL PRESSURE IS 988 HPA AND MAXIMUM SUSTAINED WIND SPEED IS 55 KNOTS GUSTING TO 65 KNOTS. SEA CONDITION IS HIGH TO VERY HIGH OVER CENTRAL & ADJOINING NORTHWEST BAY OF BENGAL.

UNDER IT'S INFLUENCE:

(I) WIND WARNING:

EASTCENTRAL BAY OF BENGAL: GALE WIND SPEED REACHING 95-105 KMPH GUSTING TO 115 KMPH IS PREVAILING AND IS LIKELY TO CONTINUE TILL AFTERNOON OF 24TH OCTOBER. IT IS LIKELY TO DECREASE THEREAFTER.

ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL: GALE WIND SPEED REACHING 95-105 KMPH GUSTING TO 115 KMPH IS PREVAILING AND IS LIKELY TO CONTINUE TILL 1200 UTC OF 24TH OCTOBER. IT IS LIKELY TO DECREASE THEREAFTER.

NORTHWEST BAY OF BENGAL: GALE WIND SPEED REACHING 95-105 KMPH GUSTING TO 115 KMPH IS PREVAILING. IT IS LIKELY TO INCREASE GRADUALLY BECOMING 105-115 KMPH GUSTING TO 125 KMPH BY 1200 UTC OF 24TH OCTOBER.

ADJOINING AREAS OF NORTHEAST BAY OF BENGAL: SQUALLY WIND SPEED REACHING 50-60 KMPH GUSTING TO 70 KMPH IS LIKELY TO PREVAIL TILL 0000 UTC OF 25TH OCT AND DECREASE THEREAFTER.

ALONG & OFF ODISHA-WEST BENGAL COASTS: GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH IS PREVAILING AND INCREASE GRADUALLY REACHING 100-110 KMPH GUSTING TO 120 KMPH FROM 24TH/1200 UTC TILL 0000 UTC OF 25TH OCT AND DECREASE GRADUALLY THEREAFTER.

(II) STORM SURGE WARNING:

STORM SURGE OF:

- ❖ 1.0 TO 2.0 M HEIGHT ABOVE ASTRONOMICAL TIDE IS VERY LIKELY TO INUNDATE LOW LYING AREAS OF KENDRAPARA, BHADRAK & BALASORE DISTRICTS OF ODISHA AND EAST MEDINIPUR DISTRICTS OF WEST BENGAL.
- ❖ 0.5 TO 1.0 M HEIGHT ABOVE ASTRONOMICAL TIDE IS VERY LIKELY TO INUNDATE LOW LYING AREAS OF SOUTH 24-PARGANAS OF WEST BENGAL AND JAGATSINGHPUR DISTRICT OF ODISHA DURING THE TIME OF LANDFALL.

(III) SEA CONDITION:

EASTCENTRAL BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE HIGH TO VERY HIGH TILL 24TH OCTOBER/1200 UTC AND IMPROVE GRADUALLY THEREAFTER.

ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE HIGH TO VERY HIGH TILL 1200 UTC OF 24TH OCTOBER. IT IS LIKELY TO IMPROVE GRADUALLY THEREAFTER.

NORTHWEST BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE HIGH TO VERY HIGH TILL 0000 UTC OF 25TH OCTOBER AND IMPROVE GRADUALLY THEREAFTER.

ADJOINING AREAS OF NORTHEAST BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE ROUGH TO VERY ROUGH TILL 25TH/0000 UTC AND IMPROVE GRADUALLY THEREAFTER.

ALONG & OFF ODISHA-WEST BENGAL COASTS: ROUGH TO VERY ROUGH SEA CONDITION IS PREVAILING AND LIKELY TO BECOME HIGH TO VERY HIGH FROM 24TH OCTOBER/0000 UTC TO 25TH OCT/0900 UTC AND IMPROVE GRADUALLY THEREAFTER.

(IV) FISHERMEN WARNING:

- ❖ **TOTAL SUSPENSION OF FISHING OPERATION IS ADVISED TILL 25TH OCTOBER**
- ❖ **FISHERMEN ARE ADVISED NOT TO VENTURE INTO:**
 - EASTCENTRAL BAY OF BENGAL TILL 24TH OCTOBER.
 - ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL TILL 24TH OCT.
 - NORTH BAY OF BENGAL AND ALONG & OFF ODISHA, WEST BENGAL AND BANGLADESH COASTS TILL 25TH OCTOBER.

REMARKS:

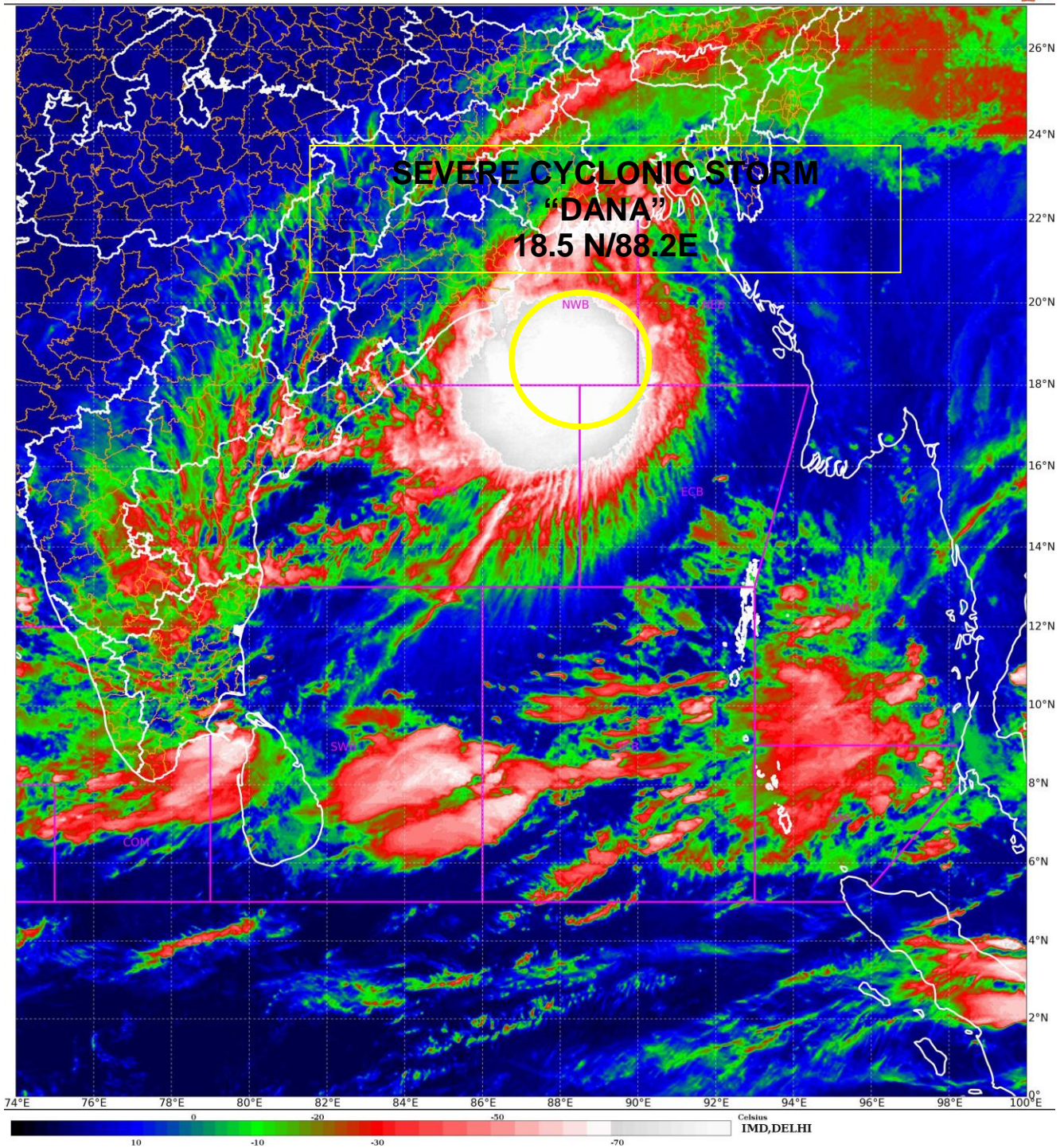
THE MADDEN-JULIAN OSCILLATION (MJO) IS CURRENTLY IN PHASE 5, WITH AMPLITUDE MORE THAN 1, AND IS EXPECTED TO MOVE ACROSS PHASE 5 DURING NEXT 5 DAYS WITH FURTHER INCREASING AMPLITUDE. THUS, MJO WOULD SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER CENTRAL AND NORTH BAY OF BENGAL DURING NEXT 5 DAYS. THE GUIDANCE FROM NCICS BASED FORECAST OVER BOB INDICATES EASTWARD MOVING MJO & KELVIN WAVES ALONG WITH EQUATORIAL ROSSBY WAVES OVER THE CENTRAL BAY OF BENGAL DURING NEXT 5 DAYS. THESE FEATURES INDICATE HIGHLY FAVOURABLE ENVIRONMENT FOR INTENSIFICATION OF SYSTEM OVER THE CENTRAL & NORTH PARTS OF THE BAY OF BENGAL.

THE SEA SURFACE TEMPERATURE (SST) IS 30°C OVER CENTRAL & NORTH BOB. THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS >100 KJ/CM² OVER WESTCENTRAL BOB, AROUND 80 KJ/CM² OVER NORTHWEST BOB. VORTICITY AT LOW LEVEL HAS INCREASED IN PAST 3 HOURS AND IS 250X 10⁶S⁻¹ AROUND SYSTEM CENTRE OVER EASTCENTRAL BAY OF BENGAL WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. POSITIVE LOW-LEVEL CONVERGENCE IS 20 X10⁻⁶S⁻¹ TO THE SOUTHWEST OF SYSTEM AREA. POSITIVE UPPER-LEVEL DIVERGENCE IS ALSO SAME AND IS 20X10⁻⁶S⁻¹ TO THE SOUTHWEST OF SYSTEM AREA. VERTICAL WIND SHEAR (VWS) IS LOW-MODERATE (10-15 KT) OVER NORTHWEST AND CENTRAL BOB. ENHANCED POLEWARD OUTFLOW IS SEEN IN MID-LATITUDE WESTERLIES. HIGH SST, POLEWARD OUTFLOW, MODERATE WIND SHEAR WOULD SUPPORT FURTHER INTENSIFICATION OF THE SYSTEM.

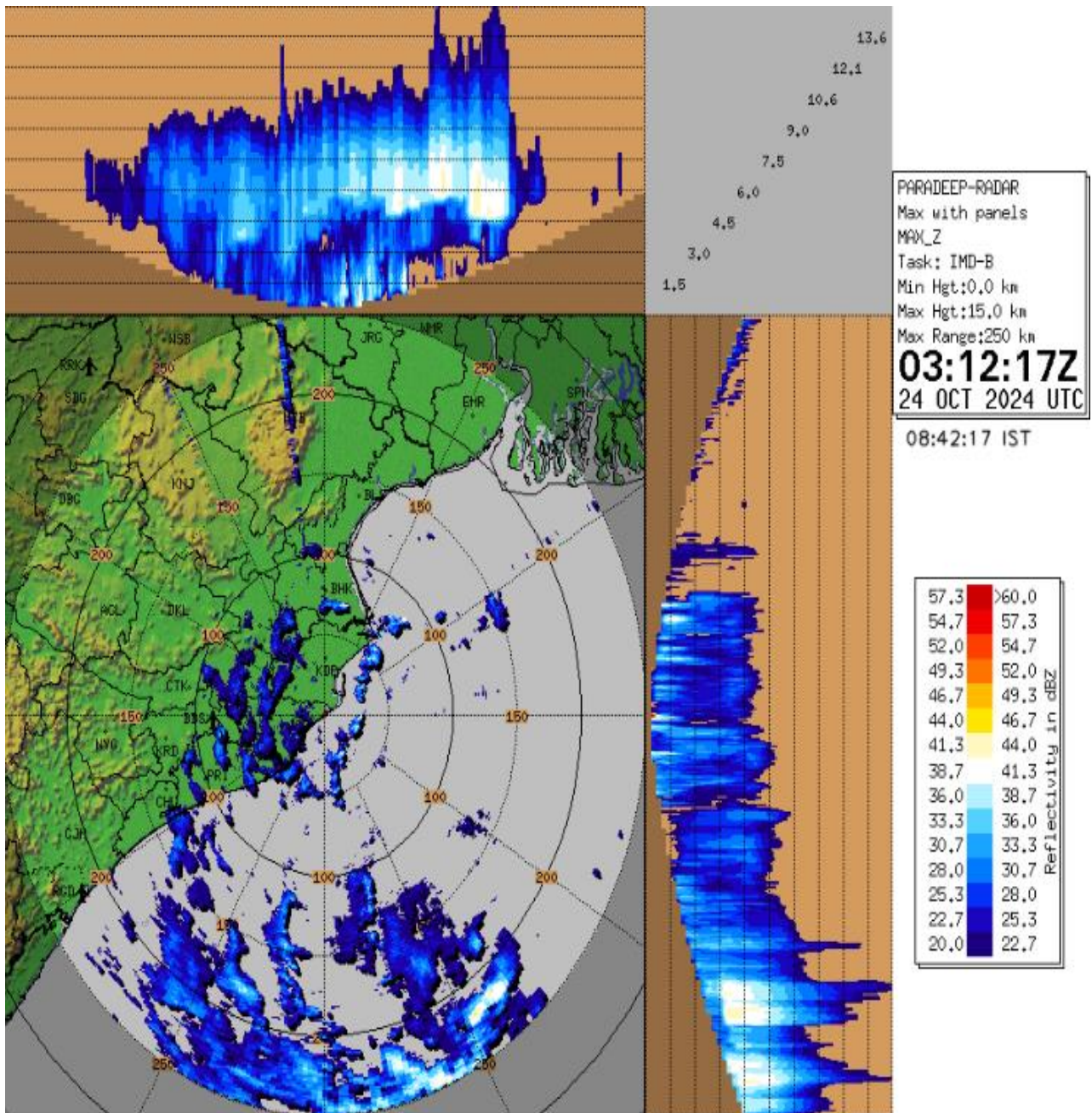
IMD-GFS, NCEP-GFS, ECMWF AND NCMRWF UM MODELS INDICATING LANDFALL OVER NORTH ODISHA-WEST BENGAL COASTS BETWEEN 1800 UTC OF 24TH AND 0600 UTC OF 25TH OCTOBER 2024. ALL THE MODELS ARE INDICATING THE INTENSITY OF SEVERE CYCLONIC STORM DURING THE LAND TIME.

CONSIDERING ALL, SEVERE CYCLONIC STORM "DANA" IS VERY LIKELY TO MOVE NORTHWESTWARDS AND CROSS NORTH ODISHA AND WEST BENGAL COASTS BETWEEN PURI (43053, ODISHA) AND SAGAR ISLAND (42903, WEST BENGAL) CLOSE TO BHITARKANIKA AND DHAMARA (ODISHA) DURING 1800 UTC OF 24TH TO 0000 UTC OF 25TH OCTOBER, 2024 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 100-110 KMPH GUSTING 120 KMPH.

(TRISANU BANIK)
SCIENTIST-D
RSMC NEW DELHI



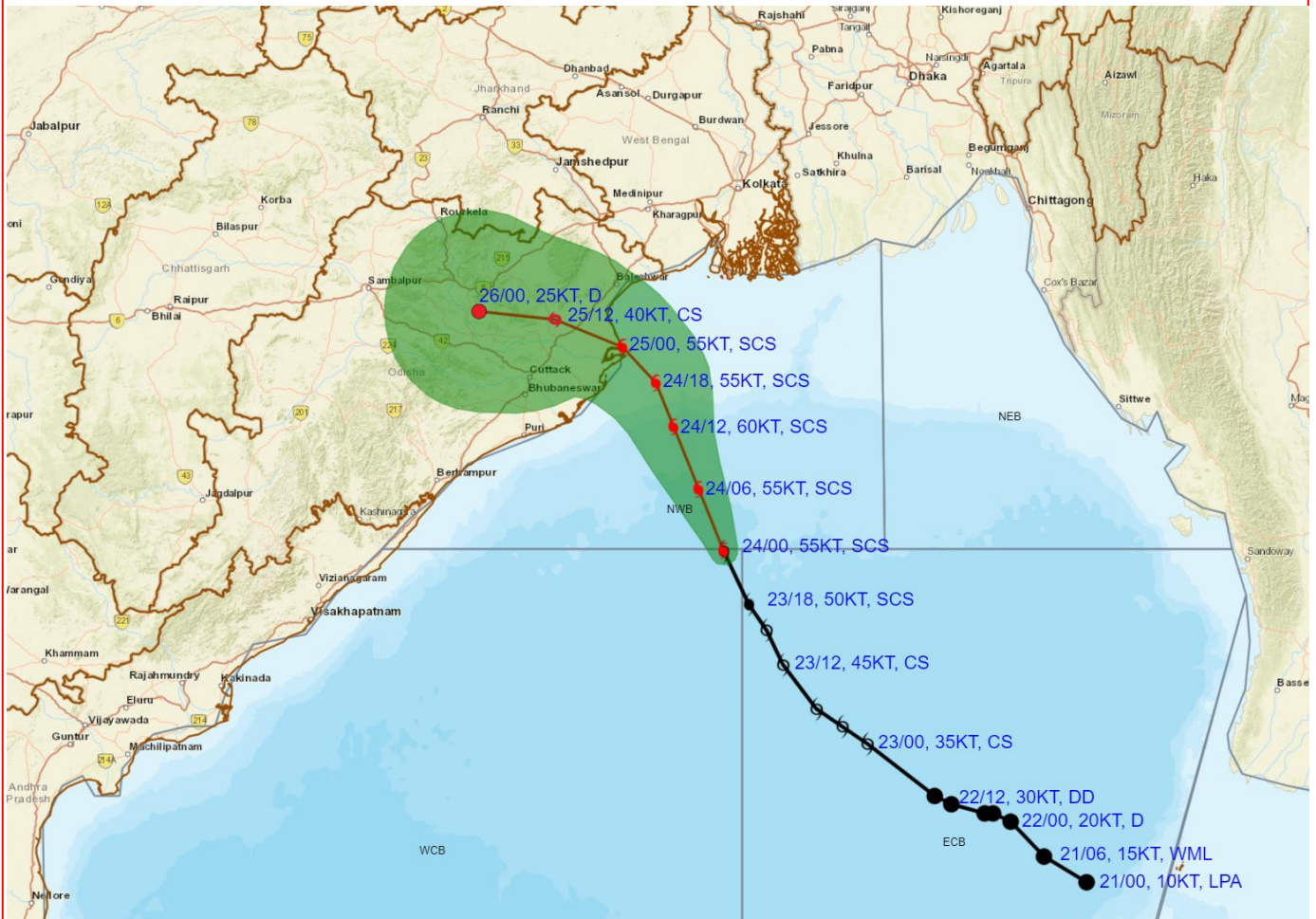
Cloud distribution: (a) Isolated: <25%, Scattered:25-50%, Broken: 51-75%, Solid:>75%, Convection Intensity: (a) Weak: Cloud Top Temperature (CTT) >-25°C, (b) Moderate: CTT: - 25°C to -40°C, (c) Intense: CTT: - 41°C to -70°C and (d) Very Intense: : Less than -70°C
PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION):NIL: 0%, LOW: 1-33%, , MODERATE: 34-66% AND HIGH: 67-100%
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Radar image of Paradip at 03:12 UTC of 24 October 2024.



OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF CYCLONIC STORM 'DANA' OVER NORTHWEST AND ADJOINING CENTRAL BAY OF BENGAL BASED ON 0000 UTC (0530 Hrs. IST) OF 24th OCTOBER 2024



DATE/TIME : IN UTC
 IST : UTC + 0530
 KT : NAUTICAL MILE S/HOUR = 1.85 KM/HOUR
 LPA : 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 (48-63 KT)
 VSCS : VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS : EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
 SuCS : SUPER CYCLONIC STORM (≥120 KT)

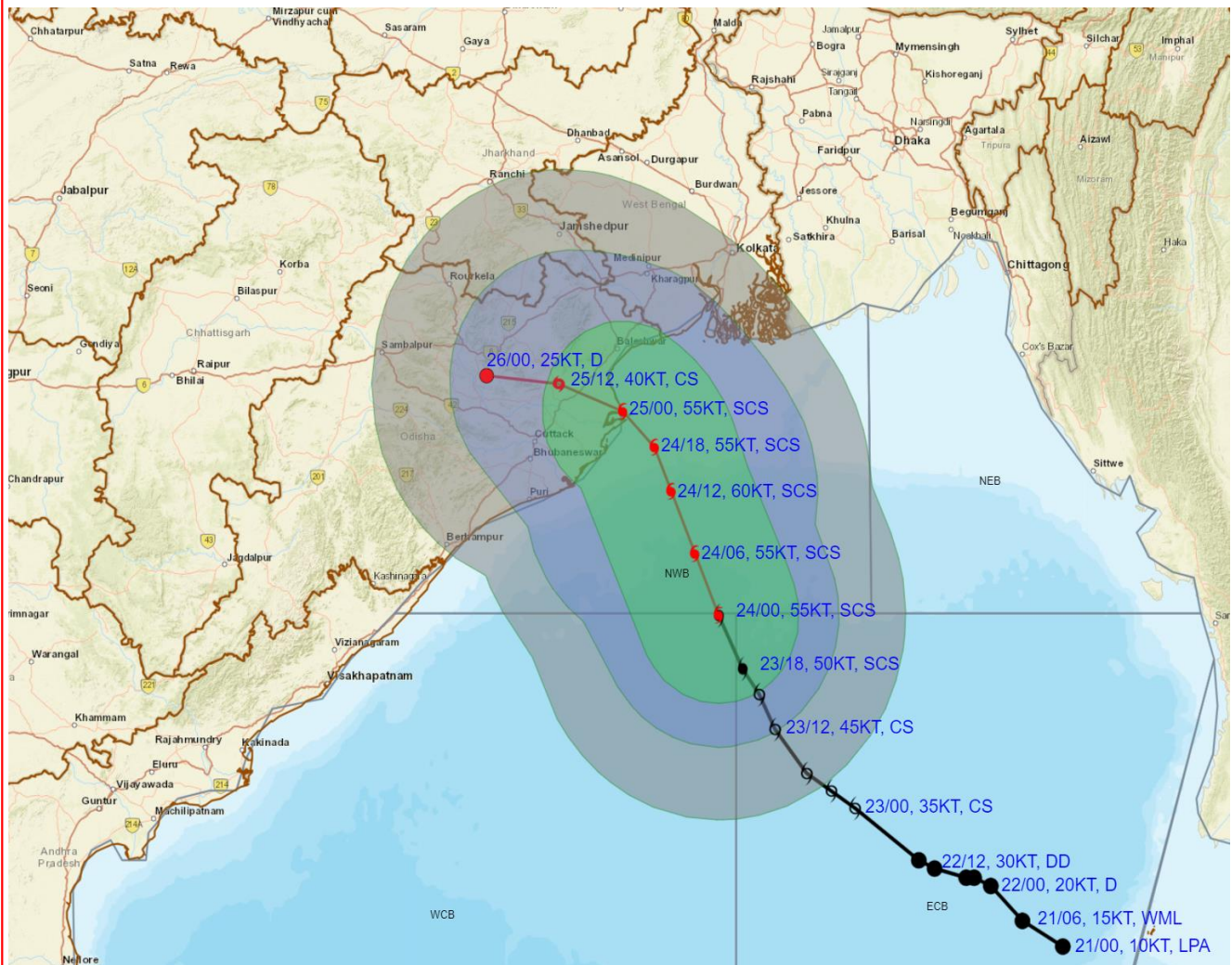
● LESS THAN 34 KT
 ⚡ 34-47 KT
 ⚡ ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ▲ CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS		
Date and Time (UTC)	PARADIP (CWR)	DHAMARA	SAGAR ISLAND
24.10.24/0000	260, SE	290, SSE	350, S
25.10.24/0000	70, NNE	20, E	150, SW
26.10.24/0000	180, NW	180, WNW	290, W

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
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OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM 'DANA' OVER NORTHWEST AND ADJOINING CENTRAL BAY OF BENGAL BASED ON 0000 UTC (0530 Hrs. IST) OF 24th OCTOBER 2024



DATE/TIME : IN UTC
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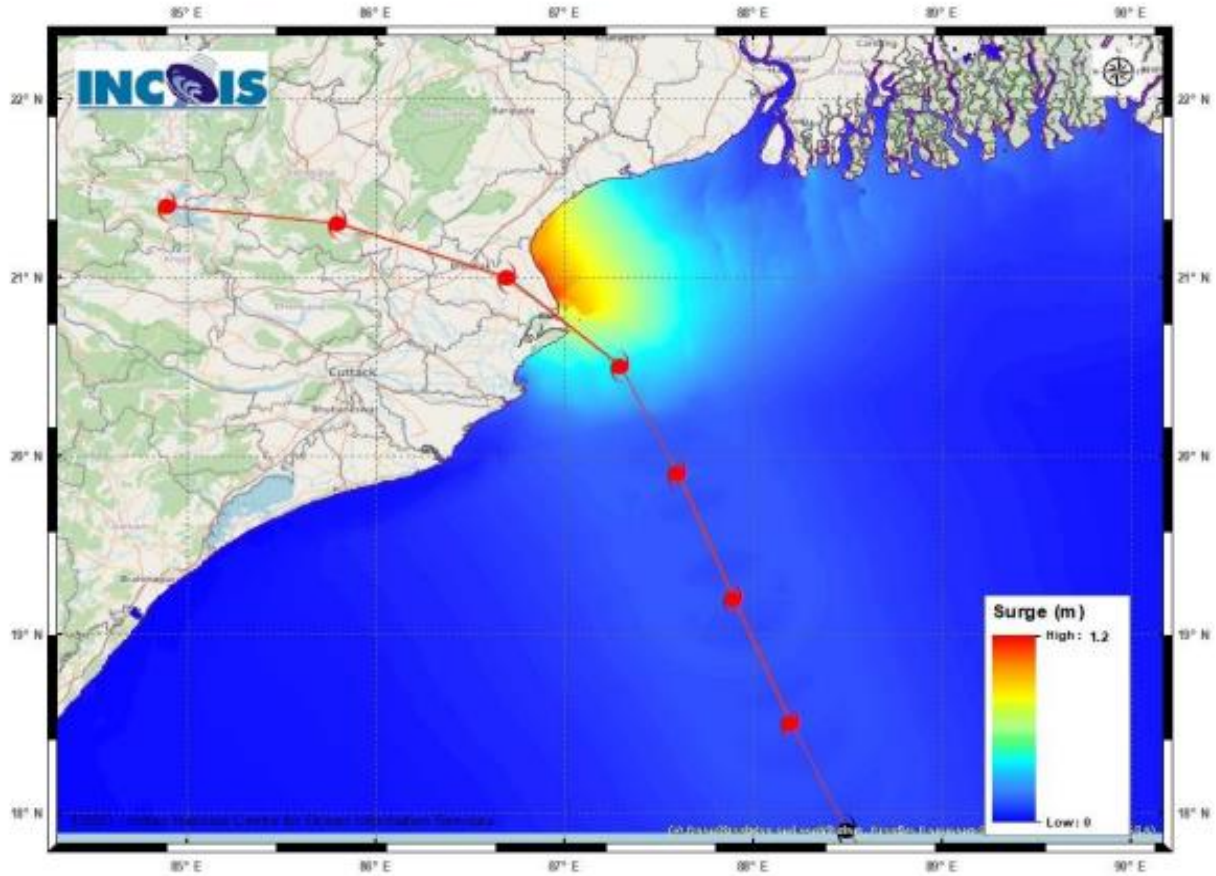
● LESS THAN 34 KT
 ○ 34-47 KT
 ⊙ ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ▲ CONE OF UNCERTAINTY
AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥118 KMPH)

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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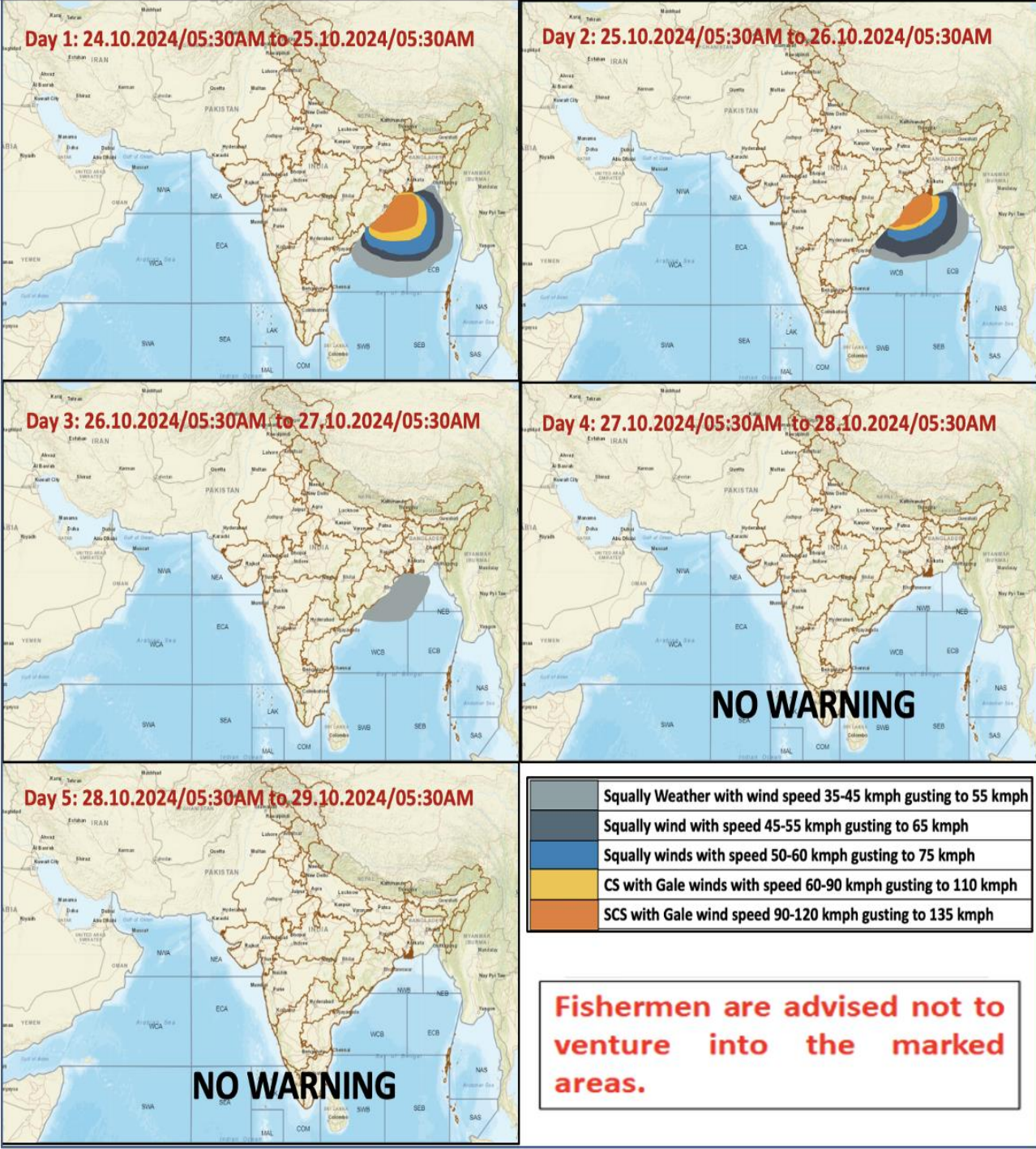
Storm Surge warning graphics



DISTRICT	STATE / UNION TERRITORY	NEAREST PLACE OF HABITATION	STORM SURGE (m) *	EXPECTED INUNDATION EXTENT (km)
Baleswar	Odisha	Kumbhigari	0.4-1.5	Upto 0.92
Bhadrak	Odisha	Mohanpur	0.8-1.5	Upto 0.82
Kendrapara	Odisha	Tikayat Nagar	0.2-1.0	Upto 3.01
Purba Medinipur	West Bengal	Dakshin Purushottampur	0.3-0.5	Upto 0.98
South 24 Parganas	West Bengal	Island	0.4-0.5	Upto 0.11

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Fishermen Warning Graphics



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