



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 16**

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.15 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 2330 UTC OF 24.10.2024 BASED ON 2100 UTC OF 24.10.2024

SUB: SEVERE CYCLONIC STORM “DANA” OVER NORTH ODISHA COAST (CYCLONE WARNING FOR ODISHA-WEST BENGAL COASTS & POST LANDFALL OUTLOOK FOR INTERIOR DISTRICTS OF ODISHA: **RED MESSAGE)**

LATEST OBSERVATIONS INDICATE THAT THE SEVERE CYCLONIC STORM “DANA” (PRONOUNCED AS DANA) OVER NORTHWEST BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF 12 KMPH DURING PAST 6 HOURS, CROSSED NORTH ODISHA COAST CLOSE TO HABALIKHATI NATURE CAMP (BHITARKANIKA) AND DHAMARA DURING 2000 UTC TO 2200 UTC OF 24TH OCTOBER AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 100-110 KMPH GUSTING TO 120 KMPH AND LAY CENTRED AT 2100 UTC OF 24TH OCTOBER, OVER ODISHA COAST, NEAR LATITUDE 20.7° N AND LONGITUDE 87.0 °E, ABOUT 60 KM NORTHEAST OF PARADIP (ODISHA), 20 KM SOUTHEAST OF DHAMARA (ODISHA) AND 150 KM SOUTHWEST OF SAGAR ISLAND (WEST BENGAL).

IT LAY CENTRED AT 2200 UTC OF 24TH OCTOBER OVER NORTH COASTAL ODISHA NEAR LATITUDE 20.85° N AND LONGITUDE 86.9°E, ABOUT 10 KM NORTH OF DHAMARA AND 20 KM NORTH-NORTHWEST OF HABALIKHATI NATURE CAMP (BHITARKANIKA).

IT IS LIKELY TO MOVE NEARLY WEST-NORTHWESTWARDS ACROSS NORTH ODISHA AND WEAKEN GRADUALLY INTO A CYCLONIC STORM BY 0600 UTC OF TODAY, THE 25TH OCTOBER.

THE SYSTEM IS UNDER CONTINUOUS SURVEILLANCE OF THE DOPPLER WEATHER RADAR AT PARADIP.

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
24.10.24/2100	20.7/87.0	100-110 gusting to 120	Severe Cyclonic Storm
25.10.24/0000	20.9/86.8	95-105 gusting to 120	Severe Cyclonic Storm
25.10.24/0600	21.0/86.5	80-90 gusting to 100	Cyclonic Storm
25.10.24/1200	21.1/86.1	50-60 gusting to 70	Deep Depression
25.10.24/1800	21.1/85.6	30-40 gusting to 50	Depression

VORTEX (DANA) OVER NORTHWEST BAY OF BENGAL OFF ODISHA COAST CENTERED NEAR 20.7N / 87.0E WITH CURRENT INTENSITY IS CHARACTERISED AS T3.5. ASSOCIATED SCATTERED TO BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHWEST. MINIMUM CTT IS MINUS 93°C. MODERATE TO INTENSE CONVECTION OVER EASTERN ODISHA, SOUTH GANGETIC WEST BENGAL (MINIMUM CTT MINUS 70-80 DEG CEL) MODERATE TO INTENSE CONVECTION OVER SOUTH BANGLADESH.

ESTIMATED CENTRAL PRESSURE IS 986 HPA AND MAXIMUM SUSTAINED WIND SPEED IS 55 KNOTS GUSTING TO 65 KNOTS. SEA CONDITION IS VERY HIGH OVER NORTHWEST & ADJOINING CENTRAL BAY OF BENGAL.

UNDER IT'S INFLUENCE:

(I) WIND WARNING:

NORTHWEST BAY OF BENGAL: GALE WIND SPEED REACHING 100-110 GUSTING TO 120 KMPH IS LIKELY TO PREVAIL TILL 0600 UTC OF 25TH OCTOBER.

ADJOINING AREAS OF CENTRAL BAY OF BENGAL: GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH IS PREVAILING AND LIKELY TO CONTINUE TILL 0000 UTC OF 25TH OCT. IT IS LIKELY TO DECREASE GRADUALLY THEREAFTER.

ALONG & OFF ODISHA-WEST BENGAL COASTS: GALE WIND SPEED REACHING 100-110 KMPH GUSTING TO 120 KMPH ALONG & OFF NORTH ODISHA AND EAST MEDINIPUR DISTRICT OF WEST BENGAL IS LIKELY TILL 0000 UTC OF 25TH OCTOBER AND DECREASE GRADUALLY THEREAFTER.

GALE WIND SPEED REACHING 60-80 KMPH GUSTING TO 90 KMPH ALONG & OFF SOUTH ODISHA AND REMAINING DISTRICTS OF COASTAL WEST BENGAL IS LIKELY TILL 25TH OCT 0000 UTC AND DECREASE GRADUALLY THEREAFTER.

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 AND DECREASE GRADUALLY THEREAFTER.

SOUTH JHARKHAND: SQUALLY WIND SPEED REACHING 40-50 GUSTING TO 60 KMPH IS VERY LIKELY TO PREVAIL FROM 0000 UTC OF 25TH TILL 1200 UTC OF 26TH OCTOBER.

(III) 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 DURING THE TIME OF LANDFALL.

STORM SURGE OF 0.5 TO 1.0 M HEIGHT ABOVE ASTRONOMICAL TIDE IS VERY LIKELY TO INUNDATE LOW LYING AREAS OF SOUTH 24-PARGANAS DISTRICT OF WEST BENGAL AND JAGATSINGHPUR DISTRICT OF ODISHA DURING THE TIME OF LANDFALL.

(IV) SEA CONDITION:

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

ADJOINING AREAS OF CENTRAL BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE **ROUGH TO VERY ROUGH** TILL 25TH OCTOBER 0600 UTC. IT IS LIKELY TO 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: **HIGH TO VERY HIGH** TILL 25TH OCT 0000 UTC AND IMPROVE GRADUALLY THEREAFTER.

(V) FISHERMEN WARNING:

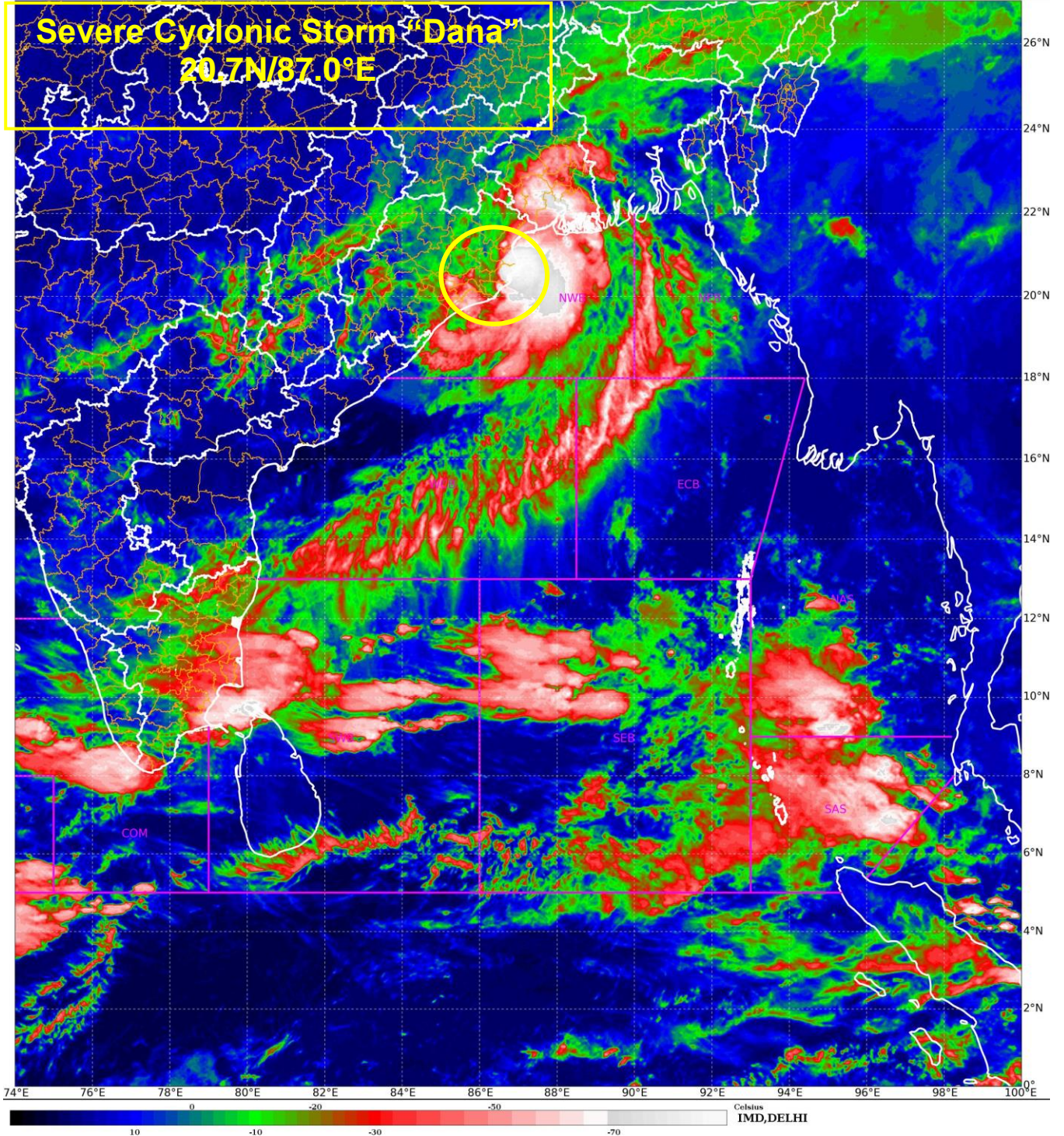
- TOTAL SUSPENSION OF FISHING OPERATIONS ON 25TH OCT OVER CENTRAL AND NORTH BAY OF BENGAL.
- NORTHWEST & ADJOINING NORTHEAST BAY OF BENGAL AND ALONG & OFF ODISHA, WEST BENGAL AND BANGLADESH COASTS TILL 25TH OCTOBER.

REMARKS:

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 70-80 KJ/CM² OVER NORTHWEST BOB. VORTICITY AT LOW LEVEL IS DECREASED FURTHER TO 150X 10⁻⁶S⁻¹ AROUND SYSTEM AREA WITH VERTICAL EXTENSION UPTO 500 HPA LEVEL. LOW-LEVEL CONVERGENCE IS 15 X10⁻⁶S⁻¹ TO THE SOUTHWEST OF SYSTEM AREA. POSITIVE UPPER-LEVEL DIVERGENCE IS ALSO SAME AND IS 10X10⁻⁶S⁻¹ TO THE NORTHEAST OF SYSTEM AREA. VERTICAL WIND SHEAR (VWS) IS INCREASED TO MODERATE (10 KT) OVER NORTHWEST BOB. THE UPPER TROPOSPHERIC RIDGE IS AROUND 20N.

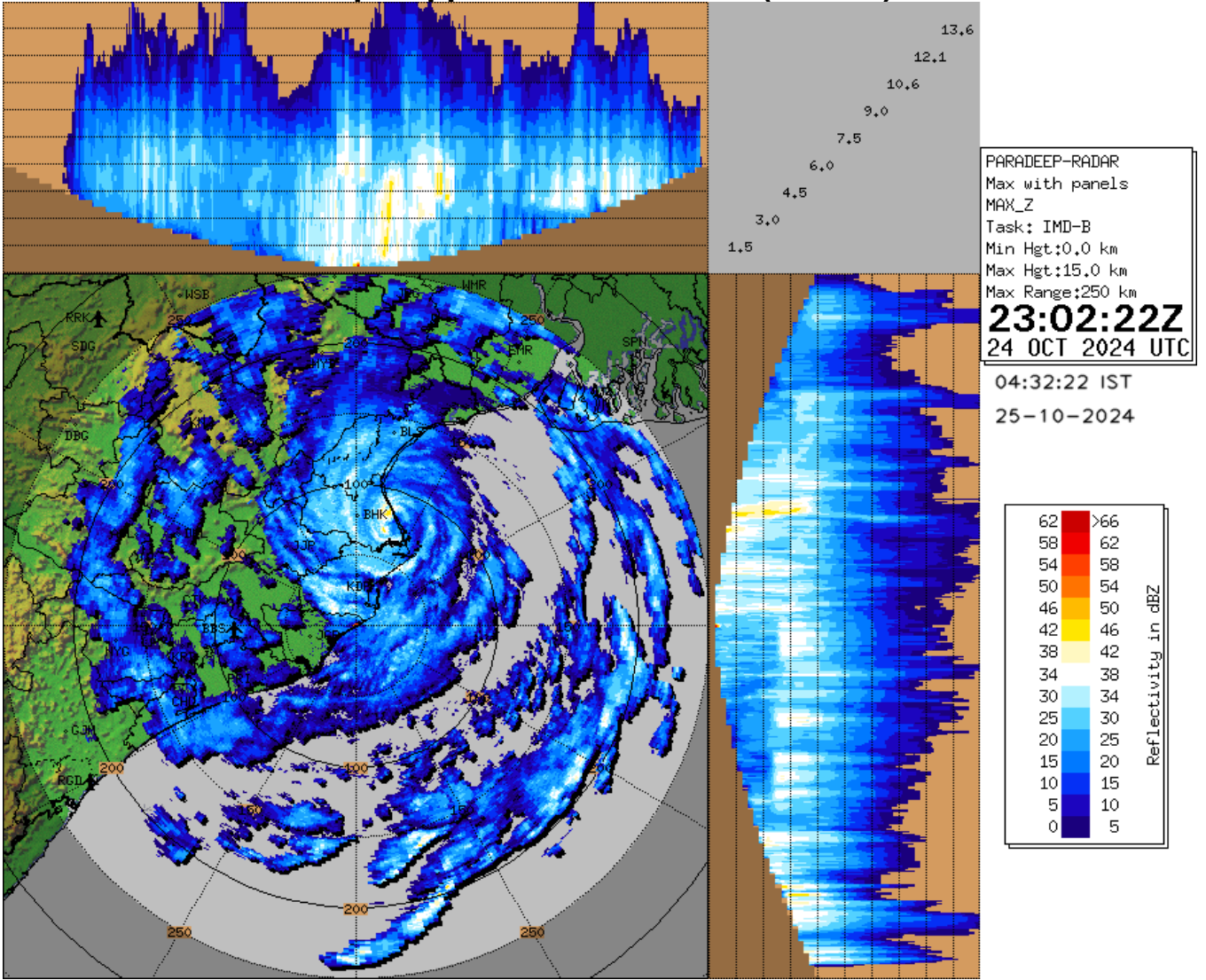
AFTER LANDFALL IT IS LIKELY TO MOVE NEARLY WEST-NORTHWESTWARDS ACROSS NORTH ODISHA AND WEAKEN GRADUALLY INTO A CYCLONIC STORM BY 0600 UTC OF THE 25TH OCTOBER.

(D. R. PATTANAİK)
SCIENTIST-F
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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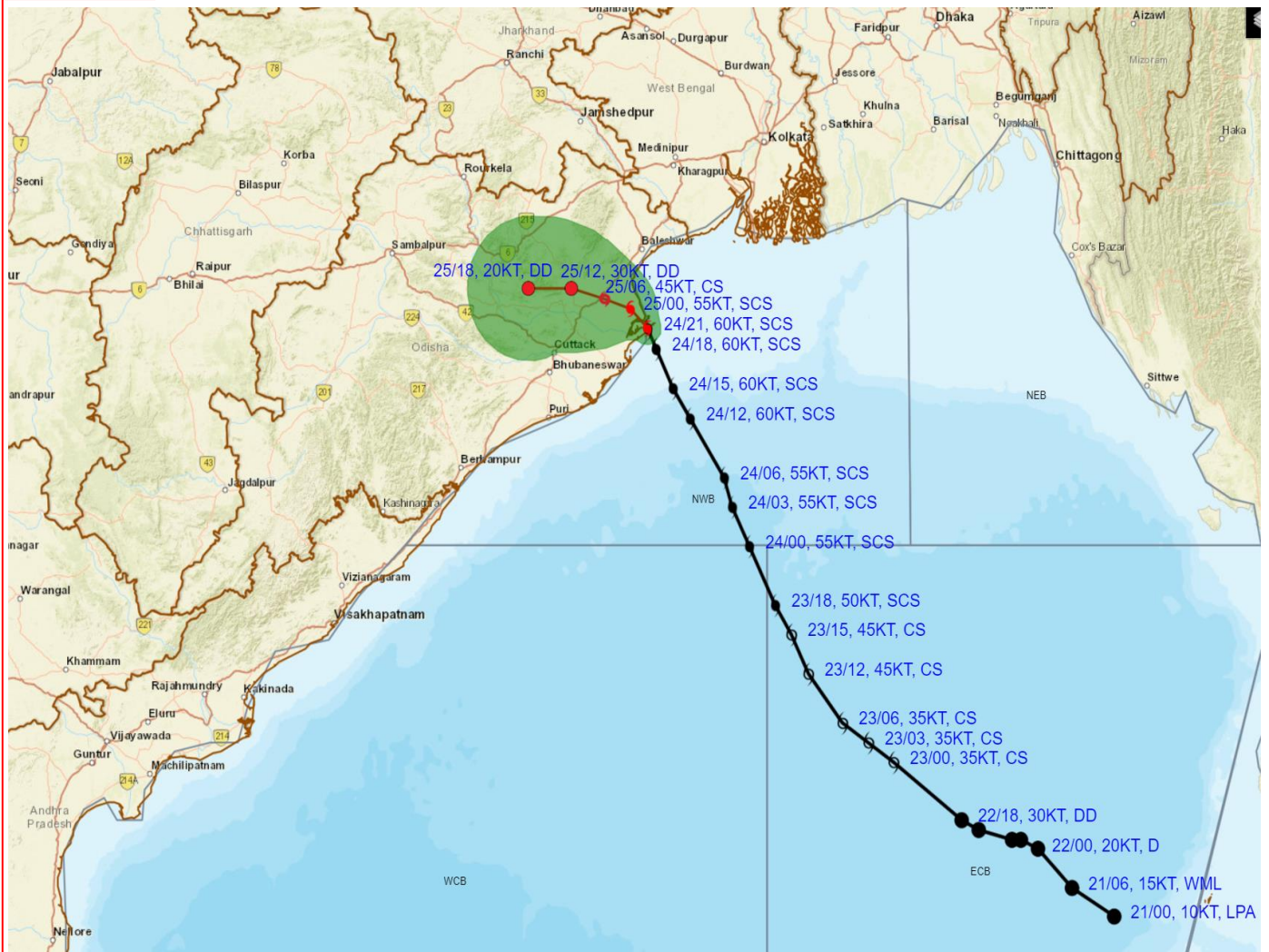
Paradip Doppler Weather Radar (MAX_Z)



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OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF SEVERE CYCLONIC STORM 'DANA' OVER NORTH ODISHA COAST BASED ON 2100 UTC OF 24th (0230 Hrs. IST OF 25th) 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)

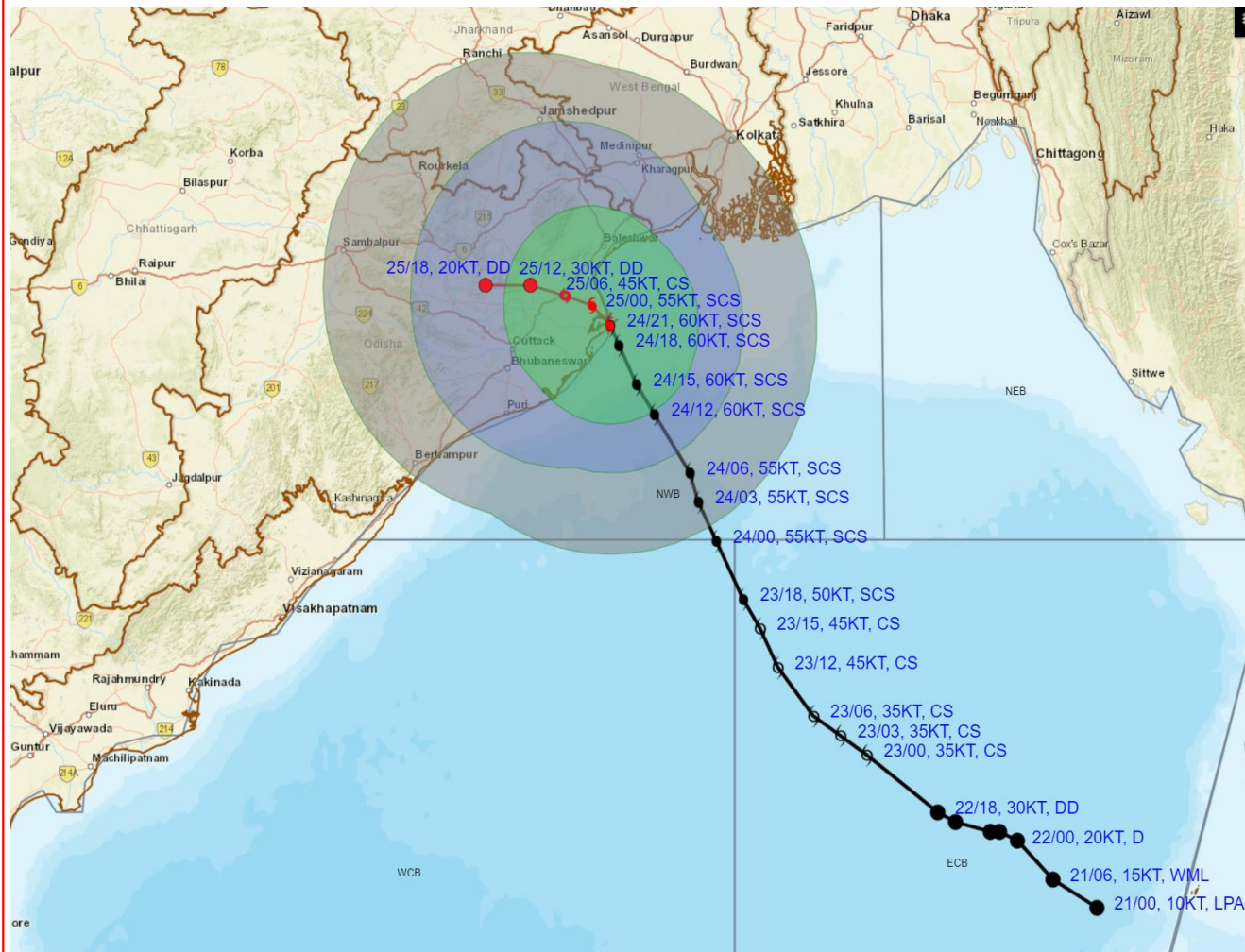
LESS THAN 34 KT
 34-47 KT
 ≥ 48 KT
 OBSERVED TRACK
 FORECAST TRACK
 CONE OF UNCERTAINTY

Forecast	DISTANCE (KM) AND DIRECTION FROM STATIONS		
Date and Time (UTC)	PARADIP (CWR)	DHAMARA	SAGAR ISLAND
24.10.24/2100	60, NE	20, SE	150, SW
25.10.24/1800	140, NW	140, WNW	260, WSW

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OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF SEVERE CYCLONIC STORM 'DANA' OVER NORTH ODISHA COAST BASED ON 2100 UTC OF 24th (0230 Hrs. IST OF 25th) OCTOBER 2024



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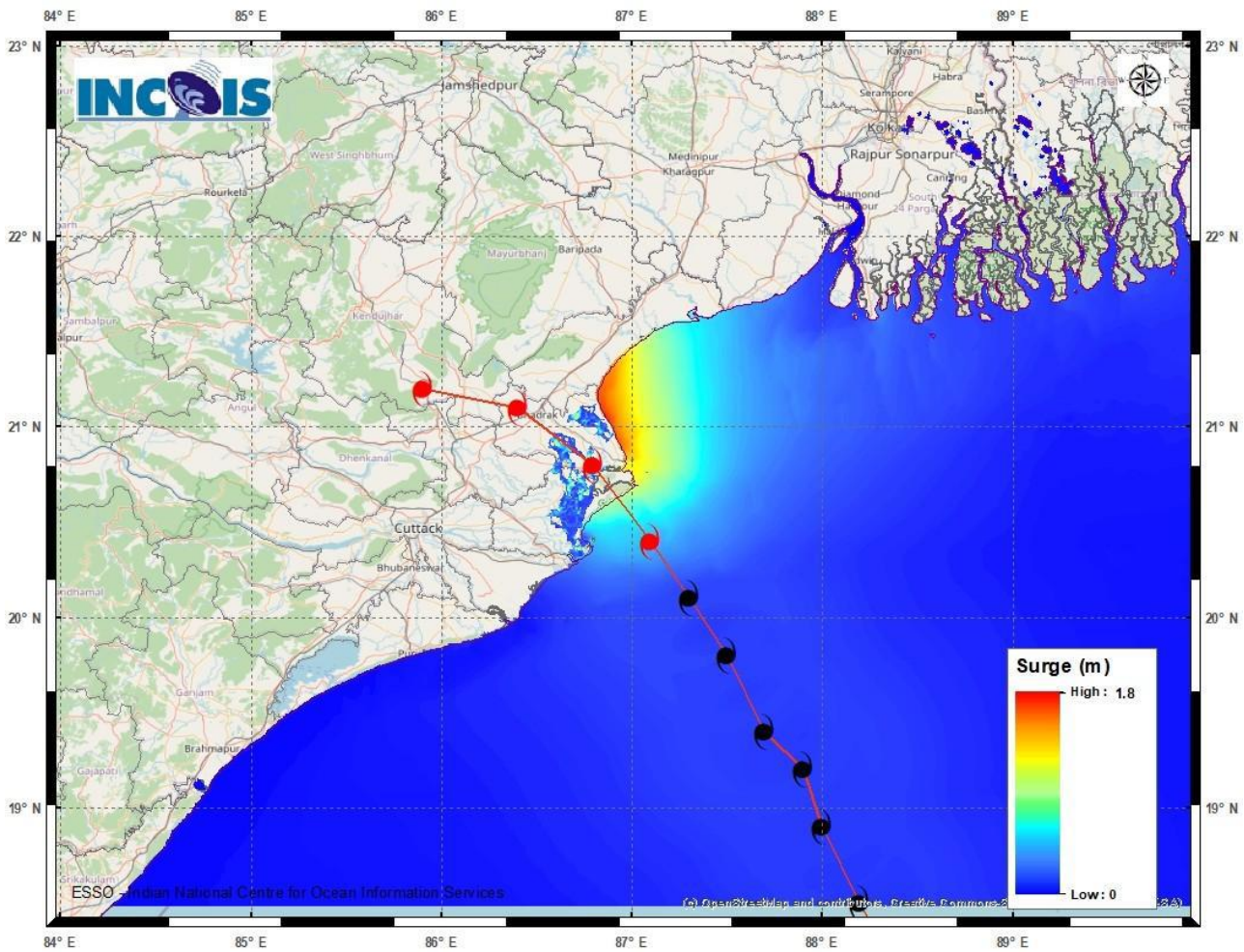
● LESS THAN 34 KT
 ○ 34-47 KT
 ● ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ● CONE OF UNCERTAINTY
AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥118 KMPH)

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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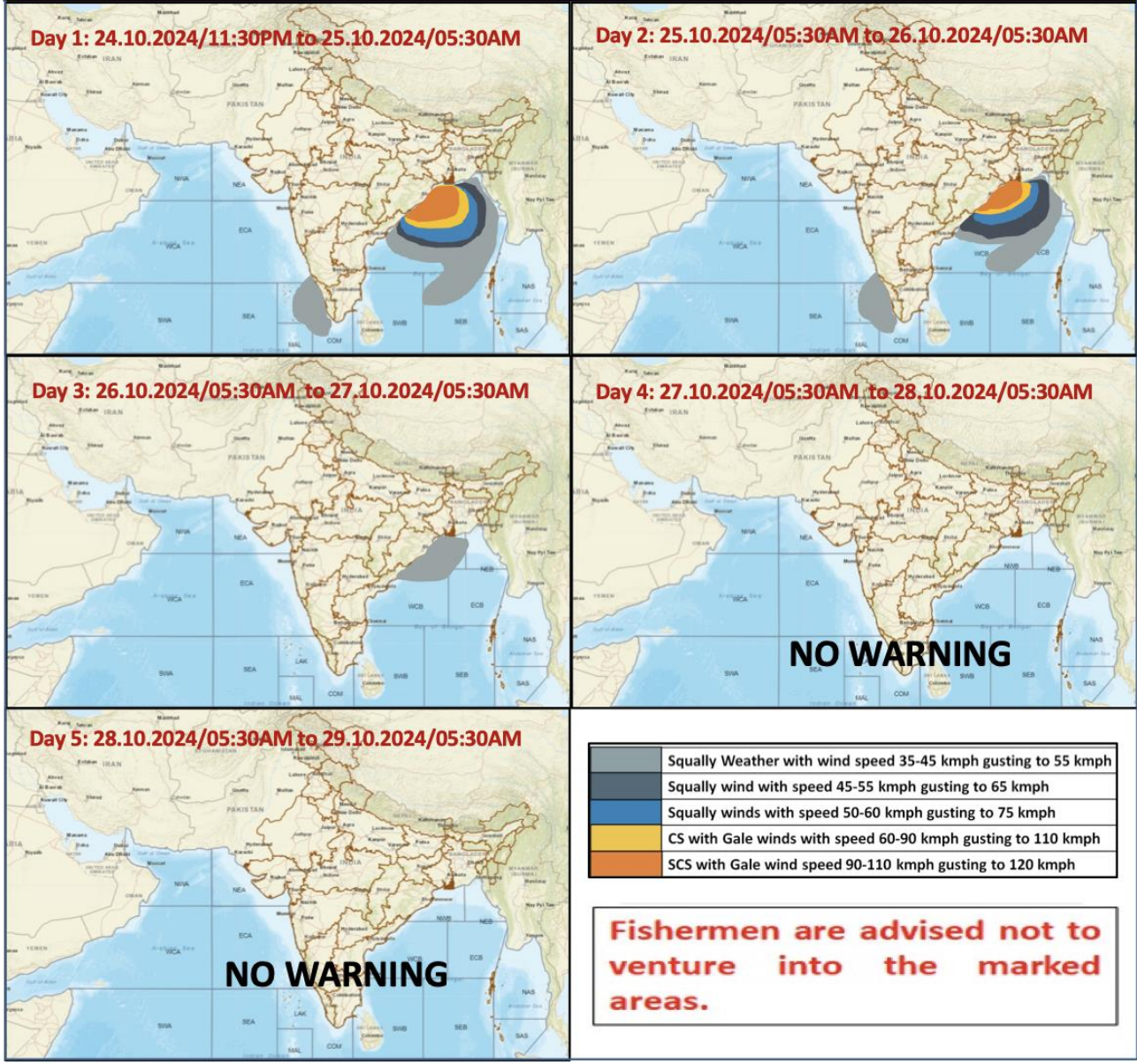
Storm Surge warning graphics



DISTRICT	STATE/UNION TERRITORY	NEAREST PLACE OF HABITATION	STORM SURGE (m)*	EXPECTED INUNDATION EXTENT (km)
Bhadrak	Odisha	Mohanpur	1.3-1.8	Upto 1.15
Baleswar	Odisha	Kumbhigari	0.4-1.6	Upto 1.08
Kendrapara	Odisha	Tikayat Nagar	0.2-1.3	Upto 3.01
Jagatsinghapur	Odisha	Musadia	0.2-0.5	Upto 2.91
Purba Medinipur	West Bengal	Dakshin Purushottampur	0.3-0.5	Upto 0.98

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Fishermen Warning Graphics



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