



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 14**

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.13 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1630 UTC OF 24.10.2024 BASED ON 1500 UTC OF 24.10.2024

SUB: SEVERE CYCLONIC STORM “DANA” OVER NORTHWEST BAY OF BENGAL (POST LANDFALL OUTLOOK FOR ODISHA AND WEST BENGAL COASTS: **RED MESSAGE)**

THE SEVERE CYCLONIC STORM “DANA” (PRONOUNCED AS DANA) OVER NORTHWEST BAY OF BENGAL MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF 15 KMPH DURING PAST 6 HOURS AND LAY CENTRED AT 1500 UTC OF TODAY, THE 24TH OCTOBER, OVER THE SAME REGION, NEAR LATITUDE 20.1° N AND LONGITUDE 87.3°E, ABOUT 70 KM EAST-SOUTHEAST OF PARADIP (42976, ODISHA), 90 KM SOUTH-SOUTHEAST OF DHAMARA (ODISHA) AND 190 KM SOUTH-SOUTHWEST OF SAGAR ISLAND (42903, WEST BENGAL).

IT IS VERY LIKELY TO MOVE NORTH-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.

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

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

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
24.10.24/1500	20.1/87.3	105-115 gusting to 125	Severe Cyclonic Storm
24.10.24/1800	20.4/87.1	100-110 gusting to 120	Severe Cyclonic Storm
25.10.24/0000	20.8/86.8	100-110 gusting to 120	Severe Cyclonic Storm
25.10.24/0600	21.1/86.4	85-95 gusting to 105	Cyclonic Storm
25.10.24/1200	21.2/85.9	50-60 gusting to 70	Deep Depression

THE CLOUD MASS IS ORGANISED IN CDO PATTERN. VORTEX (DANA) OVER NW BAY CENTERED NEAR 20.0N / 87.3E WITH CURRENT INTENSITY IS CHARACTERISED AS T3.5. THE SYSTEM HAS MOVED NORTH-NORTHWESTWARDS DURING LAST 6 HOURS. THE SATELLITE IMAGERY SHOWS THE SYSTEM AS REGULAR CDO PATTERN. DIAMETER SIZE OF CDO IS ABOUT 200 KMS. ASSOCIATED BROKEN LOW/MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTHWEST AND ADJOINING WEST CENTRAL BAY OF BENGAL BETWEEN LATITUDE 17.0N & 22.0N AND LONGITUDE 84.0E TO 90.0E. MINIMUM CTT IS MINUS 93°C. MODERATE TO INTENSE CONVECTION OVER ODISHA GANGETIC WEST BENGAL AND SOUTH BANGLADESH.

ESTIMATED CENTRAL PRESSURE IS 984 HPA AND MAXIMUM SUSTAINED WIND SPEED IS 60 KNOTS GUSTING TO 70 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 105-115 KMPH GUSTING TO 125 KMPH IS PREVAILING. IT IS LIKELY TO INCREASE GRDUALY BECOMING 105-115 KMPH GUSTING TO 125 KMPH FROM 1200 UTC OF 24TH OCTOBER.

ADJOINING AREAS OF CENTRAL BAY OF BENGAL: GALE WIND SPEED REACHING 80-90 KMPH GUSTING TO 100 KMPH IS PREVAILING AND IS LIKELY TO CONTINUE TILL 1800 UTC OF 24TH OCTOBER. IT IS LIKELY TO DECREASE 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 OCT AND DECREASE THEREAFTER.

ALONG & OFF ODISHA-WEST BENGAL COASTS: GALE WIND SPEED REACHING 60-70 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:

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

ADJOINING AREAS OF CENTRAL BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE HIGH TILL 24TH OCTOBER/1800 UTC 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: HIGH TO VERY HIGH TILL 25TH OCT/0600 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:**

- ADJOINING AREAS OF CENTRAL BAY OF BENGAL TILL 24TH OCTOBER.
- NORTHWEST & ADJOINING NORTHEAST BAY OF BENGAL AND ALONG & OFF ODISHA, WEST BENGAL AND BANGLADESH COASTS TILL 25TH OCTOBER.

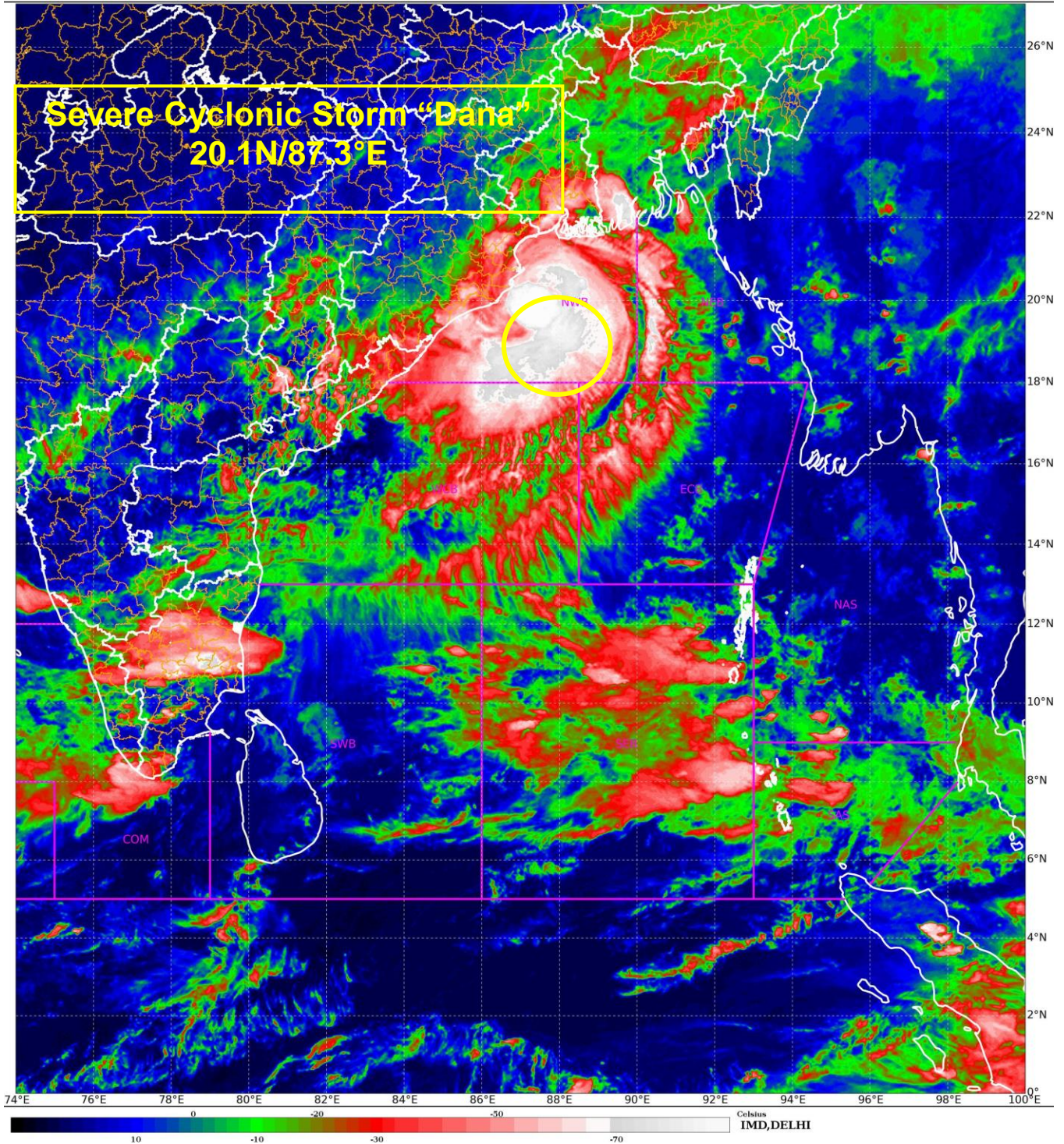
REMARKS:

THE MADDEN-JULIAN OSCILLATION (MJO) IS CURRENTLY IN PHASE 5, WITH AMPLITUDE MORE THAN 1, AND IS EXPECTED TO CONTINUE IN SAME PHASE DURING NEXT 2 DAYS WITH FURTHER INCREASING AMPLITUDE. THUS, MJO WOULD SUPPORT ENHANCEMENT OF CONVECTIVE ACTIVITY OVER NORTH AND CENTRAL BAY OF BENGAL DURING NEXT 2 DAYS. THE GUIDANCE FROM NCICS BASED FORECAST OVER BOB INDICATES EASTWARD MOVING MJO & KELVIN WAVES ALONG WITH WESTWARD MOVING EQUATORIAL ROSSBY WAVES OVER THE CENTRAL BAY OF BENGAL DURING NEXT 3 DAYS. THESE FEATURES INDICATE HIGHLY FAVOURABLE ENVIRONMENT FOR INTENSIFICATION OF SYSTEM OVER THE NORTH & CENTRAL 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 70-80 KJ/CM² OVER NORTHWEST BOB. VORTICITY AT LOW LEVEL IS 250 X 10⁻⁶S⁻¹ AROUND SYSTEM AREA WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. POSITIVE LOW-LEVEL CONVERGENCE IS 10 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 LOW (10-15 KT) OVER NORTHWEST BOB. THE UPPER TROPOSPHERIC RIDGE IS AROUND 20N. CURRENTLY THE SYSTEM IS TRACKING NORTH-NORTHWESTERLY UNDER THE INFLUENCE OF SOUTH-SOUTHEASTERLY WINDS TO THE SOUTH OF RIDGE. THE SYSTEM WOULD WEAKEN SLIGHTLY DUE TO LAND INTERACTIONS AND INCLINED COASTLINE WRT THE PATH OF CYCLONE.

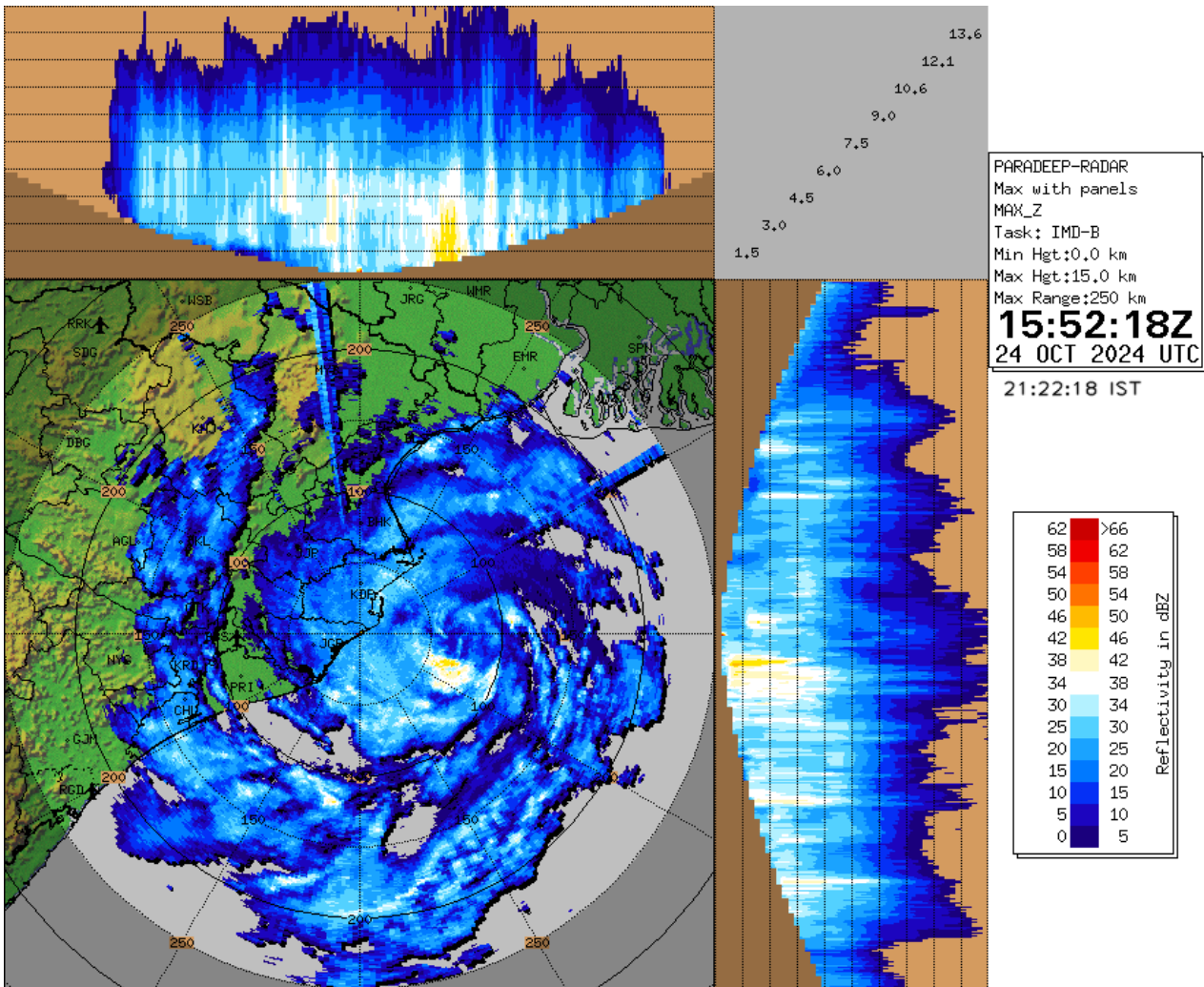
CONSIDERING ALL THE ABOVE, THE SEVERE CYCLONIC STORM "DANA" IS VERY LIKELY TO MOVE NORTH-NORTHWESTWARDS AND CROSS NORTH ODISHA AND WEST BENGAL COASTS BETWEEN PURI (43053, ODISHA) AND SAGAR ISLAND (42903, WEST BENGAL) CLOSE TO BHITARKANIKA AND DHAMARA (ODISHA) DURING 1800 UTC OF 24TH TO 0000 UTC OF 25TH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

(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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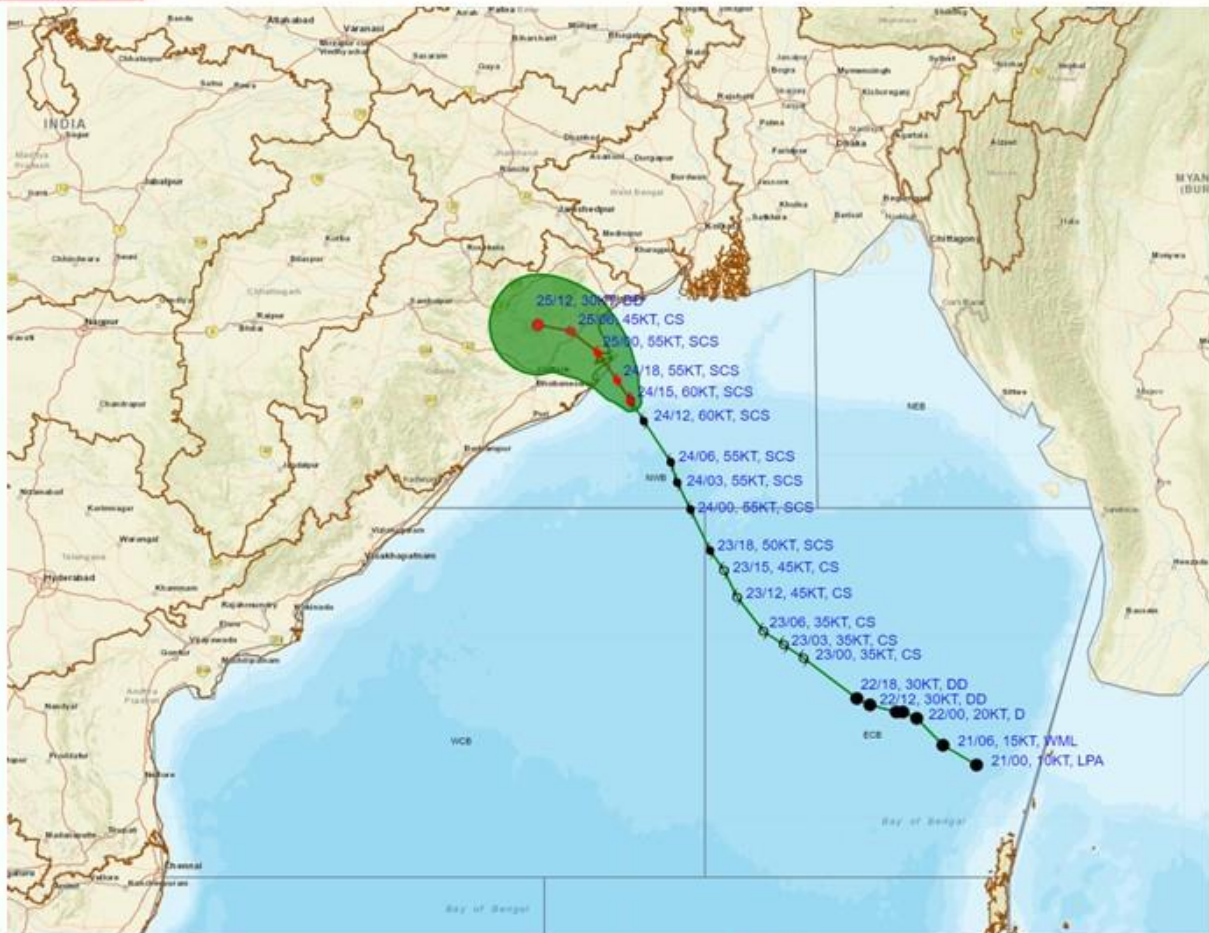
Paradip Doppler Weather Radar (MAX_Z)



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OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF SEVERE CYCLONIC STORM 'DANA' OVER NORTHWEST BAY OF BENGAL BASED ON 1500 UTC (2030 Hrs. IST) OF 24th OCTOBER 2024



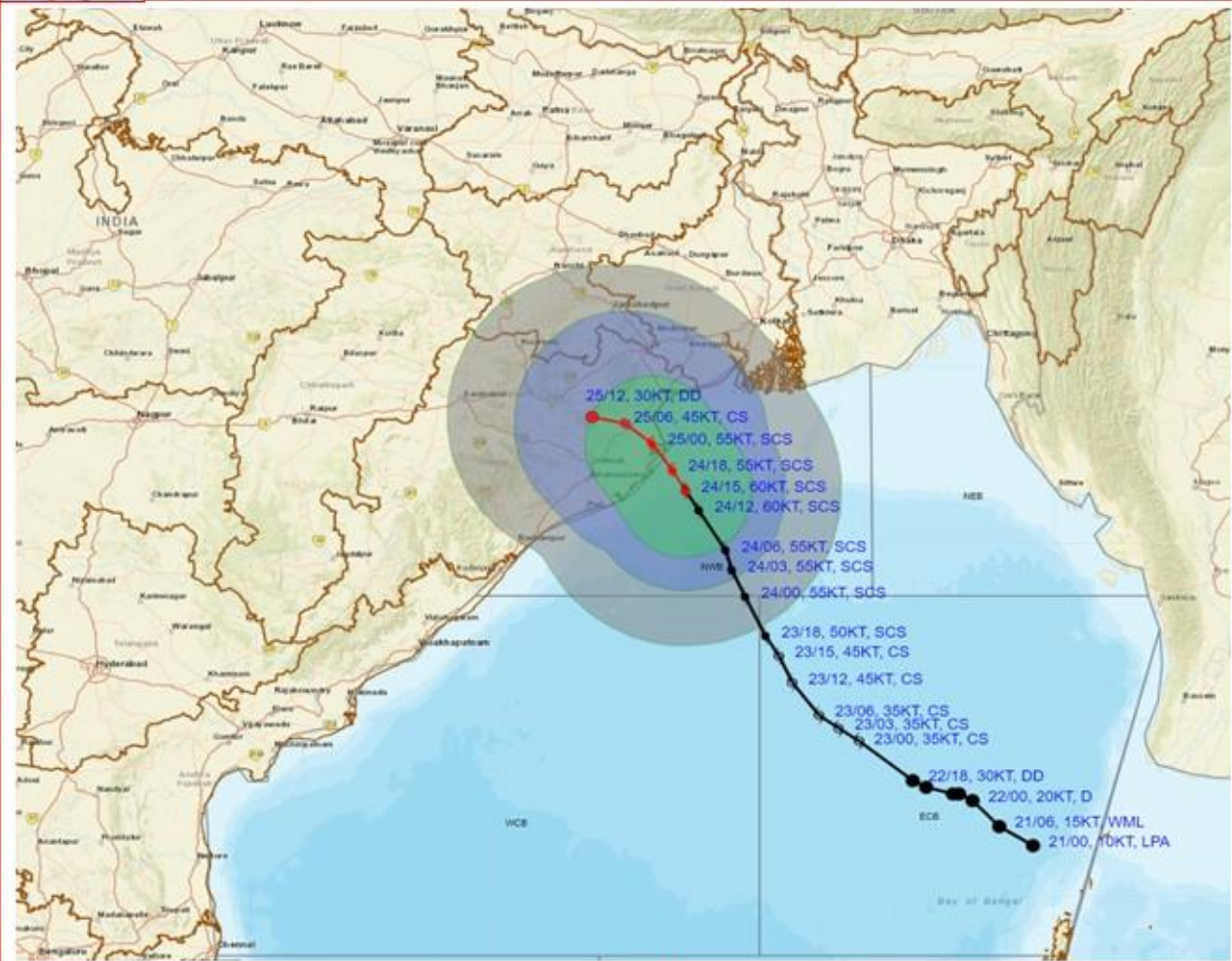
DATE/TIME : IN UTC
 IST : UTC + 0530
 KT : NAUTICAL MILE S/HOUR = 1.85 KM/HOUR
 LPA : LOW PRESSURE AREA
 WML : WELL MARKED LOW PRESSURE AREA
 D : DEPRESSION (17-27 KT)
 DD : DEEP DEPRESSION (28-33 KT)
 CS : CYCLONIC STORM (34-47 KT)
 SCS : SEVERE CYCLONIC STORM (48-63 KT)
 VSCS : VERY SEVERE CYCLONIC 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		
	PARADIP (CWR)	DHAMARA	SAGAR ISLAND
Date and Time (UTC)			
24.10.24/1500	70, ESE	90, SSE	190, SSW
25.10.24/1200	130, NW	110, WNW	230, WSW



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF SEVERE CYCLONIC STORM 'DANA' OVER NORTHWEST BAY OF BENGAL BASED ON 1500 UTC (2030 Hrs. IST) OF 24th OCTOBER 2024



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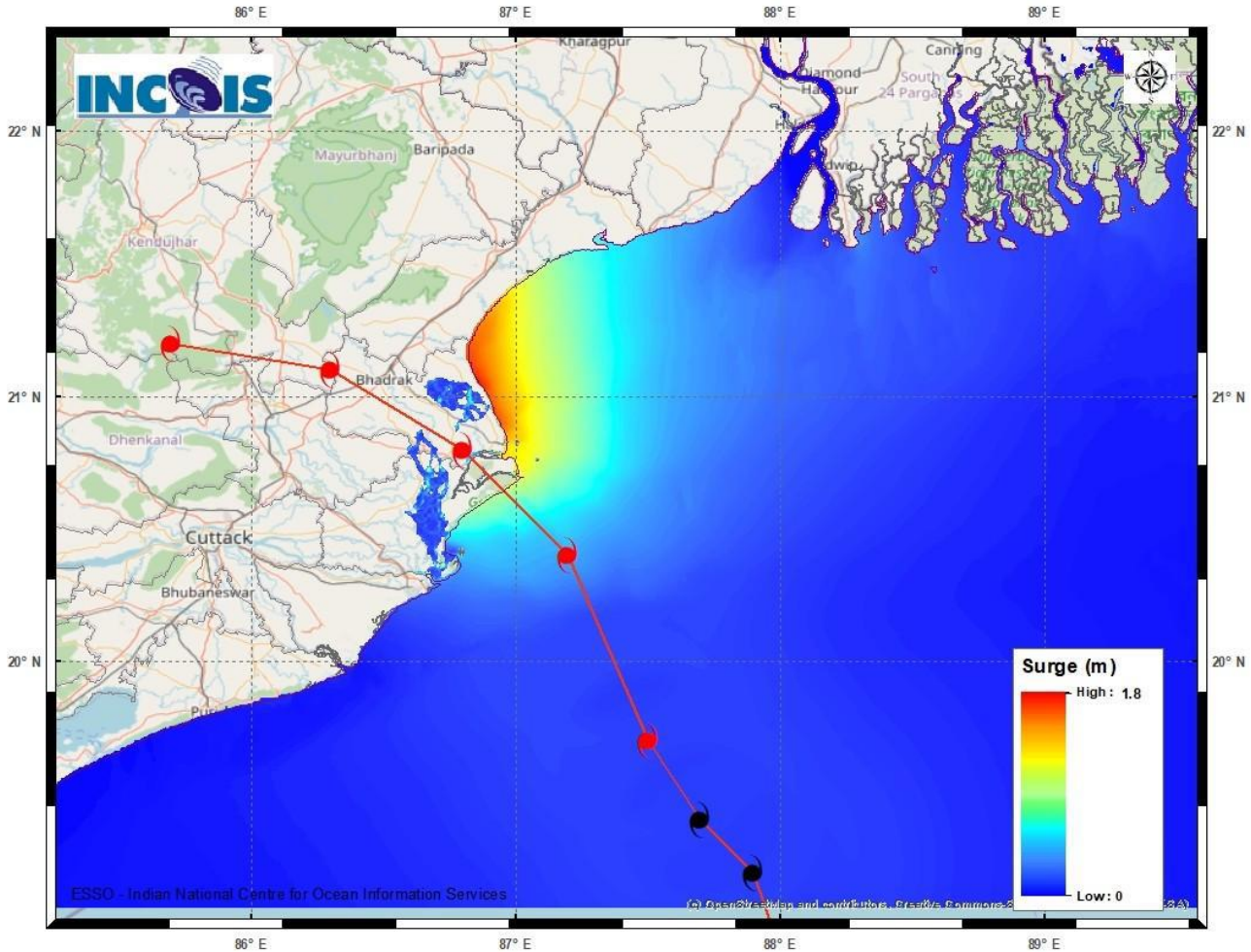
● LESS THAN 34 KT
 ○ 34-47 KT
 ● ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ● CONE OF UNCERTAINTY
 AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥118 KMPH)

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)
Baleshwar	Odisha	Kumbhargari	0.5-1.7	Upto 1.08
Bhadrak	Odisha	Mohanpur	1.3-1.8	Upto 1.15
Jagatsinghpur	Odisha	Musadia	0.2-0.6	Upto 2.91
Kendrapara	Odisha	Tikayat Nagar	0.3-1.3	Upto 3.01
Purba Medinipur	West Bengal	Dakshin Purushottampur	0.3-0.5	Upto 0.98

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Fishermen Warning Graphics

