REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY NO. 06

DEMS-RSMCSPECIAL TROPICAL CYCLONES NEW DELHI DATED 23.10.2024
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. 06 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1800 UTC OF 23.10.2024 BASED ON 1500 UTC OF 23.10.2024

SUB: CYCLONIC STORM "DANA" (PRONOUNCED AS DANA) OVER EASTCENTRAL BAY OF BENGAL

THE CYCLONIC STORM "DANA" (PRONOUNCED AS DANA) OVER EASTCENTRAL & ADJOINING WESTCENTRAL 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 23RD OCTOBER, OVER THE SAME REGION NEAR LATITUDE 17.6° N AND LONGITUDE 88.7°E, ABOUT 370 KM SOUTHEAST OF PARADIP (42976, ODISHA), 400 KM SOUTH-SOUTHEAST OF DHAMARA (ODISHA) AND 460 KM SOUTH-SOUTHEAST OF SAGAR ISLAND (42903, WEST BENGAL).

IT IS VERY LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A SEVERE CYCLONIC STORM OVER CENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL BY 0000 UTC OF 24TH 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
23.10.24/1500	17.6/88.7	80-90 gusting to 100	Cyclonic Storm
23.10.24/1800	17.9/88.5	90-100 gusting to 110	Severe Cyclonic Storm
24.10.24/0000	18.7/88.2	95-105 gusting to 115	Severe Cyclonic Storm
24.10.24/0600	19.3/87.9	100-110 gusting to 120	Severe Cyclonic Storm
24.10.24/1200	20.0/87.6	100-110 gusting to 120	Severe Cyclonic Storm
25.10.24/0000	20.9/87.0	100-110 gusting to 120	Severe Cyclonic Storm
25.10.24/1200	21.3/86.3	60-70 gusting to 80	Cyclonic Storm
26.10.24/0000	21.5/85.4	35-45 gusting to 55	Depression

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

THE SATELLITE IMAGERY SHOWS THE SYSTEM AS CURVED BAND PATTERN WITH WRAP 0.7 AT LOG 10 SPIRALS. MET YIELDS 3.0 DT = PT = MET. HENCE FT = 3.0. INTENSITY OF THE SYSTEM IS CHARACTERISED AS T3.0. 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 86.0E TO 91.0E. MIMIMUM CTT IS MINUS 80-93°C CELSIUS. VERY INTENSE CONVECTION IS SEEN OVER SOUTHERN SECTOR WITH POLEWARD OUTFLOW. MINIMUM CTT IS MINUS 93°C. MICROWAVE IMAGERY F17 SSMIS DEPICTS CENTRE 17.1N /88.9E AT 1200 UTC. AS PER MULTISATELLITE IMAGERY, STRONG WINDS ARE SEEN IN THE NORTHERN SECTOR.

ESTIMATED CENTRAL PRESSURE IS 992 HPA AND MAXIMUM SUSTAINED WIND SPEED IS 45 KNOTS GUSTING TO 55 KNOTS. SEA CONDITION IS HIGH OVER EASTCENTRAL & ADJOINING WESTCENTRAL BAY OF BENGAL.

UNDER IT'S INFLUENCE:

(I) WIND WARNING:

EASTCENTRAL BAY OF BENGAL: GALE WIND SPEED REACHING 80-90 KMPH GUSTING TO 100 KMPH IS PREVAILING AND LIKELY TO INCREASE BECOMING 90-100 KMPH GUSTING TO 110 KMPH FROM 1800 UTC OF 23RD TILL 0300 UTC OF 24TH OCTOBER. IT IS LIKELY TO DECREASE THEREAFTER.

ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL: GALE WIND SPEED REACHING 70-80 KMPH GUSTING TO 90 KMPH IS PREVAILING. IT IS LIKELY TO INCREASE GRADUALLY BECOMING 90-100 KMPH GUSTING TO 110 KMPH FROM 0000 UTC OF 24TH TILL 1200 OF 24TH OCTOBER. IT IS LIKELY TO DECREASE THEREAFTER.

NORTHWEST BAY OF BENGAL: GALE WIND SPEED REACHING 70-90 KMPH GUSTING TO 100 KMPH IS PREVAILING. IT IS LIKELY GRDUALLY BECOMING 100-110 KMPH GUSTING TO 120 KMPH TILL 0000 UTC OF 25TH OCTOBER. IT IS LIKELY TO DECREASE GRADUALLY THEREAFTER.

ADJOINING AREAS OF NORTHEAST BAY OF BENGAL: SQUALLY WIND SPEED REACHING 45-55 KMPH GUSTING TO 65 KMPH IS VERY LIKELY TO COMMENCE FROM 1800 UTC OF 23RD, BECOMING 50-60 KMPH GUSTING TO 70 KMPH FROM 24TH TILL 0000 UTC OF 25TH AND DECREASE GRADUALLY THEREAFTER.

ALONG & OFF ODISHA-WEST BENGAL COASTS: SQUALLY WIND SPEED REACHING 45-55 GUSTING TO 65 KMPH IS PREVAILING. IT WOULD GRADUALLY INCREASE BECOMING GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH FROM 0000 UTC OF 24TH AND REACHING 100-110 KMPH GUSTING TO 120 KMPH FROM 24TH/1800 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 TILL 24TH OCTOBER/1200 UTC AND IMPROVE GRADUALLY THEREAFTER.

ADJOINING AREAS OF WESTCENTRAL BAY OF BENGAL: SEA CONDITION IS LIKELY TO BE VERY ROUGH TO HIGH ON 23RD AND 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 FROM 23RD/1800 UTC 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.

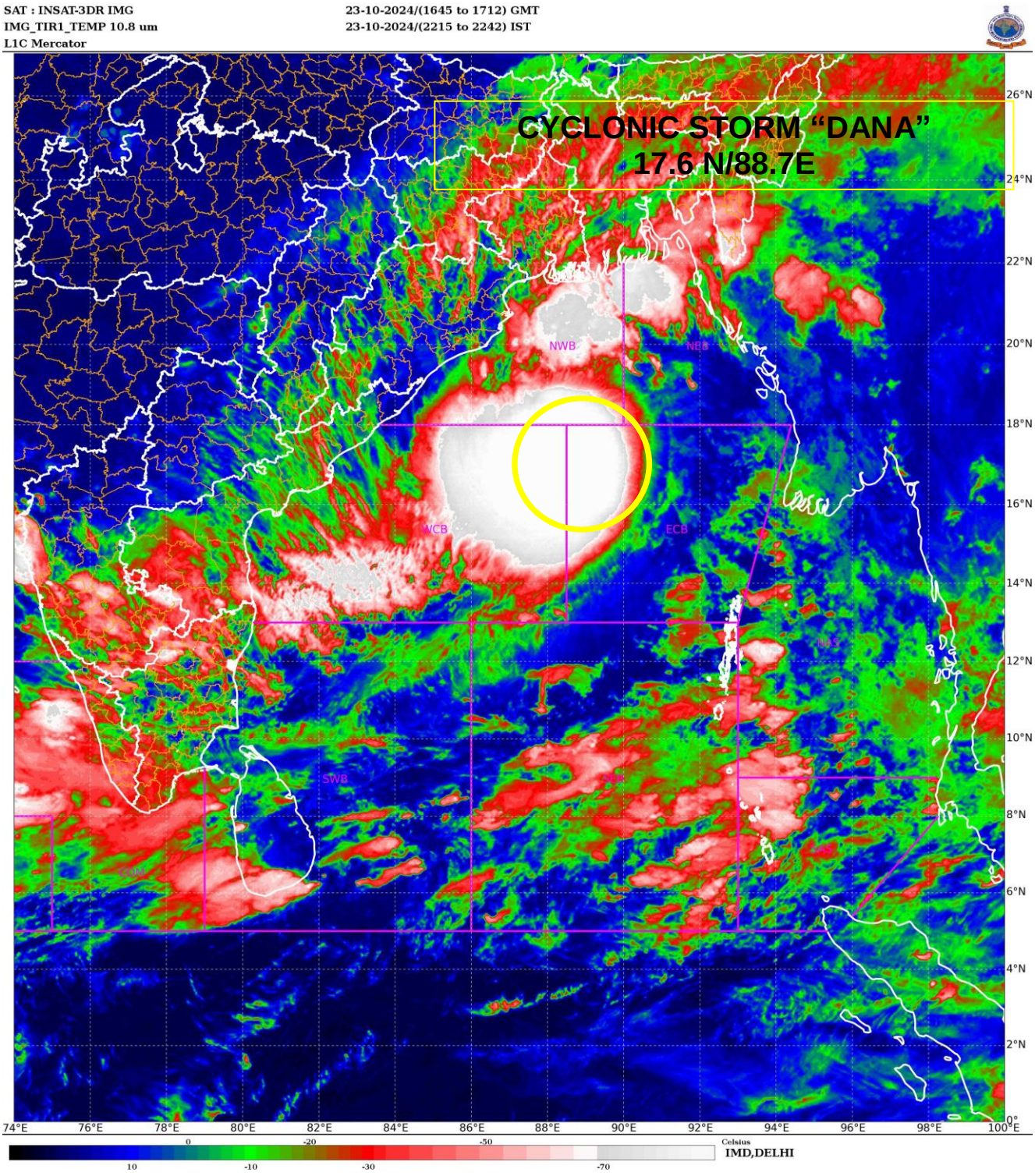
THE SEA SURFACE TEMPERATURE (SST) IS 30°C OVER CENTRAL & NORTH BOB. THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS >100 KJ/CM^2 OVER WESTCENTRAL BOB, AROUND 80 KJ/CM^2 OVER NORTHWEST BOB. VORTICITY AT LOW LEVEL HAS INCREASED IN PAST 3 HOURS AND IS 200X 10^5S^{-1} AROUND SYSTEM CENTRE OVER EASTCENTRAL BAY OF BENGAL WITH VERTICAL EXTENSION UPTO 200 HPA LEVEL. POSITIVE LOW-LEVEL CONVERGENCE IS 20 $X10^{-5}S^{-1}$ TO THE SOUTHWEST OF SYSTEM AREA. POSITIVE UPPER-LEVEL DIVERGENCE IS ALSO SAME AND IS $10X10^{-5}S^{-1}$ TO THE SOUTHWEST OF SYSTEM AREA. VERTICAL WIND SHEAR (VWS) IS LOW-MODERATE (10-15 KT) OVER 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.

MOST OF THE NWP MODELS ARE INDICATING FURTHER INTENSIFICATION OF CYCLONIC STORM INTO A SEVERE CYCLONIC STORM OVER NORTHWEST BAY OF BENGAL AROUND 0000 UTC OF 24^{TH} OCTOBER. IMD-GFS, NCEP-GFS, ECMWF AND NCMRWF UM MODELS INDICATING LANDFALL OVER NORTH ODISHA-WEST BENGAL COASTS BETWEEN 1800 UTC OF 24^{TH} AND 0600 UTC OF 25^{TH} OCTOBER 2024. ALL THE MODELS ARE INDICATING THE INTENSITY OF SEVERE CYCLONIC STORM DURING THE LAND TIME.

CONSIDERING ALL THE ABOVE, THE CYCLONIC STORM OVER EASTCENTRAL BAY OF BENGAL IS VERY LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A SEVERE CYCLONIC STORM OVER NORTHWEST BAY OF BENGAL BY 1800-2100 UTC OF 23RD OCTOBER. IT IS VERY LIKELY TO CROSS NORTH ODISHA AND WEST BENGAL COASTS BETWEEN PURI AND SAGAR ISLAND DURING 1800 UTC OF 24TH TO 0000 UTC TO 25TH OCTOBER, 2024 AS A SEVERE CYCLONIC STORM WITH A WIND SPEED OF 100-110 KMPH GUSTING 120 KMPH.

“DANA” IS VERY LIKELY TO MOVE NORTHWESTWARDS AND INTENSIFY INTO A SEVERE CYCLONIC STORM OVER CENTRAL AND ADJOINING NORTHWEST BAY OF BENGAL BY 0000 UTC OF 24TH 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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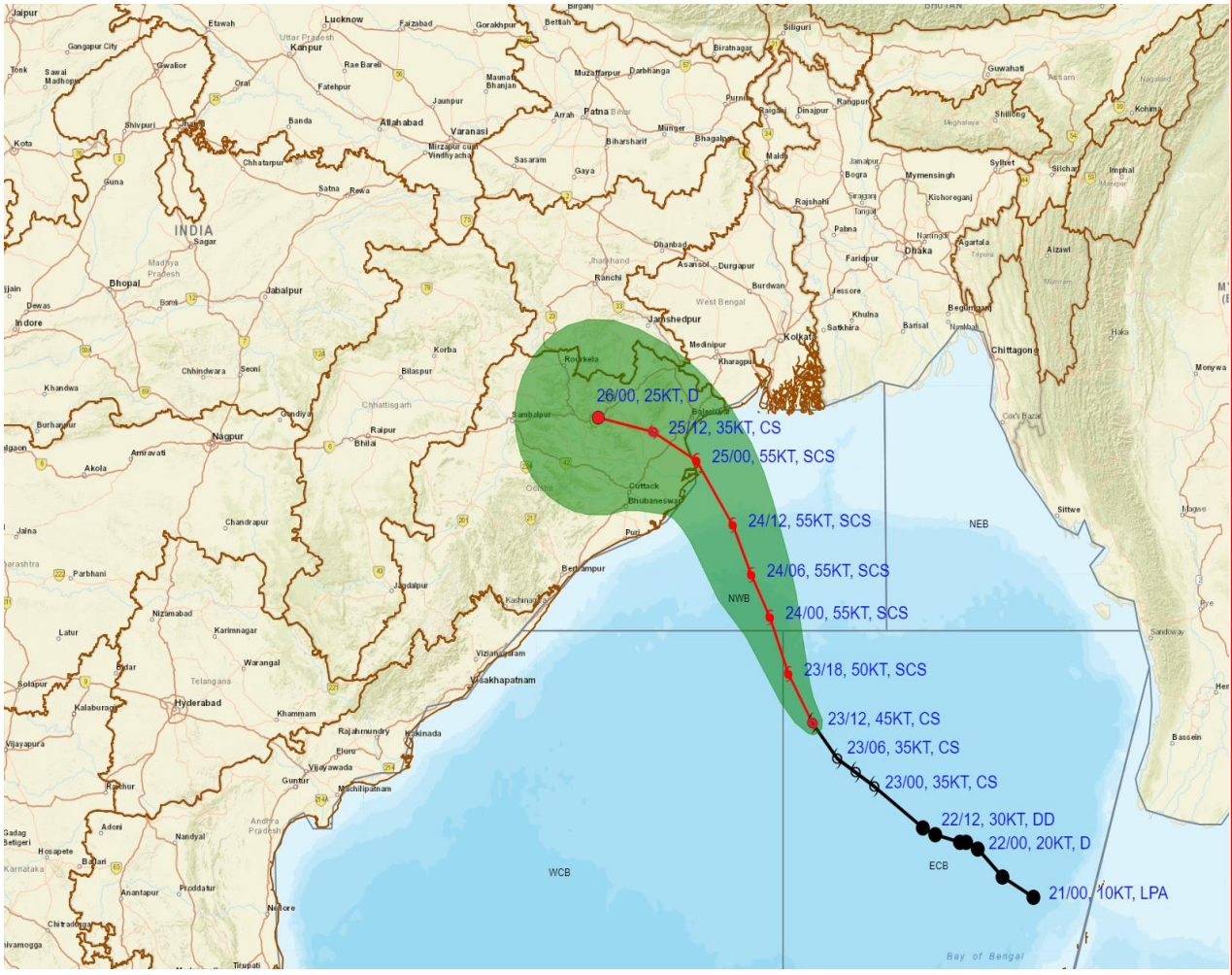
OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY OF CYCLONIC STORM 'DANA' OVER EASTCENTRAL AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 1200 UTC (1730 Hrs. IST) OF 23RD OCTOBER 2024



DATE/TIME	:	IN UTC
IST	:	UTC + 0530
KT	:	NAUTICAL MILES/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
23.10.24/1200	420, SE	450, SSE	500, SSE
24.10.24/1200	100, ESE	120, SE	190, SSW
25.10.24/1200	120, NNW	80, NW	190, WSW

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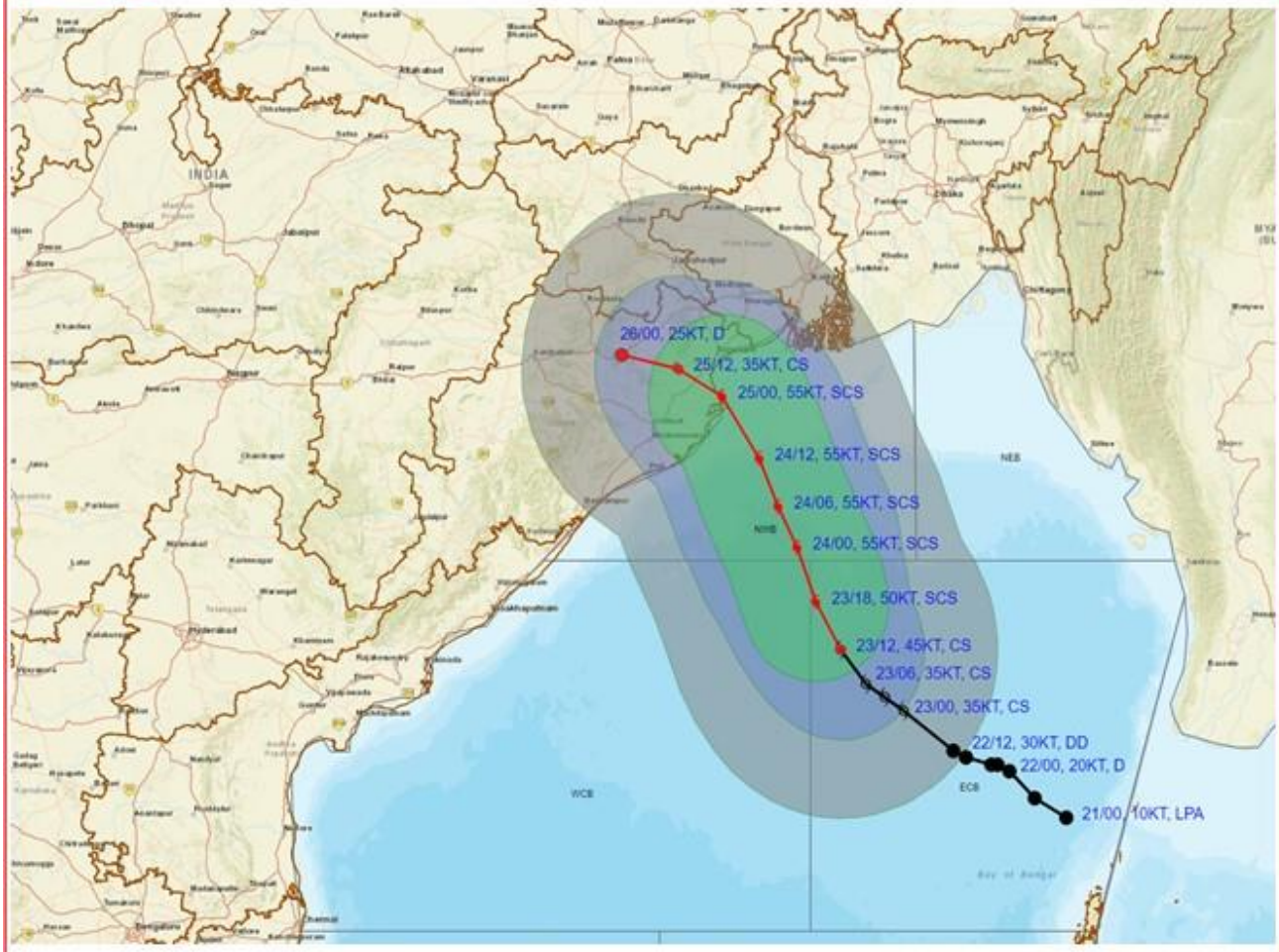
OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM 'DANA' OVER EASTCENTRAL AND ADJOINING WESTCENTRAL BAY OF BENGAL BASED ON 1200 UTC (1730 Hrs. IST) OF 23RD OCTOBER 2024



DATE/TIME	:	IN UTC
IST	:	UTC + 0530
KT	:	NAUTICAL MILES/HOUR = 1.85 KM/HOUR
LPA	:	LOW PRESSURE AREA
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D	:	DEPRESSION (17-27 KT)
DD	:	DEEP DEPRESSION (28-33 KT)
CS	:	CYCLONIC STORM (34-47 KT)
SCS	:	SEVERECYCLONIC STORM (48-63 KT)
VSCS	:	VERY SEVERECYCLONIC 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

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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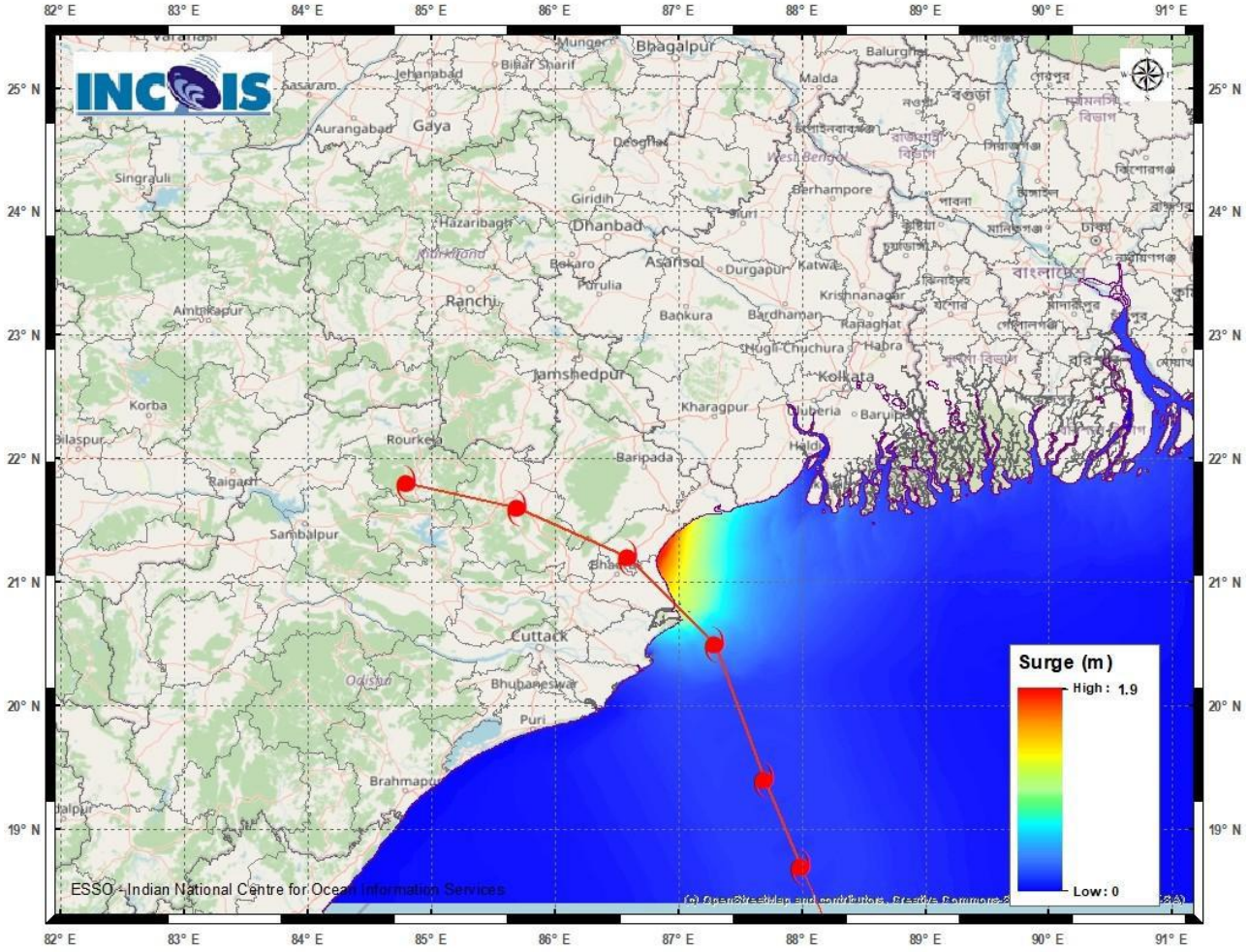
Storm Surge warning graphics



DISTRICT	STATE/UNION TERRITORY	NEARESTPLACE OF HABITATION	STORM SURGE (m) *	EXPECTED INUNDATION EXTENT (km)
Baleswar	Odisha	Kumbhirgari	0.4-1.9	Upto 1.08
South 24 Parganas	West Bengal	Island	0.4-0.5	Upto 0.15
Bhadrak	Odisha	Mohanpur	0.8-1.9	Upto 1.24
Purba Medinipur	West Bengal	Safar Chata	0.2-0.7	Upto 0.98
Kendrapara	Odisha	Suravi	0.2-1.0	Upto 3.01

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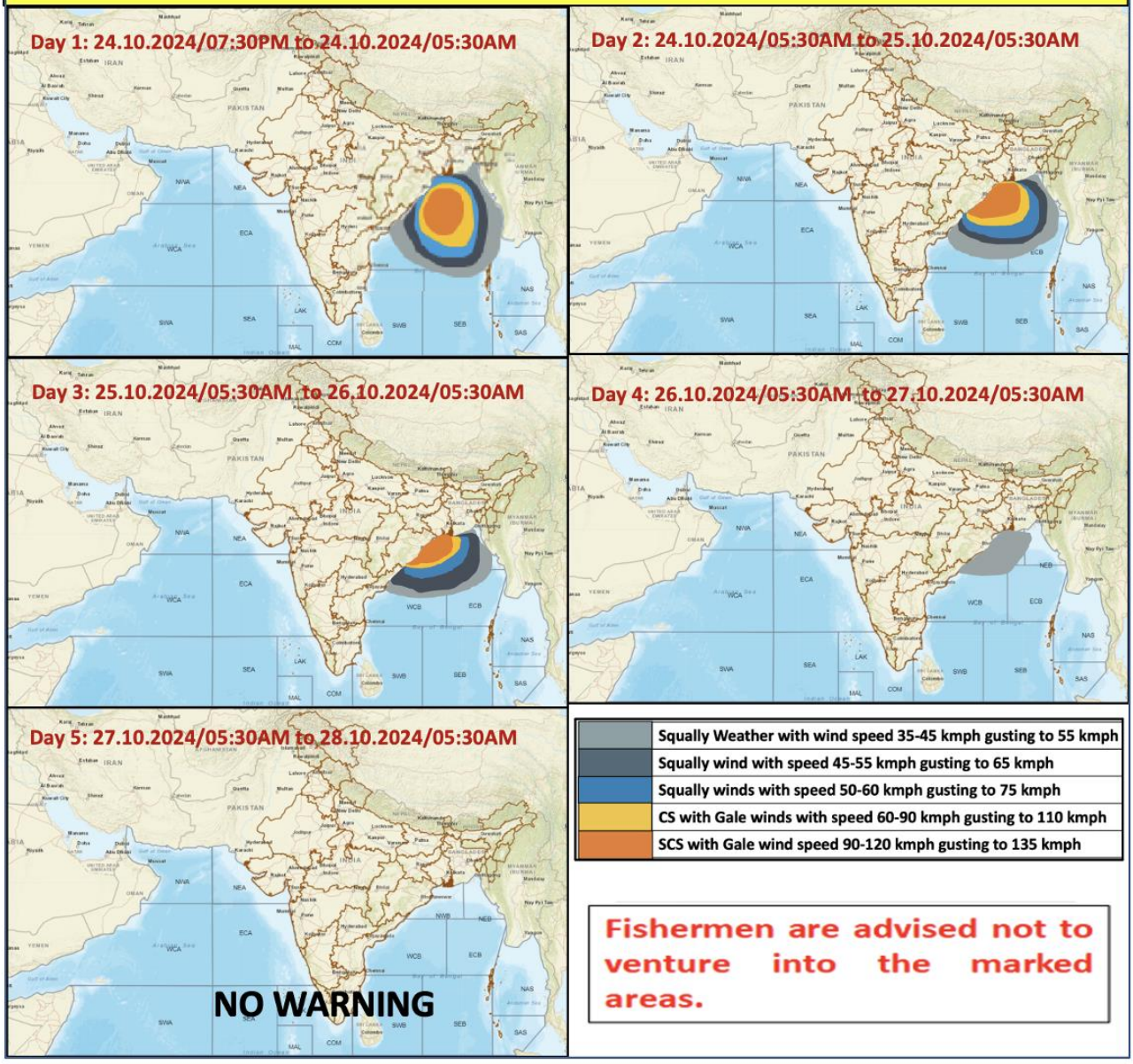
Fishermen Warning Graphics



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