REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI

TROPICAL WEATHER OUTLOOK

DEMS-RSMC TROPICAL CYCLONES NEW DELHI DATED 23.05.2024

TROPICAL WEATHER OUTLOOK FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND THE ARABIAN SEA) VALID FOR NEXT 168 HOURS ISSUED AT 0800 UTC OF 23.05.2024 BASED ON 0300 UTC OF 23.05.2024.

BAY OF BENGAL:

YESTERDAY'S LOW PRESSURE AREA OVER WESTCENTRAL & ADJOINING SOUTHWEST BAY OF BENGAL MOVED NORTHEASTWARDS AND LAY AS A WELL MARKED LOW PRESSURE AREA OVER WESTCENTRAL & ADJOINING SOUTH BAY OF BENGAL AT 0300 UTC OF TODAY, THE 23RD MAY, 2024. IT IS VERY LIKELY TO CONTINUE TO MOVE NORTHEASTWARDS AND CONCENTRATE INTO A DEPRESSION OVER CENTRAL PARTS OF BAY OF BENGAL BY 0000 UTC OF 24TH MAY, 2024. THEREAFTER, IT IS VERY LIKELY TO CONTINUE TO MOVE NORTHEASTWARDS, INTENSIFY FURTHER INTO A CYCLONIC STORM OVER EASTCENTRAL BAY OF BENGAL BY 0000 UTC OF 25TH MAY. SUBSEQUENTLY, IT WOULD MOVE NEARLY NORTHWARDS AND REACH NEAR BANGLADESH AND ADJOINING WEST BENGAL COASTS BY 1200 UTC OF 26TH MAY AS A SEVERE CYCLONIC STORM.

AS PER INSAT-3D IMAGERY, THE CONVECTION HAS FURTHER ORGANISED. INTENSITY OF THE SYSTEM IS T1.0. ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH & CENTRAL BAY OF BENGAL ANDAMAN SEA (MINIMUM CLOUD TOP TEMPERATURE -93^{0}C). AS PER MULTISATELLITE WINDS, STRONGER WINDS ARE SEEN IN SOUTHERN SECTOR.

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTH & CENTRAL BAY OF BENGAL ANDAMAN SEA (MINIMUM CLOUD TOP TEMPERATURE -93^{0}C). SCATTERED LOW AND MEDIUM CLOUDS WITH EMBEDDED MODERATE TO INTENSE CONVECTION LAY OVER TENASSERIM COAST AND GULF OF MARTABAN.

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
MOD	HIGH	-	-	-	-	-

*NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY

AS PER LATEST OBSERVATIONS, ESTIMATED CENTRAL PRESSURE IS 999 HPA. AT 0000 UTC A SHIP NEAR 12.3N/ 86E INDICATES MEAN SEA LEVEL PRESSURE (MSLP) OF 998.7 HPA AND MAXIMUM SUSTAINED WIND SPEED (MSW) OF 200DEG/23KT.

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% This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

WIND WARNING:

- SQUALLY WEATHER WITH WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY TO PREVAIL OVER CENTRAL AND ADJOINING SOUTH BAY OF BENGAL ON 23RD MAY. IT WOULD BECOME 50-60 KMPH GUSTING TO 70 KMPH OVER CENTRAL BAY OF BENGAL ON 24TH MAY.
- IT WOULD EXTEND TO ADJOINING AREAS OF NORTH BAY OF BENGAL WITH GALE WIND SPEED REACHING 60-70 KMPH GUSTING TO 80 KMPH FROM 0000 UTC OF 25TH MAY IT WOULD FURTHER INCREASE BECOMING 100-110 KMPH GUSTING TO 120 KMPH OVER NORTH BAY OF BENGAL AND 70-80 KMPH GUSTING TO 90 KMPH OVER ADJOINING CENTRAL BAY OF BENGAL FROM 0000 UTC OF 26TH FOR SUBSEQUENT 24 HOURS.
- SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY ALONG & OFF BANGLADESH, WEST BENGAL AND ADJOINING NORTH ODISHA COASTS FROM 1200 UTC OF 25TH MAY.
- SQUALLY WIND SPEED REACHING 40-50 KMPH GUSTING TO 60 KMPH IS LIKELY OVER ANDAMAN ISLANDS AND NORTH ANDAMAN SEA ON 23RD AND 24TH MAY.

SEA CONDITION:

- ROUGH TO VERY ROUGH OVER CENTRAL AND ADJOINING SOUTH BAY OF BENGAL FROM 23RD MAY AND OVER NORTH BAY OF BENGAL FROM 24TH MAY/1200 UTC. IT WOULD BECOME HIGH OVER CENTRAL BAY OF BENGAL FROM 25TH MAY/0000 UTC AND HIGH TO VERY HIGH OVER NORTH BAY OF BENGAL FROM 25TH/ 1200 UTC TILL 27TH MAY/ 0000 UTC.
- ROUGH TO VERY ROUGH ALONG & OFF BANGLADESH, WEST BENGAL AND ADJOINING NORTH ODISHA COASTS FROM 25TH MAY/ 1200 UTC AND HIGH ALONG & OFF BANGLADESH AND WEST BENGAL COASTS FROM 26TH/ 0600 UTC ONWARDS TILL 27TH MAY/ 0000 UTC.
- ROUGH TO VERY ROUGH OVER ANDAMAN ISLANDS AND NORTH ANDAMAN SEA ON 23RD AND 24TH MAY.

FISHERMEN WARNING (GRAPHICS ATTACHED):

FISHERMEN ARE ADVISED NOT TO VENTURE INTO SOUTH BAY OF BENGAL TILL 24TH MAY, CENTRAL BAY OF BENGAL TILL 26TH MAY AND NORTH BAY OF BENGAL FROM 24TH MAY ONWARDS TILL MORNING OF 27TH MAY. FISHERMEN OUT AT SEA ARE ADVISED TO RETURN TO THE COAST.

ARABIAN SEA:

UNDER THE INFLUENCE OF THE CYCLONIC CIRCULATION OVER SOUTH KERALA & NEIGHBOURHOOD, A LOW PRESSURE AREA FORMED OVER SOUTHEAST ARABIAN SEA OFF KERALA COAST WITH ASSOCIATED CYCLONIC CIRCULATION EXTENDING UPTO 7.6 KM ABOVE MEAN SEA LEVEL AT 0300 UTC OF TODAY, THE 25TH MAY,2024.

ASSOCIATED SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHEAST ARABIAN SEA & LAKSHADWEEP ISLANDS AREA (MINIMUM CLOUD TOP TEMPERATURE -93^{0}C).

SCATTERED TO BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER SOUTHEAST ADJOINING EASTCENTRAL ARABIAN SEA LAKSHADWEEP ISLANDS AREA MALDIVES AND COMORIN AREA (MINIMUM CLOUD TOP TEMPERATURE -93^{0}C).

***PROBABILITY OF CYCLOGENESIS (FORMATION OF DEPRESSION) DURING NEXT 168 HRS:**

24 HOURS	24-48 HOURS	48-72 HOURS	72-96 HOURS	96-120 HOURS	120-144 HOURS	144-168 HOURS
NIL	NIL	NIL	NIL	NIL	NIL	NIL

*****NOTE: EVERY 24HR FORECAST IS VALID UPTO 0300 UTC (0830 IST) OF NEXT DAY

REMARKS:

THE MADDEN JULIAN INDEX (MJO) CURRENTLY LIES IN PHASE 4 WITH AMPLITUDE MORE THAN 1. IT WILL CONTINUE IN SAME PHASE DURING NEXT 7 DAYS. THUS, MJO PHASE & AMPLITUDE ARE HIGHLY CONDUCIVE FOR CYCLOGENESIS AND FURTHER INTENSIFICATION OVER THE BAY OF BENGAL (BOB) DURING NEXT 5 DAYS.

STRONG EASTERLY WINDS (5-7 MPS) ARE LIKELY TO PREVAIL OVER CENTRAL BOB DURING NEXT 24 HOURS & NORTH BOB DURING SUBSEQUENT 3-4 DAYS IN THE LOWER TROPOSPHERIC LEVELS. STRONG WESTERLY WINDS (5-7 MPS) ARE LIKELY TO PREVAIL OVER THE SOUTH BOB AND ANDAMAN SEA DURING NEXT 5 DAYS AND OVER CENTRAL BOB DURING 25^{TH} TO 27^{TH} MAY. IN ADDITION, KELVIN WAVES, EQUATORIAL ROSSBY WAVES ARE PREVAILING OVER SOUTH BOB & COUPLED WITH MJO. THESE WAVES WILL PROVIDE A CONDUCIVE ENVIRONMENT FOR CYCLOGENESIS AND INTENSIFICATION OF SYSTEM OVER BOB.

THE TROPICAL CYCLONE HEAT POTENTIAL (TCHP) IS MORE THAN 100 KJ/CM2 OVER MAJOR PARTS OF BOB. IT IS INDICATING SLIGHTLY DECREASING TENDENCY TOWARDS NORTH BOB AND ALONG THE COASTS. SEA SURFACE TEMPERATURE (SST) IS AROUND 30-32°C OVER ENTIRE BOB. THE SEA CONDITIONS OVER BOB ARE ALSO CONDUCIVE FOR CYCLOGENESIS AND INTENSIFCATION.

CONSIDERING THE ENVIRONMENTAL CONDITIONS, LOW LEVEL VORTICITY HAS INCREASED DURING PAST 24 HOURS AND IS ABOUT $100x10^{-5}S^{-1}$ TO THE SOUTH OF SYSTEM CENTRE OVER SOUTHWEST BAY OF BENGAL OF BENGAL WITH VERTICAL EXTENSION UPTO 200 HPA LEVELS. LOW LEVEL CONVERGENCE IS THE SAME AND IS ABOUT $10\text{-}15x10^{-5}S^{-1}$ OVER SOUTH BOB AND IS EAST-WEST ORIENTED. UPPER LEVEL DIVERGENCE HAS INCREASED AND IS ABOUT $20x10^{-5}S^{-1}$ OVER SOUTH BOB & SOUTH ANDAMAN SEA. IT IS ALSO EAST-WEST ORIENTED. VERTICAL WIND SHEAR (VWS) IS LOW TO MODERATE OVER MAJOR PARTS OF BOB. MID LEVEL WIND SHEAR IS ANTICYCLONIC OVER SOUTH BOB. VWS WILL THUS SUPPORT FURTHER INTENSIFICATION OF SYSTEM. CURRENTLY, THE SYSTEM IS MOVING NORTHEASTWARDS UNDER THE INFLUENCE OF SOUTHWESTERLY WINDS ASSOCIATED WITH ADVANCE OF SOUTHWEST MONSOON OVER THE SOUTH BAY OF BENGAL. THE UPPER TROPOSPHERIC RIDGE AT 200 HPA IS LOCATED NEAR $15.0^{0}N$. THE RIDGE IS LIKELY TO SHIFT NORTHWARDS LEADING TO NEAR NORTHWARDS MOVEMENT OF THE SYSTEM FROM 24^{TH} MAY.

VARIOUS MODELS ARE INDICATING FORMATION OF DEPRESSION DURING 23/1200 UTC TO 24/1200 UTC OVER CENTRAL PARTS OF BAY OF BENGAL. HENCE HIGH PROBABILITY HAS BEEN ASSIGNED TO FORMATION OF DEPRESSION DURING NEXT 24-48 HOURS. THERE IS LARGE VARIATION AMONG VARIOUS MODELS WITH RESPECT TO MOVEMENT AND INTENSIFICATION OF THE SYSTEM. THE LANDFALL POINT IS VARYING FROM ODISHA TO BANGLADESH COASTS. MODELS LIKE ECAI & NCEP GFS ARE INDICATING CROSSING OVER ODISHA COAST, ECMWF OVER WEST BENGAL COAST AND IMD GFS, NCUM & IMD MME OVER BANGLADESH COAST. REGARDING INTENSIFICATION, MODELS LIKE NCEP GFS, IMD GFS AND NCUM ARE INDICATING INTENSIFICATION UPTO VERY SEVERE CYCLONIC STORM CATEGORY (65-75 KT). MODELS LIKE IMD MME, ECAI AND ECMWF ARE INDICATING INTENSIFICATION UPTO SEVERE CYCLONIC STORM STAGE (UPTO 55 KT). THE LANDFALL TIME IS VARYING BETWEEN 26^{TH}/1200-26^{TH}/2100 UTC.

CONSIDERING ALL THE ABOVE, THE WELL MARKED LOW PRESSURE AREA OVER WESTCENTRAL & ADJOINING SOUTH BAY OF BENGAL IS VERY LIKELY TO CONTINUE TO MOVE NORTHEASTWARDS AND CONCENTRATE INTO A DEPRESSION OVER CENTRAL PARTS OF BAY OF BENGAL BY 0000 UTC OF 24TH MAY, 2024. THEREAFTER, IT IS VERY LIKELY TO CONTINUE TO MOVE NORTHEASTWARDS, INTENSIFY FURTHER INTO A CYCLONIC STORM OVER EASTCENTRAL BAY OF BENGAL BY 0000 UTC OF 25TH MAY. SUBSEQUENTLY, IT WOULD MOVE NEARLY NORTHWARDS AND REACH NEAR BANGLADESH AND ADJOINING WEST BENGAL COASTS BY 1200 UTC OF 26TH MAY AS A SEVERE CYCLONIC STORM.

M. SHARMA

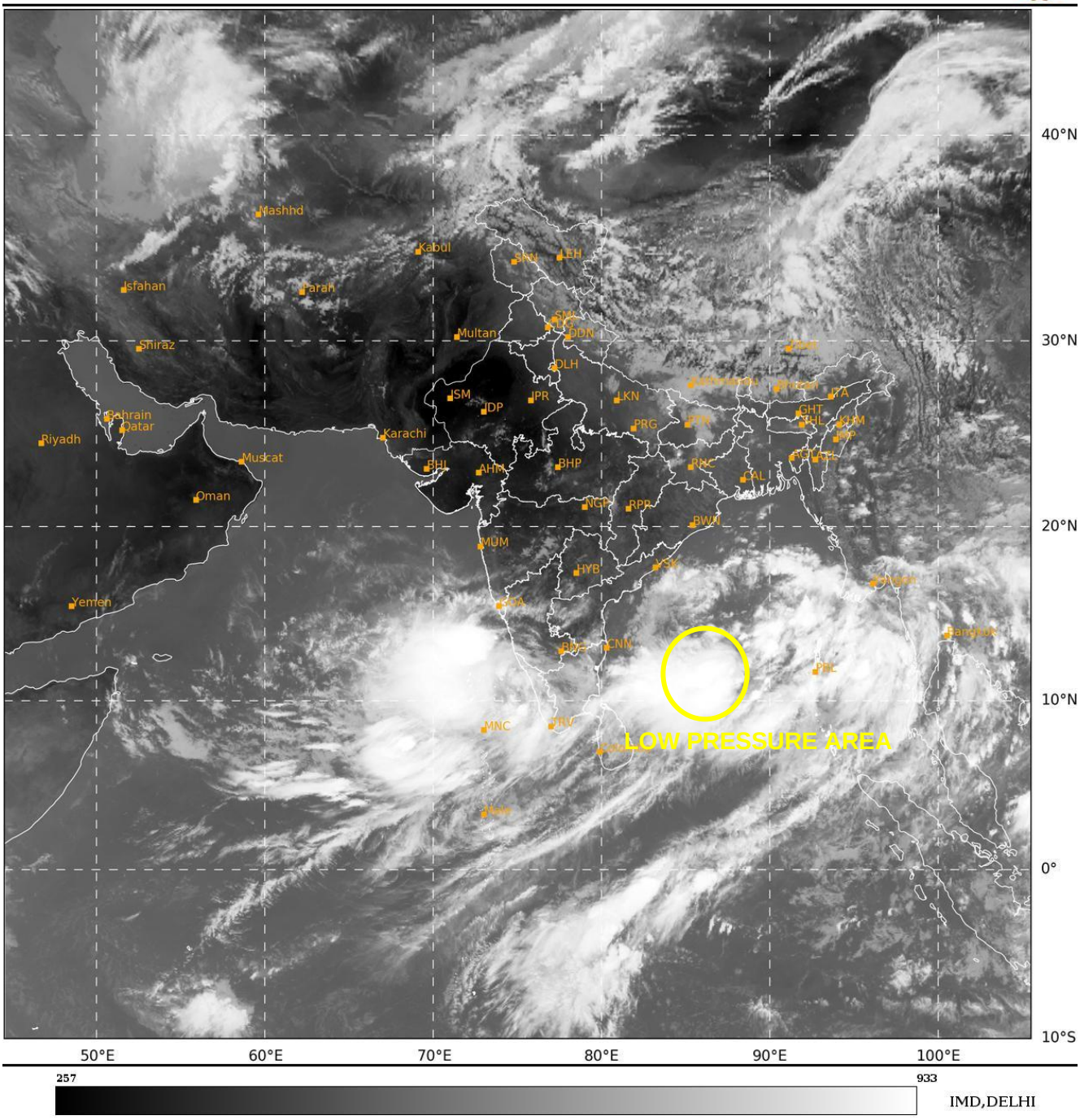
SCIENTIST D

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%

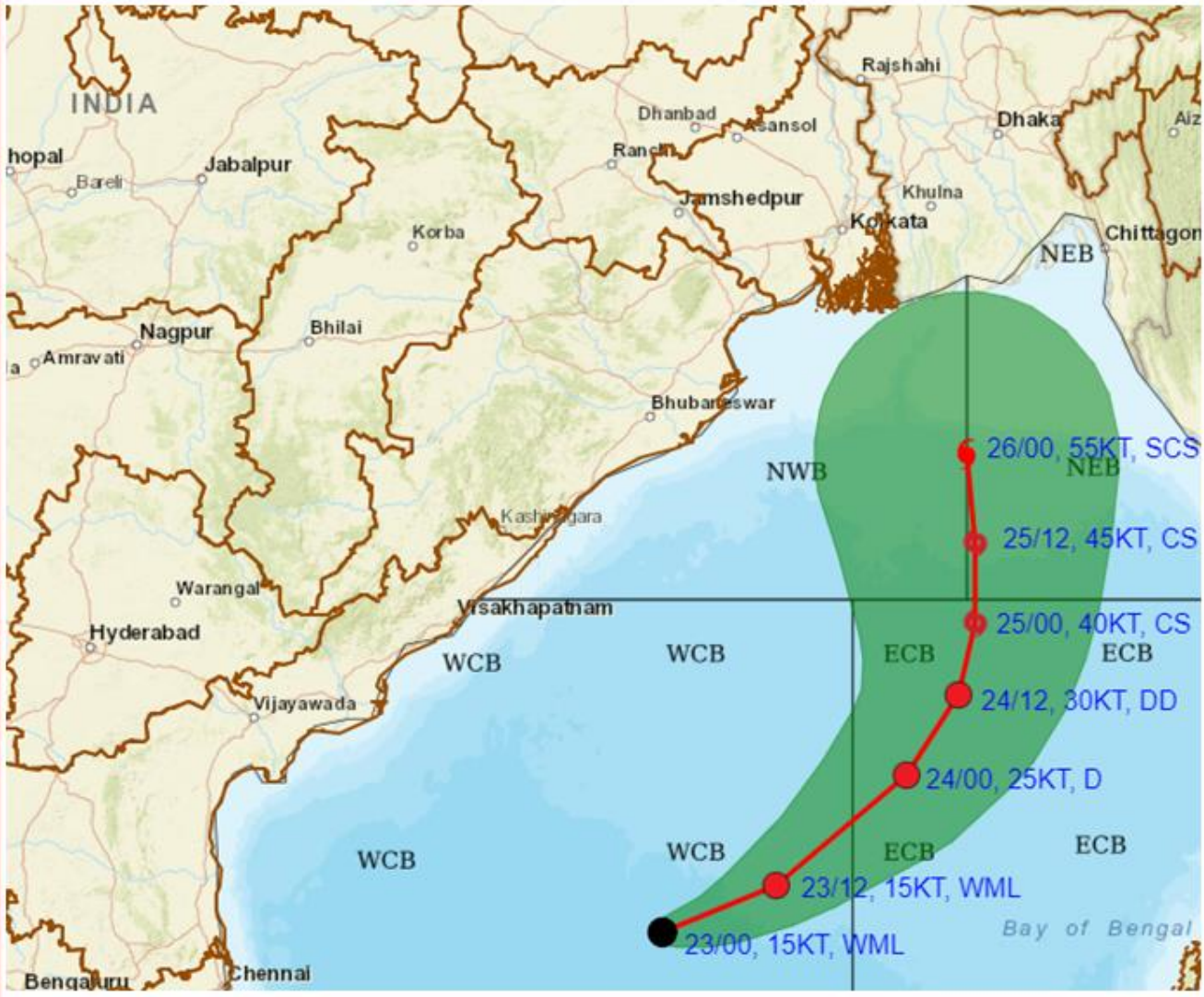
SAT : INSAT-3D IMG
IMG_TIR1 10.8 um
L1C Mercator

23-05-2024/(0600 to 0627) GMT
23-05-2024/(1130 to 1157) IST



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%
This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

PRE-GENESIS FORECAST TRACK ALONGWITH CONE OF UNCERTAINITY IN ASSOCIATION WITH LOW PRESSURE AREA OVER WESTCENTRAL & ADJOINING SOUTHWEST BAY OF BENGAL BASED ON 0300 UTC (0830 IST) OF 23RD MAY 2024.

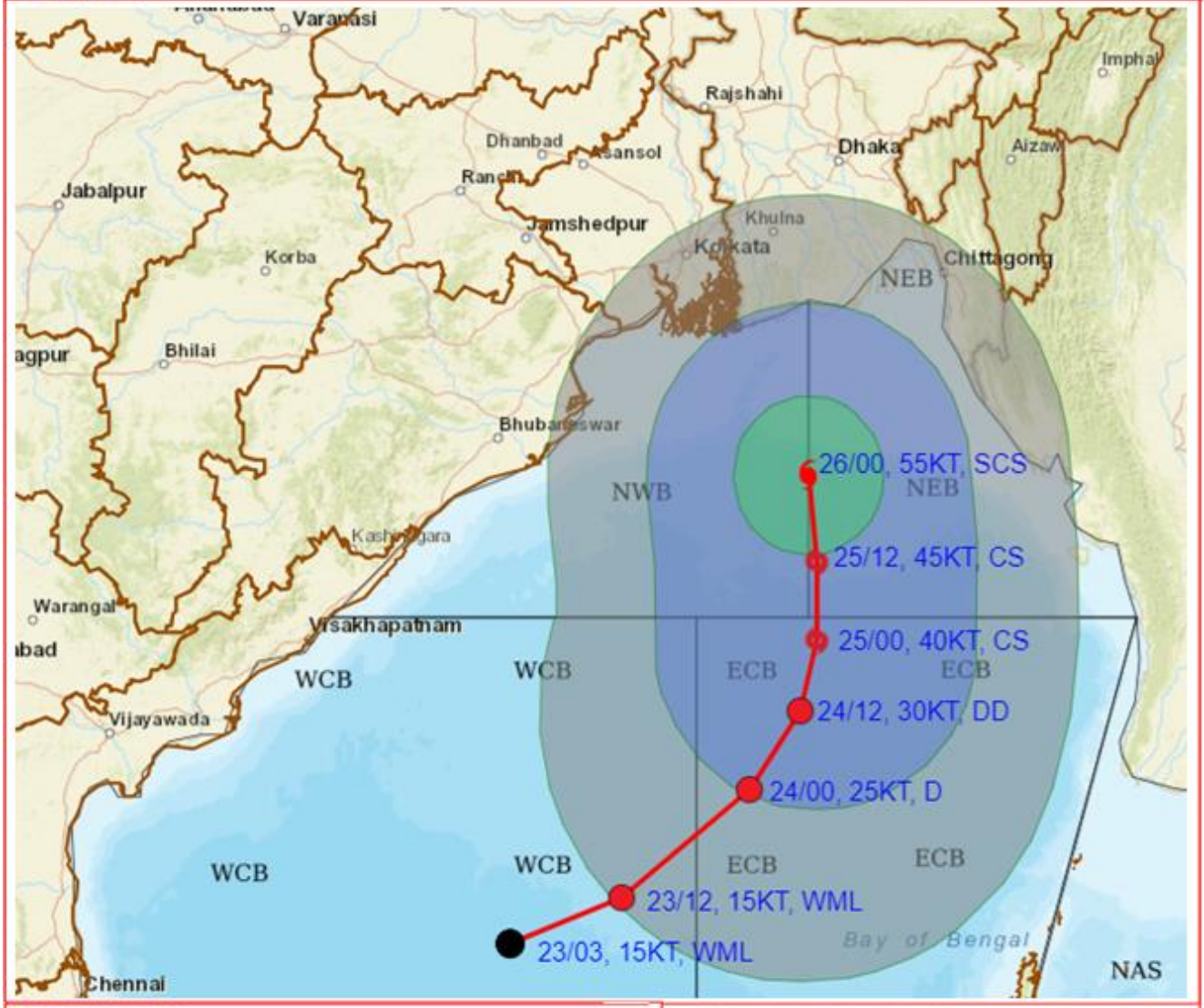


DATE/TIME IN UTC
IST=UTC + 0530
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34-47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119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

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

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%
This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins

PRE-GENESIS FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION IN ASSOCIATION WITH LOW PRESSURE AREA OVER WESTCENTRAL & ADJOINING SOUTHWEST BAY OF BENGAL BASED ON 0300 UTC (0830 IST) OF 23RD MAY 2024.



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)

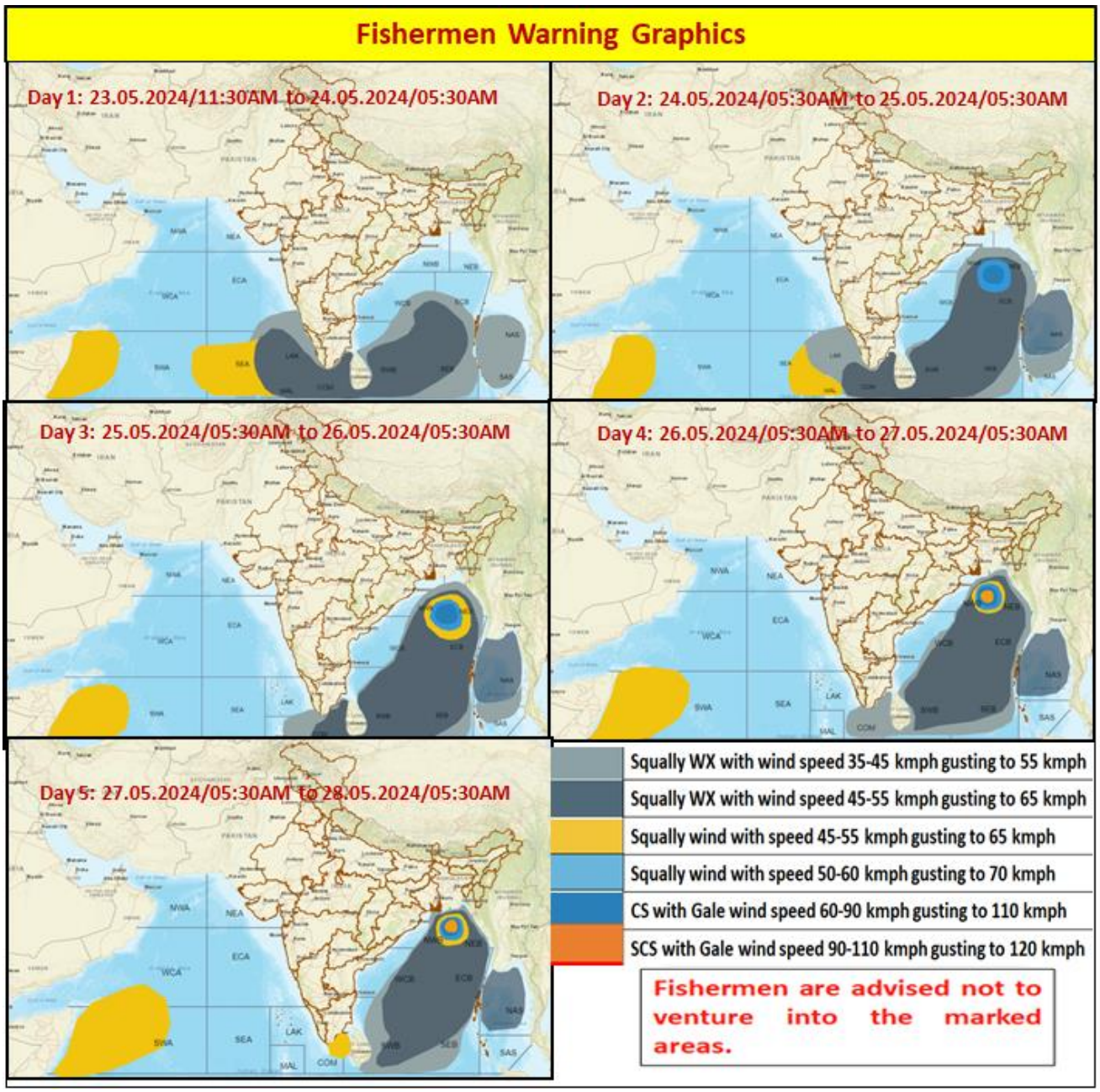
- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

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

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%
This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins



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%
This is a guidance Bulletin for WMO/ESCAP Panel Member countries. Visit respective National websites for Country specific Bulletins