



**REGIONAL SPECIALISED METEOROLOGICAL CENTRE-TROPICAL CYCLONES, NEW DELHI
TROPICAL CYCLONE ADVISORY**

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 09.06.2023

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. 25 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 1600 UTC OF 09.06.2023 BASED ON 1200 UTC OF 09.06.2023

**SUB: A) VERY SEVERE CYCLONIC STORM “BIPARJOY” (PRONOUNCED AS “BIPORJOY”) OVER EASTCENTRAL ARABIAN SEA
B) WELL MARKED LOW PRESSURE AREA OVER NORTHEAST BAY OF BENGAL**

A) VERY SEVERE CYCLONIC STORM “BIPARJOY” (PRONOUNCED AS “BIPORJOY”) OVER EASTCENTRAL ARABIAN SEA

THE VERY SEVERE CYCLONIC STORM “BIPARJOY” (PRONOUNCED AS “BIPORJOY”) OVER EASTCENTRAL ARABIAN SEA MOVED NORTHEASTWARDS WITH A SPEED OF 13 KMPH DURING PAST 6-HOURS AND LAY CENTERED AT 1200 UTC OF TODAY, THE 09TH JUNE, 2023 OVER THE SAME REGION NEAR LATITUDE 15.5°N AND LONGITUDE 67.1°E, ABOUT 720 KM WEST OF GOA(43192), 720 KM WEST-SOUTHWEST OF MUMBAI(43057), 740 KM SOUTH-SOUTHWEST OF PORBANDAR(42830) AND 1050 KM SOUTH OF KARACHI(41780).

IT WOULD INTENSIFY FURTHER GRADUALLY DURING NEXT 36 HOURS. IT IS VERY LIKELY TO MOVE NORTH-NORTHEASTWARDS DURING NEXT 24 HOURS AND THEN NORTH-NORTHWESTWARDS DURING SUBSEQUENT 3 DAYS.

Forecast track and intensity are given below:

Date/Time(UTC)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
09.06.23/1200	15.5/67.1	120-130 gusting to 145	Very Severe Cyclonic Storm
09.06.23/1800	16.0/67.5	125-135 gusting to 150	Very Severe Cyclonic Storm
10.06.23/0000	16.5/67.6	130-140 gusting to 155	Very Severe Cyclonic Storm
10.06.23/0600	17.0/67.7	135-145 gusting to 160	Very Severe Cyclonic Storm
10.06.23/1200	17.4/67.7	140-150 gusting to 165	Very Severe Cyclonic Storm
11.06.23/0000	18.0/67.7	145-155 gusting to 170	Very Severe Cyclonic Storm
11.06.23/1200	18.7/67.6	135-145 gusting to 160	Very Severe Cyclonic Storm
12.06.23/0000	19.4/67.4	130-140 gusting to 155	Very Severe Cyclonic Storm
12.06.23/1200	20.1/67.1	125-135 gusting to 150	Very Severe Cyclonic Storm
13.06.23/0000	20.7/66.8	120-130 gusting to 145	Very Severe Cyclonic Storm
13.06.23/1200	21.3/66.5	115-125 gusting to 140	Very Severe Cyclonic Storm
14.06.23/0000	21.8/66.2	105-115 gusting to 125	Severe Cyclonic Storm
14.06.23/1200	22.3/66.0	95-105 gusting to 115	Severe Cyclonic Storm

AS PER INSAT 3D IMAGERY INTENSITY OF THE SYSTEM IS T 4.0. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL ARABIAN SEA BETWEEN LATITUDE 12.0N & 17.0N LONGITUDE 62.0E & 67.7E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 70 KNOTS GUSTING TO 80 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 978 HPA. SEA CONDITION IS LIKELY TO BE PHENOMENAL OVER EASTCENTRAL AND ADJOINING WESTCENTRAL ARABIAN SEA.

B) WELL MARKED LOW PRESSURE AREA OVER NORTHEAST BAY OF BENGAL

THE WELL MARKED LOW PRESSURE AREA OVER THE NORTHEAST BAY OF BENGAL PERSISTS OVER THE SAME REGION AT 1200 UTC OF TODAY, THE 9TH JUNE, 2023.

AS PER INSAT 3D IMAGERY, THE WELL MARKED LOW PRESSURE AREA IS CENTERED WITHIN HALF A DEG OF 19.9N/91.5E. INTENSITY OF THE SYSTEM IS T1.0. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER NORTH BAY OF BENGAL BETWEEN LATITUDE 18.0N & 21.5N LONGITUDE 88.0E & 92.0E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

REMARKS:

THE MADDEN JULIAN OSCILLATION (MJO) INDEX IS CURRENTLY IN PHASE 3 WITH AMPLITUDE LESS THAN 1. IT WOULD MOVE ACROSS PHASE 3 AND 4 DURING NEXT 3 DAYS. THEREAFTER, IT WOULD MOVE ACROSS PHASES 5 AND 6 DURING SUBSEQUENT 3 DAYS. HENCE, MJO IS LIKELY TO SUPPORT THE ENHANCEMENT OF CONVECTIVE ACTIVITY AND CYCLOGENESIS OVER THE BAY OF BENGAL (BOB) DURING THE WEEK1 AND ARABIAN SEA (AS) DURING NEXT 3 DAYS. WESTERLY WINDS (3-5 MPS) ALONG WITH EQUATORIAL ROSSBY WAVES (ERW) ARE LIKELY TO PREVAIL OVER SOUTH AND CENTRAL ARABIAN SEA DURING NEXT 3 DAYS.

(A)ARABIAN SEA:

SEA SURFACE TEMPERATURE IS AROUND 30-32°C OVER CENTRAL & ADJOINING SOUTH ARABIAN SEA. THE CYCLONIC STORM "BIPARJOY" IS CURRENTLY IN A VERY FAVOURABLE ENVIROMENT WITH POSITIVE LOW LEVEL VORTICITY IS AROUND $200 \times 10^{-6} S^{-1}$ NEAR SYSTEM CENTRE, LOW LEVEL CONVERGENCE IS ABOUT $40 \times 10^{-5} S^{-1}$ TO THE NORTHWEST OF THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS ABOUT $30 \times 10^{-5} S^{-1}$ TO THE WEST OF

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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SYSTEM CENTRE. WIND SHEAR IS MODERATE OVER SYSTEM AREA (15-20 KNOTS) AND IS WEAK 10-15 KTS ALONG THE FORECAST TRACK .

LATEST GUIDANCE FROM VARIOUS MODELS INDICATE INTIAL NEAR NORTHWARDS MOVEMENT TOWARDS PAKISTAN-GUJARAT COASTS. MOST OF THE MODELS ARE INDICATING MOVEMENT TOWARDS PAKISTAN COAST AND NCUM IS INDICATING MOVEMENT TOWARDS GUJARAT COAST. THE LANDFALL POINT IS VARYING BETWEEN LONGITUDE 66°E-69°E ON 15TH.

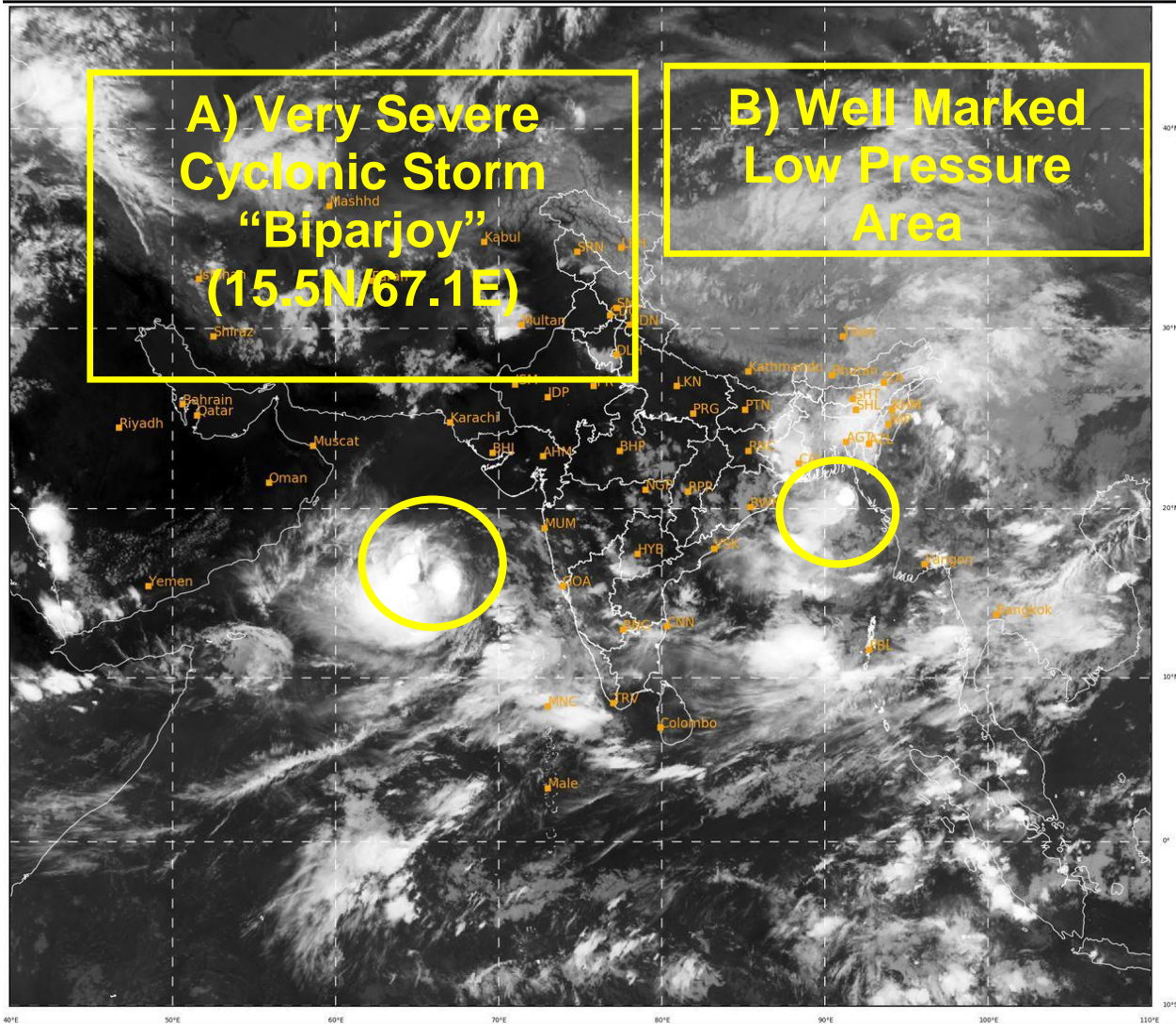
CONSIDERING ALL THE ABOVE, VERY SEVERE CYCLONIC STORM "BIPARJOY" WOULD INTENSIFY FURTHER GRADUALLY DURING NEXT 36 HOURS AND MOVE NEARLY NORTH-NORTHEASTWARDS DURING NEXT 24-HOURS AND NORTH-NORTHWESTWARDS DURING SUBSEQUENT 3 DAYS.

(B) BAY OF BENGAL:

SEA SURFACE TEMPERATURE IS AROUND 30-32°C OVER EASTCENTRAL AND ADJOINING NORTHEAST BAY OF BENGAL AND IS SLIGHTLY LESS OFF MYANMAR COAST. LOW LEVEL VORTICITY IS AROUND $50 \times 10^{-6} \text{ S}^{-1}$ OVER EASTCENTRAL AND ADJOINING NORTHEAST BAY OF BENGAL. LOW LEVEL CONVERGENCE IS ABOUT $10 \times 10^{-5} \text{ S}^{-1}$ AROUND SYSTEM AREA AND IS NORTHEAST ORIENTED. UPPER LEVEL DIVERGENCE IS ABOUT $10 \times 10^{-5} \text{ S}^{-1}$ TO THE SOUTHWEST OF SYSTEM CENTRE AND IS ALSO NORTHEAST ORIENTED. WIND SHEAR IS HIGH OVER SYSTEM AREA (25-30 KNOTS).

ECMWF ENSEMBLE IS INDICATING LIKELY PROBABILITY OF FORMATION OF DEPRESSION OVER NORTHEAST BAY OF BENGAL WITH MOVEMENT TOWARDS MYANMAR COAST.

**R. K. JENAMANI
SCIENTIST-G
RSMC NEW DELHI**



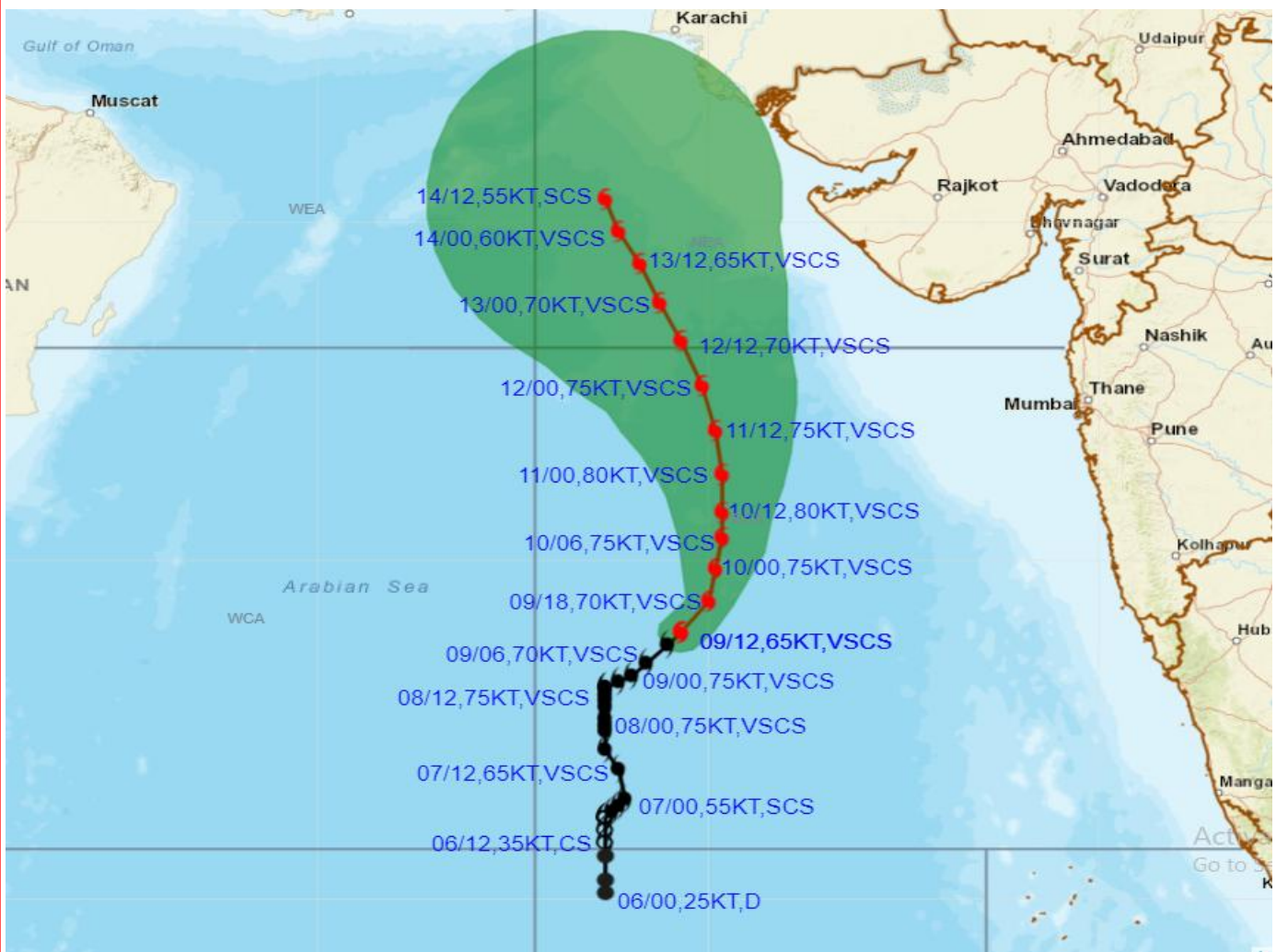
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IMD, DELHI



OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM "BIPARJOY" OVER EASTCENTRAL ARABIAN SEA BASED ON 1200 UTC (1730 IST) OF 09TH JUNE 2023.



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)

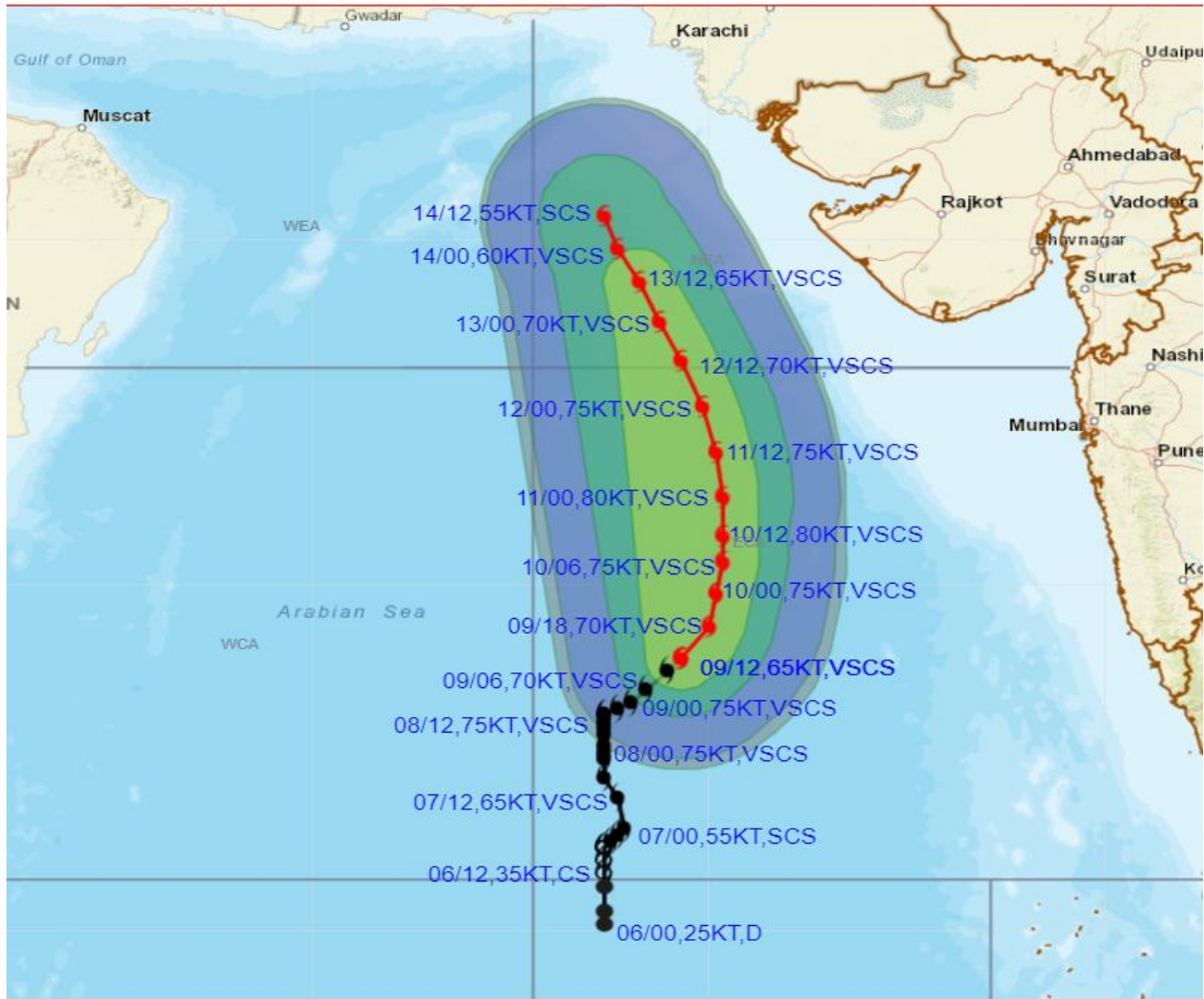
- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- ▲ CONE OF UNCERTAINTY

Forecast	DISTANCE(KM) AND DIRECTION FROM STATIONS				
	PORBANDAR	BOMBAY / COLABA	GOA/PANJIM	KARACHI AIRPORT	MASIRAH
10.06.23/1200	510, SSW	560, WSW	690, WNW	830, S	990, ESE
11.06.23/1200	390, SSW	560, W	760, WNW	690, S	930, ESE
12.06.23/1200	320, WSW	620, WNW	880, NW	530, S	850, E
13.06.23/1200	340, W	720, WNW	1010, NW	400, S	790, E
14.06.23/1200	380, WNW	800, WNW	1110, NW	310, SSW	750, ENE

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 QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM "BIPARJOY" OVER EASTCENTRAL ARABIAN SEA BASED ON 1200 UTC (1730 IST) OF 09TH JUNE 2023.



DATE/TIME IN UTC
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 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
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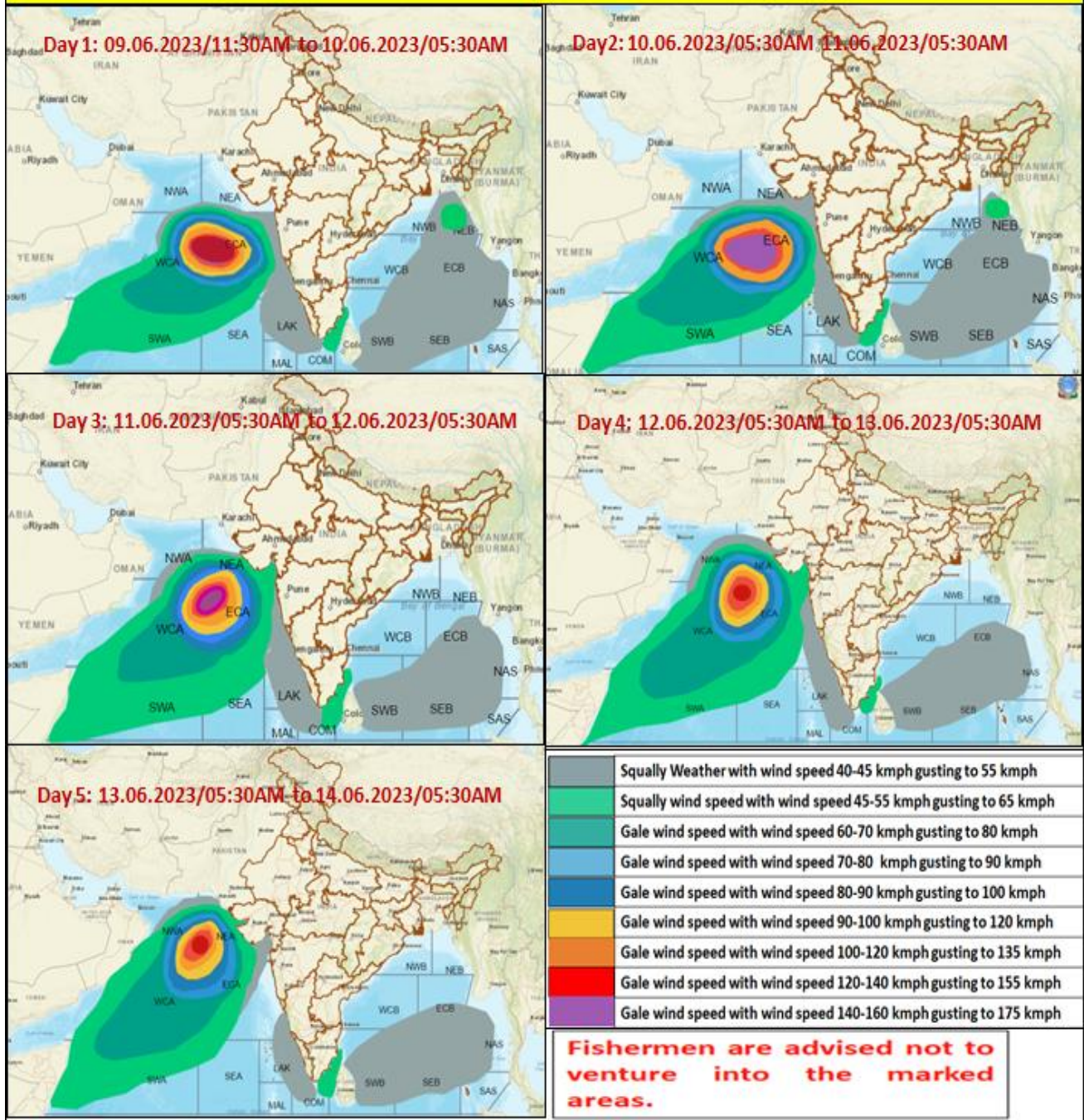
● LESS THAN 34 KT
 ○ 34-47 KT
 ● ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ▲ CONE OF UNCERTAINTY
 AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥118 KMPH)

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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Fishermen warning graphics



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