



**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. 22 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0700 UTC OF 09.06.2023 BASED ON 0300 UTC OF 09.06.2023**

**SUB: (A) VERY SEVERE CYCLONIC STORM “BIPARJOY” OVER EASTCENTRAL ARABIAN SEA AND (B) LOW PRESSURE AREA OVER NORTHEAST BAY OF BENGAL OFF MYANMAR COAST**

**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 SLOWLY NORTH-NORTHEASTWARDS WITH A SPEED OF 6 KMPH DURING PAST 6-HOURS AND LAY CENTERED AT 0300 UTC OF TODAY, THE 09TH JUNE, 2023 OVER THE SAME REGION NEAR LATITUDE 14.8°N AND LONGITUDE 66.4°E, ABOUT 800 KM WEST OF GOA (43192), 820 KM WEST-SOUTHWEST OF MUMBAI (43057), 830 KM SOUTH-SOUTHWEST OF PORBANDAR (42830) AND 1120 KM SOUTH OF KARACHI (41780).

IT WOULD INTENSIFY FURTHER GRADUALLY DURING NEXT 36 HOURS AND MOVE NEARLY NORTH-NORTHEASTWARDS DURING NEXT 48 HOURS AND 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
09.06.23/0300	14.8/66.4	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
09.06.23/0600	14.9/66.5	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
09.06.23/1200	15.2/66.7	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
09.06.23/1800	15.6/66.8	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
10.06.23/0000	16.6/66.9	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
10.06.23/1200	16.8/67.0	145-155 GUSTING TO 170	VERY SEVERE CYCLONIC STORM
11.06.23/0000	17.7/67.0	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
11.06.23/1200	18.5/66.9	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
12.06.23/0000	19.3/66.7	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
12.06.23/1200	20.1/66.4	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
13.06.23/0000	20.8/66.0	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
13.06.23/1200	21.5/65.6	115-125 GUSTING TO 140	VERY SEVERE CYCLONIC STORM
14.06.23/0000	22.2/65.1	110-120 GUSTING TO 135	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 61.0E & 67.8E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 75 KNOTS GUSTING TO 85 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 978 HPA. SEA CONDITION IS LIKELY TO BE PHENOMENAL OVER EASTCENTRAL AND ADJOINING WESTCENTRAL ARABIAN SEA.

#### **B) LOW PRESSURE AREA OVER NORTHEAST BAY OF BENGAL OFF MYANMAR COAST**

UNDER THE INFLUENCE OF A CYCLONIC CIRCULATION OVER NORTHEAST AND ADJOINING EASTCENTRAL BAY OF BENGAL, A LOW PRESSURE FORMED OVER NORTHEAST BAY OF BENGAL OFF MYANMAR COAST AT 0300 UTC OF 9<sup>TH</sup> JUNE, 2023. IT IS LIKELY TO BECOME A WELL MARKED LOW PRESSURE AREA DURING NEXT 24 HOURS.

#### **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.

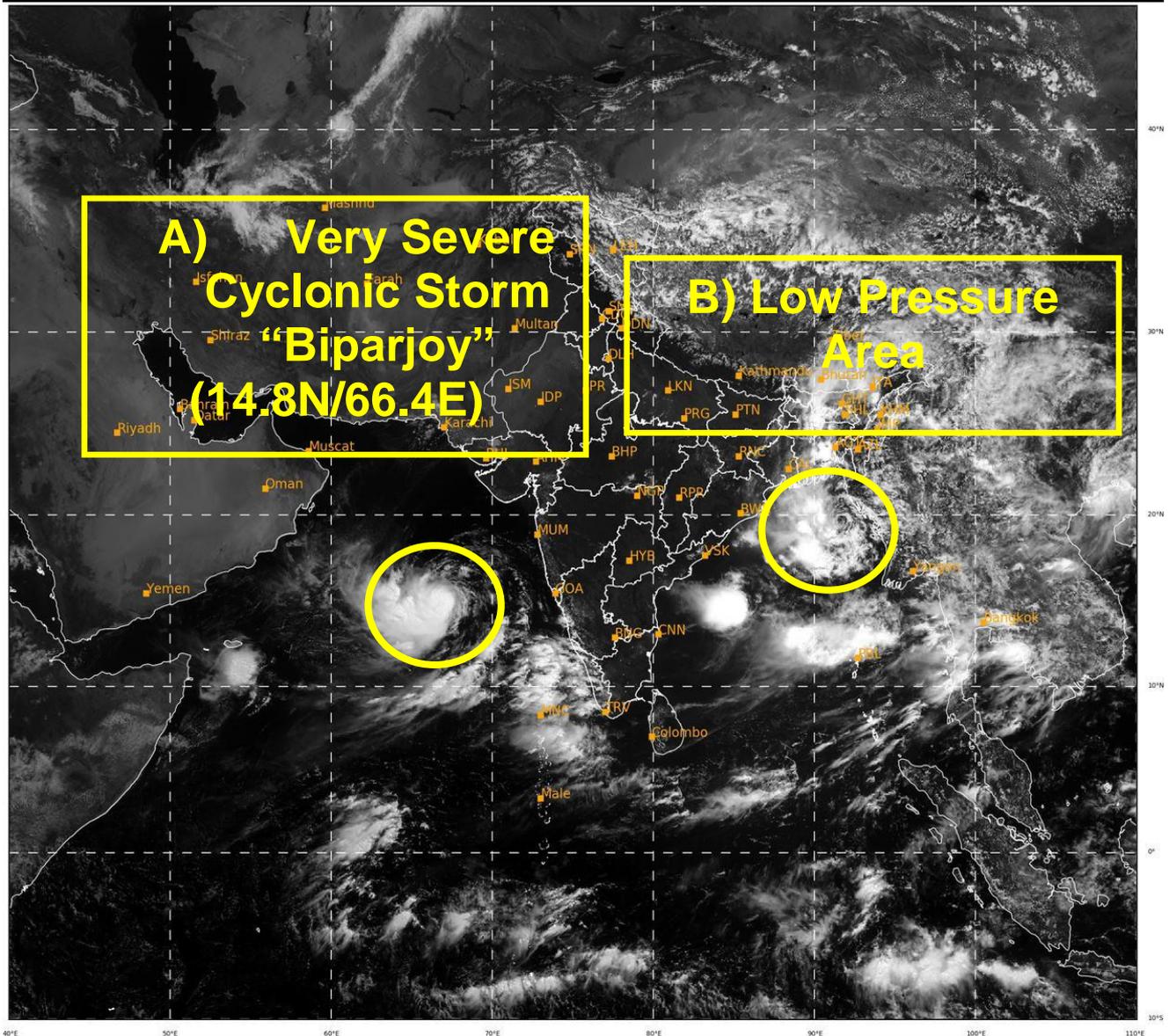
SEA SURFACE TEMPERATURE IS AROUND 30-32°C OVER CENTRAL & ADJOINING SOUTH ARABIAN SEA. THE CYCLONIC STORM "BIPARJOY" IS CURRENTLY IN A VERY FAVOURABLE ENVIROMENT WITH POSITIVE LOW LEVEL VORTICITY HAS DECREASED AND IS AROUND  $150 \times 10^{-6} S^{-1}$  NEAR SYSTEM CENTRE, LOW LEVEL CONVERGENCE IS ABOUT  $30 \times 10^{-5} S^{-1}$  TO THE SOUTHWEST OF THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS ABOUT

$30 \times 10^{-5} \text{S}^{-1}$  TO THE SOUTHWEST OF 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  $66^{\circ}\text{E}$ - $69^{\circ}\text{E}$  ON  $15^{\text{TH}}$ .

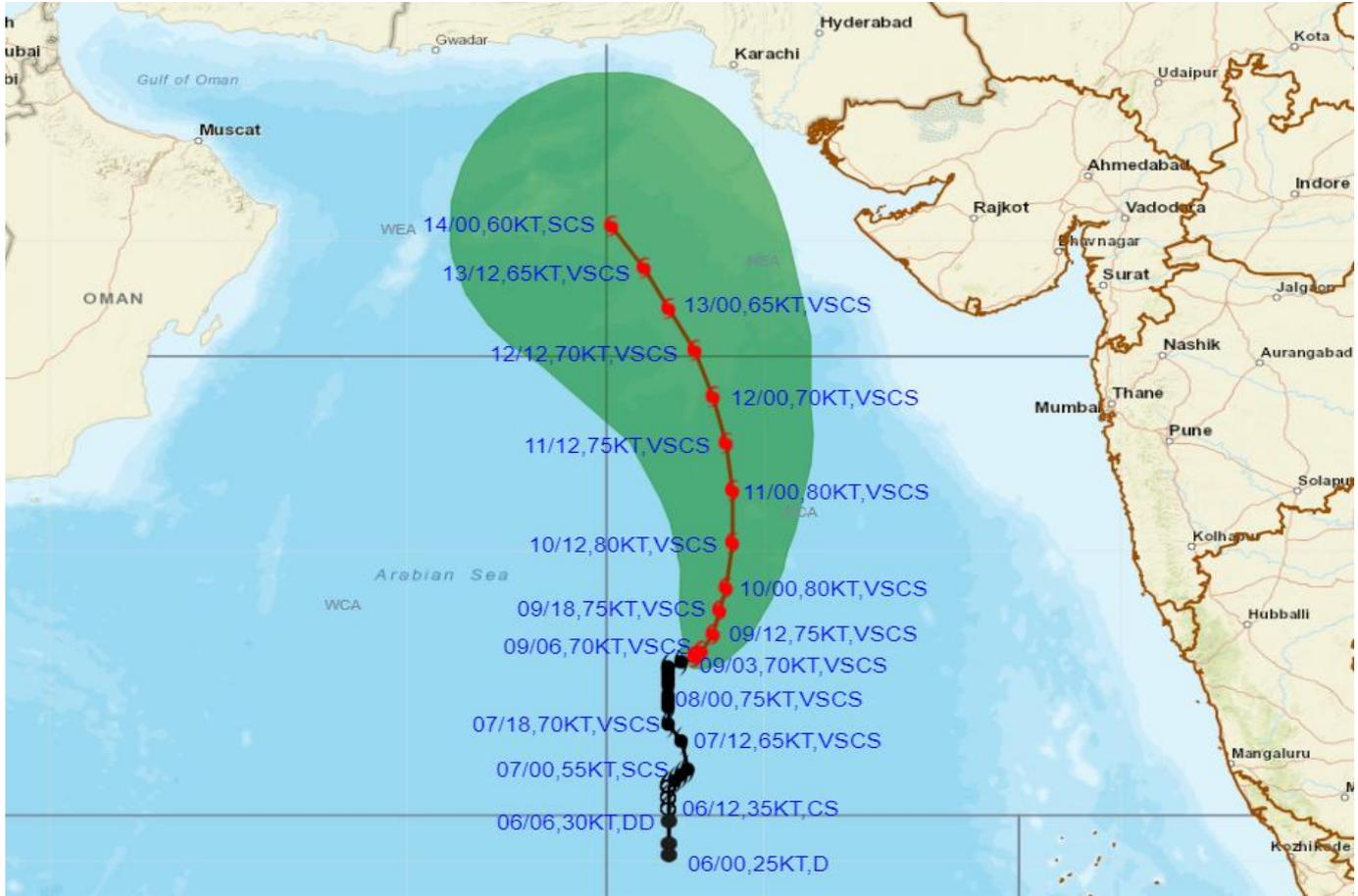
CONSIDERING ALL THE ABOVE, VERY SEVERE CYCLONIC STORM "BIPARJOY" WOULD INTENSIFY FURTHER GRADUALLY DURING NEXT 36 HOURS AND MOVE NEARLY NORTH-NORTHEASTWARDS DURING NEXT 48 HOURS AND NORTH-NORTHWESTWARDS DURING SUBSEQUENT 3 DAYS.

**M. SHARMA  
SCIENTIST-D  
RSMC NEW DELHI**





**OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM "BIPARJOY" OVER EASTCENTRAL ARABIAN SEA BASED ON 0300 UTC (0830 IST) OF 09<sup>TH</sup> 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 ( $\geq 120$  KT)

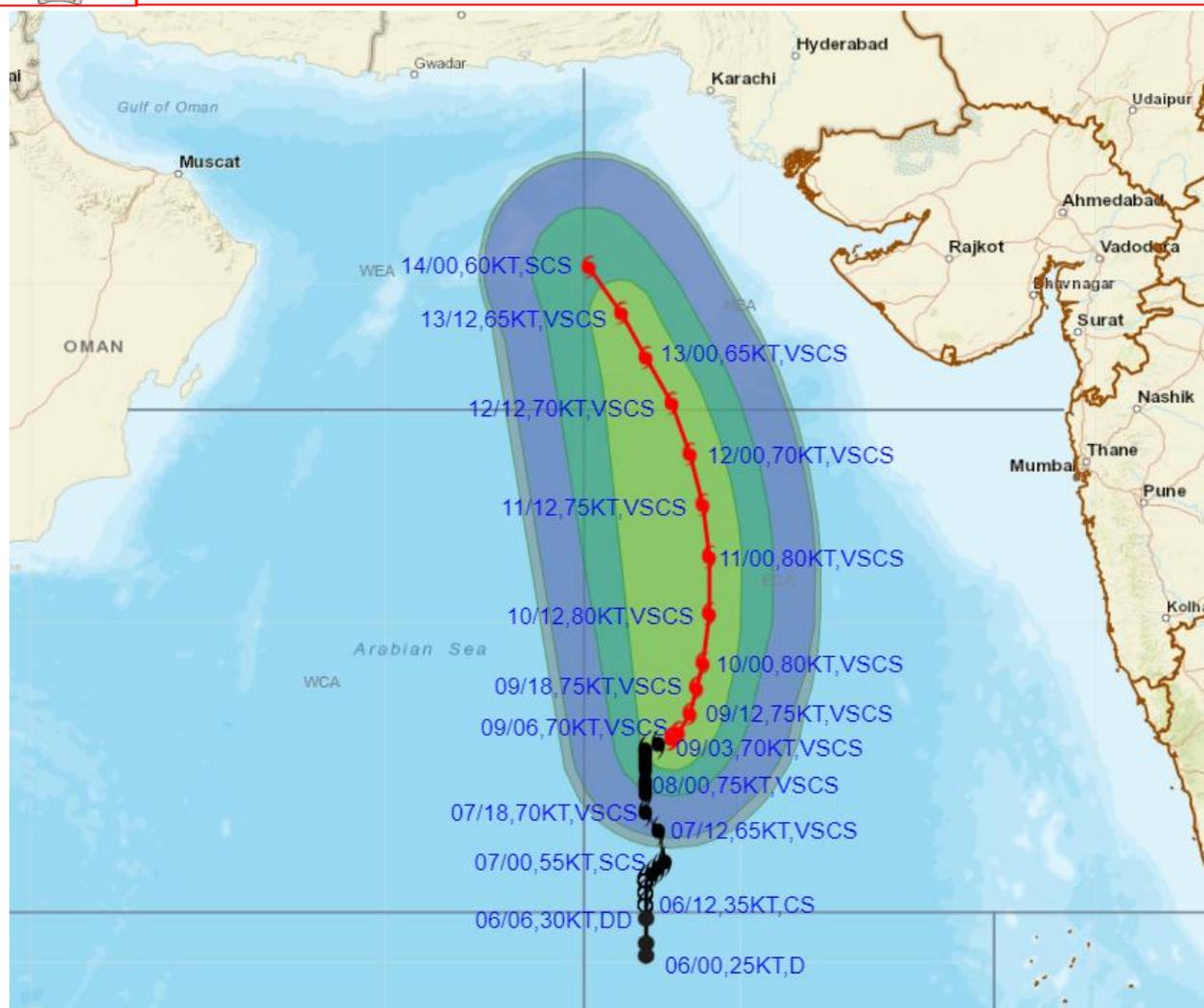
- LESS THAN 34 KT
- 34-47 KT
- $\geq 48$  KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

Forecast	DISTANCE(KM) AND DIRECTION FROM STATIONS					
Date and Time	Lead Period	PORBANDAR	BOMBAY / COLABA	GOA/PANJIM	KARACHI AIRPOR	MASIRAH
10.06.23/0000	21	690, SSW	700, WSW	750, W	990, S	990, ESE
11.06.23/0000	45	520, SSW	630, WSW	770, WNW	800, S	910, ESE
12.06.23/0000	69	400, SW	650, W	870, WNW	620, S	820, E
13.06.23/0000	93	400, WSW	750, WNW	1020, NW	470, SSW	730, E
14.06.23/0000	117	470, W	880, WNW	1180, NW	360, SW	660, 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 0300 UTC (0830 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 ( $\geq 120$  KT)

● LESS THAN 34 KT

○ 34-47 KT

●  $\geq 48$  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)

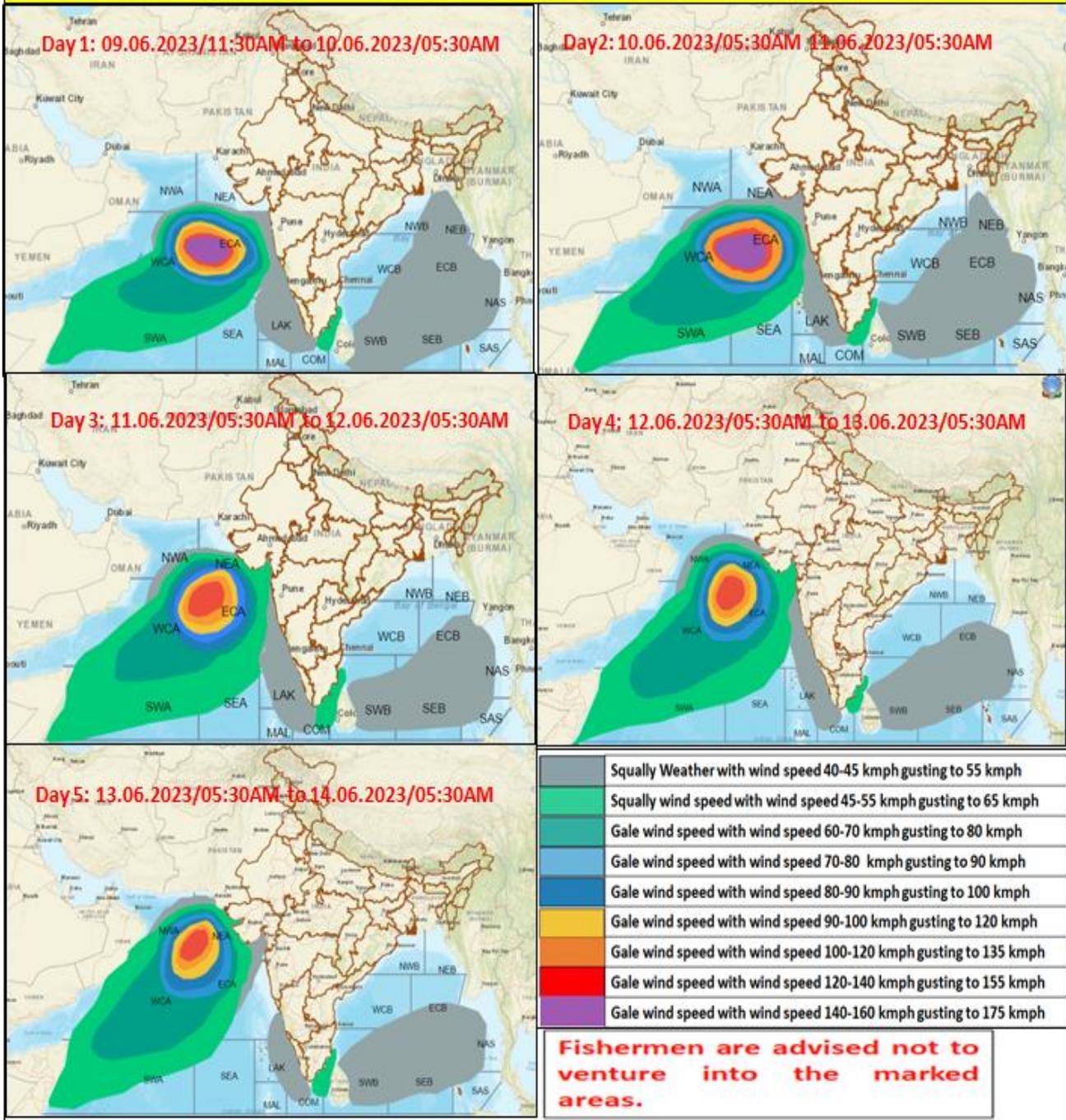
■  $\geq 64$  KT ( $\geq 118$  KMPH)

**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
$\geq 64$ ( $\geq 118$ )	Phenomenal	Total suspension of fishing operations

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## Fishermen warning graphics



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