



**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. 21 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0400 UTC OF 09.06.2023 BASED ON 0000 UTC OF 09.06.2023

SUB: 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 4 KMPH DURING PAST 6 HOURS AND LAY CENTERED AT 0000 UTC OF 09TH JUNE, 2023 OVER THE SAME REGION NEAR LATITUDE 14.7°N AND LONGITUDE 66.2°E, ABOUT 820 KM WEST OF GOA (43192), 840 KM WEST-SOUTHWEST OF MUMBAI (43057), 850 KM SOUTH-SOUTHWEST OF PORBANDAR (42830) AND 1140 KM SOUTH OF KARACHI (41780).

IT WOULD INTENSIFY FURTHER GRADUALLY DURING NEXT 48 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
09.06.23/0000	14.7/66.2	135-145 gusting to 160	Very Severe Cyclonic Storm
09.06.23/0600	14.9/66.3	135-145 gusting to 160	Very Severe Cyclonic Storm
09.06.23/1200	15.3/66.5	140-150 gusting to 165	Very Severe Cyclonic Storm
09.06.23/1800	15.7/66.6	145-155 gusting to 170	Very Severe Cyclonic Storm
10.06.23/0000	16.1/66.7	145-155 gusting to 170	Very Severe Cyclonic Storm
10.06.23/1200	16.9/66.9	140-150 gusting to 165	Very Severe Cyclonic Storm
11.06.23/0000	17.7/67.0	135-145 gusting to 160	Very Severe Cyclonic Storm

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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11.06.23/1200	18.5/66.9	130-140 gusting to 155	Very Severe Cyclonic Storm
12.06.23/0000	19.3/66.7	125-135 gusting to 150	Very Severe Cyclonic Storm
12.06.23/1200	20.1/66.4	120-130 gusting to 145	Very Severe Cyclonic Storm
13.06.23/0000	20.8/66.0	115-125 gusting to 140	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	115-125 gusting to 140	Very Severe Cyclonic Storm

AS PER INSAT 3D IMAGERY INTENSITY OF THE SYSTEM IS T 4.0. VISIBLE IMAGERY SHOWS DENSE CONVECTIVE CLOUD MASS TO THE WEST OF THE SYSTEM CENTER. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL AND ADJOINING SOUTH ARABIAN SEA BETWEEN LATITUDE 12.0N & 17.0N LONGITUDE 60.0E & 67.0E. 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.

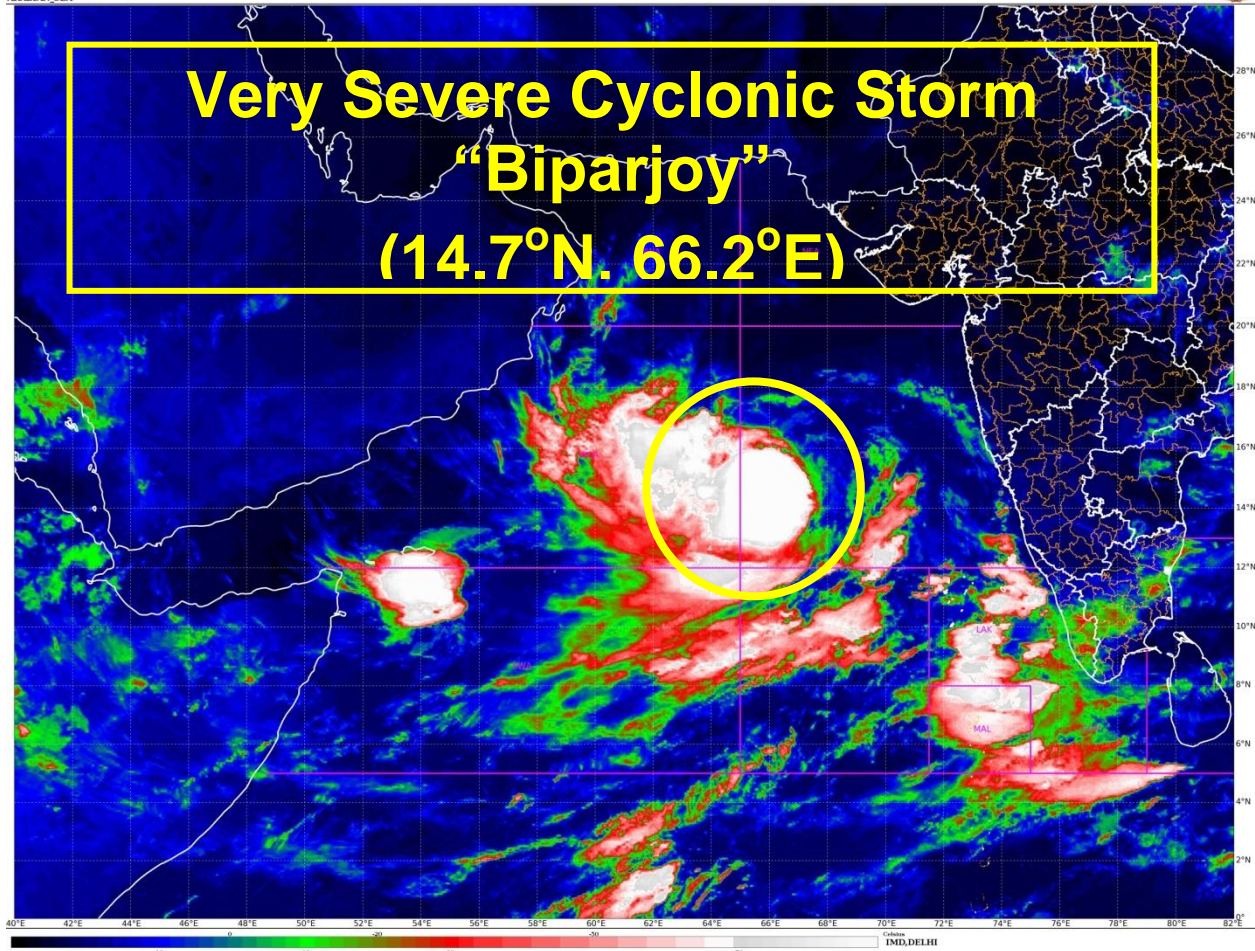
REMARKS:

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 ($250 \times 10^{-6} S^{-1}$) NEAR SYSTEM CENTRE, LOW LEVEL CONVERGENCE IS ABOUT $30 \times 10^{-5} S^{-1}$ OVER WEST OF THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS ABOUT $40 \times 10^{-5} S^{-1}$ TO THE SOUTHWEST OF SYSTEM CENTRE. WIND SHEAR IS MODERATE OVER SYSTEM AREA (15-20 KNOTS) AND IS WEAK 10-15 KTS ALONG THE FORECASTE TRACK . MJO IS IN PHASE 2 WITH AMPLITUDE CLOSE TO 1 AND EQUATORIAL ROSSBY WAVES ALONGWITH WESTERLY WINDS (5-7 MPS) ARE ALSO PREVAILING OVER CENTRAL ARABIAN SEA.

THERE IS STILL LARGE VARIATION AMONG VARIOUS MODELS WRT MOVEMENT OF THE SYSTEM AFTER 3 DAYS. LATEST NCEP GFS FORECAST IS INDICATING MOVEMENT TOWARDS IRAN, ECMWF TOWARDS PAKISTAN & ADJOINING NORTH GUJARAT COASTS, IMD GFS OVER PAKISTAN COASTS, NCUM TOWARDS GUJARAT COAST, IMD MME TOWARDS PAKISTAN COASTS AND IMDHWRP TOWARDS WESTCENTRAL ARABIAN SEA DURING NEXT 5 DAYS.

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

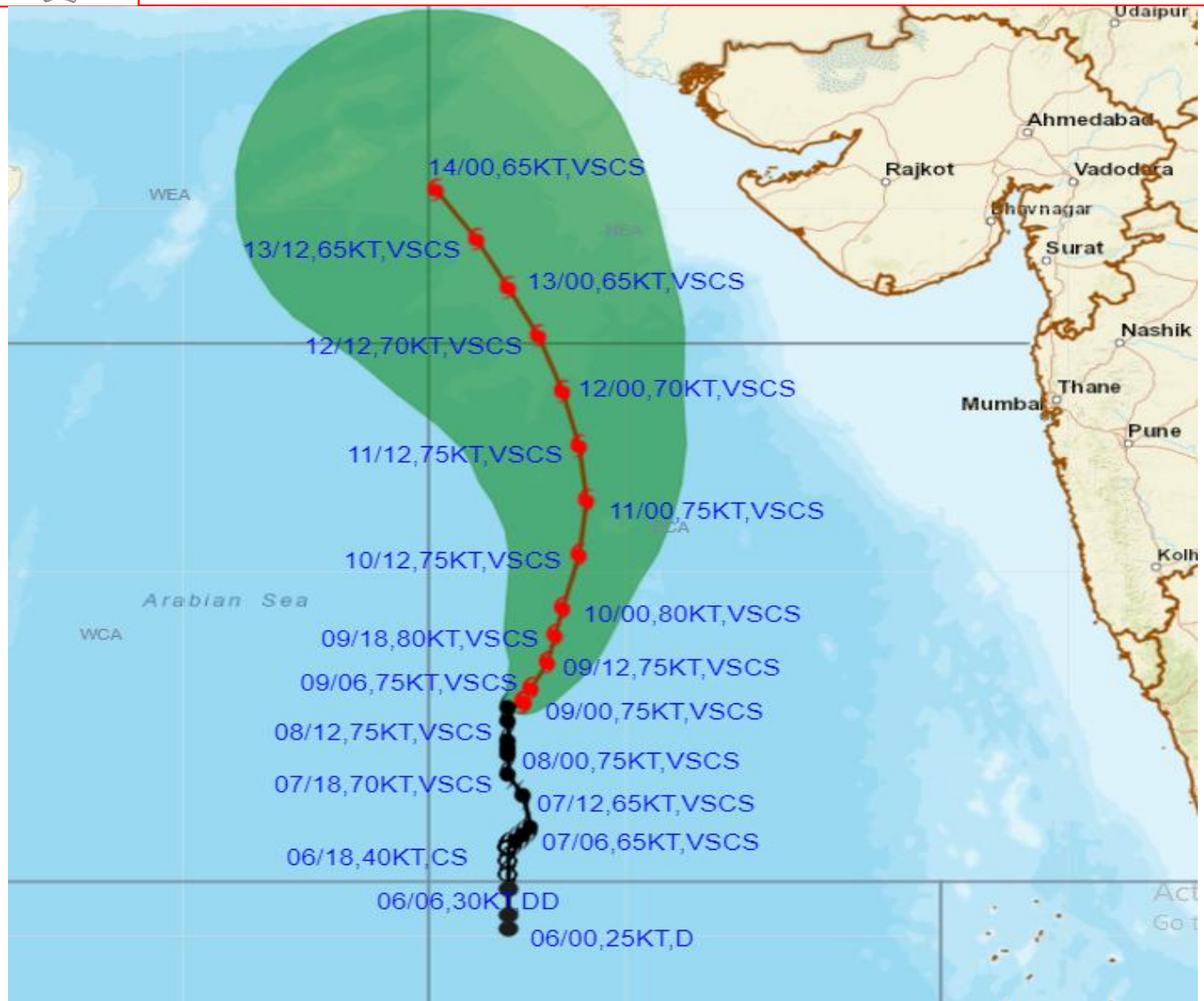
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RSMC NEW DELHI**



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OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF VERY SEVERE CYCLONIC STORM "BIPARJOY" OVER EASTCENTRAL ARABIAN SEA BASED ON 0000 UTC (0530 IST) OF 09TH JUNE 2023.



DATE/TIME IN UTC
IST=UTC + 0530

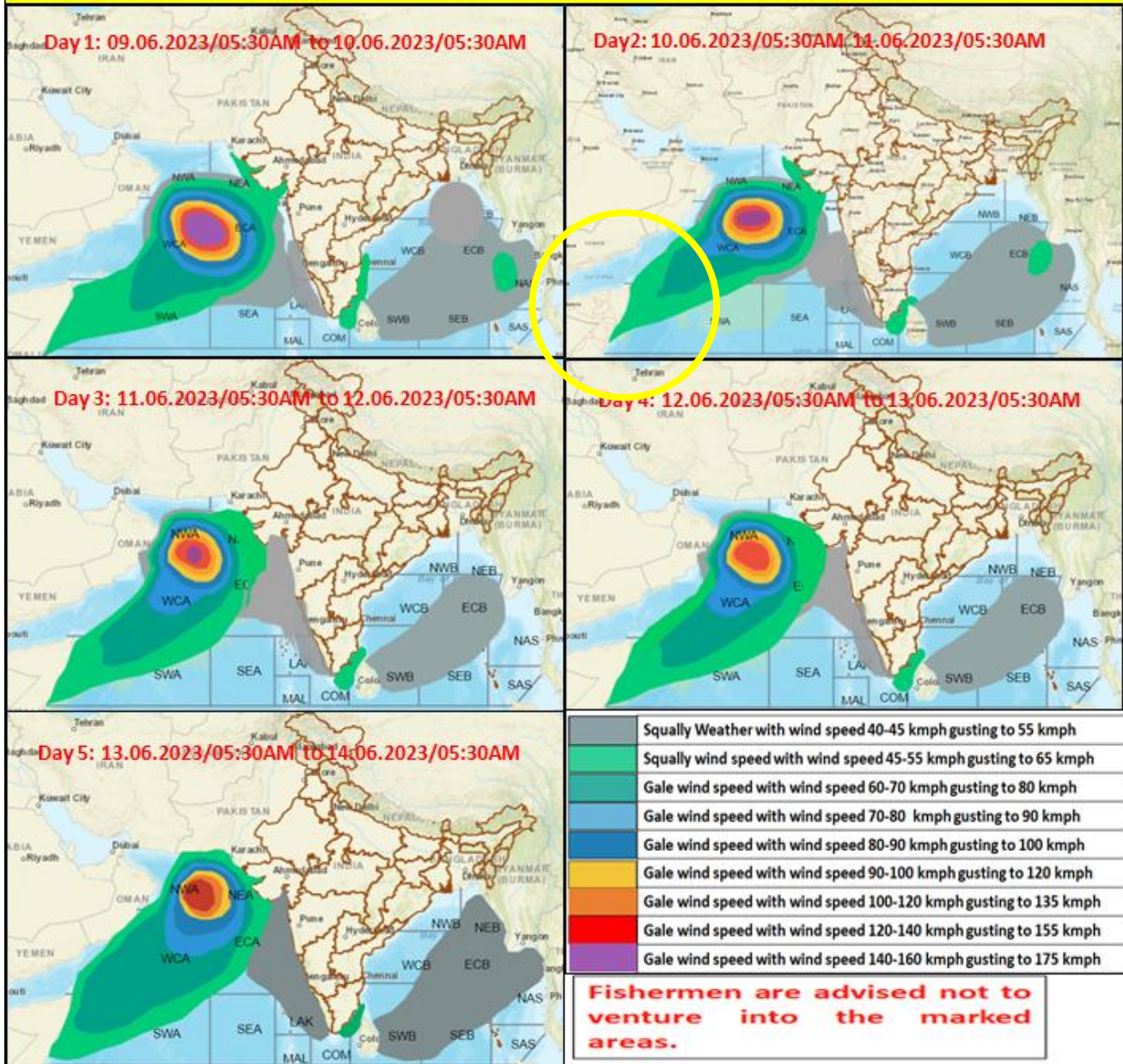
L: LOW PRESSURE AREA
WML: WELL MARKED LOW PRESSURE AREA
D: DEPRESSION (17-27 KT)
DD: DEEP DEPRESSION (28-33 KT)
CS: CYCLONIC STORM (34.47 KT)
SCS: SEVERE CYCLONIC STORM (48-63KT)
VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
ESCS: EXTREMELY SEVERE CYCLONIC STORM (90-119 KT)
SuCS: SUPER CYCLONIC STORM (\geq 120 KT)

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

STATIONS	DISTANCE(KM) AND DIRECTION FROM STATIONS		
	10.06.23/0000	11.06.23/0000	12.06.23/0000
PORBANDAR	690, SSW	520, SSW	400, SW
BOMBAY / COLABA	720, WSW	630, WSW	640, W
GOA/PANJIM	770, W	770, WNW	860, WNW
KARACHI AIRPORT	980, S	800, S	620, S
MASIRAH	960, ESE	910, ESE	820, E

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Fishermen warning graphics



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