



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

DEMS-RSMC SPECIAL TROPICAL CYCLONES NEW DELHI DATED 13.06.2023

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. 53 FOR NORTH INDIAN OCEAN (THE BAY OF BENGAL AND ARABIAN SEA) VALID FOR NEXT 120 HOURS ISSUED AT 0300 UTC OF 13.06.2023 BASED ON 0000 UTC OF 13.06.2023

SUB: VERY SEVERE CYCLONIC STORM “BIPARJOY” (PRONOUNCED AS “BIPORJOY”) OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA

THE VERY SEVERE CYCLONIC STORM “BIPARJOY” (PRONOUNCED AS “BIPORJOY”) OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA MOVED NORTH-NORTHWESTWARDS WITH A SPEED OF 10 KMPH DURING PAST 6-HOURS, AND LAY CENTERED AT 0000 UTC OF THE 13TH JUNE, 2023 OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA NEAR LATITUDE 20.6°N AND LONGITUDE 67.0°E, ABOUT 300 KM WEST-SOUTHWEST OF PORBANDAR(42830), 290 KM SOUTHWEST OF DEVBHUMI DWARKA(42731), 340 KM SOUTH-SOUTHWEST OF JAKHAU PORT, 350 KM SOUTH-SOUTHWEST OF NALIYA (42631) AND 480 KM SOUTH OF KARACHI (PAKISTAN,41780).

IT IS VERY LIKELY TO MOVE NEARLY NORTHWARDS TILL 14TH MORNING, THEN MOVE NORTH-NORTHEASTWARDS AND CROSS SAURASHTRA & KUTCH AND ADJOINING PAKISTAN COASTS BETWEEN MANDVI (GUJARAT,42729) AND KARACHI (PAKISTAN,41780) NEAR JAKHAU PORT (GUJARAT) AROUND 1200 UTC OF 15TH JUNE AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 125-135 KMPH GUSTING TO 150 KMPH.

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
13.06.23/0000	20.6/67.0	150-160 GUSTING TO 180	VERY SEVERE CYCLONIC STORM
13.06.23/0600	21.0/66.8	145-155 GUSTING TO 170	VERY SEVERE CYCLONIC STORM
13.06.23/1200	21.4/66.8	140-150 GUSTING TO 165	VERY SEVERE CYCLONIC STORM
13.06.23/1800	21.7/67.0	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
14.06.23/0000	22.1/67.3	135-145 GUSTING TO 160	VERY SEVERE CYCLONIC STORM
14.06.23/1200	22.5/67.6	130-140 GUSTING TO 155	VERY SEVERE CYCLONIC STORM
15.06.23/0000	22.9/68.0	125-135 GUSTING TO 150	VERY SEVERE CYCLONIC STORM
15.06.23/1200	23.4/68.5	120-130 GUSTING TO 145	VERY SEVERE CYCLONIC STORM
16.06.23/0000	23.9/69.1	80-90 GUSTING TO 100	CYCLONIC STORM
16.06.23/1200	24.4/70.0	50-60 GUSTING TO 70	DEEP DEPRESSION

AS PER INSAT 3D IMAGERY INTENSITY OF THE SYSTEM IS T4.5. ASSOCIATED BROKEN LOW AND MEDIUM CLOUDS WITH EMBEDDED INTENSE TO VERY INTENSE CONVECTION LAY OVER CENTRAL ARABIAN SEA BETWEEN LATITUDE 17.0°N & 23.0°N AND LONGITUDE 61.5°E & 70°E. MINIMUM CLOUD TOP TEMPERATURE IS MINUS 93°C.

ASSOCIATED MAXIMUM SUSTAINED WIND SPEED IS 85 KNOTS GUSTING TO 95 KNOTS. THE ESTIMATED CENTRAL PRESSURE IS 970 HPA. SEA CONDITION IS LIKELY TO BE PHENOMENAL OVER EASTCENTRAL AND ADJOINING NORTHEAST ARABIAN SEA.

REMARKS:

SEA SURFACE TEMPERATURE IS AROUND 30-31°C OVER CENTRAL & ADJOINING SOUTH ARABIAN SEA AND DECREASE TO 28-30°C OVER NORTH ARABIAN SEA. ENVIRONMENTAL PARAMETERS ASSOCIATED WITH VERY SEVERE CYCLONIC STORM "BIPARJOY" SHOW POSITIVE LOW LEVEL VORTICITY OF AROUND $300 \times 10^{-6} \text{S}^{-1}$ TO THE SOUTH-SOUTHWEST OF THE SYSTEM CENTRE, LOW LEVEL CONVERGENCE HAS INCREASED AND IS ABOUT $40 \times 10^{-5} \text{S}^{-1}$ TO THE SOUTHWEST OF THE SYSTEM CENTRE AND UPPER LEVEL DIVERGENCE IS ABOUT $30 \times 10^{-5} \text{S}^{-1}$ TO THE WEST OF SYSTEM CENTRE. WIND SHEAR IS HIGH (20-25 KNOTS) OVER SYSTEM AREA AND IS DECREASING TO 05-15 KNOTS ALONG THE FORECAST TRACK. CURRENTLY, THE SYSTEM IS TRACKING NORTH-NORTHWESTWARD ALONG THE WESTERN PERIPHERY OF A SUB-TROPICAL RIDGE LOCATED ALONG 21 DEG N IN ASSOCIATION WITH AN ANTICYCLONIC CIRCULATION LOCATED OVER CENTRAL INDIA, AND IS BEING STEERED BY ITS MIDDLE AND UPPER LEVELS SOUTH SOUTHEASTERLY WINDS. AS THE SYSTEM WILL APPROACH COAST, IT IS LIKELY TO EXPERIENCE LOWER OCEAN THERMAL ENERGY (40-50 KJ/CM²), LOWER SST, AND DECREASE IN MIDDLE LEVEL HUMIDITY DUE TO DRY COLD AIR INTRUSION.

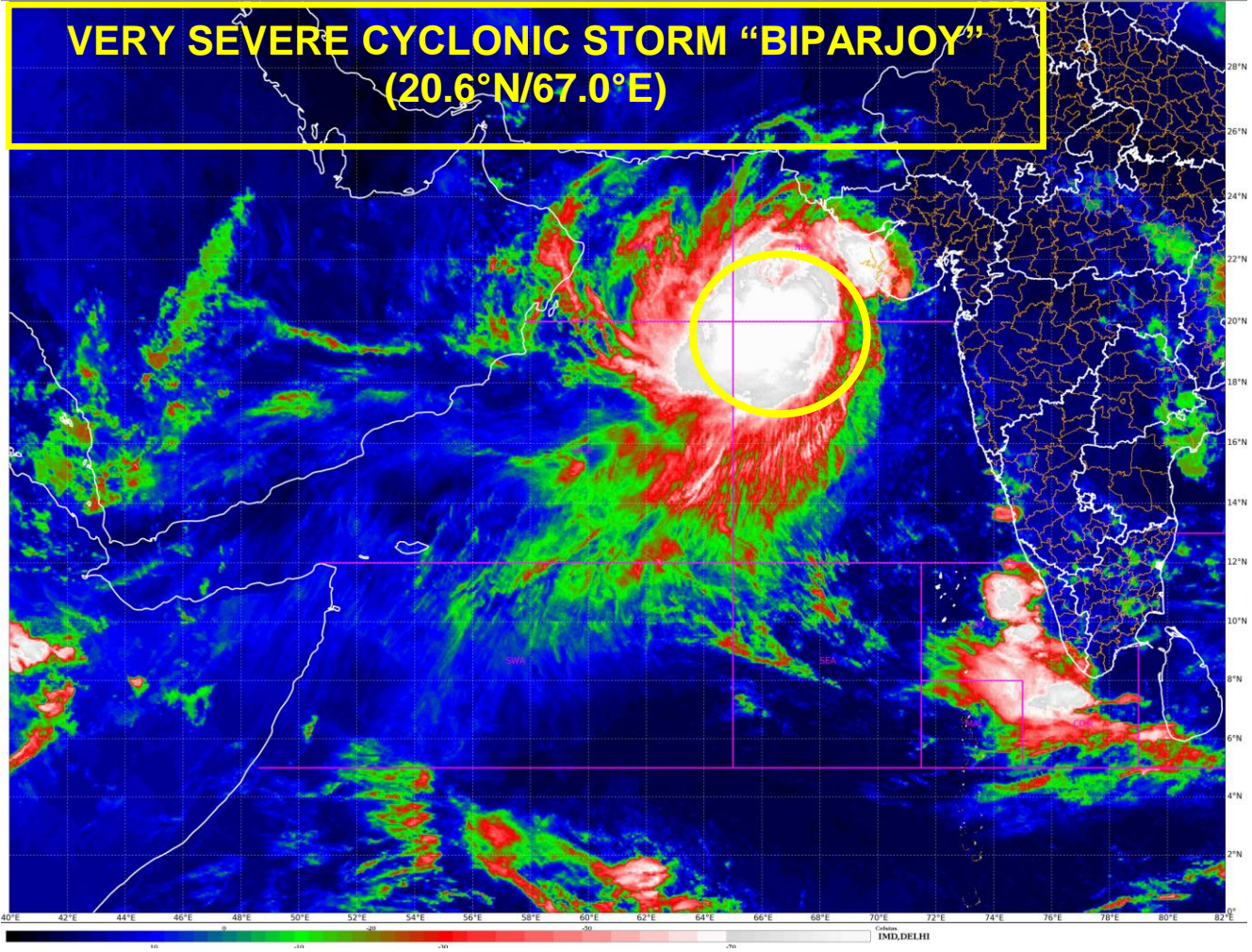
LATEST GUIDANCE FROM VARIOUS MODELS (NCUM-G, NCUM-R, ECMWF, IMD HWRF, IMD MMES) IS CONVERGING AND ALL OF THESE ARE INDICATING INITIAL NORTH-NORTHWESTWARDS MOVEMENT FOLLOWED BY GRADUAL NORTH-NORTHEASTWARDS MOVEMENT TOWARDS SAURASHTRA & KUTCH AND ADJOINING PAKISTAN COASTS. ONLY IMD GFS AND NCEP GFS ARE INDICATING MOVEMENT TOWARDS ADJOINING PAKISTAN COAST. THE LANDFALL TIME IS VARYING BETWEEN 0600 UTC TO 1800 UTC OF 15TH JUNE AND LANDFALL POINT IS VARYING BETWEEN LONGITUDE 67.7E AND 68.6E.

CONSIDERING ALL THE ABOVE, TC BIPARJOY IS VERY LIKELY TO MOVE NEARLY NORTHWARDS TILL 14TH MORNING, THEN MOVE NORTH-NORTHEASTWARDS AND CROSS SAURASHTRA & KUTCH AND ADJOINING PAKISTAN COASTS BETWEEN MANDVI (GUJARAT, 42729) AND KARACHI (PAKISTAN, 41780) NEAR JAKHAU PORT (GUJARAT) AROUND 1200 UTC OF 15TH JUNE AS A VERY SEVERE CYCLONIC STORM WITH MAXIMUM SUSTAINED WIND SPEED OF 125-135 KMPH GUSTING TO 150 KMPH.

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RSMC NEW DELHI**



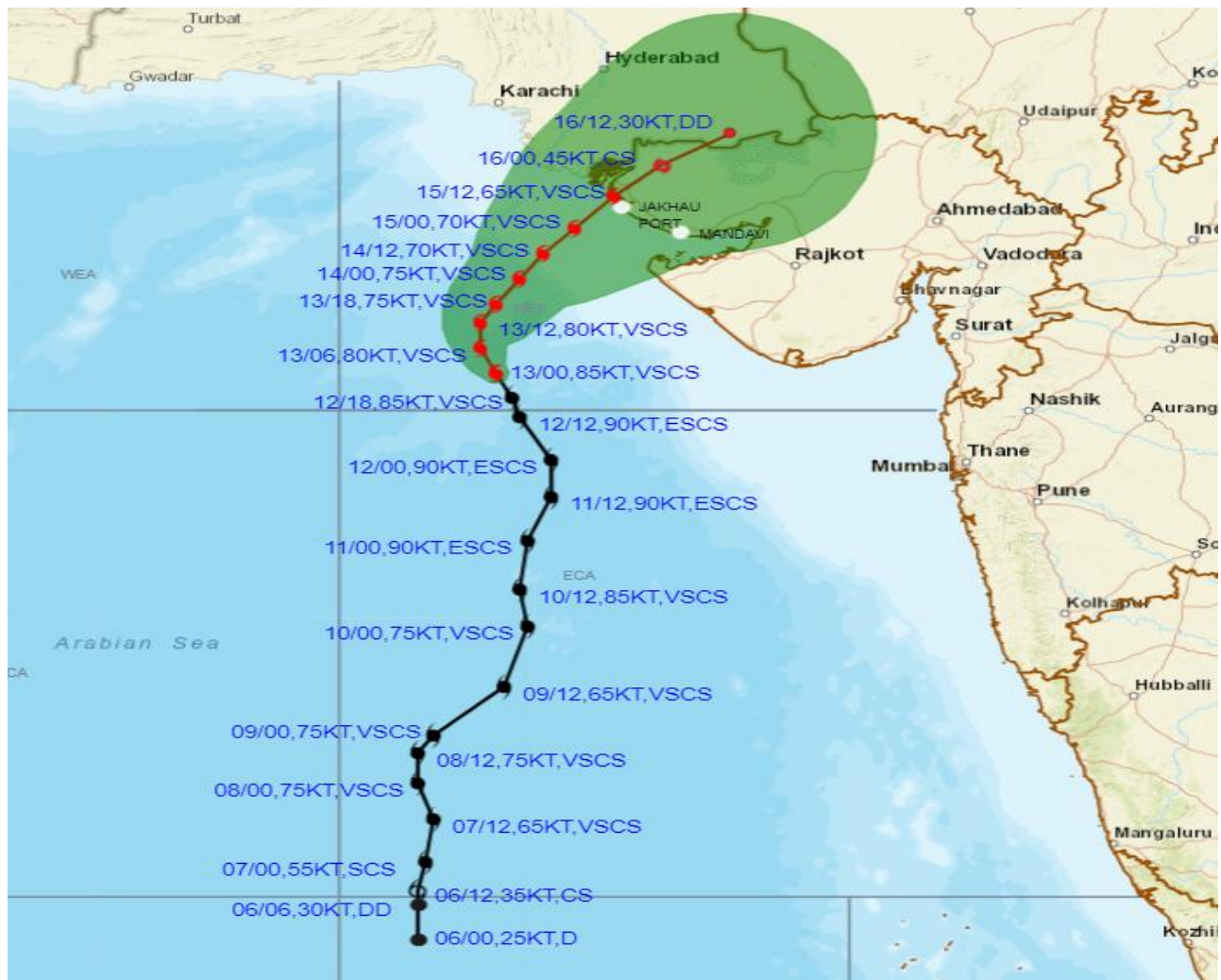
VERY SEVERE CYCLONIC STORM "BIPARJOY" (20.6°N/67.0°E)



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 UNCERTAINTY OF VERY SEVERE CYCLONIC STORM “BIPARJOY” OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA BASED ON 0000 UTC (0530 IST) OF 13TH 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)

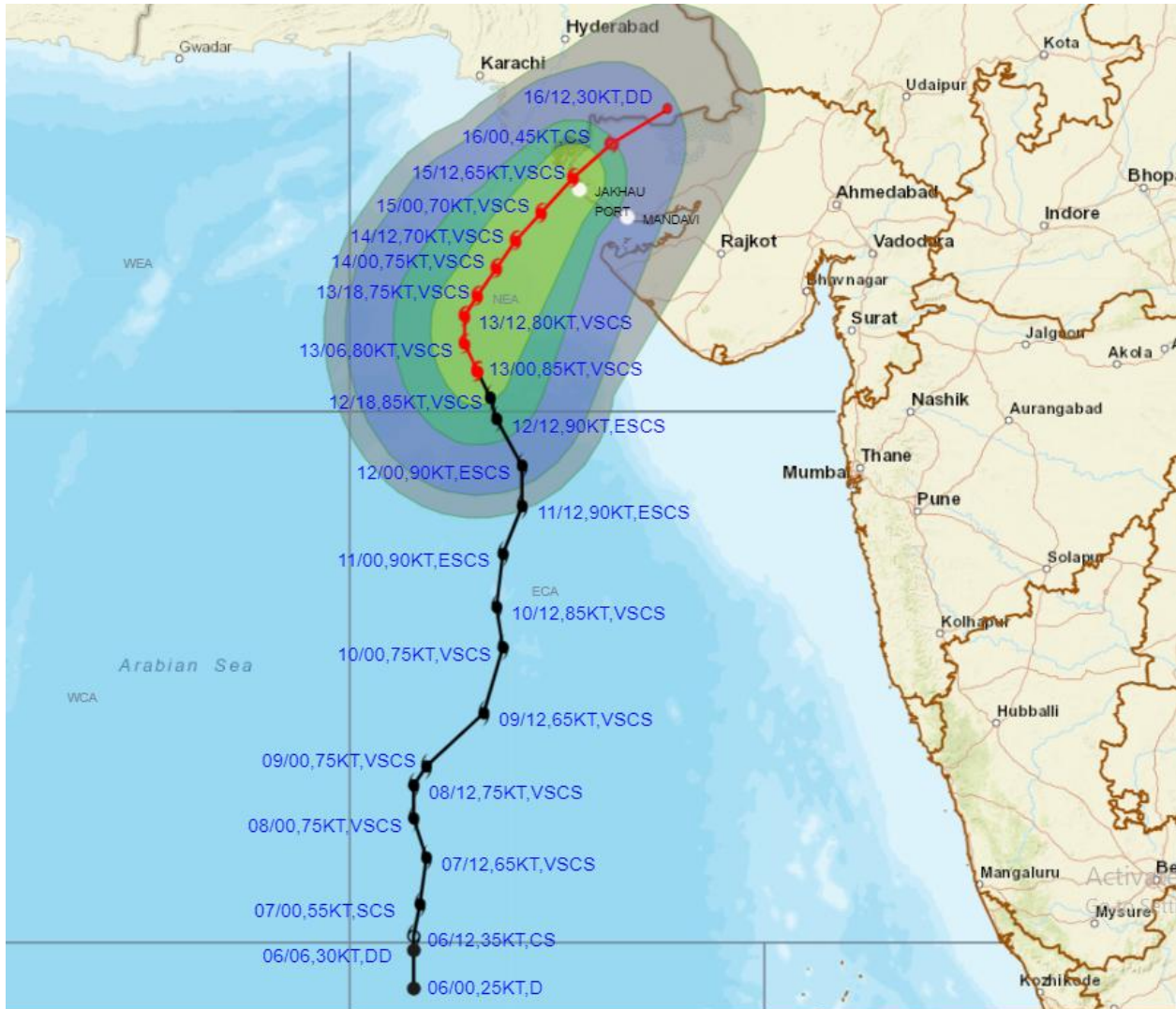
- LESS THAN 34 KT
- 34-47 KT
- ≥ 48 KT
- OBSERVED TRACK
- FORECAST TRACK
- CONE OF UNCERTAINTY

STATIONS	DISTANCE(KM) AND DIRECTION FROM STATIONS		
	14.06.23/0000	15.06.23/0000	16.06.23/0000
PORBANDAR	240, WNW	230, NW	260, NNW
DWARKA	180, W	130, WNW	170, N
JAKHAU PORT	180, SW	80, WSW	90, NE
NALIYA	200, SW	90, WSW	80, NNE
KARACHI AIRPORT	310, S	230, SSE	230, ESE

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OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF VERY SEVERE CYCLONIC STORM "BIPARJOY" OVER NORTHEAST AND ADJOINING EASTCENTRAL ARABIAN SEA BASED ON 0000 UTC (0530 IST) OF 13TH JUNE 2023.



DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
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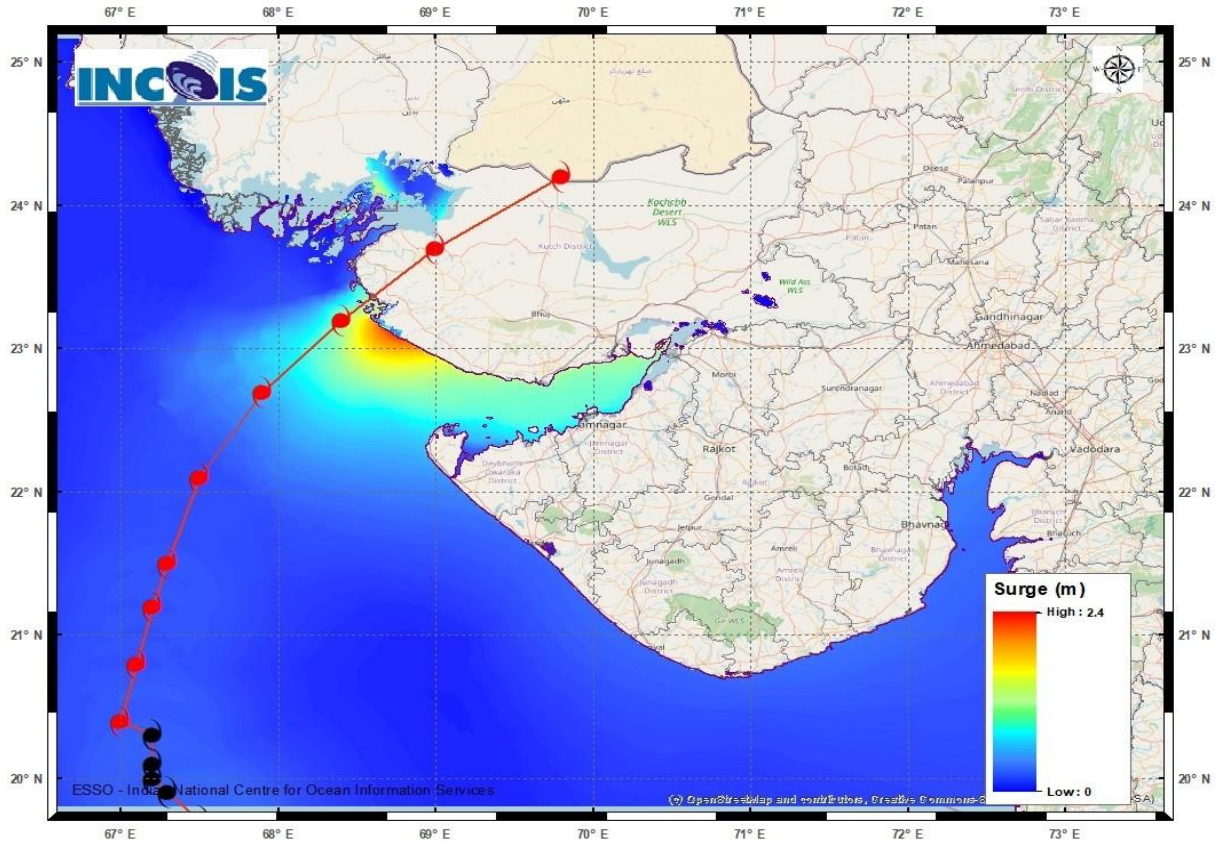
● LESS THAN 34 KT
 ○ 34.47 KT
 ● ≥ 48 KT
 — OBSERVED TRACK
 — FORECAST TRACK
 ● CONE OF UNCERTAINTY
 AREA OF MAXIMUM SUSTAINED WIND SPEED:
 ■ 28-33 KT (52-61 KMPH)
 ■ 34-49 KT (62-91 KMPH)
 ■ 50-63 KT (92-117 KMPH)
 ■ ≥ 64 KT (≥118 KMPH)

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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Storm Surge Warning Map based on Forecast Track

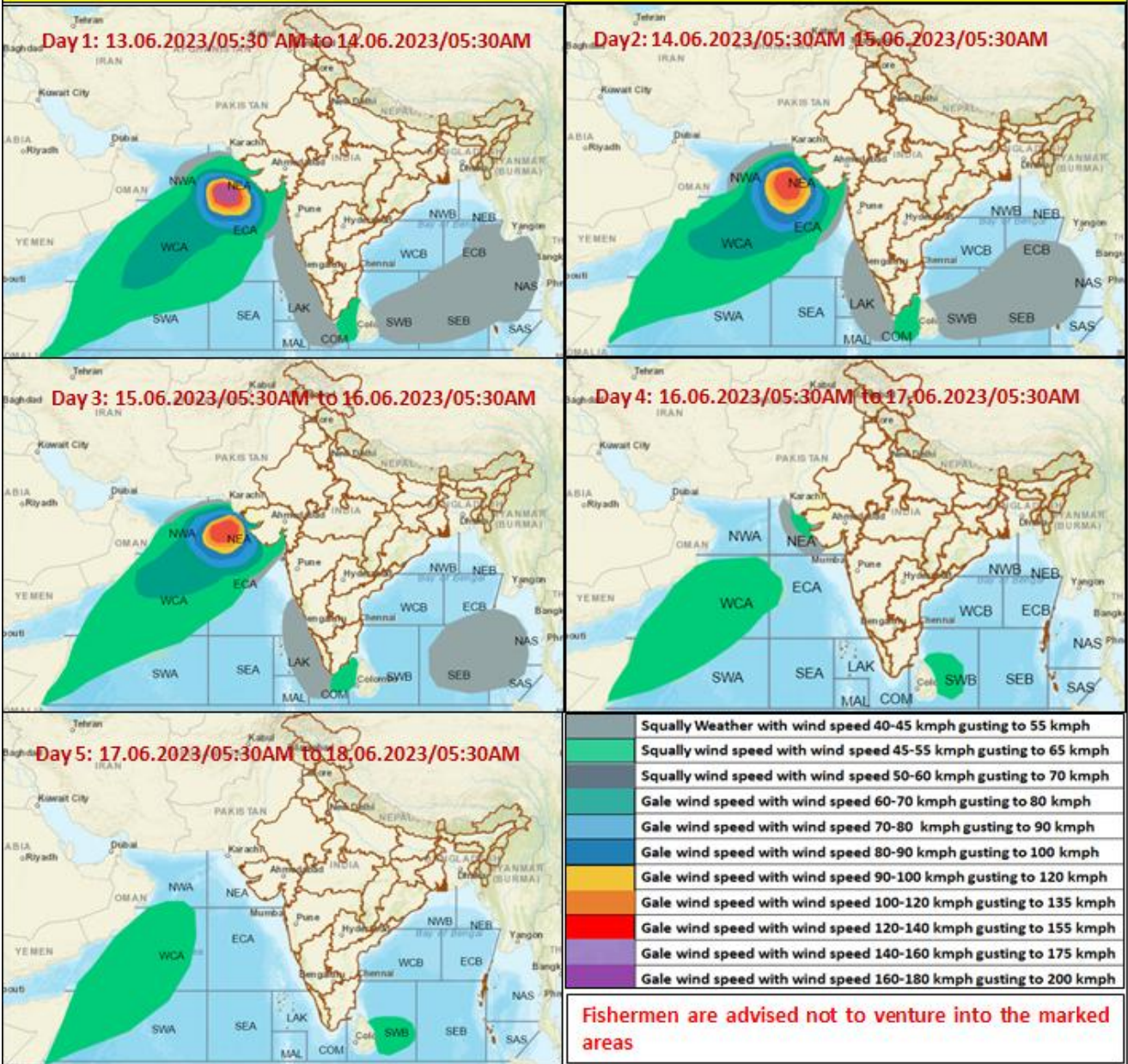


Astronomical Tide on 15th June 2023

Station	Time (IST)	Height (m)
Porbandar	09:37	2.61
Navlakhi	13:38	7.54
OKHA	11:36	3.74
DEENDAYAL PORT (KANDLA)	13:02	6.79

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Fishermen warning graphics



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