



India Meteorological Department
(Ministry of Earth Sciences)

BULLETIN NO. 83 (ARB/01/2023)

TIME OF ISSUE: 1615 HOURS IST

DATED: 16.06.2023

FROM: INDIA METEOROLOGICAL DEPARTMENT (FAX NO. 24643965/24699216/24623220)

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Sub: Cyclonic Storm “Biparjoy” (pronounced as “Biporjoy”) over Saurashtra & Kutch

The Cyclonic Storm “Biparjoy” (pronounced as “Biporjoy”) over Saurashtra & Kutch moved nearly northeastwards with a speed of 13 kmph during past 6-hours and lay centered at 1430 hours IST of today, the 16th June, 2023 over the same region near latitude 23.9°N and longitude 70.0°E, about 20 km west of Dholavira and 80 km north-northeast of Bhuj.

It is very likely to move nearly northeastwards and weaken further into a deep depression over Saurashtra & Kutch around night of today, the 16th June.

Forecast track and intensity are given below:

Date/Time(IST)	Position (Lat. °N/ long. °E)	Maximum sustained surface wind speed (Kmph)	Category of cyclonic disturbance
16.06.23/1430	23.9/70.0	70-80 Gusting To 90	Cyclonic Storm
16.06.23/1730	24.2/70.3	60-70 Gusting To 80	Cyclonic Storm
16.06.23/2330	24.6/71.0	50-60 Gusting To 70	Deep Depression
17.06.23/0530	25.1/71.8	40-50 Gusting To 60	Depression

Warnings:

(i) Heavy Rainfall warning:

- Light to moderate rainfall at most places with heavy to very heavy rainfall at a few places and extremely heavy rainfall at isolated places is very likely over Saurashtra & Kutch, isolated heavy to extremely heavy rainfall is likely over north Gujarat region and south Rajasthan on 16th and over south Rajasthan & adjoining north Gujarat region on 17th June.

(ii) Wind warning:

Northeast Arabian Sea: Squally wind speed reaching 50-60 kmph gusting to 70 kmph is prevailing and likely to become 40-50 kmph gusting to 60 kmph by 16th June afternoon.

Adjoining areas of Eastcentral Arabian Sea: Squally wind speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail on 16th June.

Wind warning along & off Saurashtra & Kutch coasts and Gulf of Kutch:

- Gale wind speed reaching 70-80 kmph gusting to 90 kmph is likely to prevail over Kachchh, Gulf of Kutch and adjoining areas; 60-70 kmph gusting to 80 kmph is likely to prevail over northern districts of Saurashtra and squally wind speed reaching 50-60 kmph gusting to 70 kmph over southern districts of Saurashtra during next six hours. It is likely to become squally wind speed reaching 50-60 kmph gusting to 70 kmph from 16th June evening till midnight over the above regions.
- Squally wind speed reaching 45-55 kmph gusting to 65 kmph is prevailing along & off remaining districts of Saurashtra coast and likely to become 35-45 kmph gusting to 55 kmph by 16th June evening.

Wind Warning for South Rajasthan

- Squally wind speed reaching 40-50 kmph gusting to 60 kmph is likely over South Rajasthan during 16th afternoon and becoming 50-60 kmph gusting to 70 kmph during evening to night. It would decrease thereafter becoming 35-45 kmph gusting to 55 kmph on 17th June.

(iii) Sea condition

High to very rough sea condition is prevailing over northeast Arabian Sea and it is likely to become rough by 16th June evening and improve thereafter.

Along & off Saurashtra & Kutch coasts:

High to very rough Sea condition is prevailing over the region. It is likely to become rough by 16th June evening and improve thereafter.

(iv) Damage expected over Kachchh and North Saurashtra districts during next 12 hours:

- Damage to thatched huts.
- Minor damage to power and communication lines due to breaking of branches.
- Major damage to Kutcha and minor damage to Pucca roads.
- Some damage to paddy crops, banana, papaya trees and orchards.

(v) Fishermen Warning & Action Suggested (Kachchh, Devbhumi Dwarka, Porbandar, Jamnagar, Rajkot, Junagarh and Morbi districts) and for Offshore & Onshore Industries on 16th June: (Graphics Attached)

- Total suspension of fishing operations over northeast and adjoining eastcentral Arabian Sea.
- Judicious regulation of offshore and onshore activities.

- Ports along the west coast of India may take necessary precautions.
- Naval base operations may maintain necessary precautions.
- Movement in motor boats unsafe.
- Judicious regulation of rail and road traffic.
- Tourism activities may be regulated over these areas.
- People in affected areas to remain indoors.

The system is under continuous surveillance and the next message will be issued at 2030 hours IST of today, the 16th June, 2023.

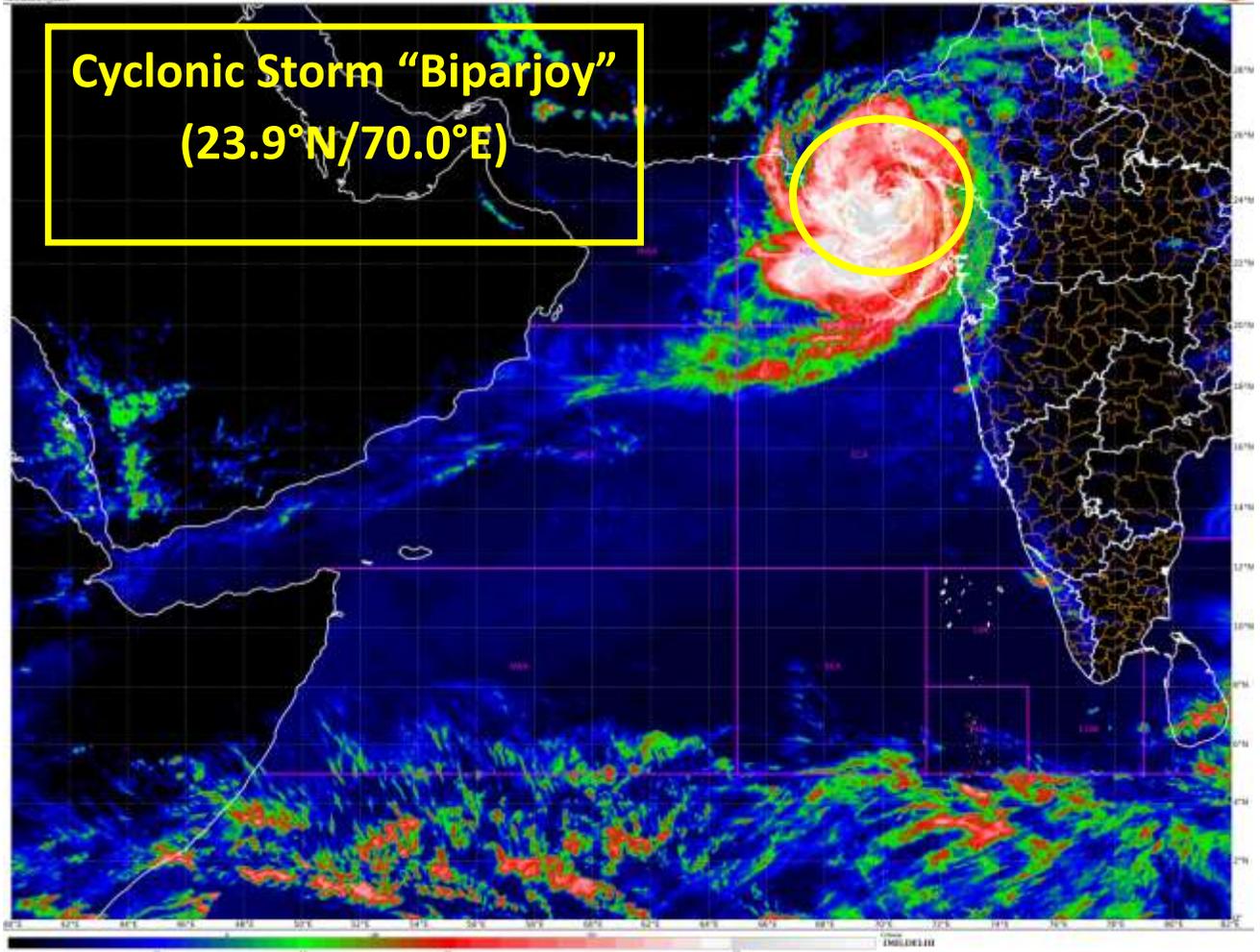
(Ananda Kumar Das)
Scientist F, Cyclone Warning Division, New Delhi

Copy to: ACWC Kolkata/ ACWC Chennai/ CWC Bhubaneswar/CWC Visakhapatnam/CWC Ahmedabad/ MO Port Blair/MC Raipur/MC Bhopal/MC Hyderabad/RMC Nagpur

LEGEND: Heavy Rainfall: 64.5 to 115.5mm, **Very Heavy Rainfall:** 115.6 to 204.4mm **Most Places:** more than 76% of total stations, **Isolated Places:** Less than 25% of total

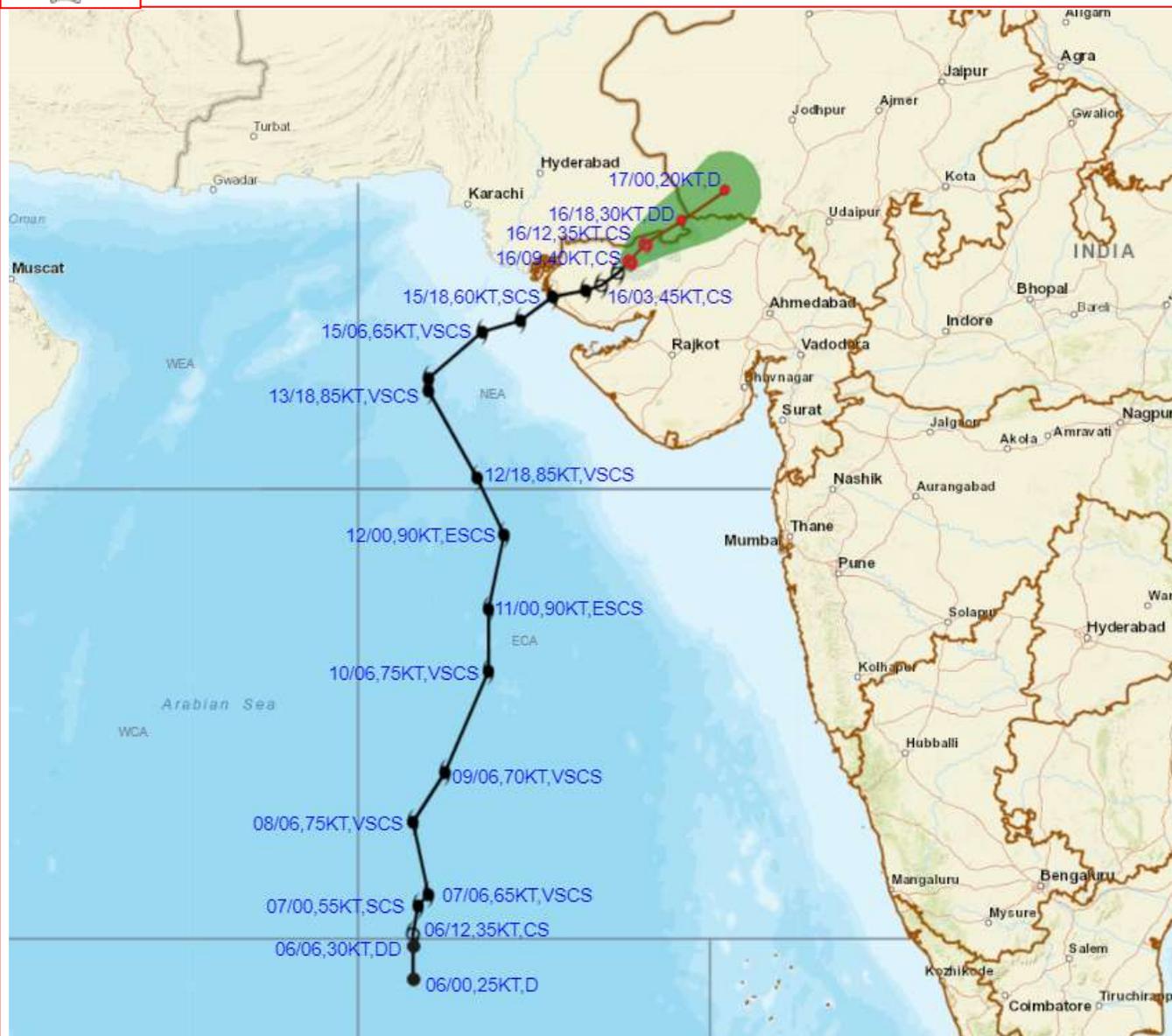


Cyclonic Storm "Biparjoy"
(23.9°N/70.0°E)





OBSERVED AND FORECAST TRACK ALONGWITH CONE OF UNCERTAINTY OF CYCLONIC STORM "BIPARJOY" OVER SAURASHTRA & KUTCH BASED ON 0900 UTC (1430 IST) OF 16TH JUNE 2023.

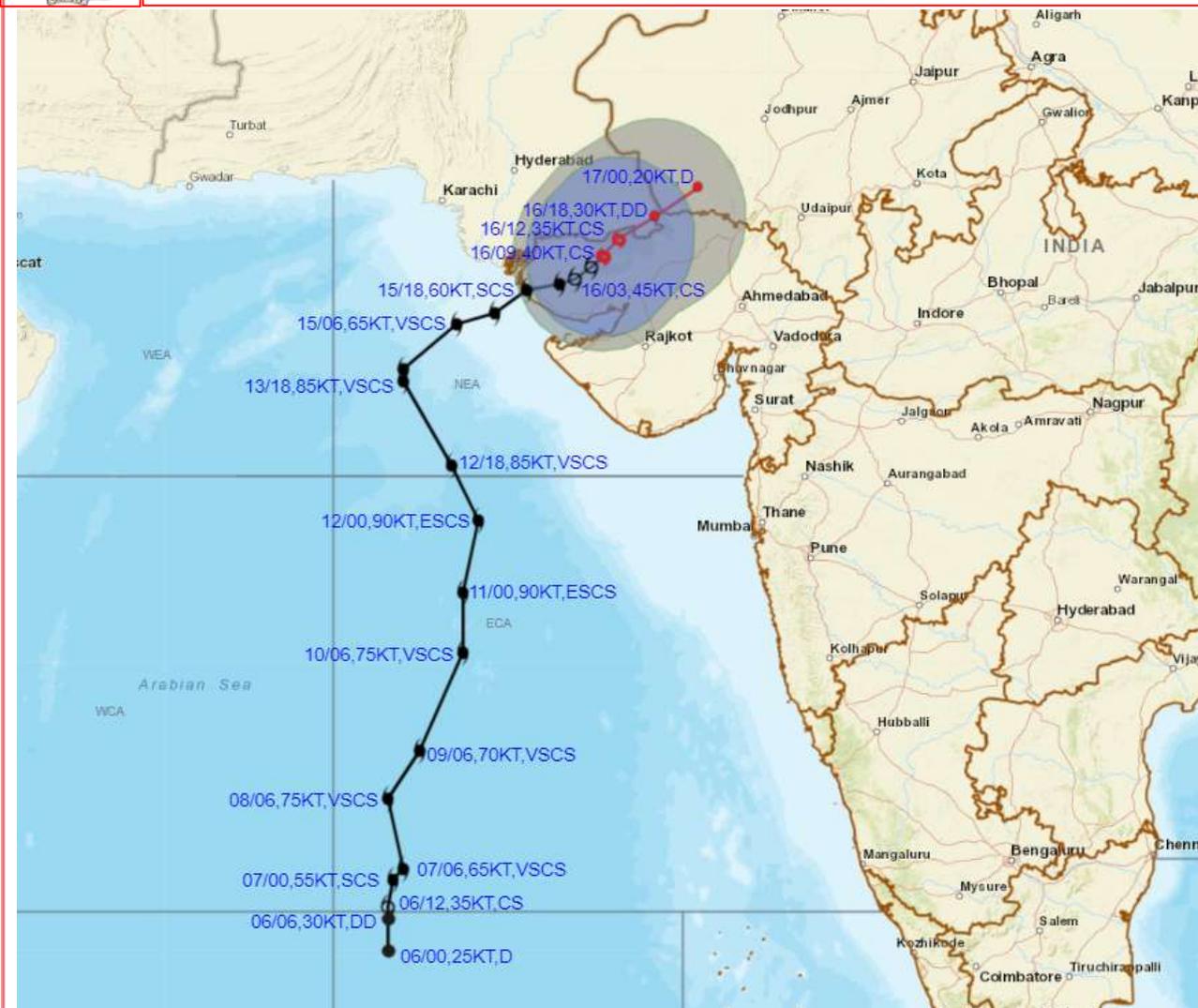


DATE/TIME IN UTC
 IST=UTC + 0530
 L: LOW PRESSURE AREA
 WML: WELL MARKED LOW PRESSURE AREA
 D: DEPRESSION (17-27 KT)
 DD: DEEP DEPRESSION (28-33 KT)
 CS: CYCLONIC STORM (34-47 KT)
 SCS: SEVERE CYCLONIC STORM (48-63KT)
 VSCS: VERY SEVERE CYCLONIC STORM (64-89 KT)
 ESCS: EXTREMELY SEVERE CYCLONIC STORM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



OBSERVED AND FORECAST TRACK ALONGWITH QUADRANT WIND DISTRIBUTION OF CYCLONIC STORM "BIPARJOY" OVER SAURASHTRA & KUTCH BASED ON 0900 UTC (1430 IST) OF 16TH 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

AREA OF MAXIMUM SUSTAINED WIND SPEED:

■ 28-33 KT (52-61 KMPH)

■ 34-49 KT (62-91 KMPH)

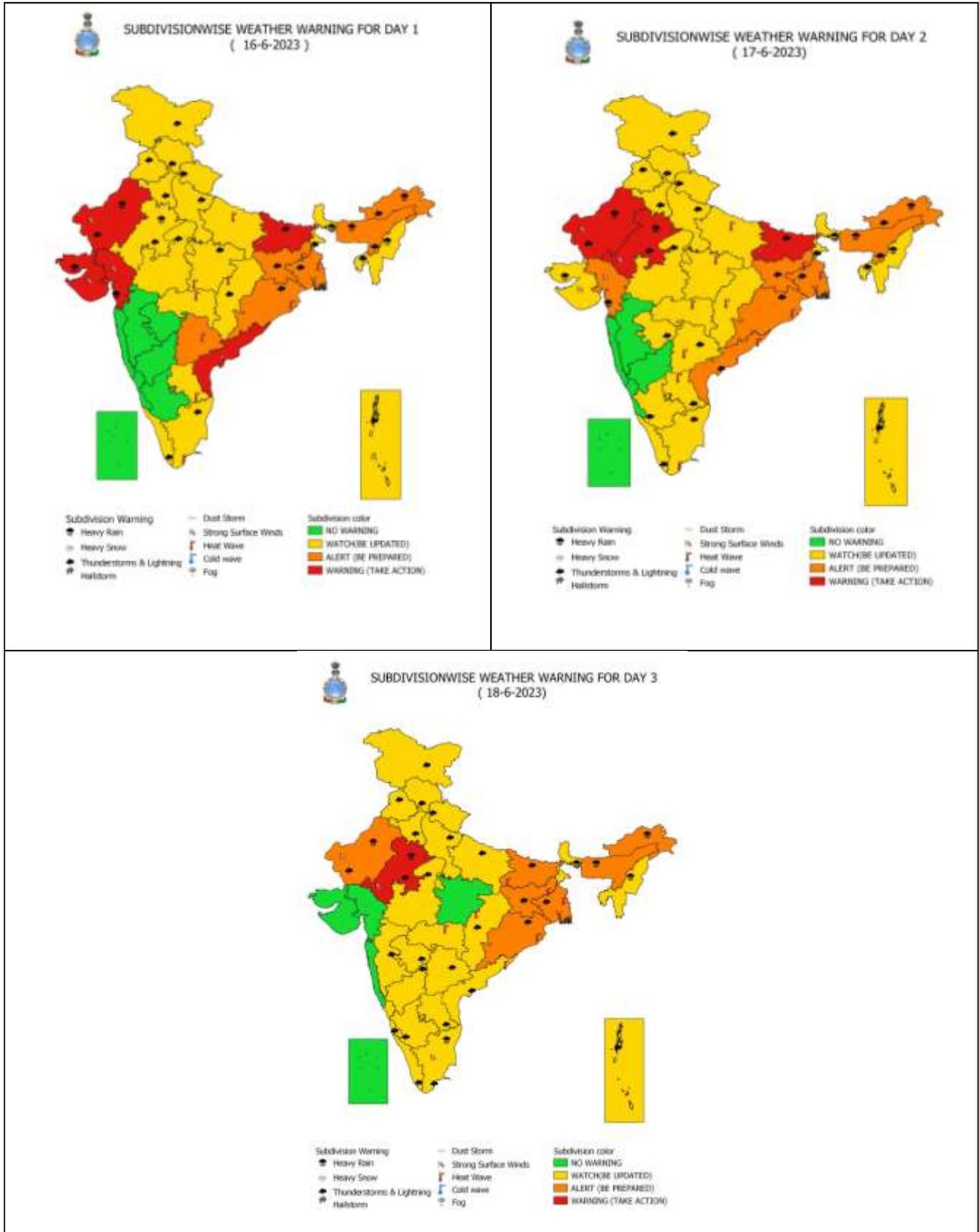
■ 50-63 KT (92-117 KMPH)

■ ≥ 64 KT (≥118 KMPH)

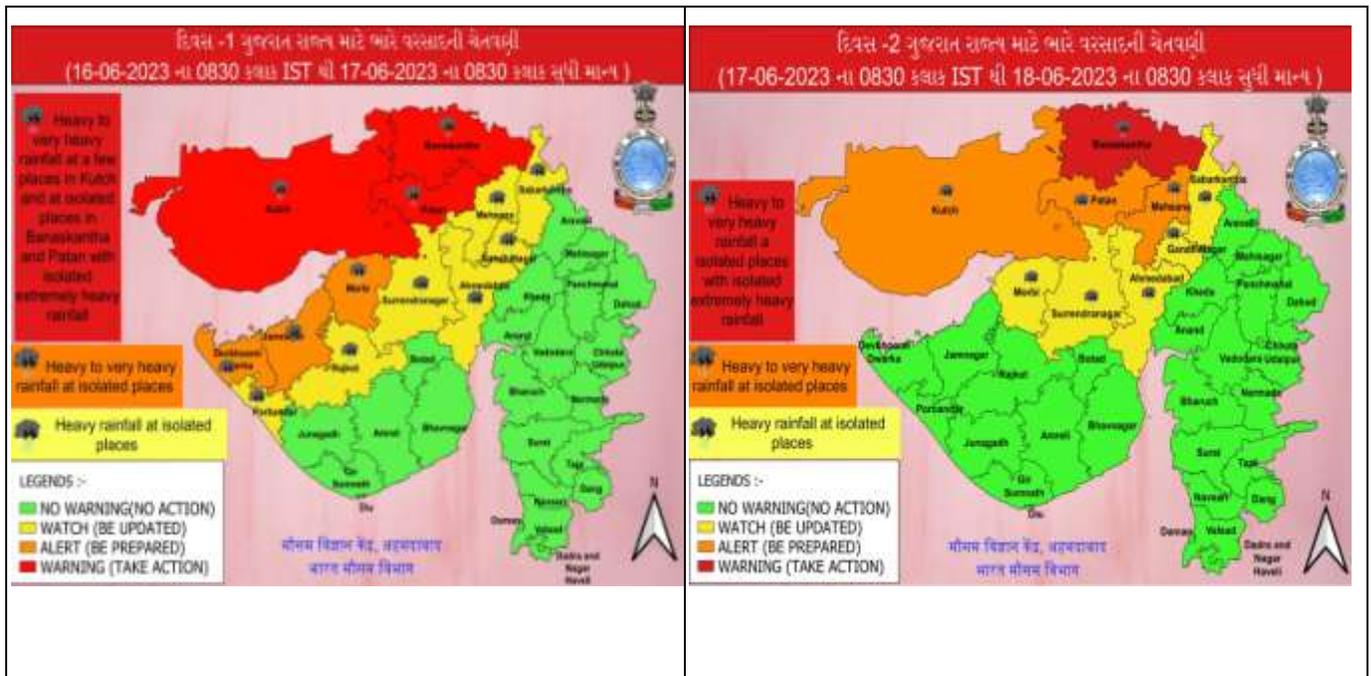
IMPACT OVER THE SEA

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

All India Heavy Rainfall Warning for 16th to 18th June 2023



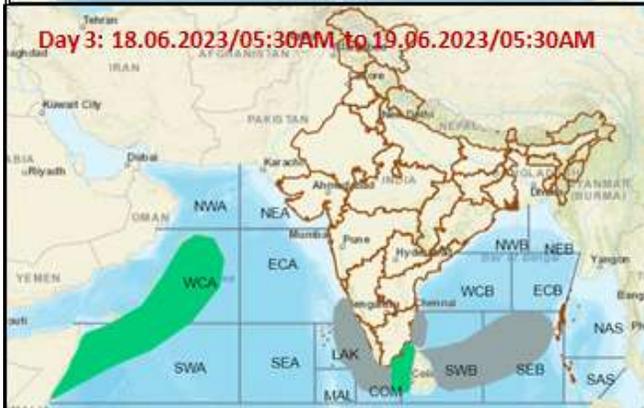
District-wise Heavy Rainfall Warning Maps for 16th to 17th June



District-wise Wind Warning Maps for 16th June



Fishermen warning graphics



	Squally Weather with wind speed 40-45 kmph gusting to 55 kmph
	Squally wind speed with wind speed 45-55 kmph gusting to 65 kmph
	Squally wind speed with wind speed 50-60 kmph gusting to 70 kmph
Fishermen are advised not to venture into the marked areas	