

Saturday, March 2, 2024
Time of Issue: 0800 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems and Forecast & Warnings during next 5 days:

- ❖ A Western Disturbance as a cyclonic circulation lies over north Afghanistan & neighbourhood and a trough runs from this cyclonic circulation to Northwest Arabian Sea in lower & middle tropospheric levels. An induced cyclonic circulation lies over northwest Rajasthan & neighbourhood in lower tropospheric levels. High moisture feeding is taking place from Arabian Sea to northwest India and is likely to continue till 03rd March. Under their influence:
 - Fairly widespread to widespread light/moderate rainfall accompanied with **thunderstorms & lightning** very likely over **Western Himalayan Region till 03rd March, 2024.**
 - Scattered to fairly widespread light/moderate rainfall accompanied with **thunderstorms, lightning & gusty winds (30-40 kmph gusting to 50 kmph)** very likely over Punjab, Haryana-Chandigarh-Delhi and isolated to scattered light/moderate rainfall over Uttar Pradesh, Rajasthan and north Madhya Pradesh during 02nd-03rd March, 2024.
 - **Isolated heavy to very heavy rainfall/snowfall very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad & Himachal Pradesh and isolated heavy rainfall/snowfall also very likely over Uttarakhand on 02nd March. Isolated heavy rainfall over Punjab on 02nd March, 2024.**
 - **Hailstorm activity also very likely at isolated places over Punjab, Haryana, Chandigarh, West Uttar Pradesh, north Madhya Pradesh, East Rajasthan and East Uttar Pradesh on 02nd March, 2024.**
- Due to trough or confluence of winds at lower tropospheric levels, isolated light/moderate rainfall accompanied with **thunderstorms, lightning** very likely over Madhya Maharashtra, Marathwada, Vidarbha on 02nd; Chhattisgarh during 02nd-05th; over Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim during 02nd-04th; Gangetic West Bengal and Odisha on 03rd & 04th March, 2024. Isolated **hailstorm** also likely over Madhya Maharashtra, Marathwada, Vidarbha and Chhattisgarh on 02nd March.
- ❖ A cyclonic circulation lies over Northeast Assam in lower tropospheric levels. Under its influence and eastward movement of current Western Disturbance:
 - Isolated to scattered light/moderate rainfall/snowfall very likely over Arunachal Pradesh during next 7 days. Isolated **heavy rainfall/snowfall** likely over Arunachal Pradesh on 04th & over Sikkim on 03rd March, 2024.
 - Isolated light/moderate rainfall accompanied with **thunderstorms, lightning** likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 03rd-06th March, 2024.

Main Weather Observations:

- ❖ **Rainfall/ snowfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): at a few places over Himachal Pradesh; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Uttarakhand, Rajasthan, West Uttar Pradesh, West Madhya Pradesh and Madhya Maharashtra.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday): (in cm): **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Gulmarg-2 and Batote, Banihal & Kupwara- 1 each; **Himachal Pradesh:** Kalpa & Bhunter-2 each.
- ❖ **Minimum Temperature Departures (as on 01-03-2024):** Minimum temperatures were **markedly above normal (5.1 or more)** at a few places over Punjab, Gujarat Region and Madhya Maharashtra; **appreciably above normal (3.1°C to 5.0°C)** at many places over Saurashtra & Kutch; at a few places over Himachal Pradesh; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Rajasthan, Assam & Meghalaya, West Madhya Pradesh and North Interior Karnataka; **above normal (1.6°C to 3.0°C)** at most places over Konkan & Goa; at many places over Marathwada, Coastal Andhra Pradesh & Yanam and Coastal Karnataka; at a few places over Vidarbha, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and Andaman & Nicobar Islands; at isolated places over Haryana-Chandigarh-Delhi, East Rajasthan, Odisha and Telangana. They were **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Gangetic West Bengal; **below normal (-1.6°C to -3.0°C)** at many places over Nagaland, Manipur, Mizoram & Tripura; at a few places over East Uttar Pradesh; at isolated places over Bihar and East Madhya Pradesh and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature** of 8.0°C was reported at **Najibabad (West Uttar Pradesh)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 01-03-2024):** Maximum temperatures were **markedly above normal (5.1 or more)** at isolated places over Bihar; **appreciably above normal (3.1°C to 5.0°C)** at a few places over West Madhya Pradesh; at isolated places over East Madhya Pradesh, East Rajasthan and Vidarbha; **above normal (1.6°C to 3.0°C)** at most places over Arunachal Pradesh, Marathwada and Gujarat State; at many places over Uttar Pradesh, West Rajasthan, Madhya Maharashtra and Jharkhand; at a few places over Nagaland, Manipur, Mizoram & Tripura and Assam & Meghalaya; at isolated places over Haryana-Chandigarh-Delhi, Uttarakhand, Konkan & Goa, North Interior & Coastal Karnataka, Telangana, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Rayalaseema, Coastal Andhra Pradesh & Yanam and Sub-Himalayan West Bengal & Sikkim. They were **below normal (-1.6°C to -3.0°C)** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh; at isolated parts over Punjab and Gangetic West Bengal and **near normal** over rest parts of the country. Yesterday, **the highest maximum temperature** of 39.5°C was reported at **Yavatmal (Vidarbha)** over the country.

Meteorological Analysis (Based on 0530 hours IST)

- ❖ The **Western Disturbance** as a cyclonic circulation over northwest Afghanistan & neighbourhood now lies over north Afghanistan & neighbourhood between 3.1 km & 12.6 km above mean sea level. The **trough** from this cyclonic circulation to Northwest Arabian Sea between 3.1 & 7.6 km above mean sea level persists.
- ❖ The induced **cyclonic circulation now seen as an induced Low Pressure Area** over west Rajasthan & adjoining Pakistan and the associated cyclonic circulation extends upto 1.5 km above mean sea level.
- ❖ The **Cyclonic Circulation** over northeast Bihar & neighbourhood at 1.5 km above mean sea level persists.
- ❖ The **Cyclonic Circulation** over northeast Assam & neighbourhood at 3.1 km above mean sea level persists.
- ❖ A fresh **Western Disturbance** likely to affect Western Himalayan Region from the night of 05th March.

Weather Forecast for next 7 days (Upto 0830 hours IST of 09th March, 2024)

- ❖ Meteorological sub-division wise detailed 7 days rainfall forecast is given in Table-1.
- ❖ No significant change in minimum temperatures very likely over northwest India during next 3 days and fall by 3-5°C thereafter.

Weather Outlook for subsequent 3 days (09th-11th March, 2024)

- ❖ Mainly dry weather likely to prevail over most parts of the country.

Table-1

7 Days Rainfall Forecast

S. No.	Subdivision	02-Mar	03-Mar	04-Mar	05-Mar	06-Mar	07-Mar	08-Mar
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	ISOL	ISOL	ISOL	DRY	DRY	DRY	DRY
2	ARUNACHAL PRADESH	ISOL	SCT	SCT	SCT	SCT	SCT	SCT
3	ASSAM & MEGHALAYA	DRY	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	DRY	ISOL	ISOL	ISOL	ISOL	DRY	DRY
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	SCT	SCT	ISOL	DRY	DRY	DRY	DRY
6	GANGETIC WEST BENGAL	DRY	ISOL	ISOL	DRY	DRY	DRY	DRY
7	ODISHA	DRY	ISOL	ISOL	DRY	DRY	DRY	DRY
8	JHARKHAND	DRY	SCT	ISOL	ISOL	DRY	DRY	DRY
9	BIHAR	ISOL	ISOL	ISOL	DRY	DRY	DRY	DRY
10	EAST UTTAR PRADESH	FWS	SCT	DRY	DRY	DRY	DRY	DRY
11	WEST UTTAR PRADESH	FWS	ISOL	DRY	DRY	DRY	DRY	DRY
12	UTTARAKHAND	WS	FWS	DRY	ISOL	SCT	SCT	SCT
13	HARYANA CHANDIGARH & DELHI	FWS	ISOL	DRY	DRY	DRY	DRY	DRY
14	PUNJAB	FWS	ISOL	DRY	DRY	DRY	DRY	DRY
15	HIMACHAL PRADESH	WS	FWS	DRY	ISOL	SCT	SCT	SCT
16	JAMMU & KASHMIR AND LADAKH	WS	SCT	ISOL	ISOL	SCT	SCT	SCT
17	WEST RAJASTHAN	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
18	EAST RAJASTHAN	SCT	DRY	DRY	DRY	DRY	DRY	DRY
19	WEST MADHYA PRADESH	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
20	EAST MADHYA PRADESH	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
21	GUJARAT REGION	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
22	SAURASHTRA & KUTCH	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
23	KONKAN & GOA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
24	MADHYA MAHARASHTRA	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
25	MARATHAWADA	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
26	VIDARBHA	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
27	CHHATTISGARH	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY
28	COASTAL ANDHRA PRADESH & YANAM	DRY	DRY	DRY	DRY	DRY	DRY	DRY
29	TELANGANA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
30	RAYALASEEMA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
31	TAMILNADU PUDUCHERRY & KARAIKAL	DRY	DRY	DRY	DRY	DRY	ISOL	ISOL
32	COASTAL KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
33	NORTH INTERIOR KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
34	SOUTH INTERIOR KARNATAKA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
35	KERALA & MAHE	DRY	DRY	DRY	DRY	DRY	DRY	DRY
36	LAKSHADWEEP	DRY	DRY	DRY	DRY	DRY	DRY	DRY

Legend	Category	% Stations
WS	Widespread/Most Places	76-100
FWS	Fairly Widespread/Many Places	51-75
SCT	Scattered/ A Few Places	26-50
ISOL	Isolated Places	1-25
DRY	No Rain	0

* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599
(Service to the Nation since 1875)

Fig. 1: Maximum Temperatures

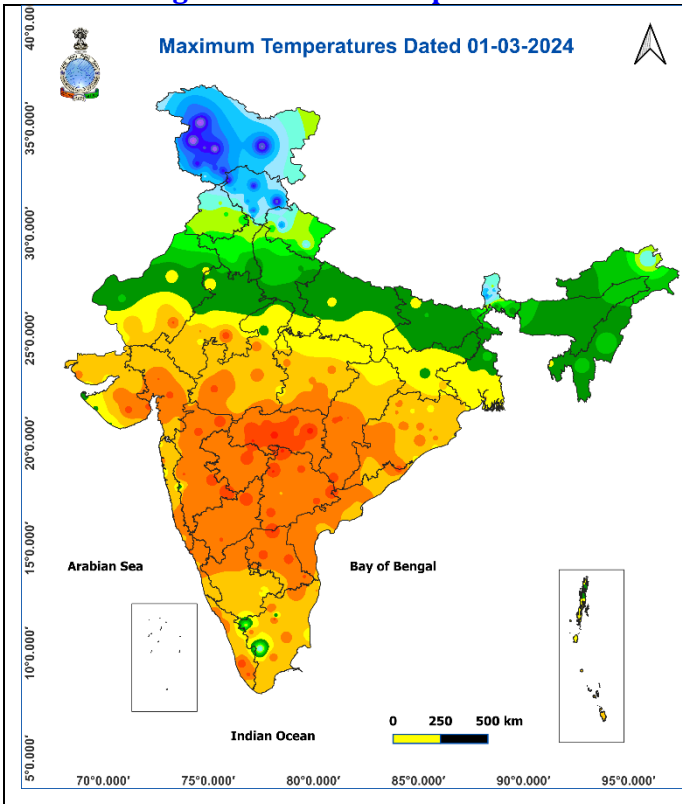


Fig. 2: Departure of Maximum Temperatures

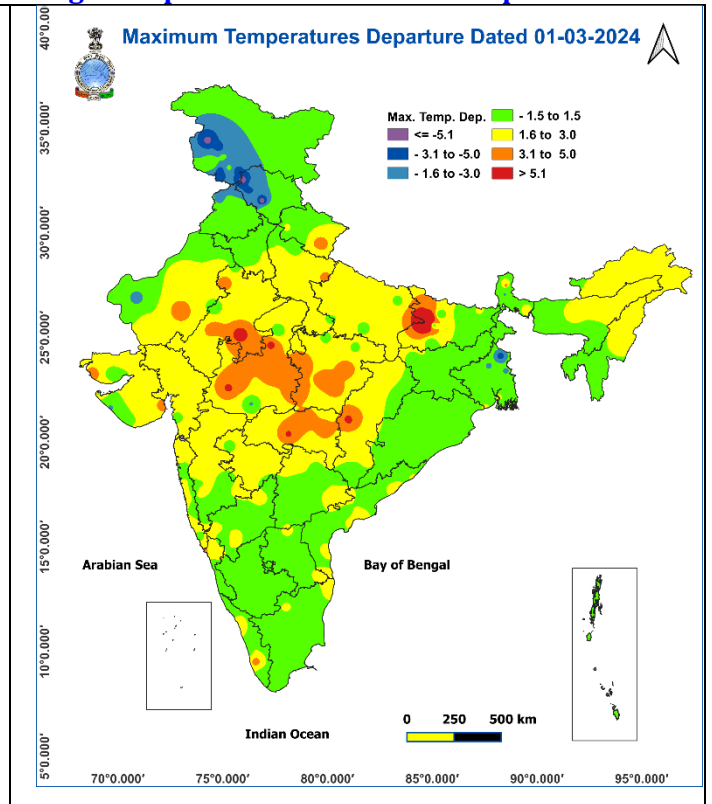


Fig. 3: Minimum Temperatures

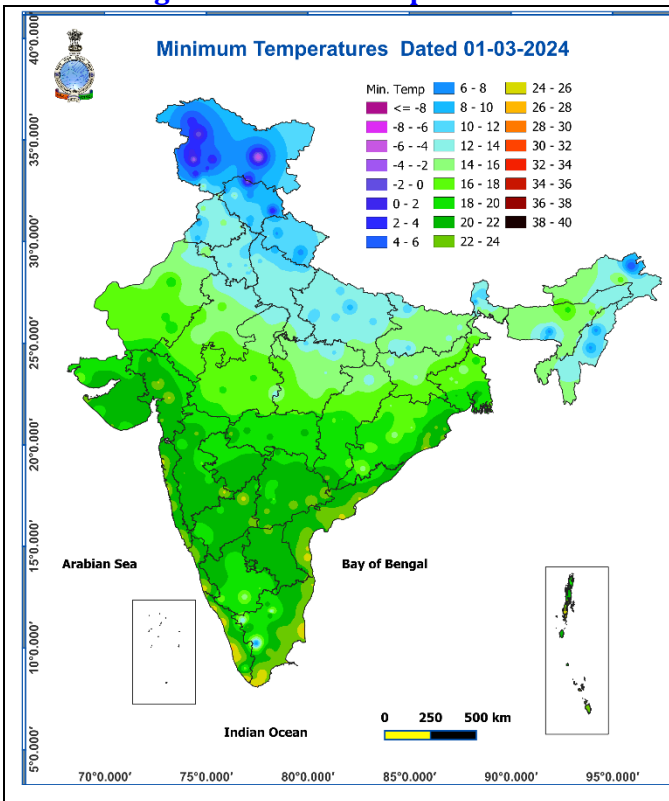
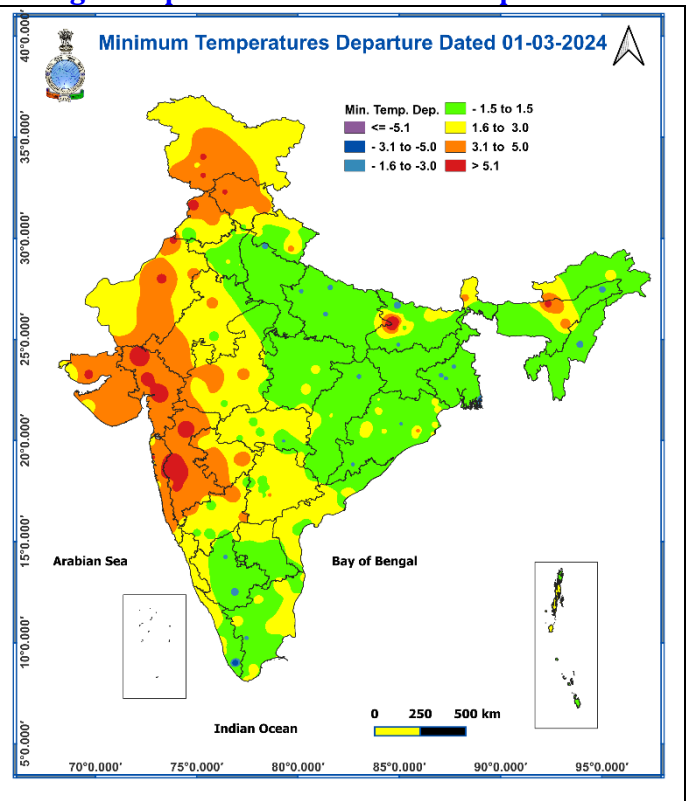


Fig. 4: Departure of Minimum Temperatures

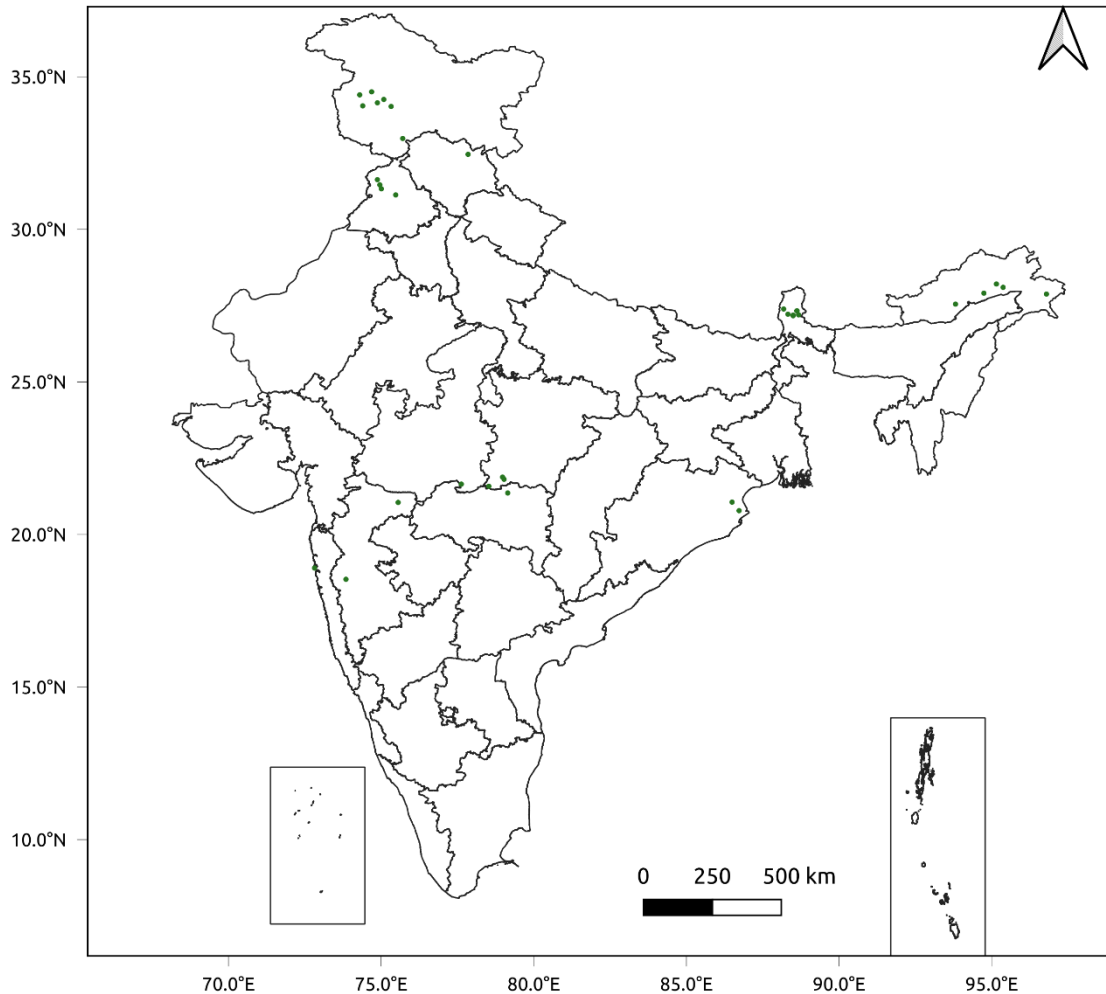


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Fig. 5: Accumulated Rainfall (mm) during past 24 hours

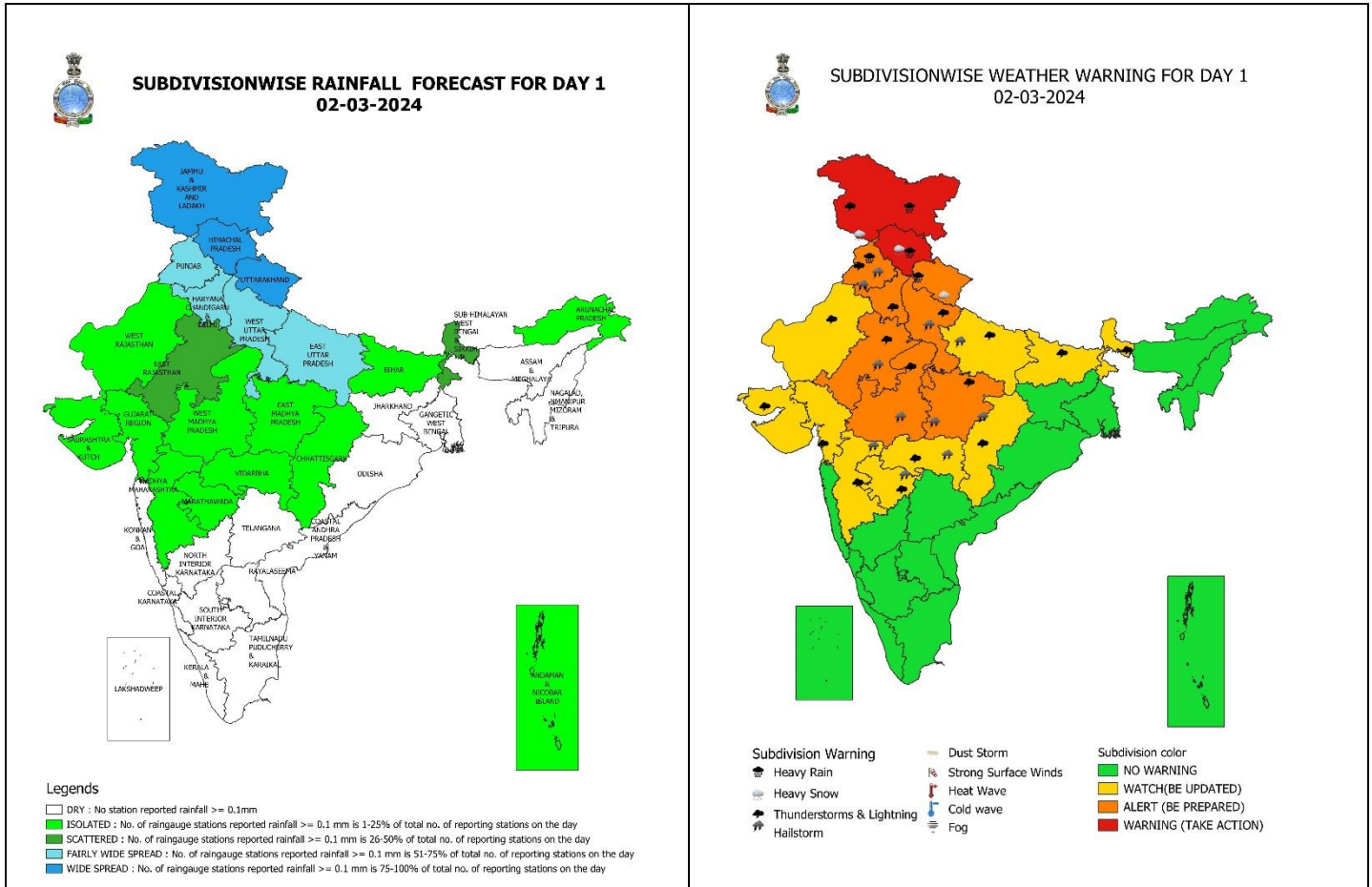


24 Hr cumulative rainfall recorded over different stations during 0830 IST of 29-2-2024 to 0830 IST of 1-3-2024



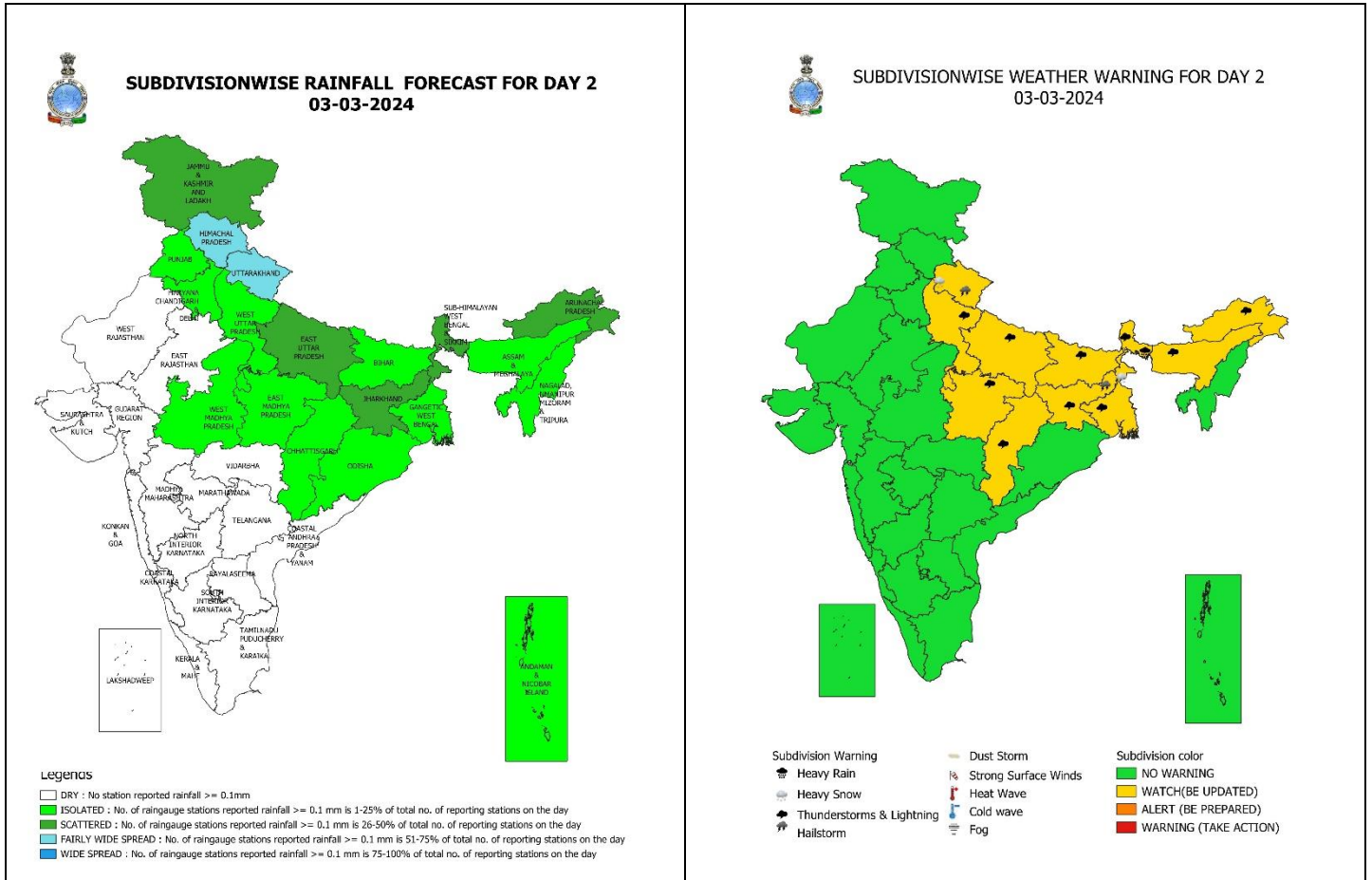
Legends

- Very Light to Light Rainfall (0.1 - 15.5 mm)
- Moderate Rainfall (15.6 - 64.4 mm)
- Heavy Rainfall (64.5 - 115.5 mm)
- Very Heavy Rainfall (115.6 - 204.4 mm)
- Extremely Heavy Rainfall (≥ 204.5 mm)



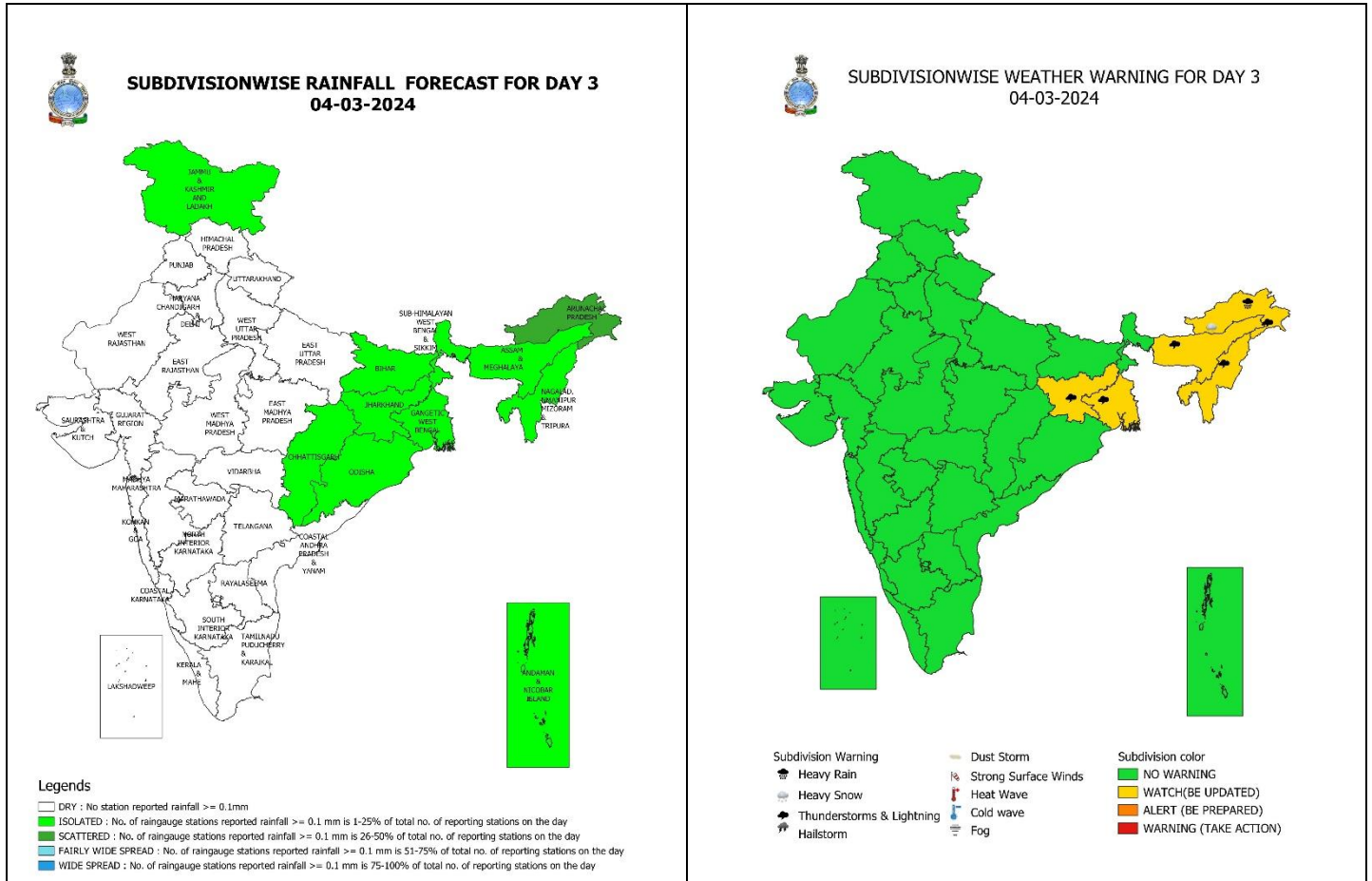
02 March (Day 1):

- ❖ **Heavy to very heavy Rainfall/Snowfall** very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh; **Heavy Rainfall/Snowfall** at isolated places over Uttarakhand; **Heavy Rainfall** at isolated places over Punjab.
- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed 50-60 kmph) & hailstorm** very likely at isolated places over Punjab and Haryana-Chandigarh; **with lightning, gusty winds (speed 40-50 kmph) & hailstorm** at isolated places over West Uttar Pradesh, East Rajasthan and north Madhya Pradesh; **with lightning, gusty winds (speed 30-40 kmph) & hailstorm** at isolated places over East Uttar Pradesh, Vidarbha and Chhattisgarh; **with lightning and hailstorm** at isolated places over Madhya Maharashtra and Marathwada; **with lightning, gusty winds (speed 40-50 kmph)** at isolated places over Delhi and Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand; **with lightning, gusty winds (speed 30-40 kmph)** at isolated places over West Rajasthan; **with lightning** at isolated places over Gujarat State, Bihar and Sub-Himalayan West Bengal & Sikkim.
- ❖ **Squally wind speed 45-55 kmph gusting to 65 kmph** very likely to prevails over northcentral parts of north Arabian sea. Fishermen are advised not to venture into these areas.



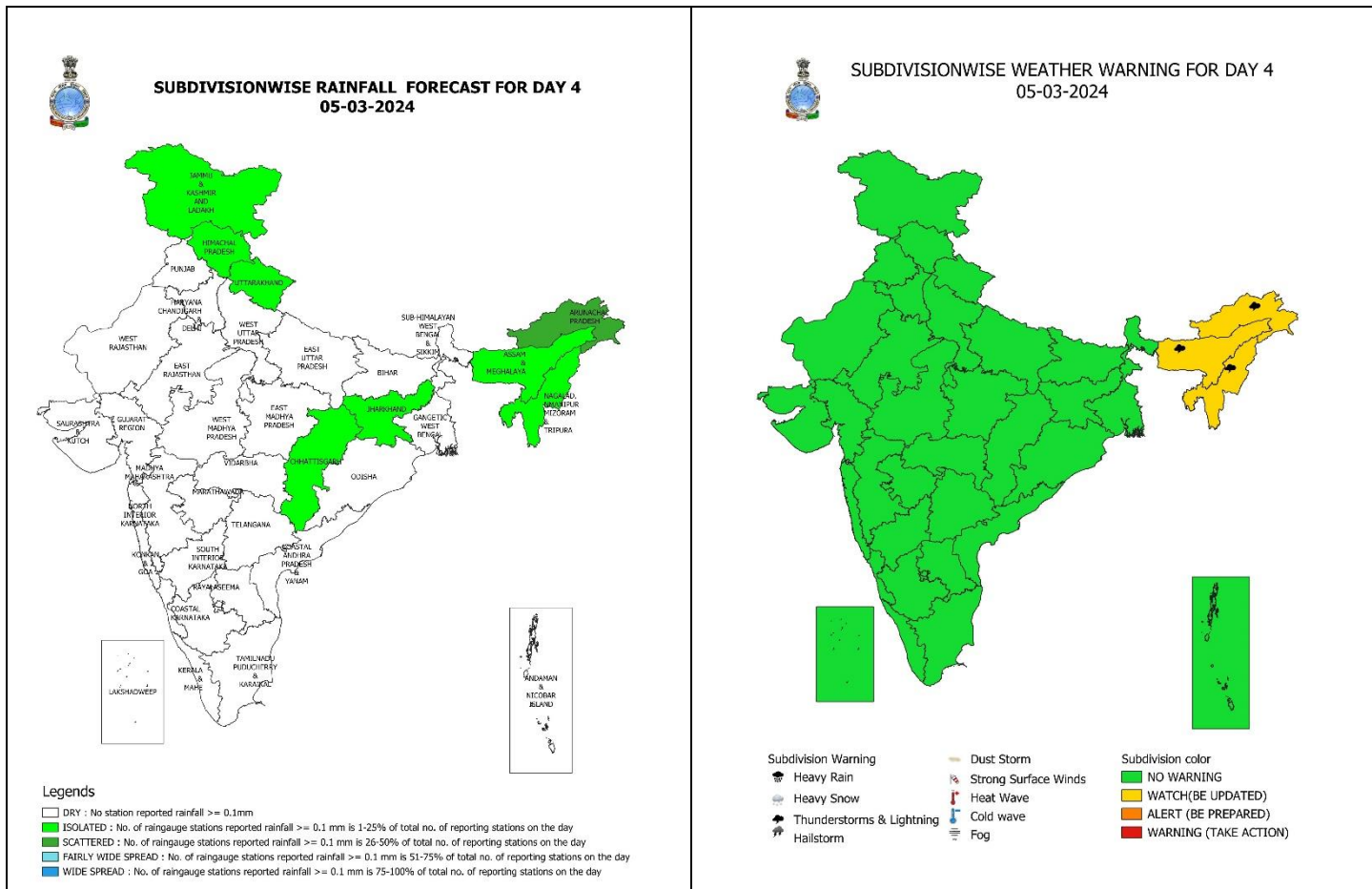
03 March (Day 2):

- ❖ **Heavy to very heavy Rainfall/Snowfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim.
- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed 30-40 kmph) & Hailstorm** very likely at isolated places over Jharkhand; **with lightning, gusty winds (speed 30-40 kmph)** at isolated places over Uttar Pradesh, West Bengal and Sikkim; **with lightning** very likely at isolated places over Uttarakhand, East Madhya Pradesh, Chhattisgarh, Bihar, Arunachal Pradesh and Assam & Meghalaya.



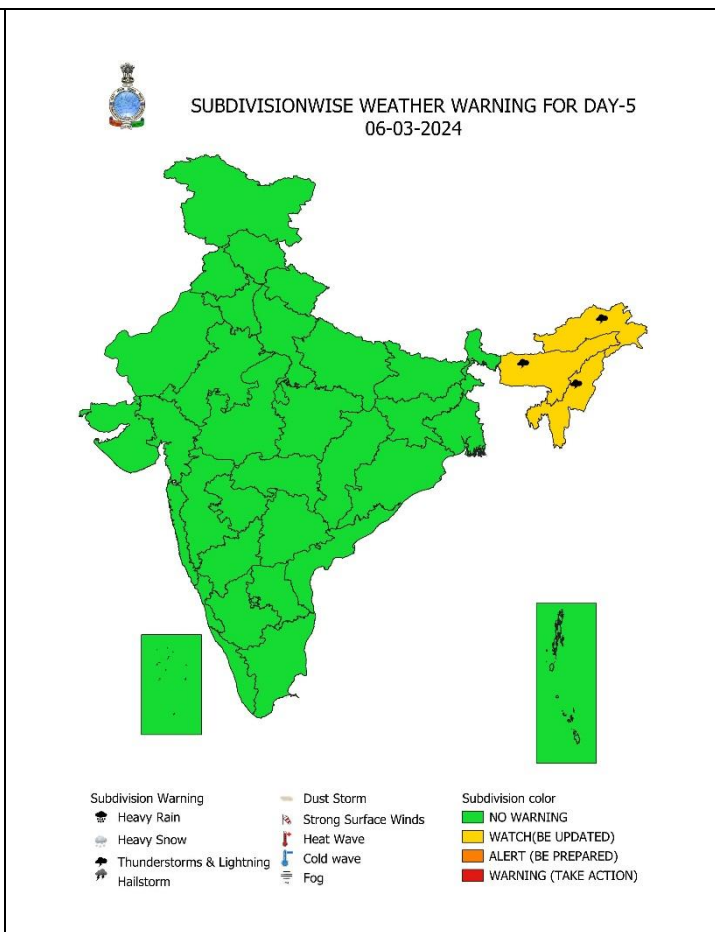
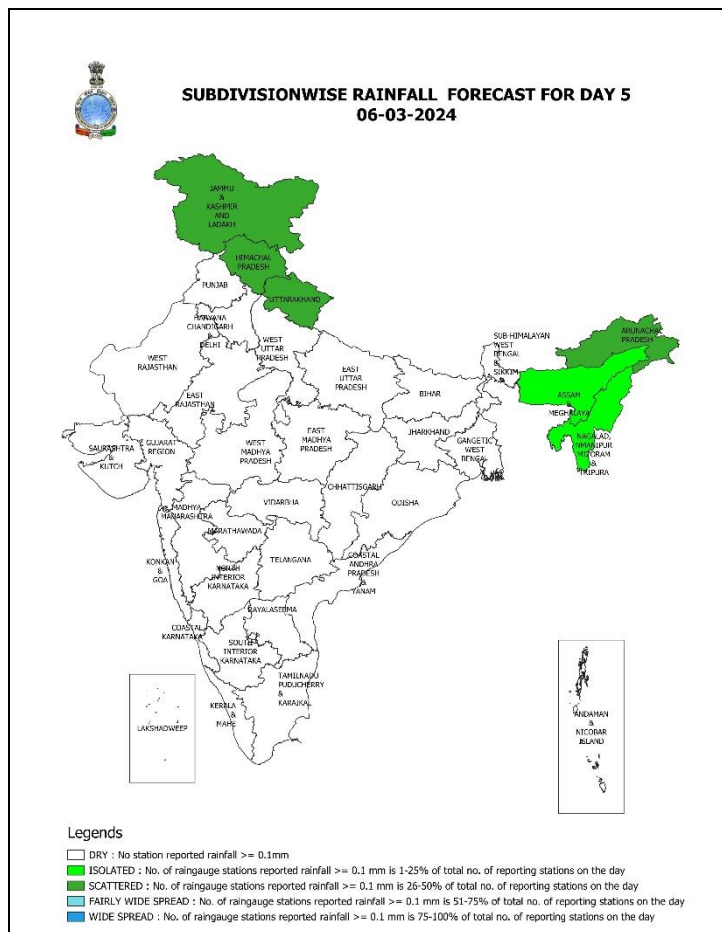
04 March (Day 3):

- ❖ **Heavy Rainfall/ Snowfall** likely at isolated places over Arunachal Pradesh.
- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed 30-40 kmph)** likely at isolated places over Gangetic West Bengal; **with lightning** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Jharkhand.



05 March (Day 4):

Thunderstorm accompanied with lightning likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

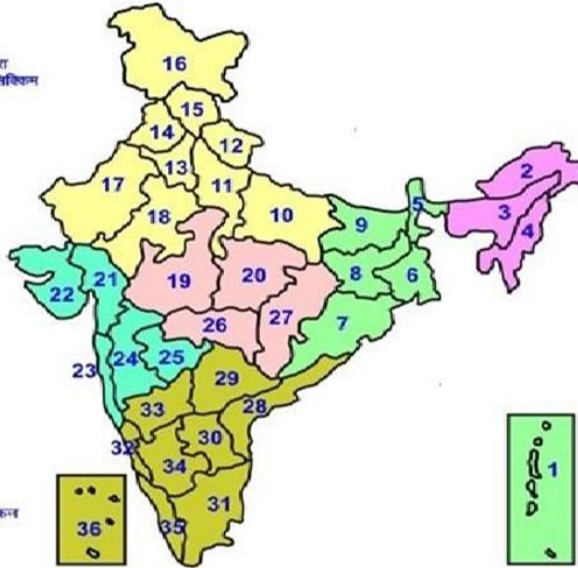


06 March (Day 5):

❖ **Thunderstorm accompanied with lightning** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.

LEGENDS

- 1 अंडमन और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीज़ोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम बंगाल
- 7 ओडिशा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा चंडीगढ़ एवं दिल्ली
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू एवं कश्मीर एवंम लद्दाख
- 17 पश्चिम राजस्थान
- 18 पूर्वी राजस्थान
- 19 पश्चिम मध्य प्रदेश
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात क्षेत्र
- 22 सौराष्ट्र एवं कच्छ
- 23 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठवाड़ा
- 26 विदर्भ
- 27 उत्तरीमहाराष्ट्र
- 28 तटीय आंध्र प्रदेश एवं यानम
- 29 तेलंगाना
- 30 दख्खिणीय
- 31 पश्चिमनाडु, पुदुचेरी एवंम कराईकल
- 32 तटिय कर्नाटक
- 33 आंतरिक उत्तरी कर्नाटक
- 34 आंतरिक दक्षिणी कर्नाटक
- 35 केरल एवंम माहे
- 36 लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Odisha
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chd & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathawada
26. Vidharbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnadu, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. Lakshadweep

SPATIAL DISTRIBUTION (% of Stations reporting)

% Stations	Category	% Stations	Category
76-100	Widespread (WS/ Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)

WARNING

WARNING (TAKE ACTION)
ALERT (BE PREPARED)
WATCH (BE UPDATED)
NO WARNING (NO ACTION)

Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

LEGENDS

WARNING

WARNING (TAKE ACTION)
ALERT (BE PREPARED)
WATCH (BE UPDATED)
NO WARNING (NO ACTION)

Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



Heavy: 64.5 to 115.5 mm/cm *
Very Heavy: 115.6 to 204.4 mm/cm*
Extremely Heavy: > 204.4 mm/cm *

Rain/ Snow *



Heat Wave

When maximum temperature of a station reaches $\geq 40^{\circ}\text{C}$ for plains and $\geq 30^{\circ}\text{C}$ for hilly regions
(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal 4.5°C to 6.4°C .
Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^{\circ}\text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature $\geq 45^{\circ}\text{C}$.
Severe Heat Wave: When actual maximum temperature $\geq 47^{\circ}\text{C}$

(c). Criteria for heat wave for coastal stations

When maximum temperature departure is $> 4.5^{\circ}\text{C}$ from normal. Heat Wave may be described provided maximum temperature $\geq 37^{\circ}\text{C}$



Warm Night

When maximum temperature remains 40°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°C .
Severe Warm Night: When minimum temperature departure $> 6.4^{\circ}\text{C}$.



Cold Wave

When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions.

(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C .
Severe Cold Wave: Minimum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave : When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$
Severe Cold Wave: When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is $\leq -4.5^{\circ}\text{C}$ & actual Minimum Temperature is $\leq 15^{\circ}\text{C}$



Cold Day

When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions
Based on departure

Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C .
Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$



Fog

Phenomenon of small droplets suspended in air and the horizontal visibility $< 1\text{km}$

Moderate Fog: When the visibility between 500-200 metres
Dense Fog: when the visibility between 50- 200 metres
Very Dense Fog: when the visibility < 50 metres



Thunderstorm

Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)



Dust/Sand Storm

An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.



Frost

Ice deposits on ground

Air temperature $\leq 4^{\circ}\text{C}$ (over Plains)



Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph
Severe: Wind speed 62-87 kmph
Very Severe: Wind speed > 87 kmph



Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre
High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre
Phenomenal: Wind speed > 117 kmph (> 63 knots) & Wave height > 14 metre



Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)
Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)
Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)
Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)
Super Cyclone Storm: Wind speed > 220 kmph (> 119 knots)