

All India Multi-hazard Winter Weather Warnings Bulletin

Dated: 29th February, 2024

Time of Issue: 1530 Hrs IST

Meteorological Features and Forecast (Based on 0830 hours IST Observation)

- A Western Disturbance as a cyclonic circulation lies over northeast Iran & neighbourhood in lower to upper tropospheric levels. High moisture feeding from Arabian Sea to northwest India is also likely on 1st & 2nd March. It is very likely to affect Western Himalayan Region from night of 29th February and plains of northwest India from 1st March to 3rd March with peak intensity on 1st & 2nd March, 2024. Under its influence:
 - 1) Fairly widespread to widespread light/moderate rainfall accompanied with thunderstorms & lightning very likely over Western Himalayan Region during night of 29th February to 3rd March, 2024.
 - 2) Scattered to fairly widespread light/moderate rainfall accompanied with thunderstorms, lightning & gusty winds (40-50 kmph gusting to 60 kmph) very likely over Punjab, Haryana-Chandigarh-Delhi and scattered light/moderate rainfall over Uttar Pradesh, Rajasthan and north Madhya Pradesh on 1st & 2nd March, 2024.
 - 3) Isolated heavy to very heavy rainfall/snowfall very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 1st & 2nd March. Isolated heavy rainfall/snowfall over Himachal Pradesh on 1st & heavy to very heavy rainfall/snowfall on 2nd March. Isolated heavy rainfall/snowfall over Uttarakhand on 1st & 2nd March. Isolated heavy rainfall over Punjab on 02nd March, 2024. Hailstorm activity also very likely at isolated places over Himachal Pradesh, Uttarakhand, Punjab on 1st & 2nd March; over West Rajasthan on 1st and over Haryana, Chandigarh, East Rajasthan, Uttar Pradesh and north Madhya Pradesh on 2nd March, 2024.
 - 4) Strong surface winds (40-50 kmph gusting to 60 kmph) likely over Northwest India on 1st & 2nd March.
- Due to trough or confluence of winds in central parts of the country at lower tropospheric levels, isolated light/moderate rainfall accompanied with thunderstorms, lightning very likely over Madhya Maharashtra, Marathwada during 29th February - 2nd March; Vidarbha on 1st & 2nd and Chhattisgarh during 2nd - 5th March, 2024. Isolated hailstorm also likely over Madhya Maharashtra on 1st March; Marathwada on 1st & 2nd; Vidarbha and Chhattisgarh on 2nd March.
- A trough in westerlies runs roughly along Long. 93°E to the north of Lat. 25°N in lower tropospheric levels. Under its influence and eastward movement of current Western Disturbance:
 - 1) Isolated to scattered light/moderate rainfall/snowfall very likely over Arunachal Pradesh during next 7 days. Isolated thunderstorms, lightning very likely over Arunachal Pradesh on 29th February. Isolated heavy rainfall/snowfall likely over Arunachal Pradesh on 4th March, 2024.
 - 2) Isolated light/moderate rainfall over the Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 3rd - 6th March, 2024.

Observed Weather (between 0830 hrs. of yesterday and 0830 hrs of today)

♦ **Fog (Annexure 1, 2, 3 & 4):-** NIL.

♦ **Observed Temperature Scenario:**

Minimum Temperature & its departure (Today) (Annexure 5):-

Lowest Minimum Temperature on Plains: 8.3°C at Karnal (Haryana).

Markedly Below Normal (-5.1°C and below) :- NIL.

Appreciably Below Normal (-3.1°C to -5.0°C) :- NIL.

Below normal (-1.6°C to -3.0°C) :- At isolated places over Haryana-Chandigarh-Delhi, Himachal Pradesh, Uttar Pradesh, Rajasthan, East Madhya Pradesh.

Near normal and above normal :- Rest parts of the country.

Maximum Temperature & its departure (Yesterday) (Annexure 6):-

Markedly Below Normal (-5.1°C and below) :- NIL.

Appreciably Below Normal (-3.1°C to -5.0°C) :- NIL.

Below normal (-1.6°C to -3.0°C) :- At isolated places over Haryana-Chandigarh-Delhi, Arunachal Pradesh, Bihar, Jharkhand, Madhya Pradesh, Gangetic West Bengal, Odisha and Rajasthan.

Near normal and above normal :- Rest parts of the country.

♦ **Cold wave conditions:-** NIL.

♦ **Cold Day conditions:-** NIL.

RH (based on 0530 hours IST) (Annexure 7):

Rain/Snow/Thundershowers over North & East India (Annexure 8):- At a few places over Arunachal Pradesh; at isolated places over East Madhya Pradesh, Vidarbha, Madhya Maharashtra, Marathwada, Sub-Himalayan West Bengal & Sikkim, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Coastal Andhra Pradesh.



5 DAYS FOG, COLD WAVE, COLD DAY AND RAIN/SNOW WARNING MAPS

Fog Warnings for Next 5 Days

DAY-1:- NIL.

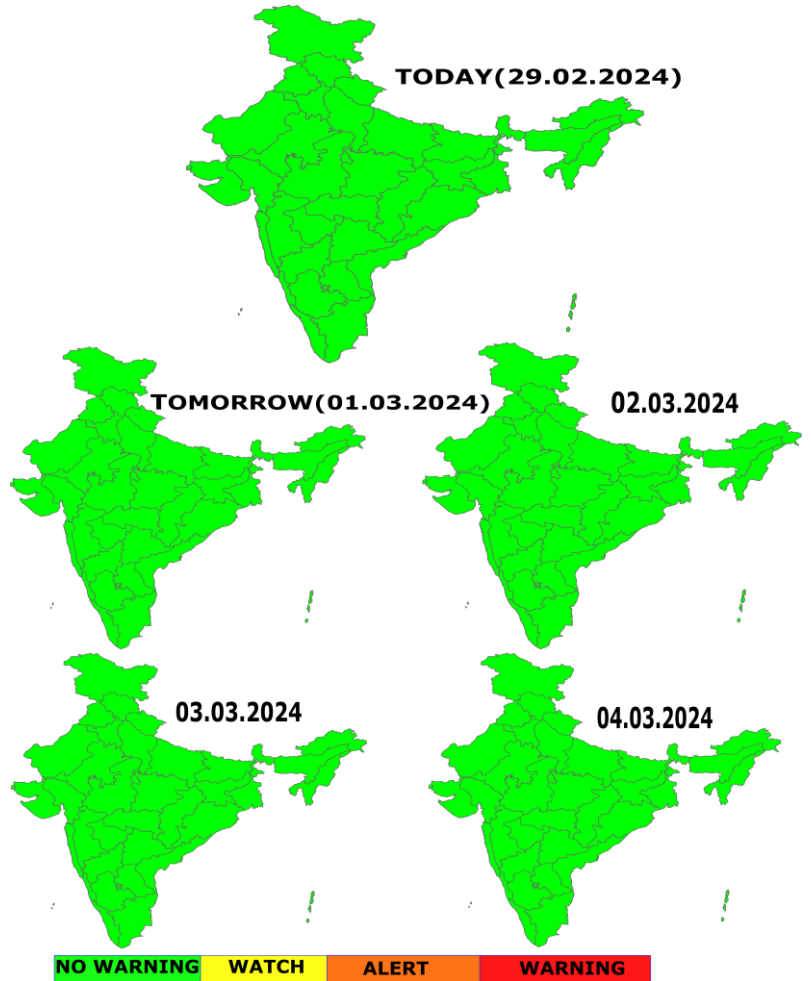
DAY-2:- NIL.

DAY-3:-NIL

DAY-4:- NIL.

DAY-5:- NIL.

5 DAYS FOG WARNING MAP



Cold Wave Warnings for Next 5 Days

DAY-1:- NIL.

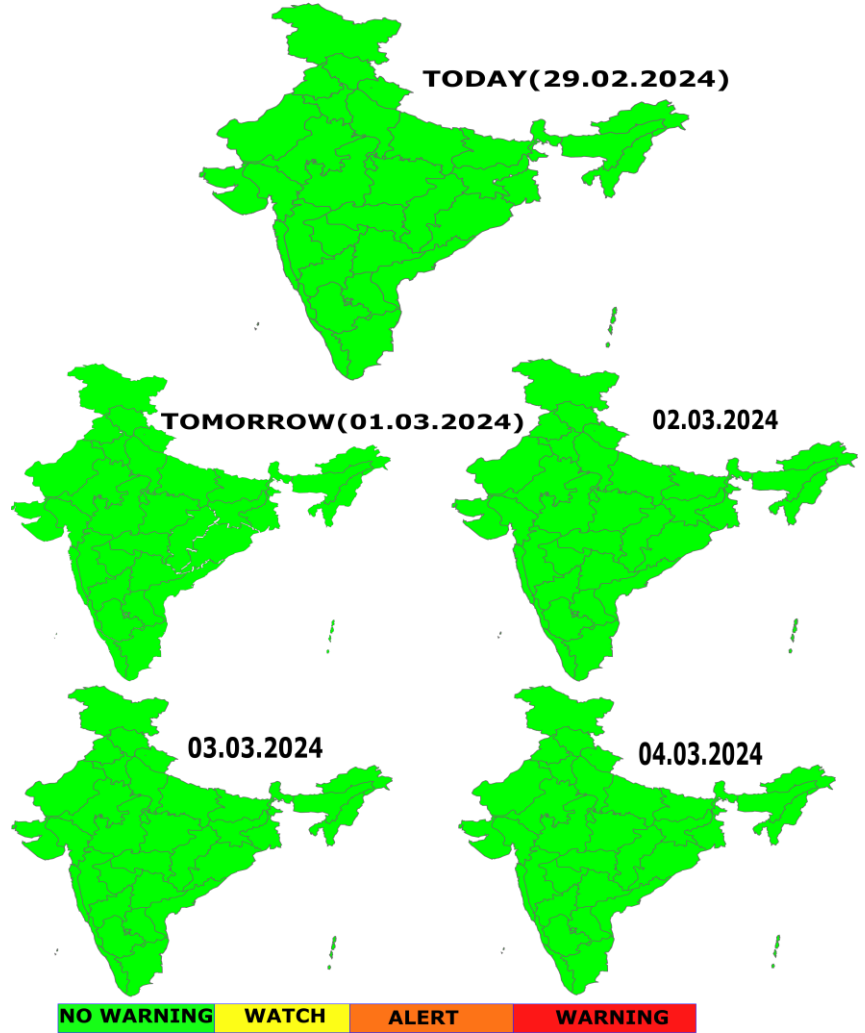
DAY-2:- NIL.

DAY-3:- NIL.

DAY-4:- NIL.

DAY-5:- NIL.

5 DAYS COLD WAVE HAZARD MAP



Cold Day Warnings for Next 5 Days

DAY-1:- NIL.

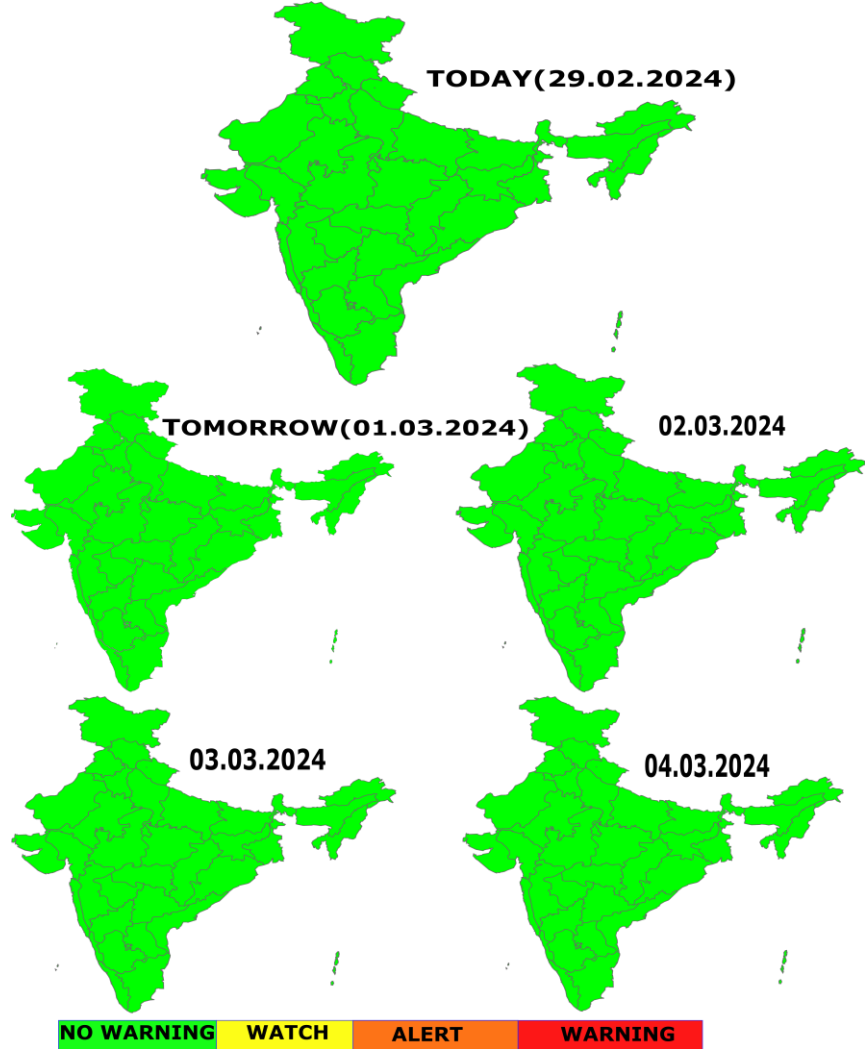
DAY-2:- NIL.

DAY-3:- NIL.

DAY-4:- NIL.

DAY-5:- NIL.

5 DAYS COLD DAY HAZARD MAP



Rain/snow Warnings for Next 5 Days

DAY-1:- NIL.

DAY-2:- Heavy to very heavy Rainfall/Snowfall very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, **Heavy Rainfall/Snowfall** likely at isolated places over Uttarakhand and Himachal Pradesh.

DAY-3:- 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.

DAY-4:- NIL.

DAY-5:- Heavy Rainfall at isolated places over Arunachal Pradesh.

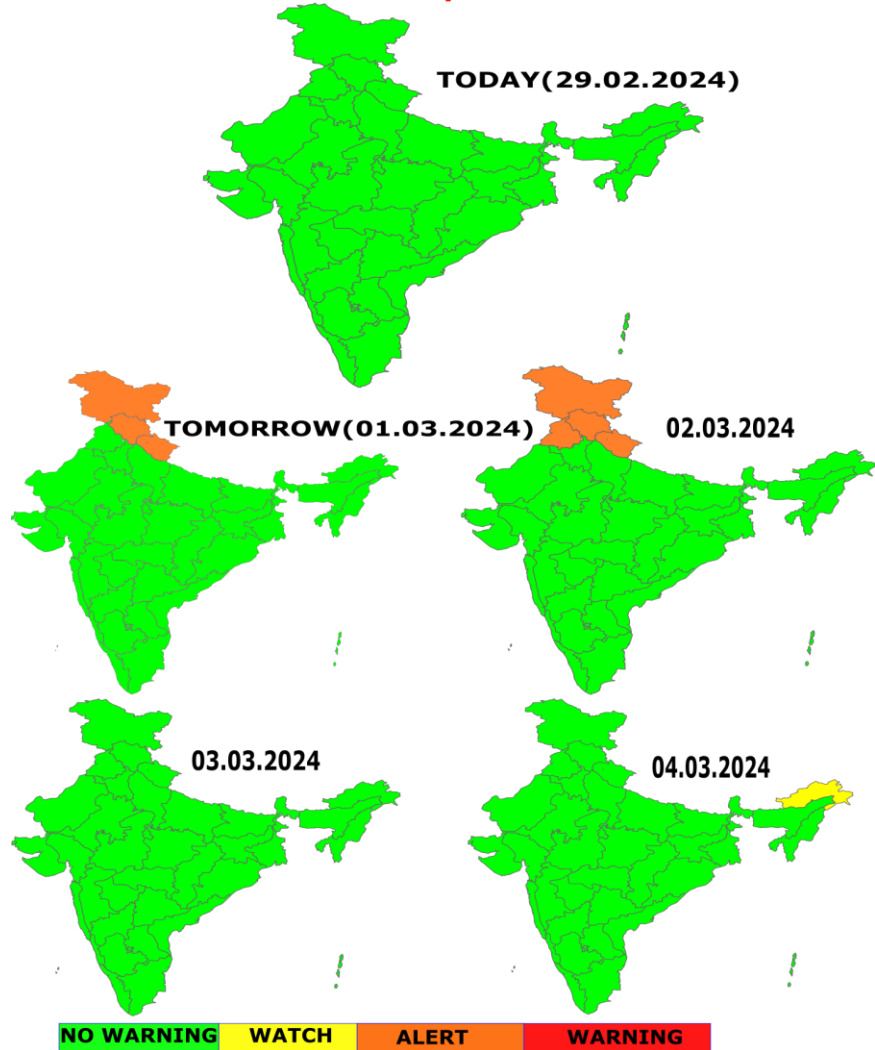
IMPACT:

- Damages to apples on trees and breakage of apple trees due to excess snow. Horticulture crops may be damaged.
- Highways may be temporarily closed due to heavy snowfall.
- Landslides and shooting stones in vulnerable spots.
- Temporary disruption to Air traffic and surface transportation.
- Electricity Disruption and temporary waterlogging in low lying areas.

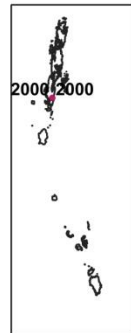
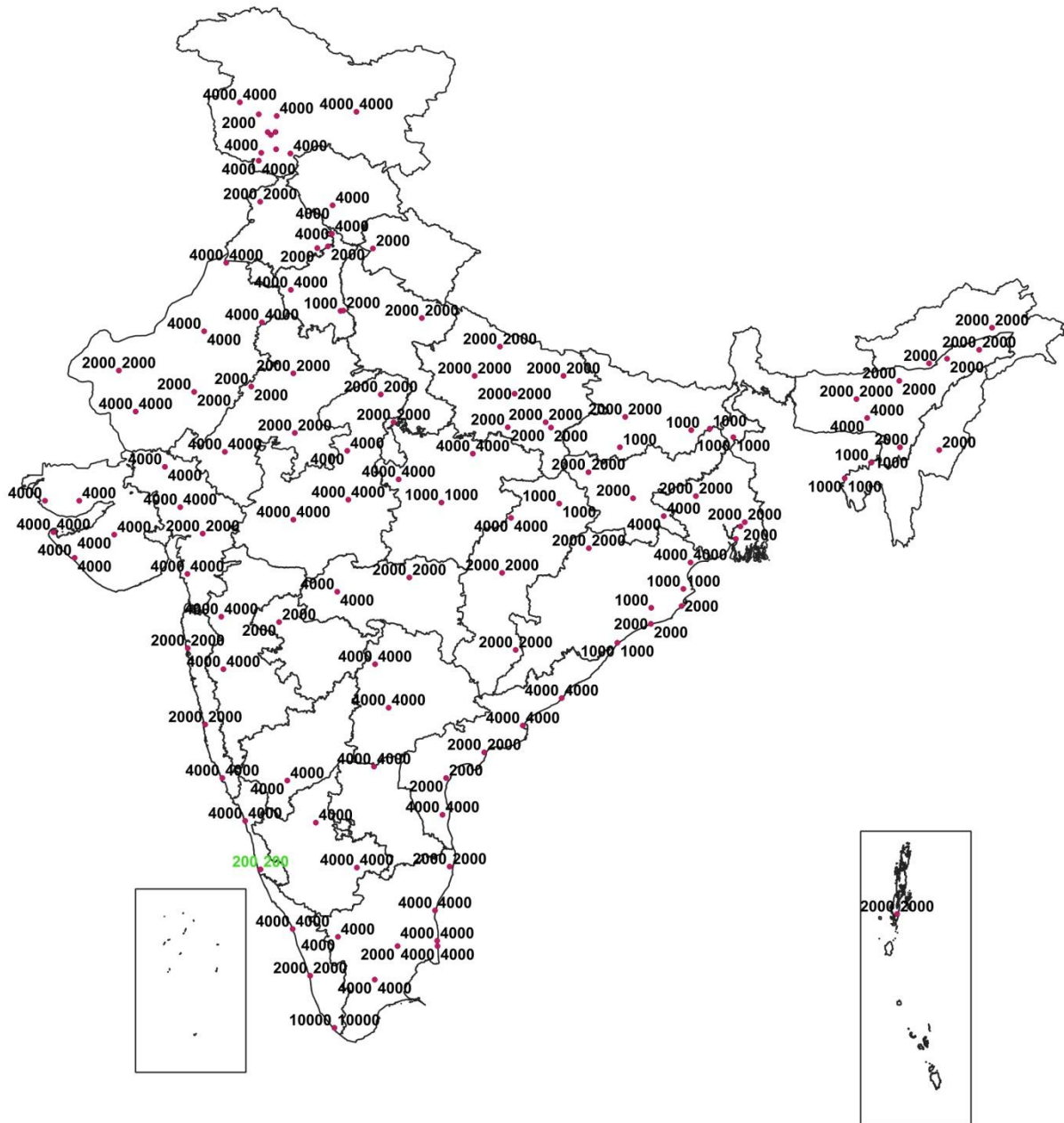
ACTION SUGGESTED:

- To avoid snowfall impact, Harvest Ripened Apples/horticulture crops, Prune Trees and shape trees frequently.
- Commute on snowfall affected highways only after confirming the Road status from traffic police.
- Be careful and cautious while visiting vulnerable spots and plan the travel after confirming the flight, train or road status from concerned agencies.

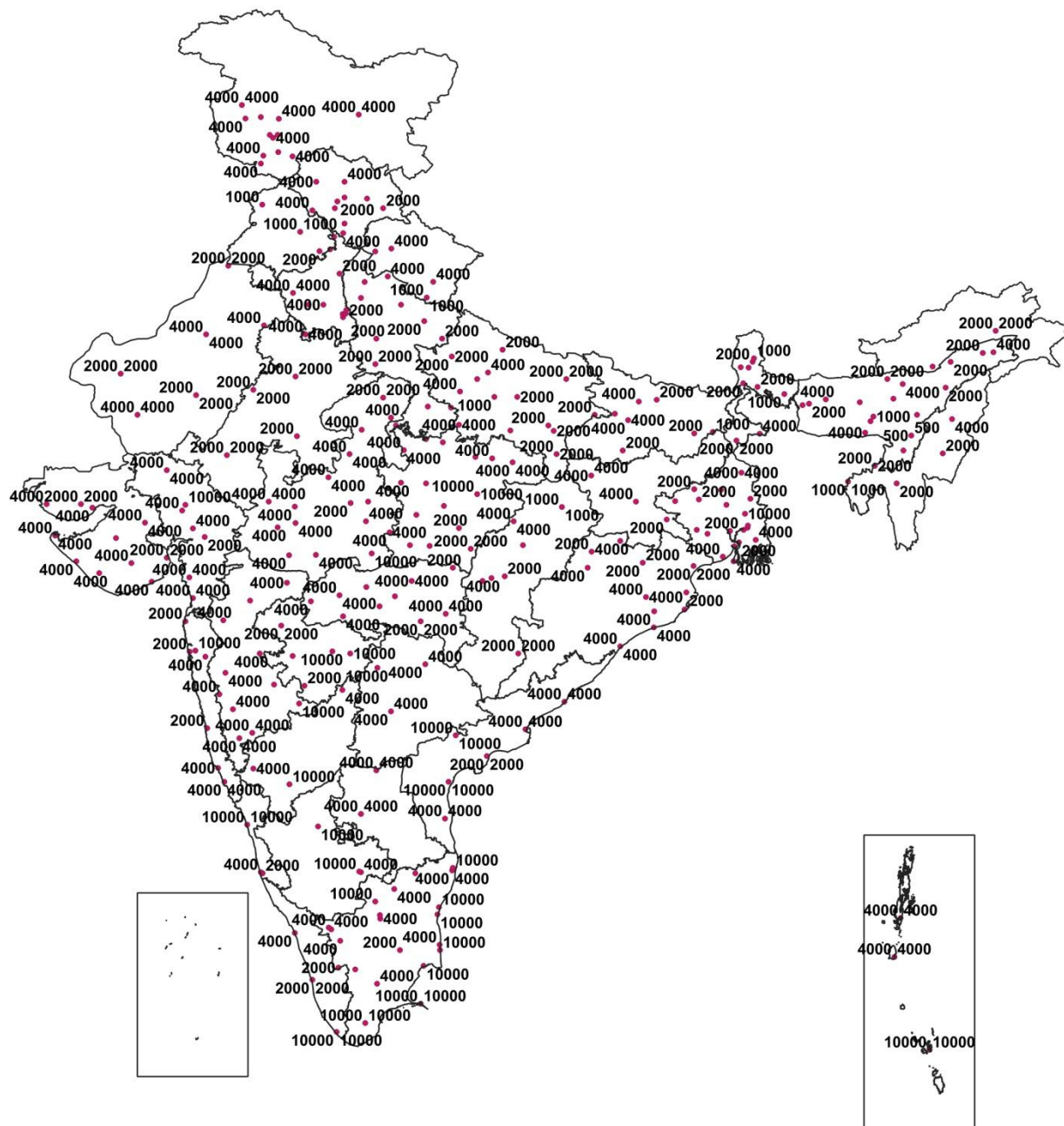
5 DAYS HEAVY RAIN/SNOW WARNING MAP



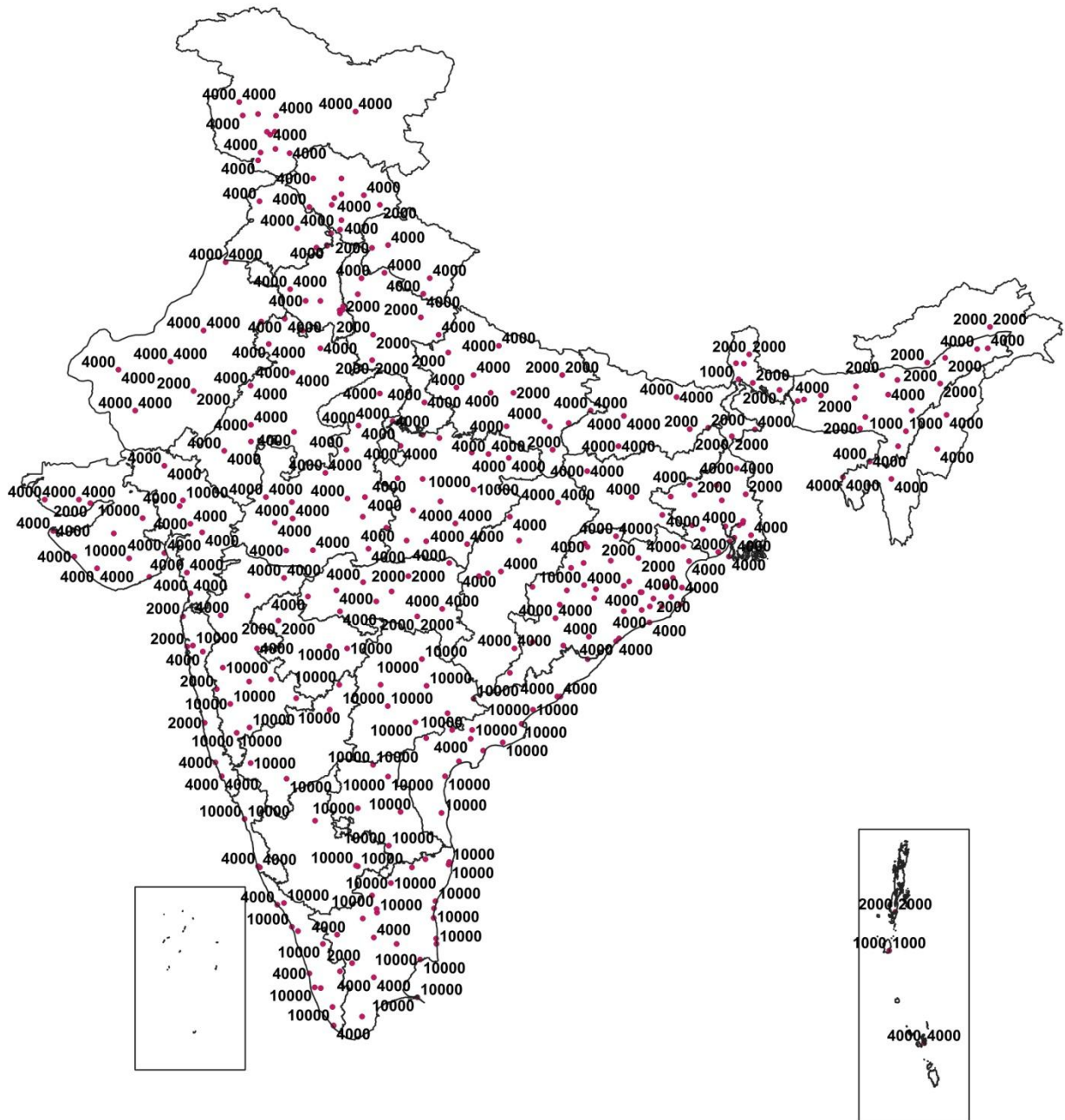
Visibility at 0530 hrs IST Dated 29/02/2024 (Today)



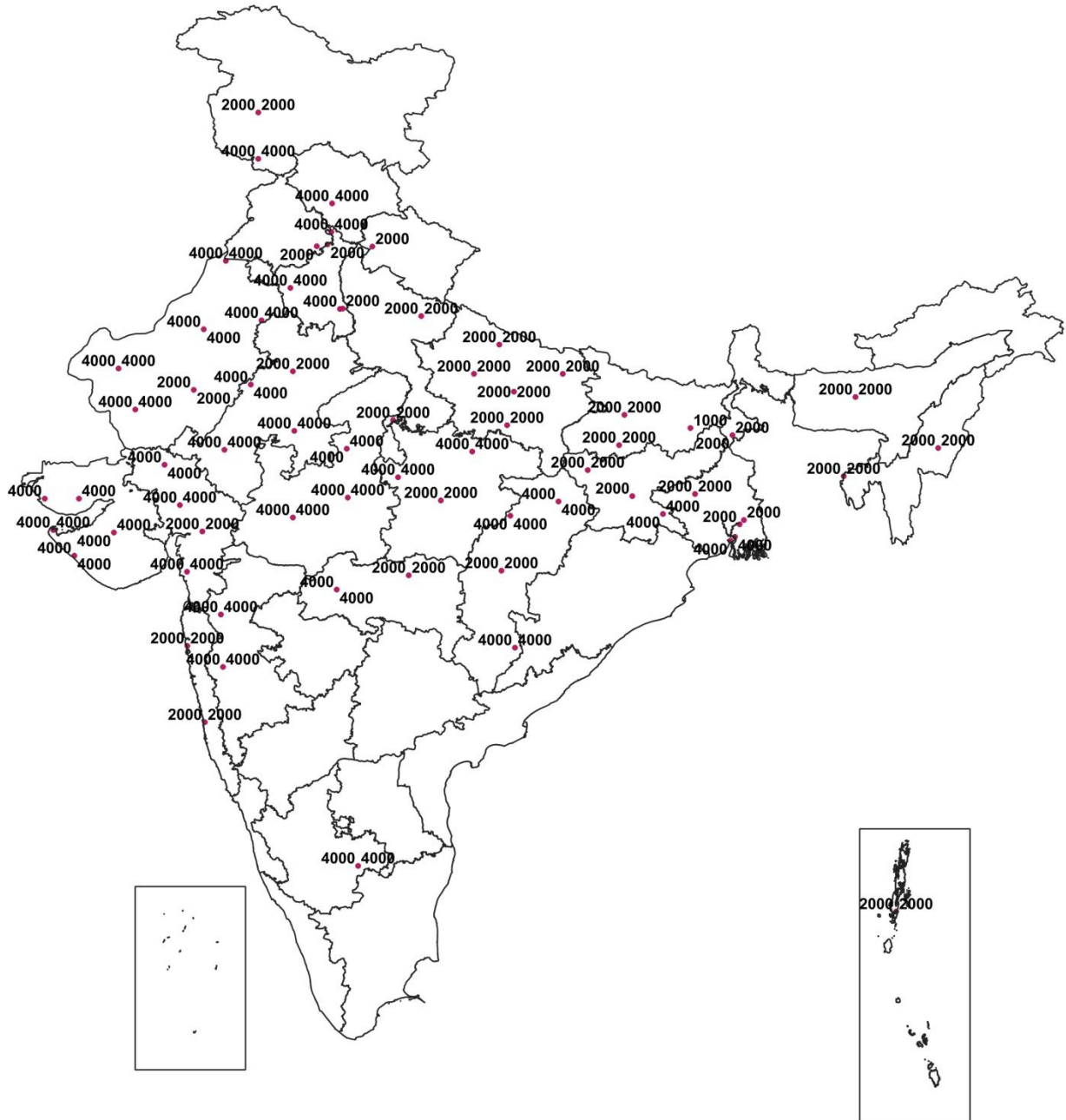
Visibility at 0830 hrs IST Dated 29/02/2024 (Today)



Visibility at 1730 hrs IST Dated 28/02/2024 (Yesterday)

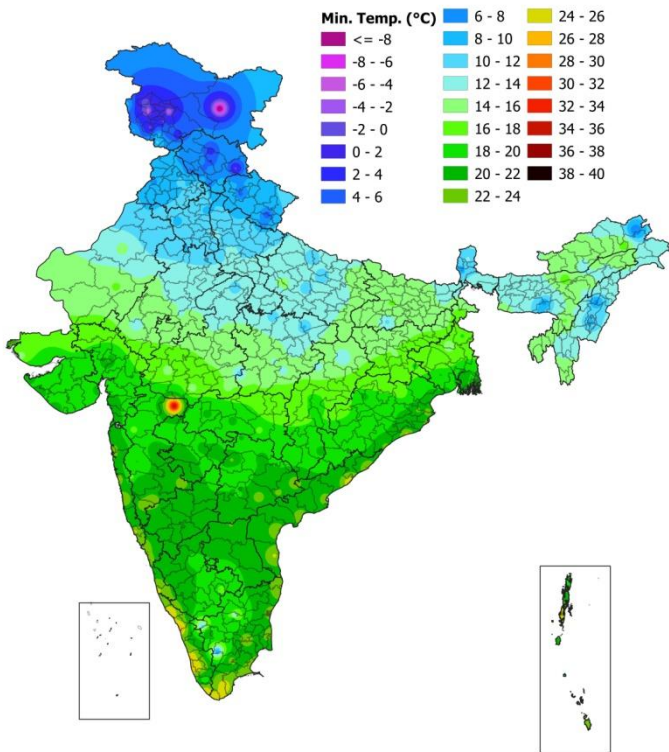


Visibility at 2330 hrs IST Dated 28/02/2024 (Yesterday)

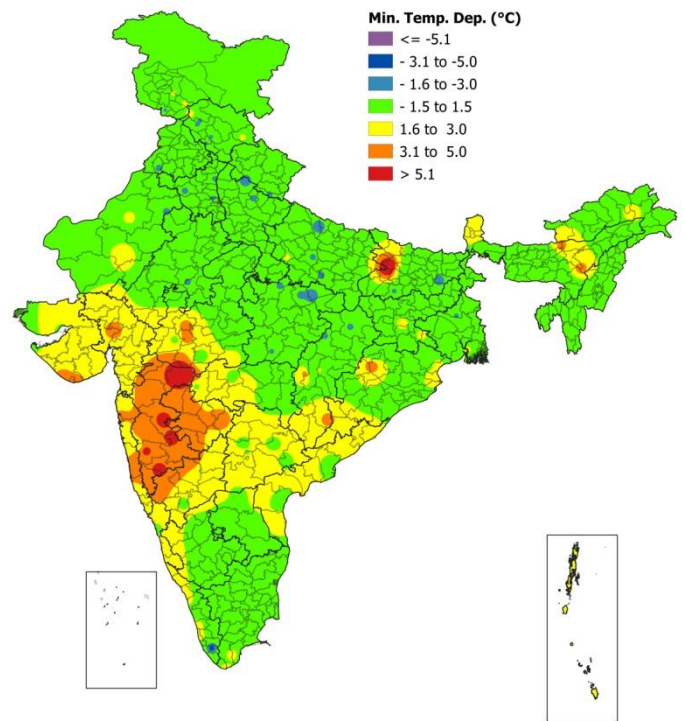


Annexure 5

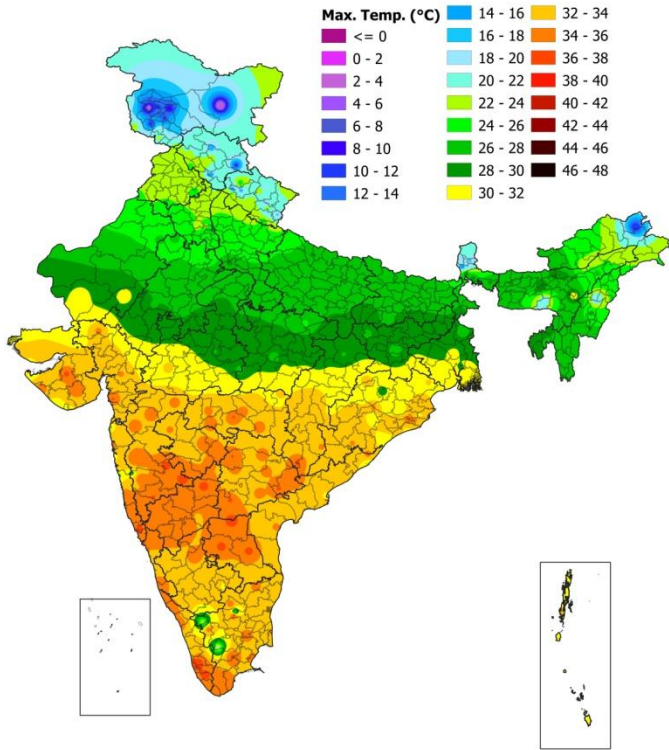
Minimum Temperature Dated 29/02/2024



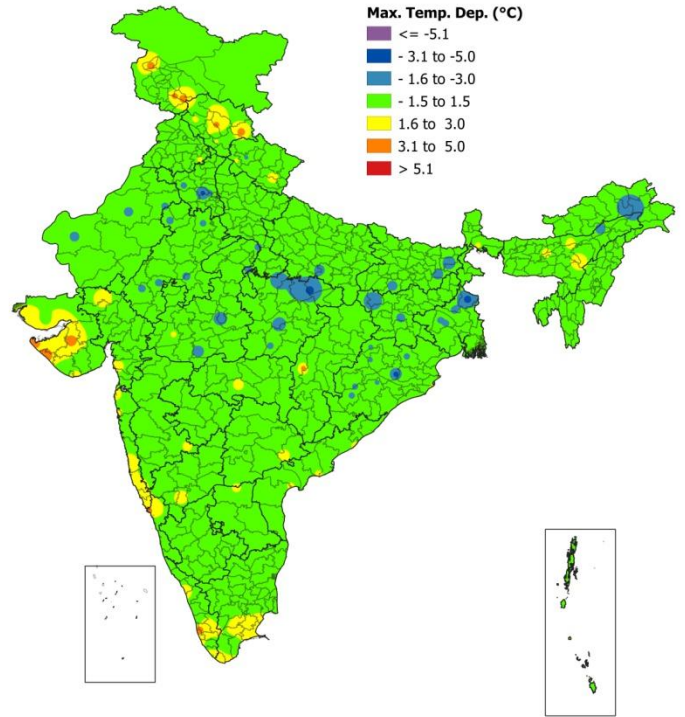
Min Temperature Departure Dated 29/02/2024



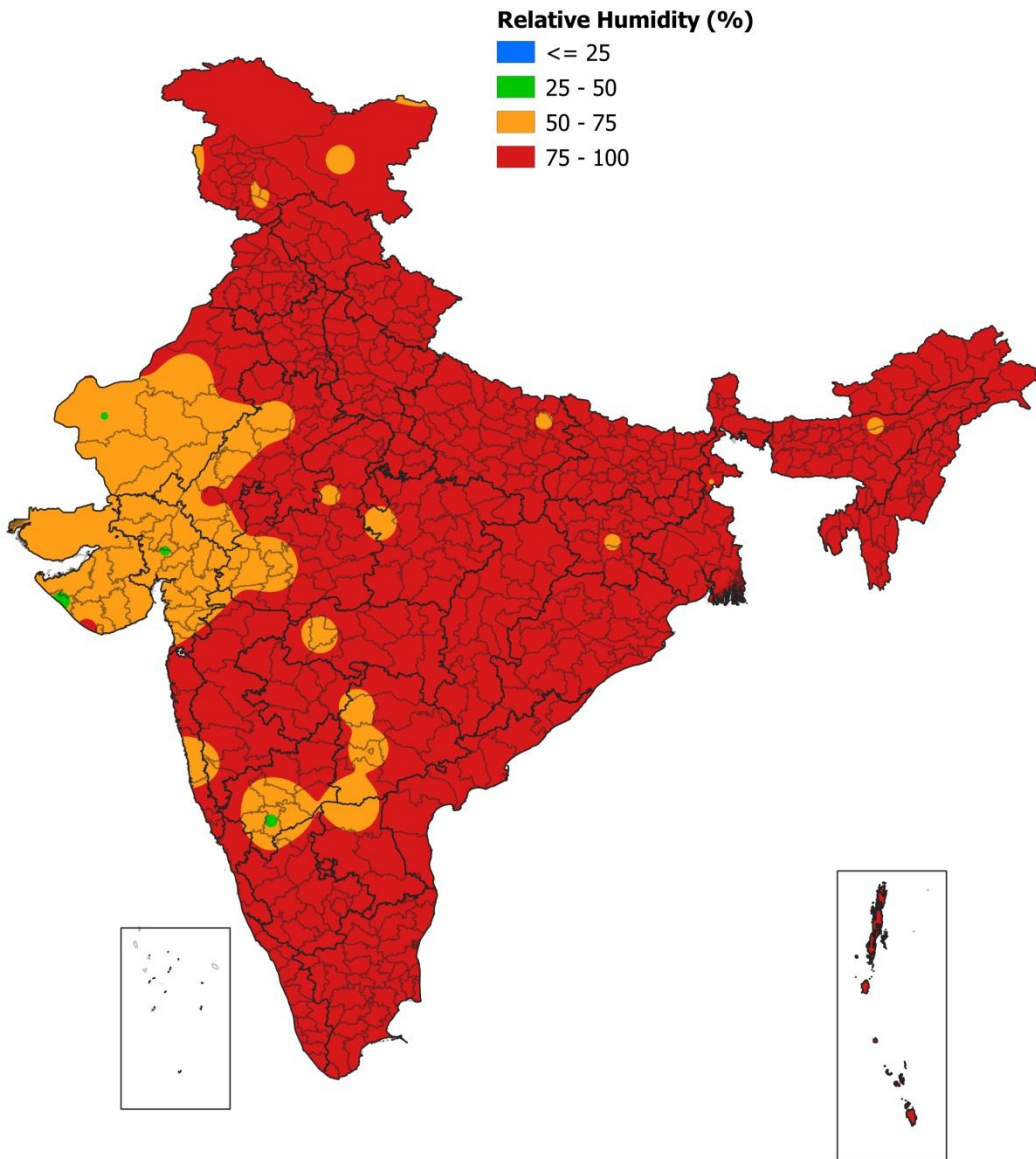
Maximum Temperature Dated 28/02/2024



Max Temperature Departure Dated 28/02/2024

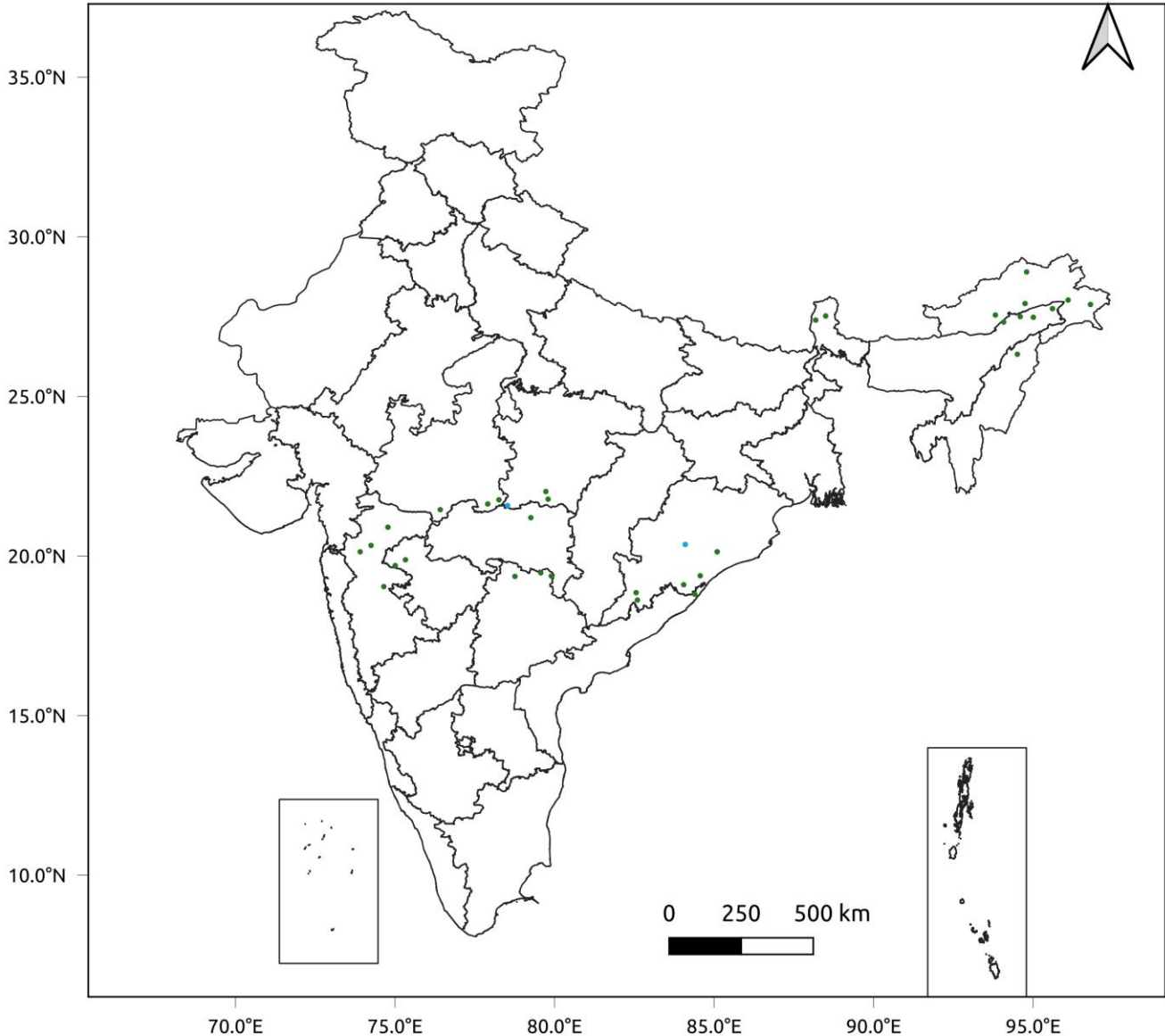


Relative Humidity Dated 29/02/2024 at 0530 Hrs





24 Hr cumulative rainfall recorded over different stations during 0830 IST of 28-2-2024 to 0830 IST of 29-2-2024

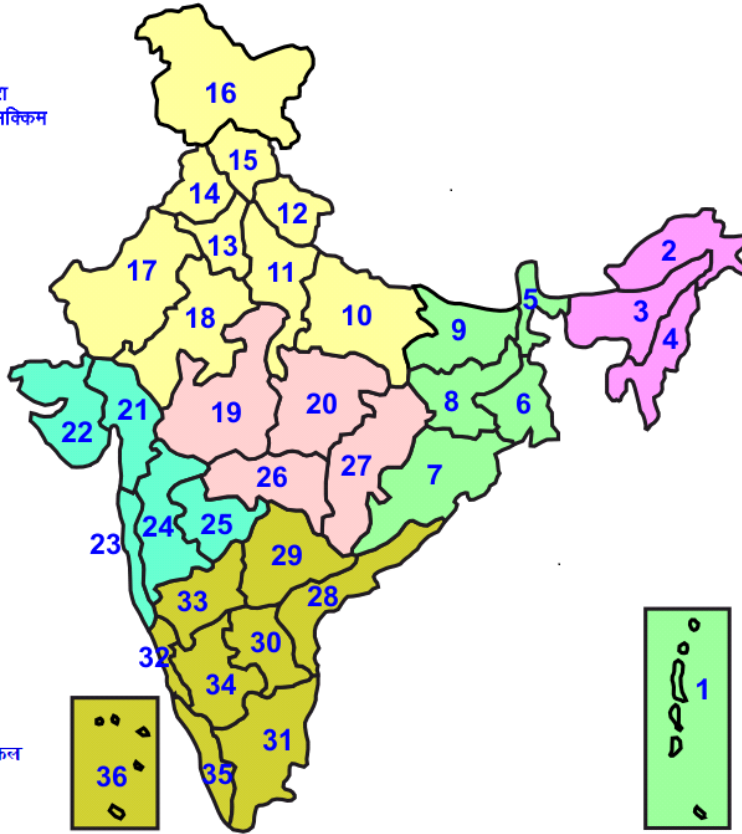


Legends

- 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)

LEGENDS


- 1 अंडमान और निकोबार द्वीप समुह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीजोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम गंगेय बंगाल
- 7 ओडिसा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा चंडिगढ़ एवं दिल्ली
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू एवं कश्मीर एवं 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 मराठावाडा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 तटीय आंध्र प्रदेश एवं यनम
- 29 तेलंगाना
- 30 रायलसीमा
- 31 तमिलनाडु, पुदुचेरी एवं कराईकल
- 32 तटिय कर्नाटक
- 33 आंतरिक उत्तरी कर्नाटक
- 34 आंतरिक दक्षिणी कर्नाटक
- 35 केरल एवं 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. Orissa
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


LEGENDS

<p style="text-align: center; color: red; font-weight: bold;">WARNING</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr><td style="background-color: red; color: white;">WARNING (TAKE ACTION)</td></tr> <tr><td style="background-color: orange;">ALERT (BE PREPARED)</td></tr> <tr><td style="background-color: yellow;">WATCH (BE UPDATED)</td></tr> <tr><td style="background-color: green;">NO WARNING (NO ACTION)</td></tr> </table>	WARNING (TAKE ACTION)	ALERT (BE PREPARED)	WATCH (BE UPDATED)	NO WARNING (NO ACTION)	<p style="text-align: center; color: blue; font-weight: bold;">Probabilistic Forecast</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="background-color: #e0f2f1;">Terms</th> <th style="background-color: #e0f2f1;">Probability of Occurrence (%)</th> </tr> </thead> <tbody> <tr><td style="color: blue;">Unlikely</td><td>< 25</td></tr> <tr><td style="color: blue;">Likely</td><td>25 - 50</td></tr> <tr><td style="color: blue;">Very Likely</td><td>50 - 75</td></tr> <tr><td style="color: blue;">Most Likely</td><td>> 75</td></tr> </tbody> </table>	Terms	Probability of Occurrence (%)	Unlikely	< 25	Likely	25 - 50	Very Likely	50 - 75	Most Likely	> 75
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	<p>When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions.</p> <p>(a). Based on departure</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C.</td></tr> <tr><td>Severe Cold Wave: Minimum Temperature Departure from normal $\geq -6.5^{\circ}\text{C}$</td></tr> </table> <p>(b) Based on actual Minimum Temperature (for Plains only)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Cold Wave : When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$</td></tr> <tr><td>Severe Cold Wave: When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$</td></tr> </table> <p>(c) For Coastal Stations</p> <p>When Minimum Temperature departure is $\leq -4.5^{\circ}\text{C}$ or actual Minimum Temperature is $\leq 15^{\circ}\text{C}$</p>	Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C .	Severe Cold Wave: Minimum Temperature Departure from normal $\geq -6.5^{\circ}\text{C}$	Cold Wave : When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$	Severe Cold Wave: When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$
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	<p>When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions</p> <p>Based on departure</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C.</td></tr> <tr><td>Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$</td></tr> </table>	Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C .	Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$
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	<p>Phenomenon of small droplets suspended in air and the horizontal visibility $< 1\text{km}$</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>Moderate Fog: When the visibility between 500-200 metres</td></tr> <tr><td>Dense Fog: when the visibility between 50- 200 metres</td></tr> <tr><td>Very Dense Fog: when the visibility < 50 metres</td></tr> </table>	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
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Very Dense Fog: when the visibility < 50 metres				

Green (No action)	Normal Day	Minimum temperatures are near normal
Yellow Alert (Be updated)	Cold Alert	Cold wave conditions at district level likely to persist for 2 days
Orange Alert (Be prepared)	Severe Cold Alert for the day	Either of the following two conditions: (i) Severe cold wave conditions persist for 2 days. (ii) With varied severity, cold wave is likely to persists for 4 days or more
Red Alert (Take Action)	Extreme Cold Alert for the day	Either of the following two conditions: (i) Severe cold wave persists for more than 2 days. (ii) Total number of cold/severe cold wave days likely to exceeds 6 days.

NOTE: THIS IS THE LAST BULLETIN FOR THE WINTER SEASON 2023-2024