राष्ट्रीय मौसम पूर्वानुमान केन्द्र
भारत मौसम विज्ञान विभाग
पृथ्वी विज्ञान मंत्रालय

National Weather Forecasting Centre
India Meteorological Department
Ministry of Earth Sciences

Friday, December 27, 2024
Time of Issue: 0830 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems, Forecast and warning:

- The **upper air cyclonic circulation** over southwest & adjoining westcentral Bay of Bengal off South Andhra Pradesh-North Tamil Nadu coasts in lower tropospheric levels. Under the influence of this system:
  - ✓ Light to moderate rainfall at a few places accompanied with thunderstorm, lightning over Tamil Nadu, Puducherry & Karaikal on 27th December.

- A **Western disturbance** lies as a cyclonic circulation between 3.1 & 5.8 km above mean sea level with the trough aloft in upper tropospheric westerlies with its axis at 7.6 km above mean sea level roughly along Long. 67°E to the north of Lat. 22°N; an **induced cyclonic circulation** lies over southwest Rajasthan & neighbourhood and a **trough in easterlies** runs from eastcentral Arabian sea to the above cyclonic circulation over north Punjab & neighbourhood across induced cyclonic circulation over southwest Rajasthan & neighbourhood in lower tropospheric levels. The system is very likely to interact with lower levels easterly winds over central parts of the country leading to high moisture feeding from Arabian Sea as well as Bay of Bengal mainly during 27th & 28th December. Under the influence of these systems:

  - ✓ Scattered to Fairly widespread Rainfall/Snowfall is likely over Western Himalayan Region on 27th & 28th December.
  - ✓ Isolated to Scattered rainfall accompanied with thunderstorm, lightning & gusty winds (wind speed 30-50 kmph) likely over Punjab, Haryana, Chandigarh, Delhi, Uttarakhand, Himachal Pradesh, West Uttar Pradesh, East Rajasthan, Madhya Maharashtra, Marathwada on 27th, Madhya Pradesh on 27th & 28th; Isolated to Scattered rainfall accompanied with thunderstorm & lightning also likely over West Rajasthan, Gujarat region on 27th, East Uttar Pradesh, Vidarbha, Chhattisgarh on 27th & 28th, West Uttar Pradesh on 28th December.
  - ✓ **Thunderstorm accompanied with hailstorms also likely over Punjab, Haryana, Chandigarh, West Uttar Pradesh, Rajasthan, Vidarbha, Madhya Maharashtra, Marathwada & Gujarat Region on 27th and Madhya Pradesh on 27th & 28th December.**

Forecast of temperature:

- Rise in minimum temperatures by about 2°C likely over Northwest India during next 2 days and gradual fall by 2-3°C thereafter.
- No significant change in minimum temperatures likely over Central India during next 2 days and fall by 2-4°C thereafter.
- No significant change in minimum temperatures likely over East India during next 4 days.
- Rise in minimum temperatures by 2-3°C likely over West India during next 24 hours and gradual fall by 2-3°C thereafter.

Cold Wave Warnings:

Cold wave conditions very likely in isolated pockets over Himachal Pradesh, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 29th & 30th December.

Cold Day Warnings:

Cold day to severe cold day conditions very likely in some parts of Himachal Pradesh on 28th December.

Cold Day conditions very likely in some parts of Himachal Pradesh on 27th December.

Dense Fog Warnings:

Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Himachal Pradesh on 27th & during 29th – 31st, Punjab, Haryana, Chandigarh during 27th-31st, Assam & Meghalaya during 27th-28th, Odisha on 27th & 28th, Rajasthan during 28th-31st December.

Ground Frost Warnings:

Ground Frost conditions very likely in isolated pockets of Himachal Pradesh on 29th & 30th December.

Main Weather Observations:

- **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at a few places** over South Interior Karnataka, Rayalaseema; **at isolated places** over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Telangana.

- **Heavy rainfall observed** (from 0830 hours IST to 1730 hours IST of yesterday): **NIL.**

- **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday): **Coastal Andhra Pradesh & Yanam**: Ongole-3, **Tamil Nadu, Puducherry & Karaikal**: Vellore-1.

- **Fog reported** (at 0530 hours IST of today): **Moderate fog** in isolated pockets of Delhi, East Uttar Pradesh, Bihar and **Shallow fog** in isolated pockets of Punjab, southeast Rajasthan, Madhya Pradesh, West Uttar Pradesh, north Chhattisgarh & northwest Odisha.

- **Visibility reported** (at 0530 hours IST of today) **(≤ 500 meter): Punjab**: Amritsar-500; **Delhi**: Safdarjung-200, Palam-500; **southeast Rajasthan**: Udaipur-500; **Madhya Pradesh**: Gwalior, Bhopal & Sagar-500 each; **East Uttar Pradesh**: Varanasi-200; **West Uttar Pradesh**: Bareilly-500; **Bihar**: Purnea-200, Bhagalpur & Patna-500; **north Chhattisgarh**: Ambikapur-500; **northwest Odisha**: Jharsuguda-500.

- **Yesterday, Cold day conditions** observed in isolated pockets of Saurashtra & Kutch.

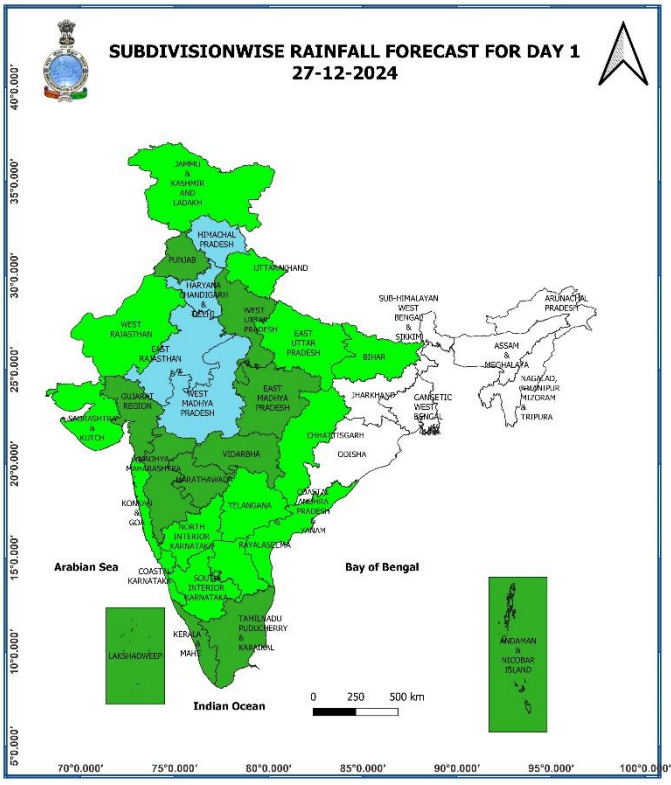
- **Minimum Temperatures Departures (as on 26-12-2024):** Minimum temperatures were **markedly above normal (5.1°C or more)** at many places over Madhya Pradesh, Madhya Maharashtra and Rayalaseema; at a few places over Telangana; at isolated places over East Rajasthan, Gujarat Region, Marathwada, Vidarbha, Odisha and Gangetic West Bengal ; **appreciably above normal (3.1°C to 5.0°C)** at most places over East Uttar Pradesh, Bihar and North Interior Karnataka; at many places over Jharkhand, Tamil Nadu, Puducherry & Karaikal, South Interior Karnataka; at a few places over Coastal Andhra Pradesh & Yanam; at isolated places over Chhattisgarh; **above normal (1.6°C to 3.0°C)** at many places over Konkan & Goa; at a few places over Saurashtra & Kutch ; at isolated places over West Rajasthan, West Uttar Pradesh, Kerala & Mahe and Nagaland, Manipur, Mizoram & Tripura. These were **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; **below normal (-1.6°C to -3.0°C)** at isolated places over Lakshadweep and near normal over rest parts of the country. Yesterday, **the lowest minimum temperature** of **5.0°C** was reported at **Churu (West Rajasthan)** over the plains of the country (Fig. 4).

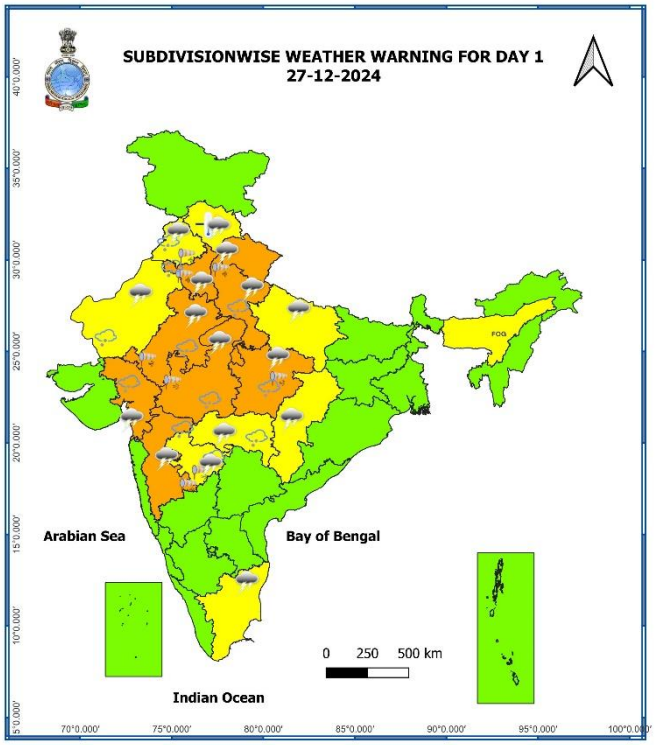
- **Maximum Temperature Departures (as on 26-12-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at a few places over East Uttar Pradesh; at isolated places over Chhattisgarh, Bihar, Gangetic West Bengal, East Madhya Pradesh; **above normal (1.6°C to 3.0°C)** at most places over Jharkhand, West Uttar Pradesh; at many places over Punjab, Uttarakhand; at a few places over Himachal Pradesh, Assam & Meghalaya, Haryana-Chandigarh-Delhi, Sub-Himalayan West Bengal & Sikkim; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Madhya Pradesh, Vidarbha, Odisha, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura. These were **markedly below normal (-5.1° C or less)** at isolated places over Saurashtra & Kutch; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over West Rajasthan, Telangana; **below normal (-1.6°C to -3.0°C)** at a few places over Rayalaseema; at isolated places over Gujarat Region, East Rajasthan, Konkan & Goa, Marathwada, Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal and near normal over rest part of the country . Yesterday, the **highest maximum temperature** of **34.8°C** was reported at **Punalur (Kerala)** over the plains of the country (Fig. 2).

Meteorological Analysis (Based on 0530 hours IST)

- The **Western disturbance** now lies as a cyclonic circulation between 3.1 & 5.8 km above mean sea level with the trough aloft in upper tropospheric westerlies with its axis at 7.6 km above mean sea level roughly along Long. 67°E to the north of Lat. 22°N.
- The **induced cyclonic circulation** over southwest Rajasthan & neighbourhood extending upto 1.5 km above mean sea level persists.
- The **trough** in easterlies now runs from eastcentral Arabian sea to the above cyclonic circulation over north Punjab & neighbourhood across induced cyclonic circulation over southwest Rajasthan & neighbourhood at 1.5 km above mean sea level.
- The **upper air cyclonic circulation** over southwest & adjoining westcentral Bay of Bengal off South Andhra Pradesh-North Tamil Nadu coasts extending upto 1.5 km above mean sea level persists.
- The **upper air cyclonic circulation** over north Punjab & neighbourhood at 1.5 km above mean sea level persists.
- The **upper air cyclonic circulation** over east Bangladesh & neighbourhood at 1.5 km above mean sea level persists.
- **Subtropical westerly Jet Stream** with core winds of the order upto 110 knots at 12.6 km above mean sea level is prevailing over Northwest India.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 03rd January, 2025)



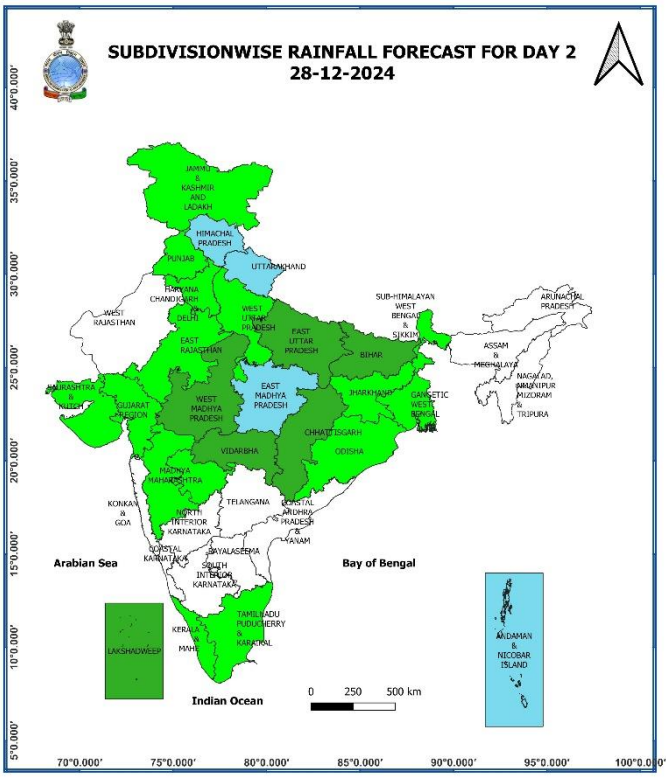


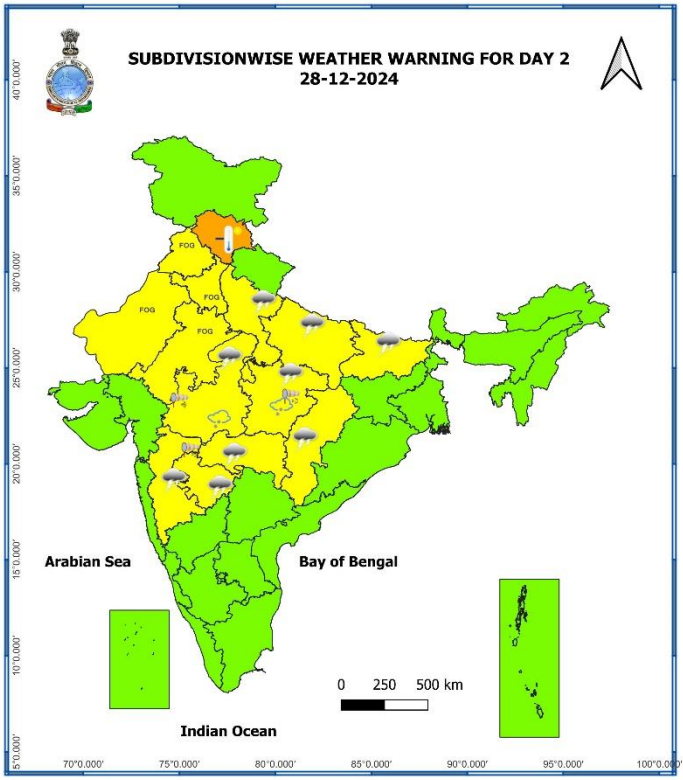
27 December (Day 1):

- **Thunderstorm accompanied with hailstorm, gusty winds (30-40 kmph) & lightning** very likely at many places over East Rajasthan; at a few places over Punjab, East Madhya Pradesh; **accompanied with hailstorm, gusty winds (40-50 kmph) & lightning** at many places over Haryana-Chandigarh-Delhi and West Madhya Pradesh; at isolated places over Madhya Maharashtra and Marathwada; **with hailstorm & lightning** at isolated places over West Rajasthan, Gujarat Region and Vidarbha; **with lightning** at many places over Himachal Pradesh; at a few places over Uttarakhand; at isolated places over East Uttar Pradesh, Chhattisgarh and Tamil Nadu, Puducherry & Karaikal.

- **Dense fog** very likely in isolated pockets of Assam & Meghalaya in night/morning hours.

- **Cold day conditions** very likely in many parts of Himachal Pradesh.



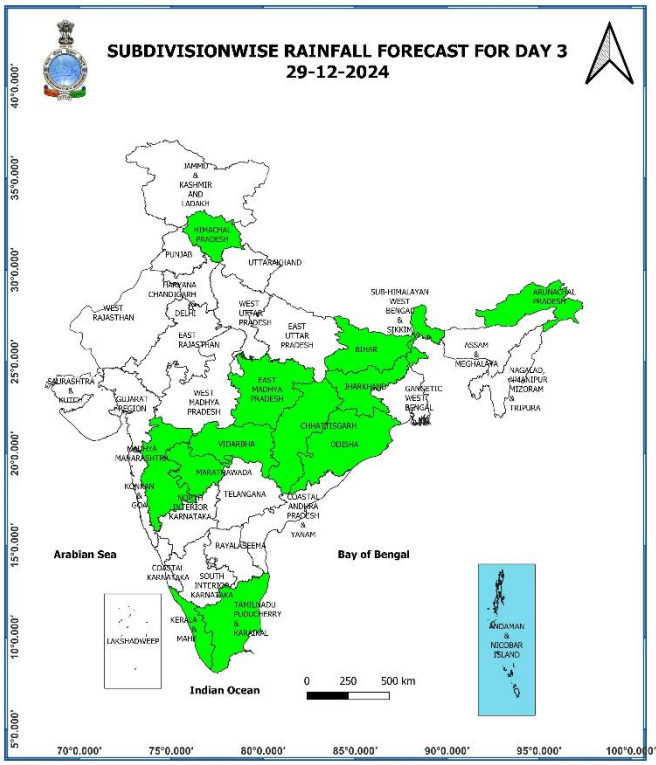


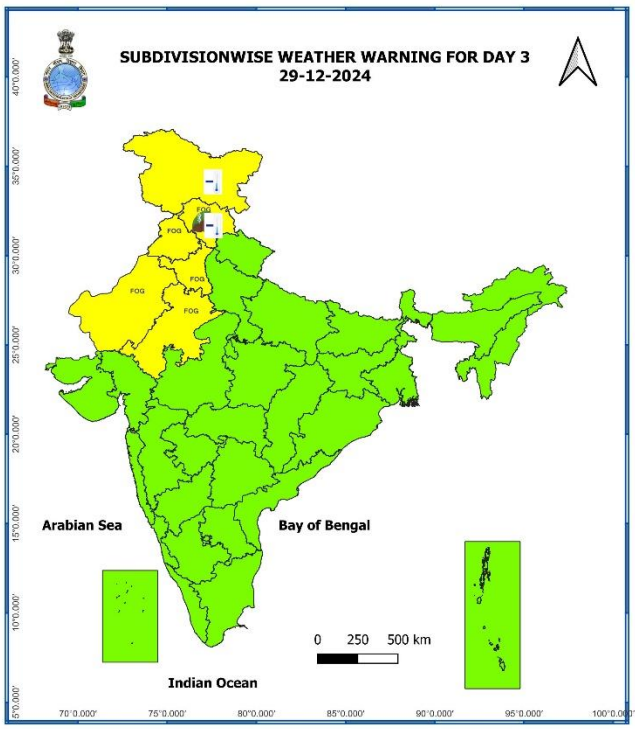
28 December (Day 2):

- **Thunderstorm accompanied with hailstorm, gusty winds (30-40 kmph) & lightning** very likely at many places over East Madhya Pradesh; at a few places over West Madhya Pradesh; **with gusty winds (30-40 kmph) & lightning** at isolated places over Madhya Maharashtra; **with lightning** at a few places over Uttar Pradesh, Vidarbha, Chhattisgarh, Bihar and Marathwada.

- **Dense fog** very likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi and Rajasthan in night/morning hours.

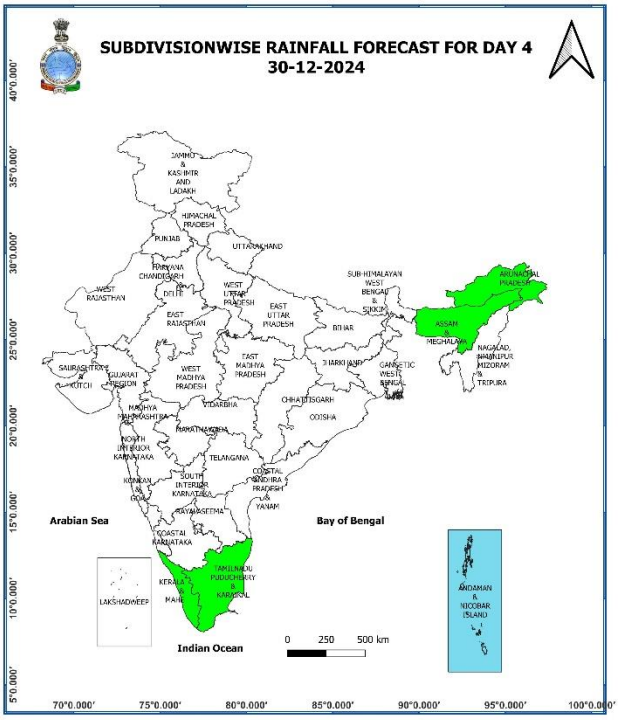
- **Cold Day to severe cold day conditions** very likely in some parts of Himachal Pradesh.

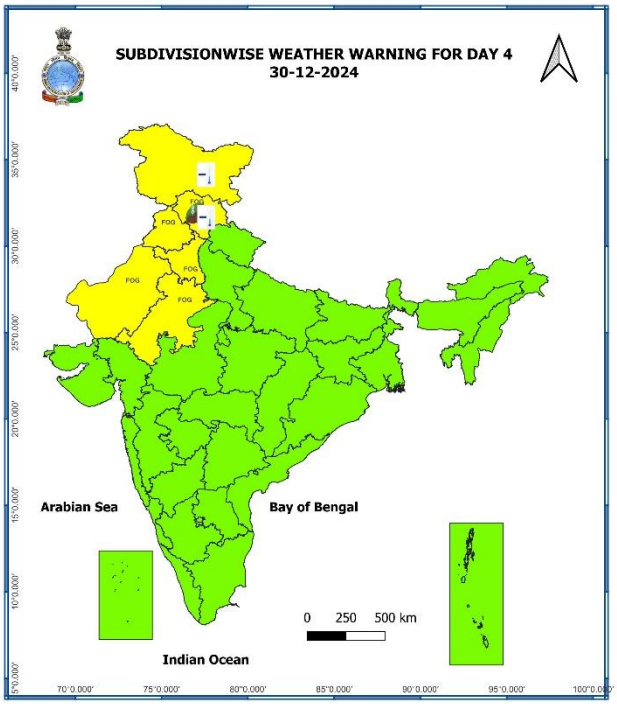




29 December (Day 3):

- **Dense fog** likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi and Rajasthan in night/morning hours.
- **Cold wave conditions** likely in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- **Ground Frost conditions** likely in isolated pockets of Himachal Pradesh.



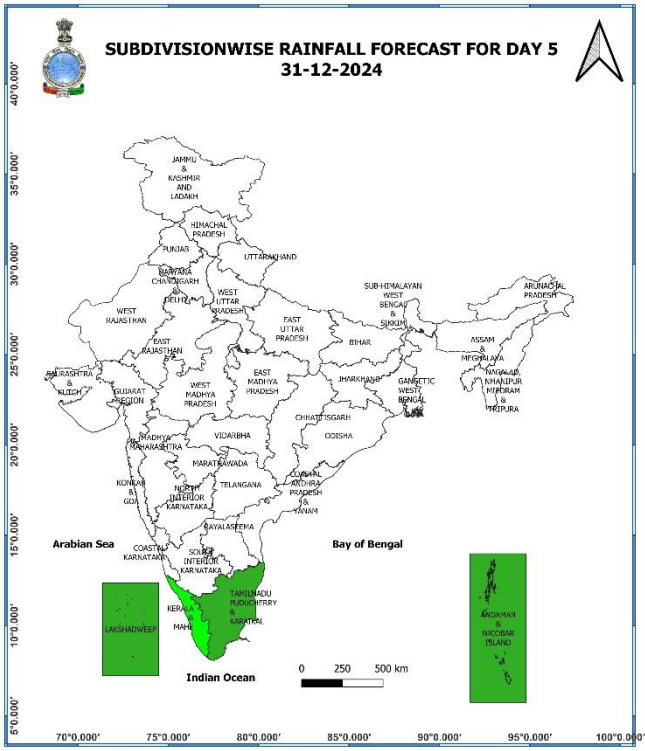


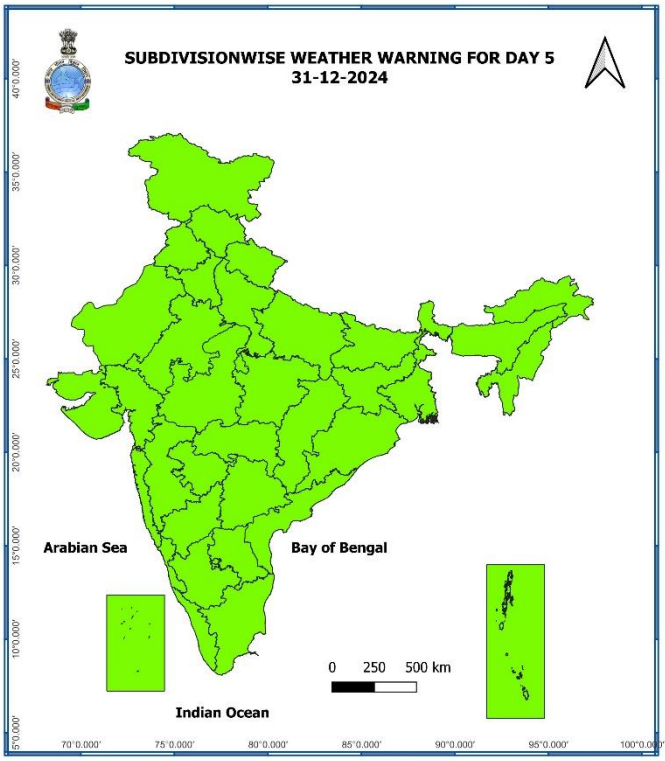
30 December (Day 4):

- **Dense fog** likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi and Rajasthan in night/morning hours.

- **Cold wave conditions** likely in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.

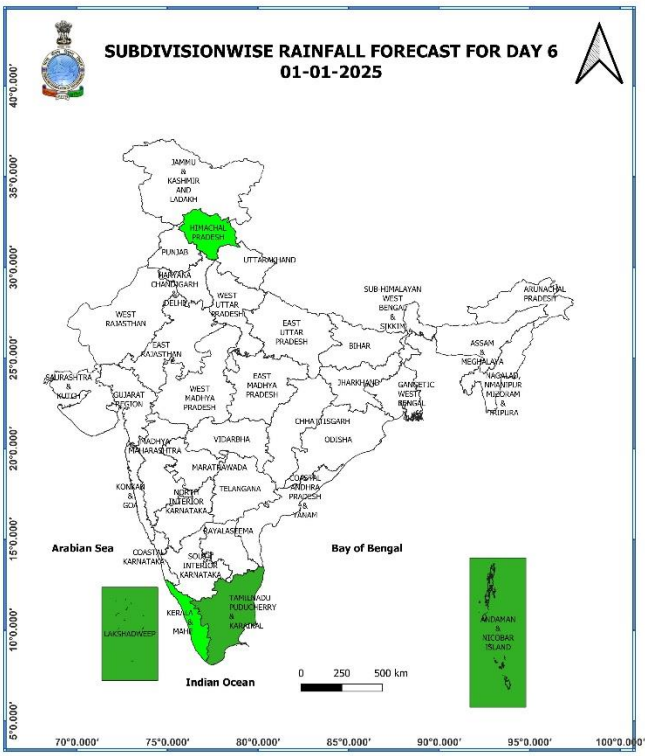
- **Ground Frost conditions** likely in isolated pockets of Himachal Pradesh.

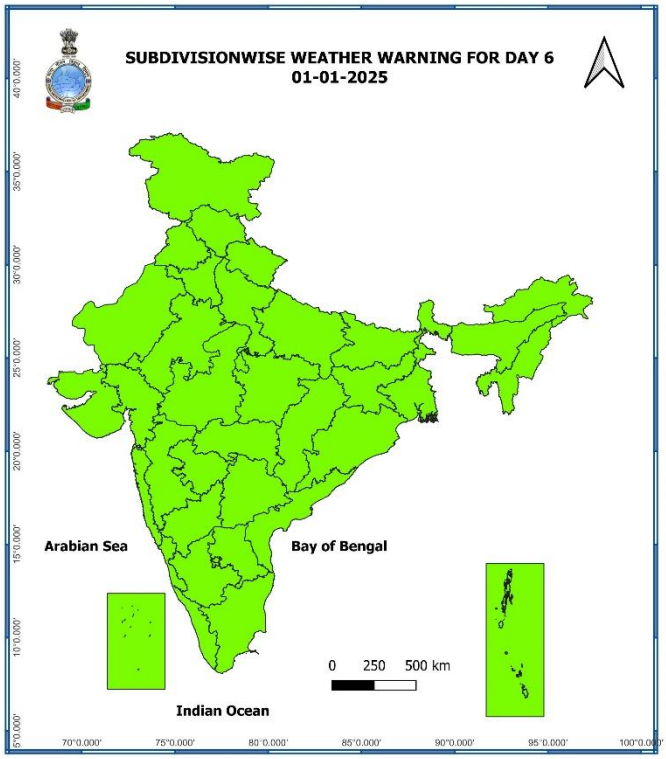




31 December (Day 5):

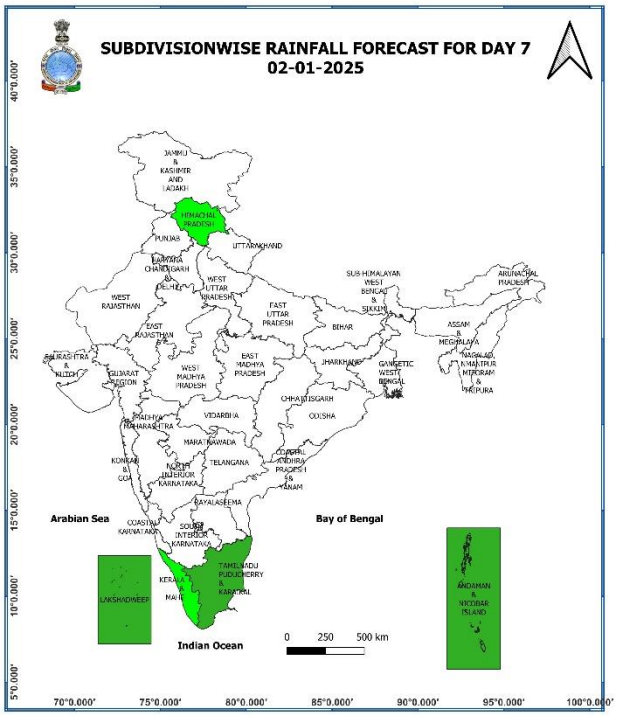
❖ **No weather warning.**

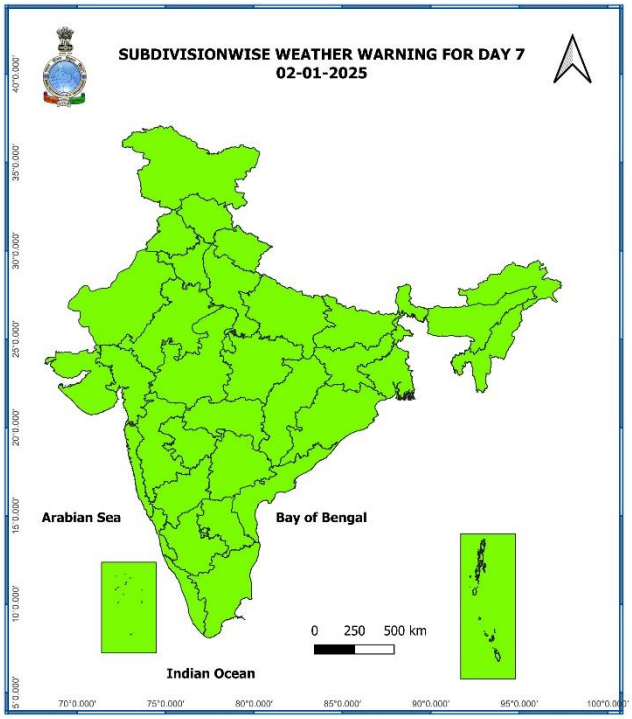




01 January (Day 6):

- **No weather warning.**





02 January (Day 7):

❖ **No weather warning.**

Weather Outlook for subsequent 3 days (During 03rd January, 2025– 05th January, 2025)

❖ Isolated to scattered light to moderate rainfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Andaman & Nicobar Islands.

❖ Mainly dry weather will prevail over rest parts of country.

- **Action may be taken based on ORANGE AND RED COLOUR warnings.**
- **Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.**
- **As the lead period increases forecast accuracy decreases.**

Impact expected and action suggested due to thunderstorm with lightning & Hailstorm.

Impact expected:

- ❖ Strong wind/hail may damage plantation, horticulture and standing crops.
- ❖ Hail may injure people and cattle at open places.
- ❖ Partial damage to vulnerable structures due to strong winds.
- ❖ Minor damage to kutcha houses/walls and huts.
- ❖ Loose objects may fly.

Action suggested:

- ❖ Stay indoors, close windows & doors and avoid travel if possible.
- ❖ Take safe shelters; do not take shelter under trees.
- ❖ Do not lie on concrete floors and do not lean against concrete walls.
- ❖ Unplug electrical/ electronic appliances.
- ❖ Immediately get out of water bodies.
- ❖ Keep away from all the objects that conduct electricity.

Impact expected due to dense fog in the night /morning hour:

❖ Transport and Aviation:

- May affect some airports, highways and railway routes in the areas of met- sub-division.
- Difficult driving conditions with slower journey times.
- Unless taken precautionary measures, it may lead to some road traffic collisions.

❖ Power Sector:

- Chances of Tripping of Power lines in the very dense fog routes.

❖ Human Health:

- Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath.
- Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
- Eye Irritation: Dense fog contains pollutions of various types and these Pollutants in the air if exposed may tend to irritate the membranes of the eye causing various infections leading to redness or swelling of the eye.

Action suggested:

❖ Transport and Aviation:

- Be careful while driving or outing through any transport.
- Use fog lights during driving.
- Be in touch with airlines, railways and state transport for schedule of your journey.

❖ Power Sector:

- To keep ready Maintenance Team
- Human Health: To avoid outing until unless emergency and to cover the face.

Impact expected due to cold wave/severe cold wave conditions:

- An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- Frostbite can occur due to prolonged exposure to cold. The skin turns pale, hard and numb and eventually black blisters appear on exposed body parts such as fingers, toes, nose and or earlobes. Severe frostbite needs immediate medical attention and treatment.
- Impact on agriculture, crop, livestock, water supply, transport and power sector at some places.

Action suggested:

- Wear several layers of loose fitting, light weight; warm woollen clothing.
- Cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts. Wear several layers of loose fitting, light weight; warm woollen clothing rather than one layer of heavy cloth.
- Eat vitamin-C rich fruits & vegetable and drink sufficient fluids preferably warm fluids to maintain adequate immunity.
- Avoid or limit outdoor activities.
- Keep dry, if wet, change cloths immediately to prevent loss of body heat. Wear insulated/waterproof shoes.
- Warm the affected area of the body slowly with lukewarm water; do not rub the skin vigorously.
- If the affected skin area turns black, immediately consult a doctor.
- Maintain ventilation while using Heaters to avoid inhaling toxic fumes.
- Take safety measures while using electrical and gas heating devices.
- Extreme care needed for vulnerable people.
- Seek medical attention as soon as possible for someone suffering from frostbite/ Hypothermia.
- Protect livestock from cold weather.

Agromet advisories for Heavy Rainfall/ Cold Wave/ Ground Frost likely over various parts of the country

- Use hail nets to protect orchards and vegetable plants in **Punjab, Haryana, West Uttar Pradesh, Rajasthan, Madhya Pradesh, Vidarbha, Madhya Maharashtra, Marathwada** and **Gujrat region**.
- Provide mechanical support to horticultural crops and staking to vegetables.
- Drain out excess water from rice, green gram, black gram, mustard, vegetables and other standing crop fields in **Odisha** and make necessary arrangements to drain out excess water from rice nurseries, green gram, black gram, sesame and other standing crop fields and vegetables in **Coastal Andhra Pradesh.**
- Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields.
- In **Jammu & Kashmir** and **Himachal Pradesh,** apply light and frequent irrigation to the standing crops in the evening to protect them from low temperature stress or cold injuries. Use mulching and cover vegetable nurseries and young fruit plants with straw/polythene sheets to maintain optimum soil temperature.

Livestock and Fishery

- Keep the animals inside the shed during heavy rainfall/ hailstorms and provide them with balanced feed.
- Store feed and fodder in a safe place to prevent spoilage.
- Construct an outlet with proper netting around the pond to drain out excess rain water, thereby preventing fishes/fingerlings from escaping in case of overflowing.
- To protect from cold, keep cattle inside the sheds during night and provide dry bedding. Also keep the chicks warm by providing artificial light in the poultry sheds.

Fig. 1: Maximum Temperatures

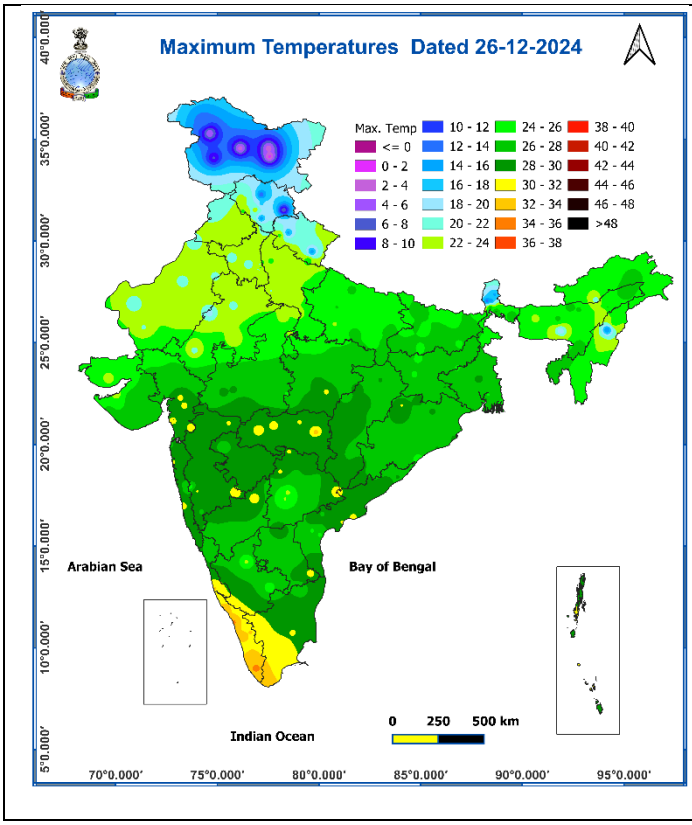


Fig. 2: Departure of Maximum Temperatures

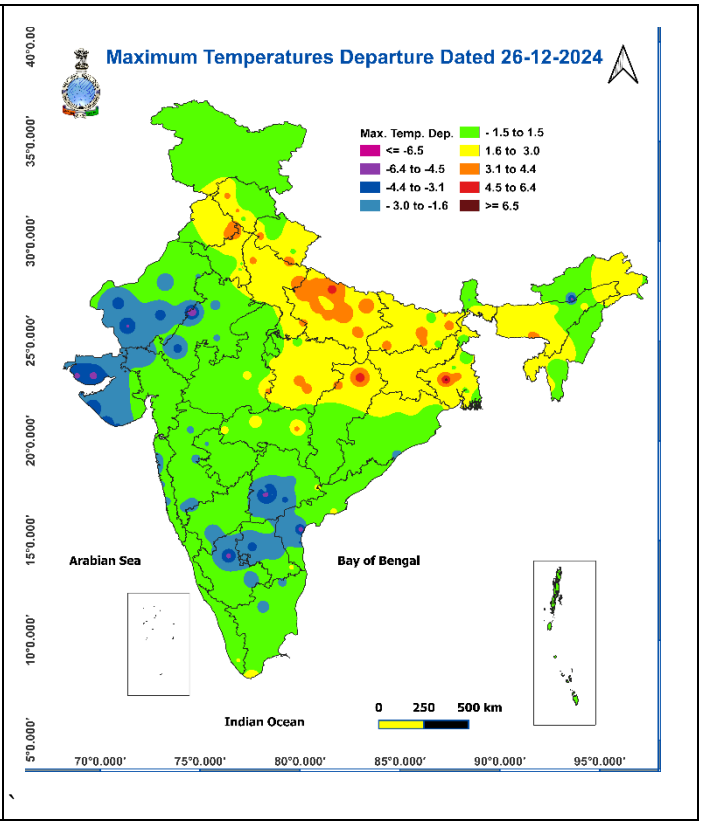


Fig. 3: Minimum Temperatures

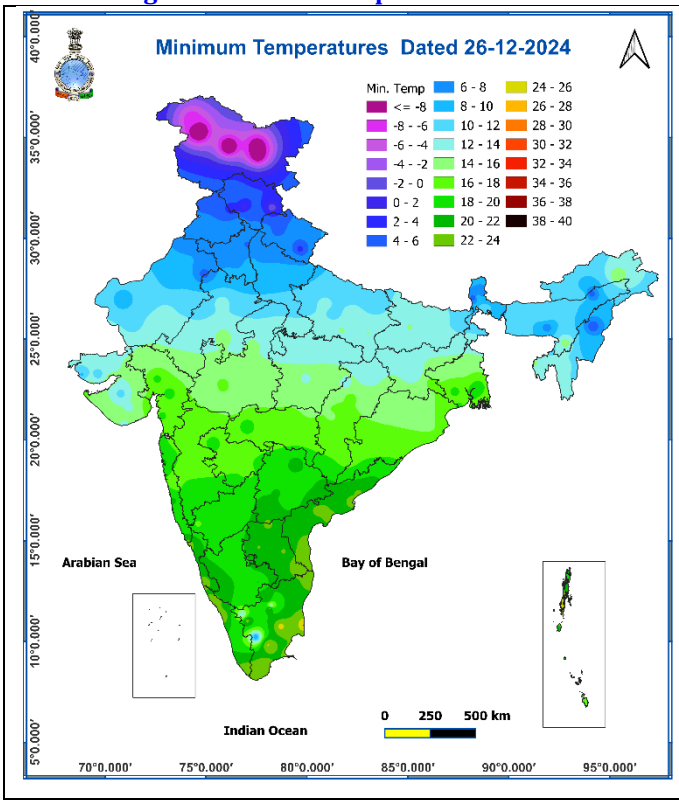
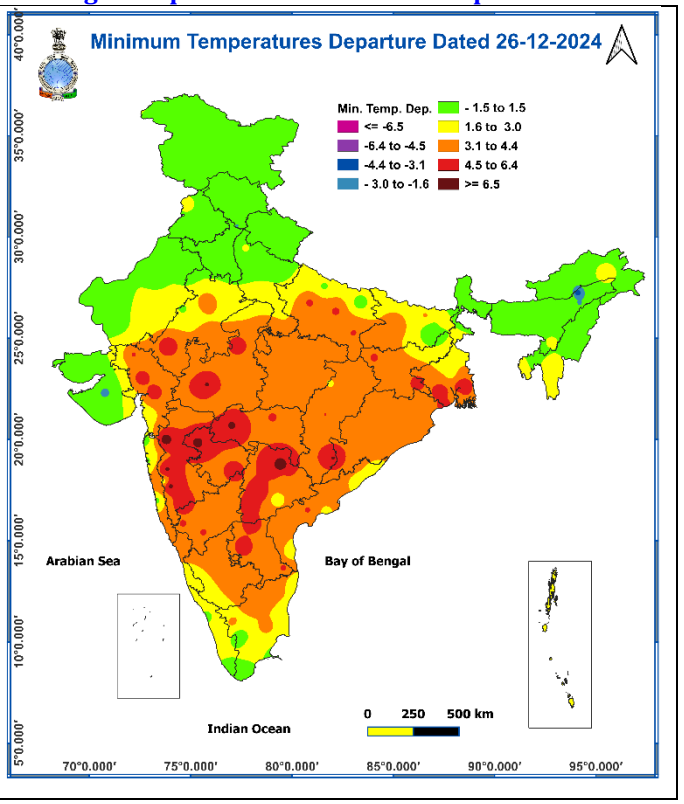
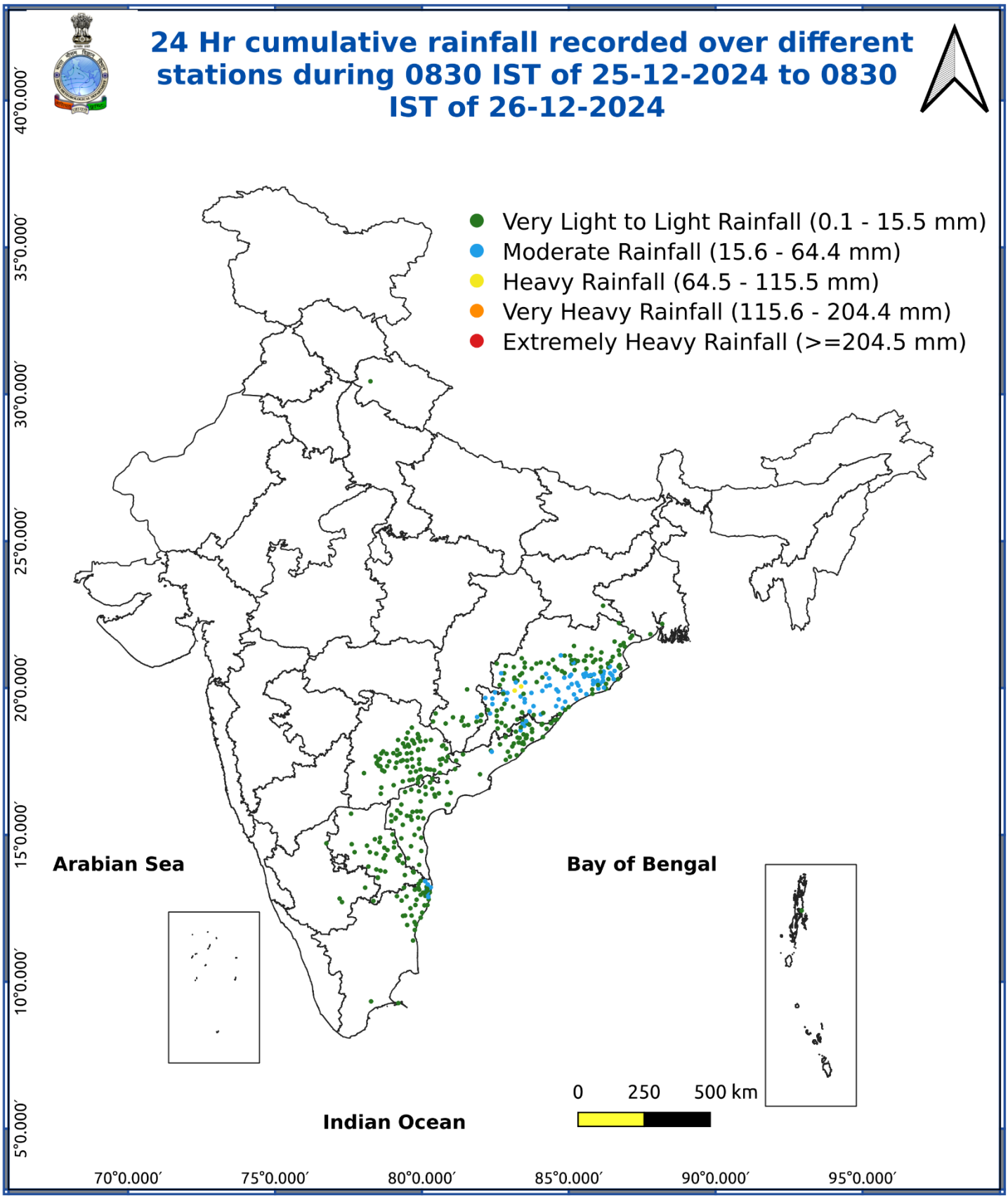


Fig. 4: Departure of Minimum Temperatures



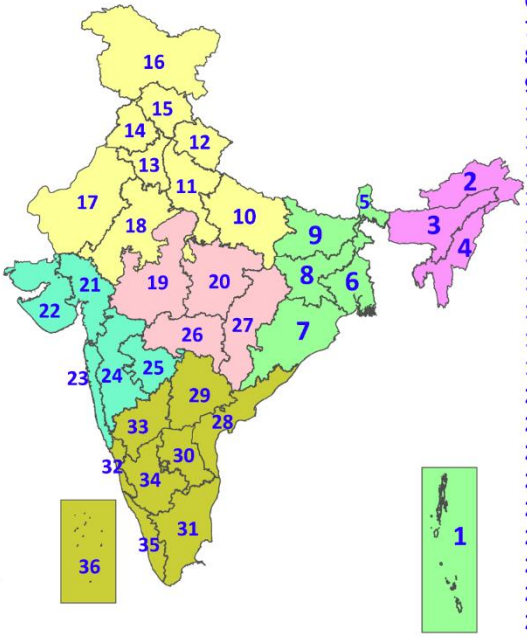
* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.
For more details, kindly visit https://mausam.imd.gov.in or contact: 011-2434-4599
(Service to the Nation since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

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



LEGENDS

1. अंडमान और निकोबार द्वीपसमूह
2. अरुणाचल प्रदेश
3. असम और मेघालय
4. नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
5. उप-हिमालयी पश्चिम बंगाल और सिक्किम
6. गंगीय पश्चिम बंगाल
7. ओडिशा
8. झारखंड
9. बिहार
10. पूर्वी उत्तर प्रदेश
11. पश्चिम उत्तर प्रदेश
12. उत्तराखंड
13. हरियाणा, चंडीगढ़ और दिल्ली
14. पंजाब
15. हिमाचल प्रदेश
16. जम्मू और कश्मीर और लद्दाख
17. पश्चिम राजस्थान
18. पूर्वी राजस्थान
19. पश्चिम मध्य प्रदेश
20. पूर्वी मध्य प्रदेश
21. गुजरात
22. सौराष्ट्र
23. कोंकण और गोवा
24. मध्य महाराष्ट्र
25. मराठवाड़ा
26. विदर्भ
27. छत्तीसगढ़
28. तटीय आंध्र प्रदेश और यनम
29. तेलंगाना
30. रायलसीमा
31. तमिलनाडु, पुडुचेरी और कराईकल
32. तटीय कर्नाटक
33. आंतरिक उत्तरी कर्नाटक
34. आंतरिक दक्षिणी कर्नाटक
35. केरल और 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, Chandigarh & 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. Marathwada
26. Vidarbha
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)

Fog
Heavy Rain
Very Heavy Rain
Extremely Heavy Rain
Thunder & Lightning
Hailstorm
Dust Raising Winds

Heavy Snow
Dust Storm
Heat Wave
Warm Night
Hot Day
Hot & Humid
Strong Surface Winds

Cold Wave
Cold Day
Ground Frost

COLOUR CODED WARNING

- No Warning (No Action)
- Watch (Be Aware)
- Alert (Be Prepared To Take Action)
- Warning (Take Action)

Probabilistic Forecast

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

* 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)

DEFINITION/CRITERIA

Rain/ Snow *	**Heavy:** 64.5 to 115.5 mm/cm * **Very Heavy:** 115.6 to 204.4 mm/cm* **Extremely Heavy:** > 204.4 mm/cm *
Heat Wave	**When maximum temperature of a station reaches ≥40° C for plains and ≥30° 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 ≥6.5° C **(b). Based on Actual maximum temperature** **Heat Wave:** When actual maximum temperature ≥45°C. **Severe Heat Wave:** When actual maximum temperature ≥47°C **(c). Criteria for heat wave for coastal stations** When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum temperature ≥37°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 °C.
Cold Wave	**When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °C **(b) Based on actual Minimum Temperature (for Plains only)** **Cold Wave :** When Minimum Temperature is ≤ 4.0 °C **Severe Cold Wave:** When Minimum Temperature is ≤ 2.0 °C **(c) For Coastal Stations** When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C
Cold Day	**When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °C
Fog	**Phenomenon of small droplets suspended in air and the horizontal visibility < 1km** **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 ≤4°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 Strom**: Wind speed >220 kmph (>119 knots)

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