

Wednesday, December 25, 2024  
Time of Issue: 0830 hours IST  
(MORNING)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### Weather Systems, Forecast and warning:

- ❖ The **well marked low pressure area** over Southwest & adjoining Westcentral Bay of Bengal off South Andhra Pradesh-North Tamil Nadu coasts persisted over the same area at 0530 hrs IST of today, the 25<sup>th</sup> December, 2024. It is likely to move west-southwestwards and weaken gradually into a low pressure area over the same region during next 24 hours.
- ❖ Under the influence of these systems:
  - ✓ Light to moderate rainfall accompanied with thunderstorm, lightening very likely at a few places with **heavy rainfall** at isolated places over Coastal Andhra Pradesh & Rayalaseema on 25<sup>th</sup> December.
  - ✓ Light to moderate rainfall at a few places accompanied with thunderstorm, lightening over Tamil Nadu, Puducherry & Karaikal on 25<sup>th</sup> & 26<sup>th</sup> December.
- ❖ An active **western disturbance** is likely to affect northwest India from night of 26<sup>th</sup> December 2024. It 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 till 28<sup>th</sup> December. Under the influence of these systems:
  - ✓ Isolated to Scattered Rainfall/Snowfall is likely over Western Himalayan Region on 27<sup>th</sup> & 28<sup>th</sup> December.
  - ✓ Isolated to Scattered rainfall accompanied with thunderstorm and lightning also likely over Rajasthan, Gujarat State on 26<sup>th</sup> & 27<sup>th</sup>, Punjab, Haryana, Chandigarh, West Uttar Pradesh on 27<sup>th</sup> December; West Madhya Pradesh, Madhya Maharashtra & Marathwada during 26<sup>th</sup> -28<sup>th</sup>, Vidarbha & Chhattisgarh on 27<sup>th</sup> & 28<sup>th</sup> December.
  - ✓ **Thunderstorm accompanied with hailstorms also likely over Punjab, Haryana, Chandigarh, West Uttar Pradesh, Rajasthan, Madhya Maharashtra & Marathwada on 27<sup>th</sup> and over Madhya Pradesh & Vidarbha on 27<sup>th</sup> & 28<sup>th</sup> December.**

#### ii. Temperature, Cold Wave and Fog Forecast:

##### Temperature Conditions during past 24 hours till 0830 hours IST of 24<sup>th</sup> December:

- ❖ On 24<sup>th</sup> December, minimum temperatures were **below 0°C** over many parts of Jammu, Kashmir & Ladakh; **2-6°C** over plains of Himachal Pradesh; **6-12°C** over Northwest India, Bihar & Jharkhand; **12-18°C** over many parts of Central & West India. There had been a rise by 2-5°C in minimum temperature over many parts of the Uttar Pradesh, Madhya Pradesh & Odisha; by 1-3°C over some parts of Maharashtra & Telangana; fall by 2-5°C over many parts of Rajasthan and Gujarat State.

##### Forecast of temperature:

- ❖ Fall in minimum temperatures by about 2°C likely over Northwest India during next 2 days and gradual rise in minimum temperatures by 2-4°C thereafter.
- ❖ No significant change in minimum temperatures likely over Central & East India during next 5 days.
- ❖ Rise in minimum temperatures by 2-3°C likely over West India (except Gujarat State) during next 2 days and no significant change thereafter.
- ❖ No significant change in minimum temperatures likely over Gujarat State during next 24 hours & gradual rise by 2-4°C thereafter.

##### Cold Wave Warnings:

**Cold wave to severe cold wave** conditions very likely in some parts of Himachal Pradesh on 25<sup>th</sup> and in isolated pockets on 26<sup>th</sup> December. **Cold wave** conditions very likely in isolated pockets over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Haryana, Chandigarh on 25<sup>th</sup> December.

##### Dense Fog Warnings:

**Dense fog conditions** very likely to prevail during late night/early morning hours in isolated pockets of Rajasthan & Bihar till 26<sup>th</sup>, Himachal Pradesh, Punjab, Haryana, Chandigarh, Uttar Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura till 27<sup>th</sup> December.

##### Ground Frost Warnings:

**Ground Frost** conditions very likely in isolated pockets of Himachal Pradesh on 25<sup>th</sup> & 26<sup>th</sup> December.

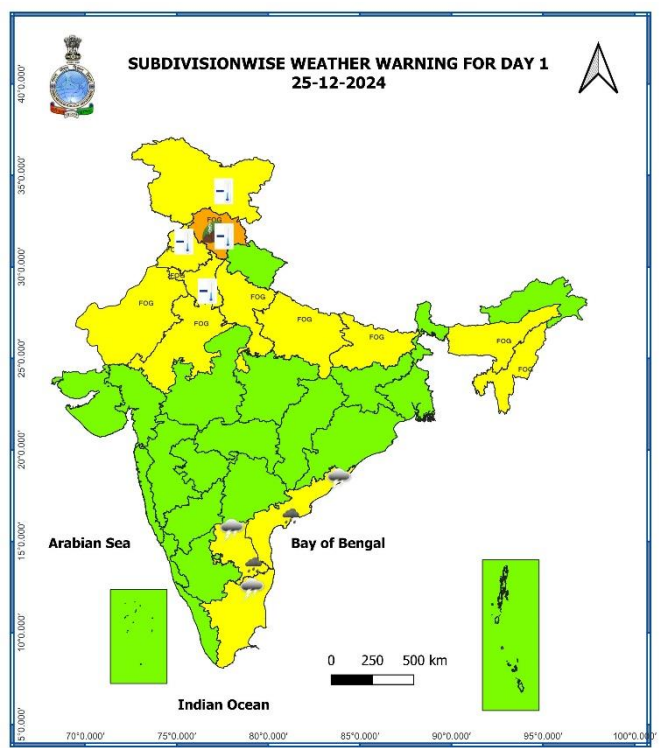
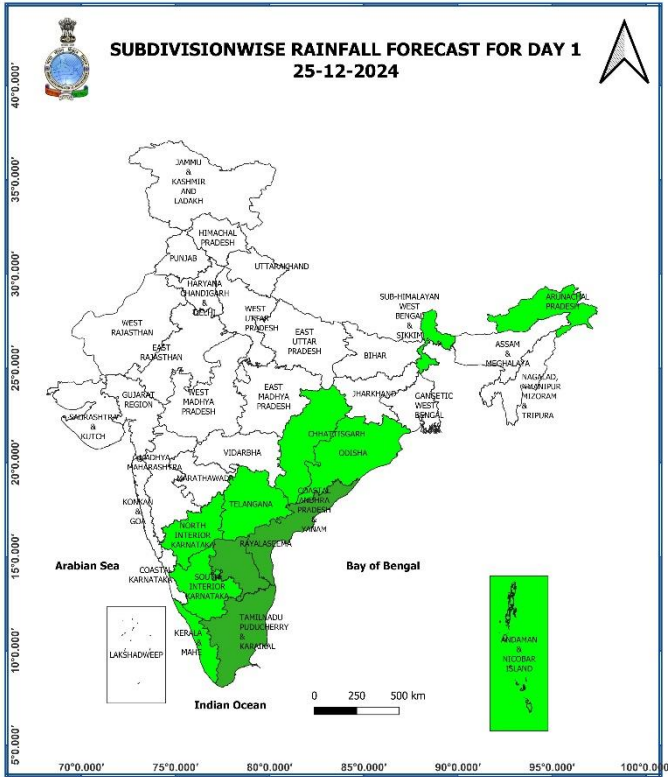
## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at many places** over Himachal Pradesh and Coastal Andhra Pradesh & Yanam; **at isolated places** over Gangetic West Bengal, Odisha, Rayalaseema, Lakshadweep, Tamil Nadu, Puducherry & Karaikal and dry over rest of the region.
- ❖ **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) (in cm): **Himachal Pradesh- Bhuntar -1; Coastal Andhra Pradesh & Yanam: Rentachintala -1.**
- ❖ **Fog reported** (at 0530 hours IST of today): **Dense to Very Dense fog** in isolated pockets of Himachal Pradesh, West Rajasthan and West Uttar Pradesh; **Dense fog** in isolated pockets of Delhi and **Shallow to Moderate fog** in isolated pockets of Punjab, West Madhya Pradesh and East Uttar Pradesh.
- ❖ **Visibility reported** (at 0530 hours IST of today): ( $\leq 200$  m) (in meter): **Himachal Pradesh: Sundernagar-00; West Rajasthan: Suratgarh\_I AF-00; West Uttar Pradesh: Hindan\_I AF- 00, Bareilly\_I AF & Sarsawa\_I AF-200; Delhi: Palam & Safdarjung -100; Punjab: Amritsar-200; West Madhya Pradesh: Bhopal\_Bairaghar 200; East Uttar Pradesh: Bakshi\_ka\_Talab\_I AF- 200.**
- ❖ **Yesterday, Cold wave to severe cold wave conditions** observed in isolated pockets over Himachal Pradesh.
- ❖ **Minimum Temperatures Departures (as on 24-12-2024):** Minimum temperatures were **markedly above normal (5.1°C or more)** at isolated places over East Uttar Pradesh, Madhya Maharashtra, Marathwada, Vidarbha, Odisha, Telangana; **appreciably above normal (3.1°C to 5.0°C)** at many places over West Madhya Pradesh and Telangana; at a few places over Odisha and Chhattisgarh; at isolated places over Chhattisgarh, North Interior Karnataka, Marathwada, Rayalaseema; at isolated places over Bihar, Gangetic West Bengal, Coastal Andhra Pradesh & Yanam; **above normal (1.6°C to 3.0°C)** at most places over Madhya Pradesh, West Uttar Pradesh; at many places over Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Jharkhand, South Interior Karnataka, Konkan & Goa; at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; at isolated places over Tamil Nadu, Puducherry & Karaikal. These were **below normal (-1.6°C to -3.0°C)** at isolated places over Saurashtra & Kutch and near normal over rest parts of the country. Yesterday, **the lowest minimum temperature of 6.5°C** was reported at **Patiala (Punjab)** over the plains of the country. (Fig. 4)
- ❖ **Maximum Temperature Departures (as on 24-12-2024):** Maximum temperatures were **above normal (1.6°C to 3.0°C)** at a few places over Tamil Nadu, Puducherry & Karaikal; at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Bihar, East Madhya Pradesh, West Bengal & Sikkim and Chhattisgarh. These were **markedly below normal (-5.1°C or less)** at many places over Himachal Pradesh; at isolated places over West Rajasthan, Saurashtra & Kutch and Coastal Andhra Pradesh & Yanam; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Gujarat Region and Konkan & Goa; **below normal (-1.6°C to -3.0°C)** at many places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, East Rajasthan; at isolated places over East Uttar Pradesh, Punjab, Haryana-Chandigarh-Delhi, West Madhya Pradesh and Madhya Maharashtra. Yesterday, **the highest maximum temperature of 34.5°C** was reported at **Tondi (Tamil Nadu)** over the plains of the country. (Fig. 2)

## Meteorological Analysis (Based on 0530 hours IST)

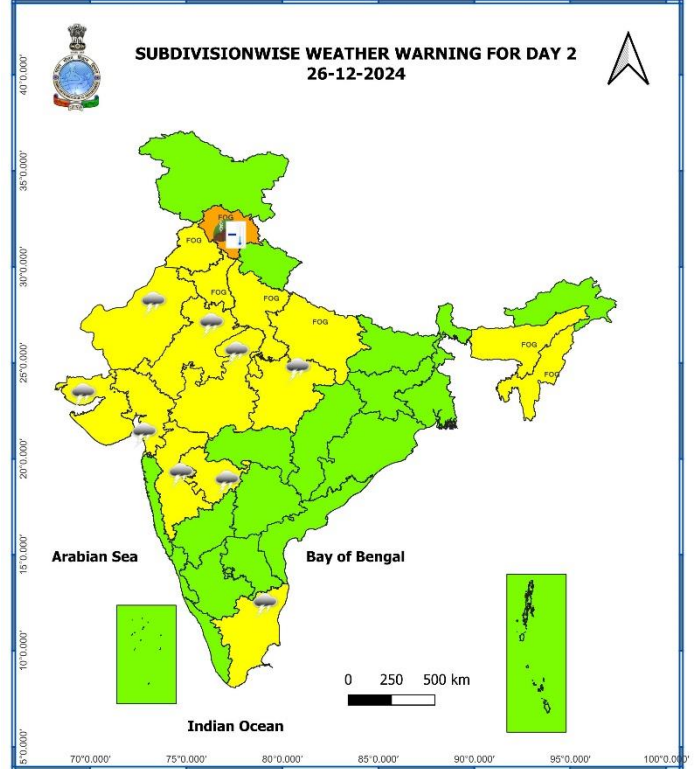
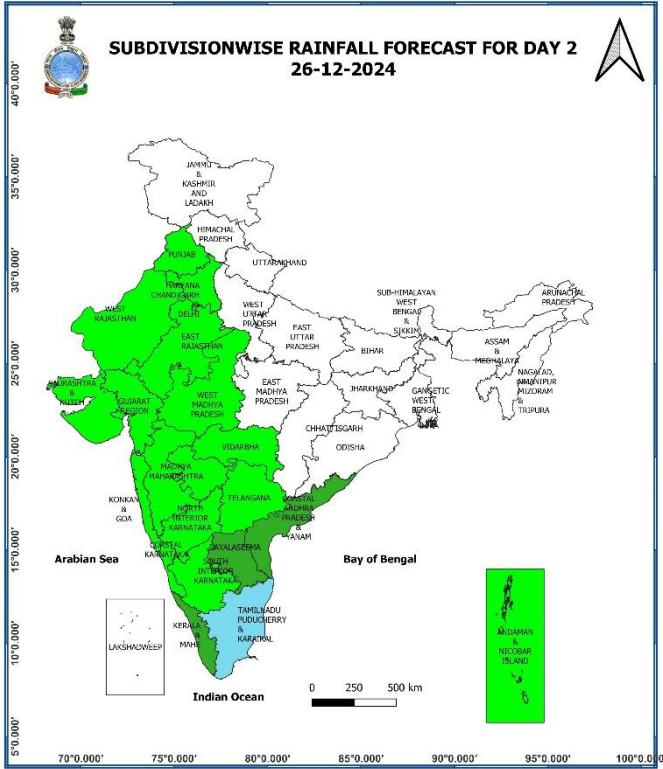
- ❖ The **well marked low pressure area** over Southwest & adjoining Westcentral Bay of Bengal off South Andhra Pradesh-North Tamil Nadu coasts persisted over the same area at 0530 hrs IST of today, the 25<sup>th</sup> December, 2024. However, the associated cyclonic circulation now extends upto 3.1 km above mean sea level tilting southwest with height. It is likely to move west-southwestwards and weaken gradually into a low pressure area over the same region during next 24 hours.
- ❖ The **Western disturbance** as a cyclonic circulation over Punjab & neighbourhood now seen at 3.1 km above mean sea level.
- ❖ The induced cyclonic circulation over southeast Rajasthan & neighbourhood now seen as a **cyclonic circulation** over Northwest Madhya Pradesh & neighbourhood at 1.5 km above mean sea level.
- ❖ **Subtropical westerly Jet Stream** with core winds of the order upto 110 knots at 12.6 km above mean sea level is prevailing over Northeast India.
- ❖ The **cyclonic circulation** over east Bangladesh at 1.5 km above mean sea level persists.
- ❖ The **cyclonic circulation** over Lakshadweep & neighbourhood at 1.5 km above mean sea level persists.
- ❖ An active **western disturbance** is likely to affect northwest India from night of 26<sup>th</sup> December 2024.

**Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 01<sup>st</sup> January, 2025)**



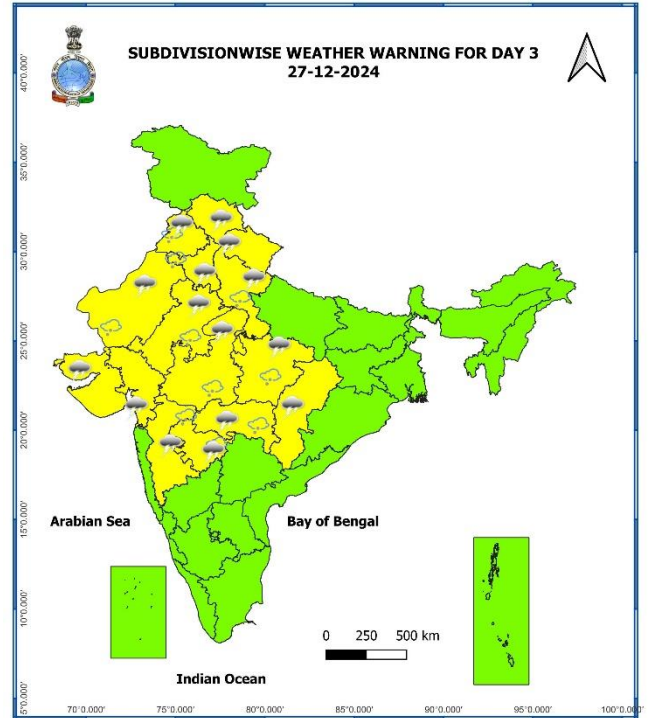
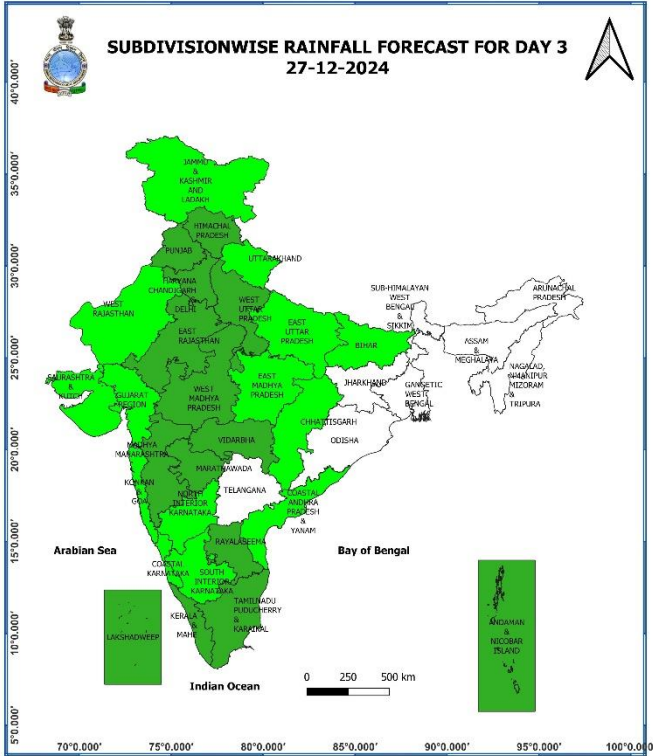
**25 December (Day 1):**

- ❖ **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Coastal Andhra Pradesh & Yanam and Rayalaseema.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam and Rayalaseema.
- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Uttar Pradesh, Bihar, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold wave to severe cold wave Conditions** very likely in some parts of Himachal Pradesh; **Cold wave Conditions** in some parts of Punjab, Haryana-Chandigarh and Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Ground Frost conditions** very likely at isolated places over Himachal Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over few parts of westcentral bay of Bengal and adjoining parts of southwest bay of Bengal, along and off south Andhra Pradesh and north Tamil Nadu coasts. Fishermen are advised not to venture into these areas.



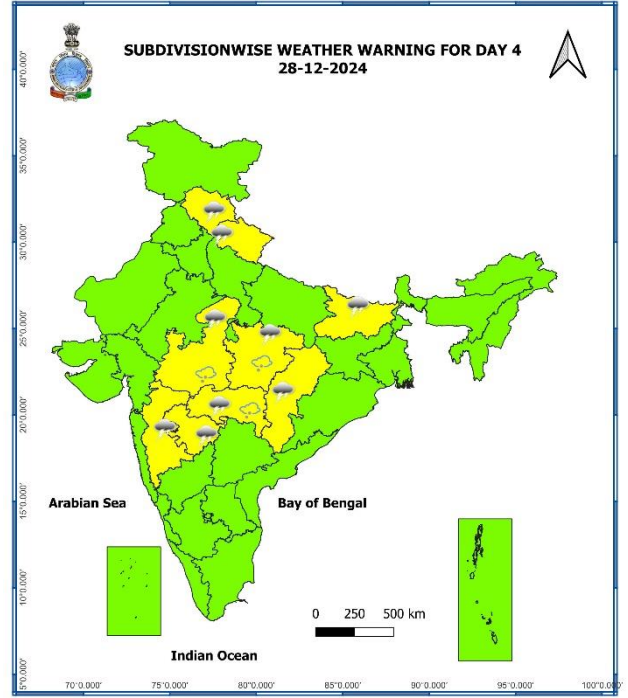
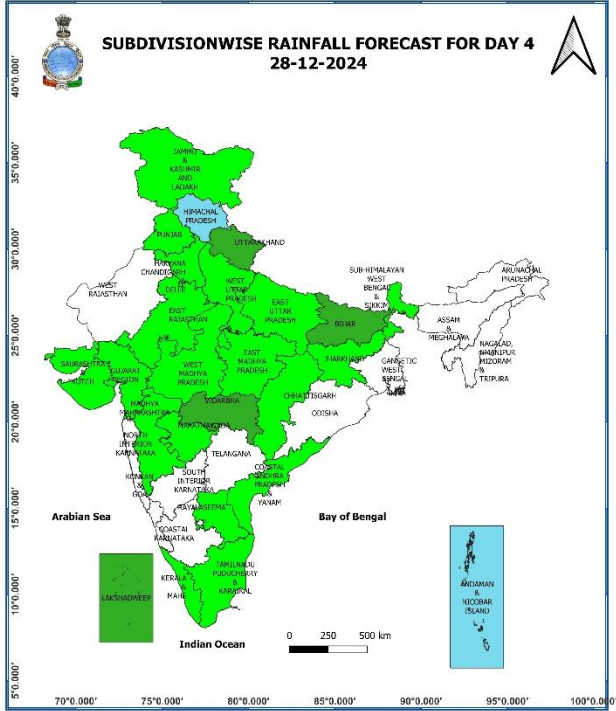
**26 December (Day 2):**

- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Rajasthan, Madhya Pradesh, Madhya Maharashtra, Marathwada, Gujarat and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold wave to severe cold wave Conditions** very likely in some parts of Himachal Pradesh.
- ❖ **Ground Frost conditions** very likely at isolated places over Himachal Pradesh.



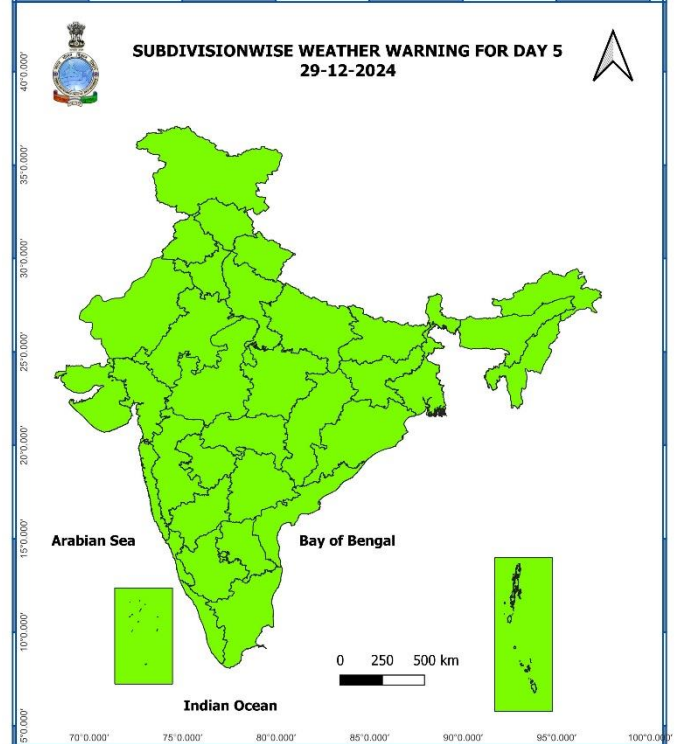
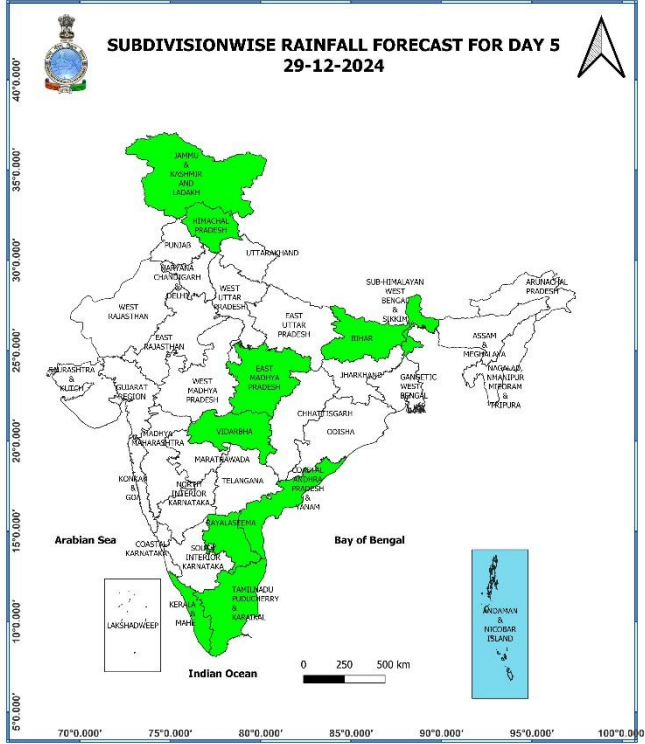
**27 December (Day 3):**

- ❖ **Thunderstorm accompanied with hailstorm & lightning** likely at isolated places over Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Rajasthan, Madhya Pradesh, Vidarbha, Marathwada and Madhya Maharashtra; **with lightning** at isolated places over Uttarakhand, Himachal Pradesh, Gujarat state and Chhattisgarh.



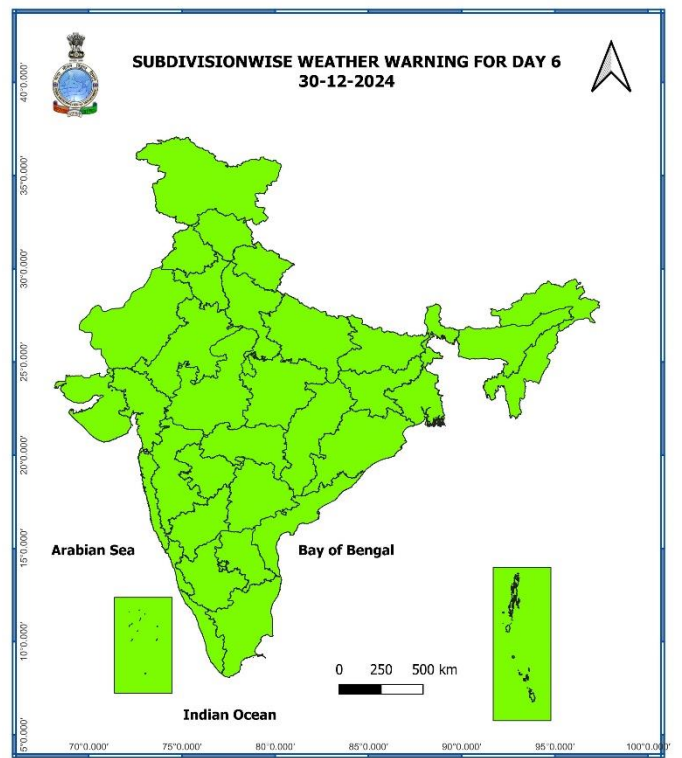
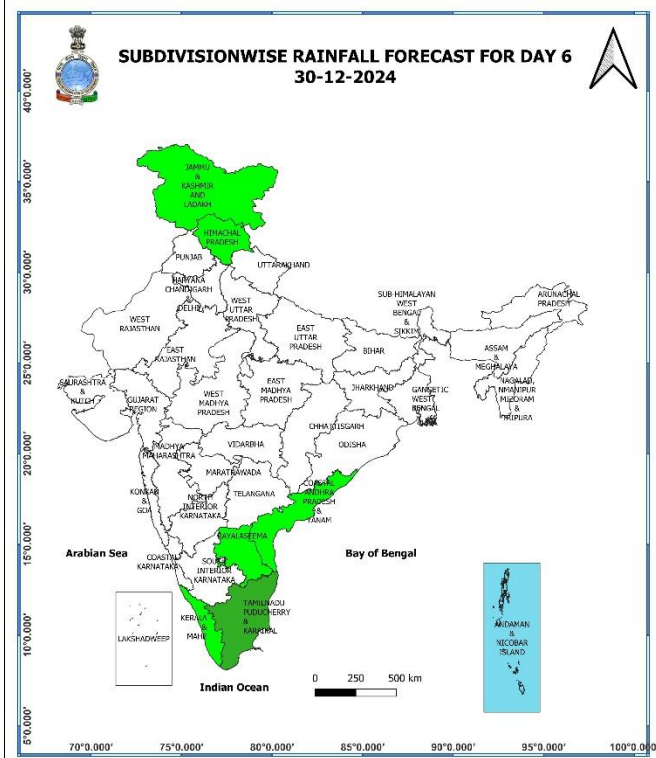
**28 December (Day 4):**

❖ **Thunderstorm accompanied with hailstorm & lightning** likely at isolated places over Madhya Pradesh, Vidarbha; **with lightning** at isolated places over Bihar, Uttarakhand, Himachal Pradesh, Konkan & Goa, Madhya Maharashtra and Chhattisgarh.



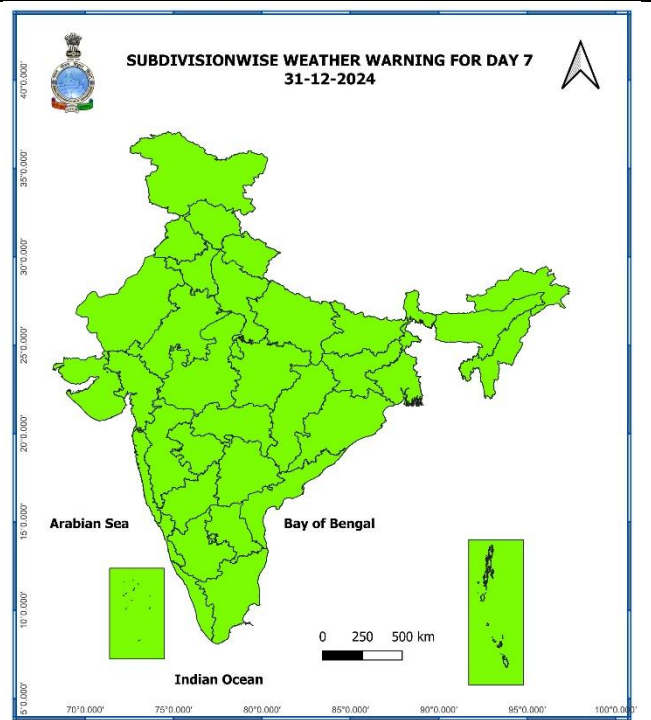
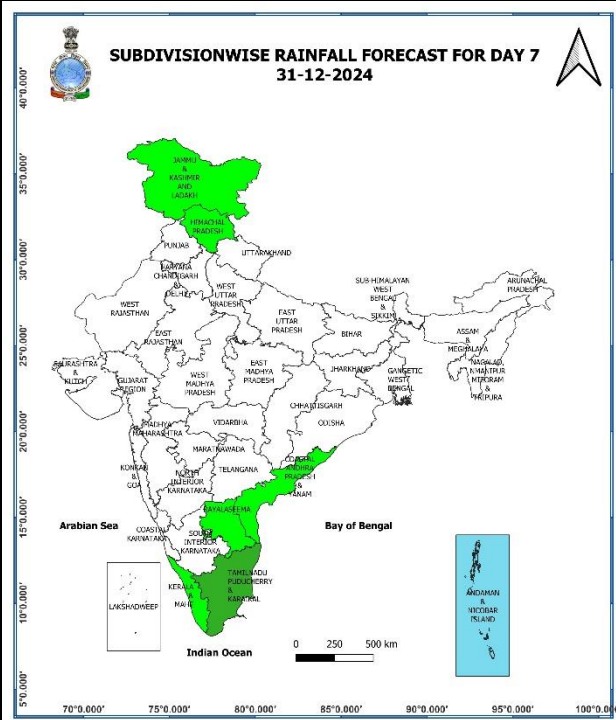
**29 December (Day 5):**

❖ **No Weather Warning.**



**30 December (Day 6):**

❖ **No Weather Warning.**



**31 December (Day 7):**

❖ **No Weather Warning.**

**Weather Outlook for subsequent 3 days (During 01<sup>st</sup> January, 2025- 03<sup>rd</sup> 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 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/ Frost likely over various parts of the country

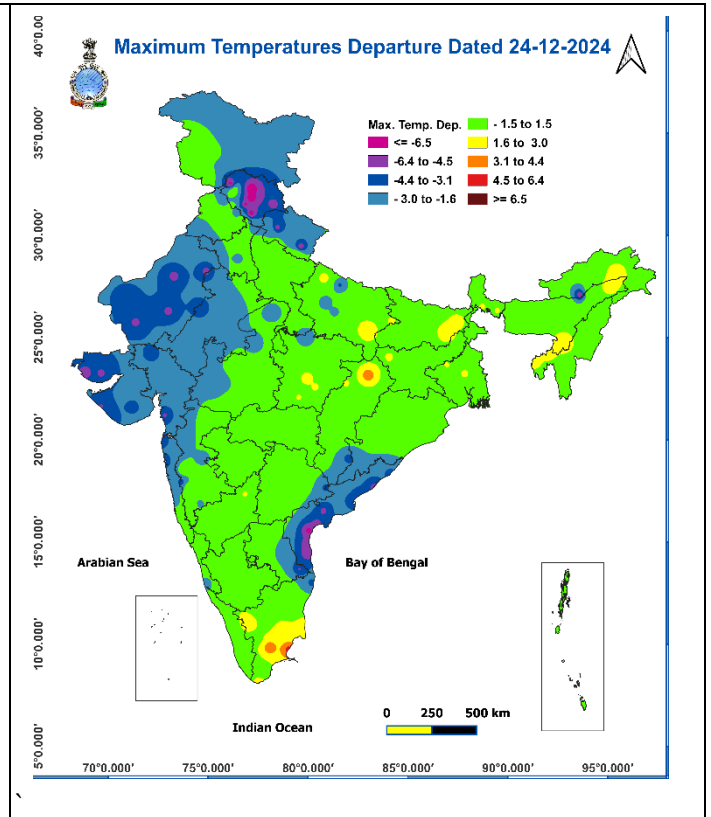
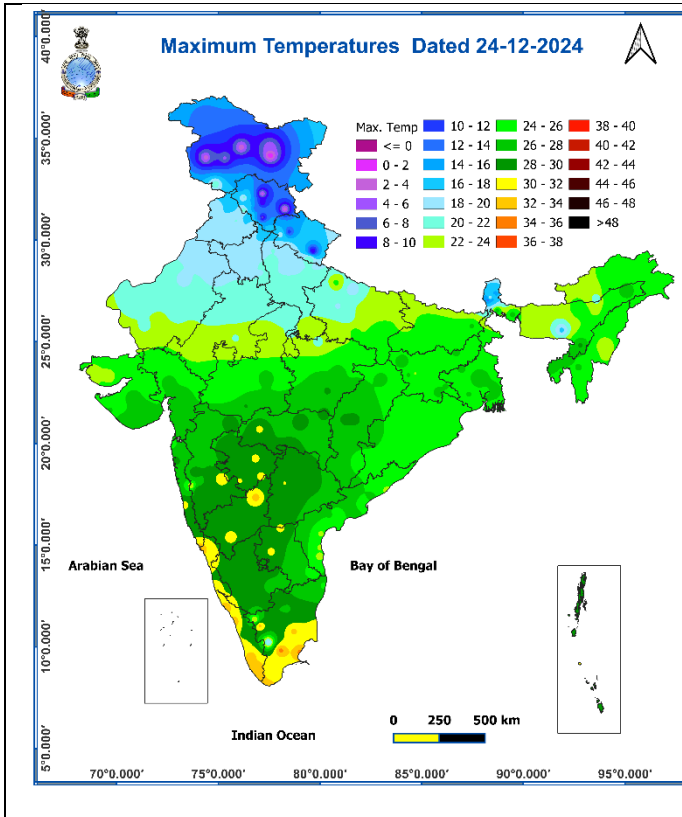
- Make necessary arrangements to drain out excess water from rice nurseries, green gram, black gram, sesame and other standing crop fields and vegetables in **Coastal Andhra Pradesh** and **Rayalaseema**.
- Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields.
- In **Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Arunachal Pradesh, Meghalaya** and **Nagaland**, 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

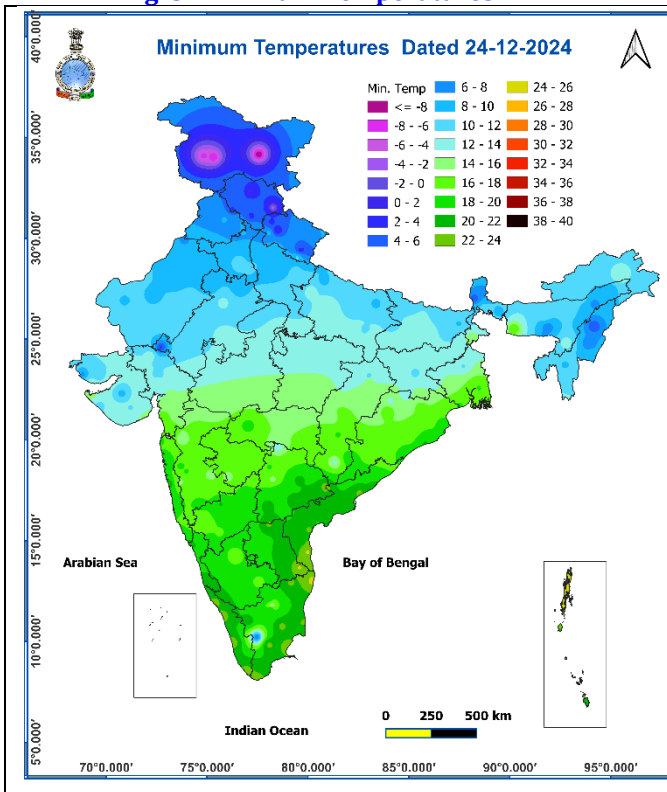
- Keep the animals inside the shed during heavy rainfall and provide balanced feed.
- Store the feed and fodder at safer place to avoid spoilage from rainfall.
- Construct an outlet with proper netting around the pond to drain out excess rain water, thereby preventing fishes/fingerlings from escaping 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

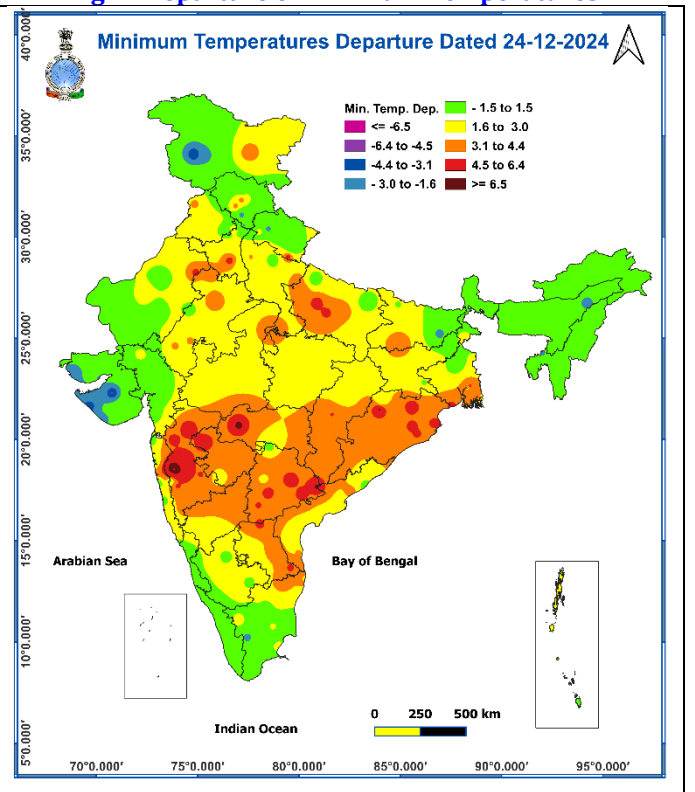
Fig. 2: Departure of Maximum Temperatures



**Fig. 3: Minimum Temperatures**

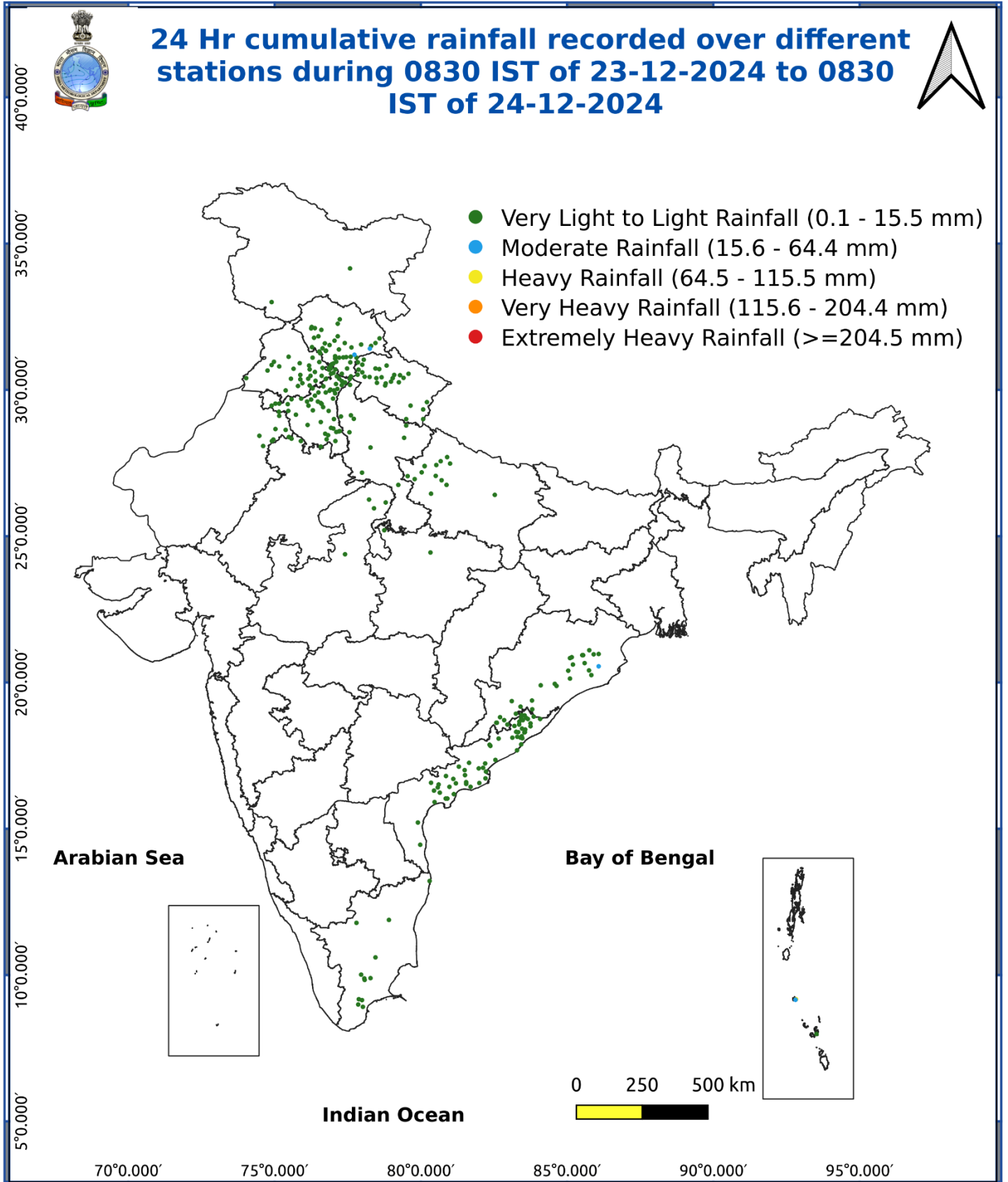


**Fig. 4: Departure of Minimum Temperatures**



**\* 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)

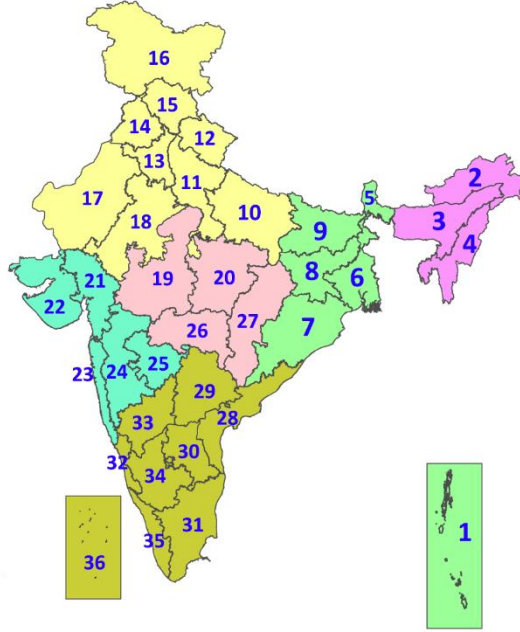
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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(Service to the Nation since 1875)

## 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 Snow           | Cold Wave    |
| Heavy Rain           | Dust Storm           | Cold Day     |
| Very Heavy Rain      | Heat Wave            | Ground Frost |
| Extremely Heavy Rain | Warm Night           |              |
| Thunder & Lightning  | Hot Day              |              |
| Hailstorm            | Hot & Humid          |              |
| Dust Raising Winds   | Strong Surface Winds |              |

### 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

## 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  $\geq 40^\circ\text{C}$  for plains and  $\geq 30^\circ\text{C}$  for hilly regions  
(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
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  $40^\circ\text{C}$

Warm Night: When minimum temperature departure  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
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  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
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  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
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 Strom: Wind speed  $> 220$  kmph ( $> 119$  knots)