

Tuesday, January 7, 2025  
Time of Issue: 1315 hours IST  
(MID-DAY)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### Weather Systems, Forecast and warning:

- ❖ A trough in middle & upper tropospheric westerlies runs roughly along Long. 84°E to the north of Lat. 28°N. A cyclonic circulation lies over northeast Assam & neighbourhood in lower tropospheric levels. It is very likely to cause
  - ✓ Light to moderate rainfall at many places accompanied with thunderstorm activity at isolated places likely over Northeastern states on 07<sup>th</sup> & 08<sup>th</sup> January. Isolated hailstorm also likely over Sikkim and north Assam on 07<sup>th</sup> January.
  - ✓ Isolated rainfall accompanied with thunderstorm & lightning over Sikkim on 07<sup>th</sup>; Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura on 07<sup>th</sup> & 08<sup>th</sup> January.
- ❖ A fresh Western Disturbance and its interaction with easterly winds, likely to affect Northwest India from 10<sup>th</sup>-12<sup>th</sup> January. Under its influence, Light to moderate rainfall/snowfall likely over Western Himalayan region and light rainfall over the plains of Northwest India during the same period.

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

##### Temperature Conditions during past 24 hours till 0830 hours IST of today:

- ❖ Minimum temperatures are **below 0°C** over many parts of Jammu, Kashmir & Ladakh; **0-5°C** over Himachal Pradesh; **5-10°C** over many parts of Northwest India; **10-15°C** over many parts of West, Central & East India. Today, the lowest minimum temperature of **5.9°C** is reported at **Chittorgarh (East Rajasthan)** over the plains of the country.
- ❖ During the past 24 hours, there has been rise in minimum temperatures by 1-5<sup>0</sup>C over many parts of Uttar Pradesh; in some parts of Chhattisgarh, Vidarbha, Saurashtra & Kutch, Assam & Meghalaya and West Bengal & Sikkim. There has been fall in minimum temperatures by 1-5<sup>0</sup>C over many parts of East Rajasthan, Madhya Pradesh; in isolated places of Jammu-Kashmir, Himachal Pradesh, West Rajasthan, Bihar and Madhya Maharashtra.
- ❖ Minimum temperatures are **below normal (-1°C to -3°C)** at a few places over Saurashtra & Kutch and Kerala & Mahe; at isolated places over West Rajasthan, Telangana, Konkan & Goa, Interior Karnataka. These are **markedly above normal (5°C or above)** at isolated places over Haryana, Chandigarh and Assam & Meghalaya; **appreciably above normal (3°C to 5°C)** at many places over East Uttar Pradesh; at isolated places over Punjab, Delhi, West Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Chhattisgarh, East Madhya Pradesh and Nagaland, Manipur, Mizoram & Tripura; **above normal (1°C to 3°C)** at many places over Odisha and Tamilnadu Puducherry & Karaikal; at a few places over Madhya Maharashtra and Vidarbha; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, East Rajasthan, Gujarat Region and near normal over rest part of the country.

##### Forecast of temperature:

- ❖ Fall in minimum temperatures by 2-4°C likely over Northwest & Central India during next 2 days and gradual rise by 2-4°C thereafter.
- ❖ Fall in minimum temperatures by 2-4°C likely over East India during next 2 days and no large change thereafter.
- ❖ Fall in minimum temperatures by 2-3°C likely over Maharashtra during next 2 days and gradual rise by 2-3°C thereafter.
- ❖ No significant change in minimum temperatures likely over Gujarat State during next 2 days and gradual rise by 2-3°C thereafter.

##### Cold Wave Warnings:

**Cold wave** conditions very likely in isolated pockets over Himachal Pradesh during 07<sup>th</sup>-09<sup>th</sup>; West Rajasthan on 07<sup>th</sup> & 08<sup>th</sup> January.

##### Dense Fog Warnings:

**Very Dense fog Condition** very likely to continue to prevail during night/early morning hours in some parts of Punjab, Haryana & Chandigarh and Uttar Pradesh during 08<sup>th</sup>- 10<sup>th</sup> January.

**Dense fog conditions** very likely to continue to prevail during night/early morning hours in many parts of Bihar on 08<sup>th</sup> & 09<sup>th</sup>; in some parts of Bihar on 07<sup>th</sup>; in isolated pockets of Bihar on 10<sup>th</sup> & 11<sup>th</sup>; Himachal Pradesh till 11<sup>th</sup>; Punjab, Haryana Chandigarh on 07<sup>th</sup>; Uttar Pradesh on 07<sup>th</sup>, 10<sup>th</sup> & 11<sup>th</sup>; Sub-Himalayan West Bengal & Sikkim till 08<sup>th</sup>; Jharkhand, Odisha till 09<sup>th</sup>; Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 09<sup>th</sup>-12<sup>th</sup> January.

##### Cold Day Warnings:

**Cold day** conditions very likely in isolated pockets of Punjab, Haryana Chandigarh, Rajasthan, north Madhya Pradesh on 07<sup>th</sup> & 08<sup>th</sup>; Uttar Pradesh during 07<sup>th</sup>- 09<sup>th</sup> January.

##### Ground Frost Warnings:

**Ground frost** conditions very likely in isolated pockets of Himachal Pradesh during 07<sup>th</sup>-09<sup>th</sup> January.

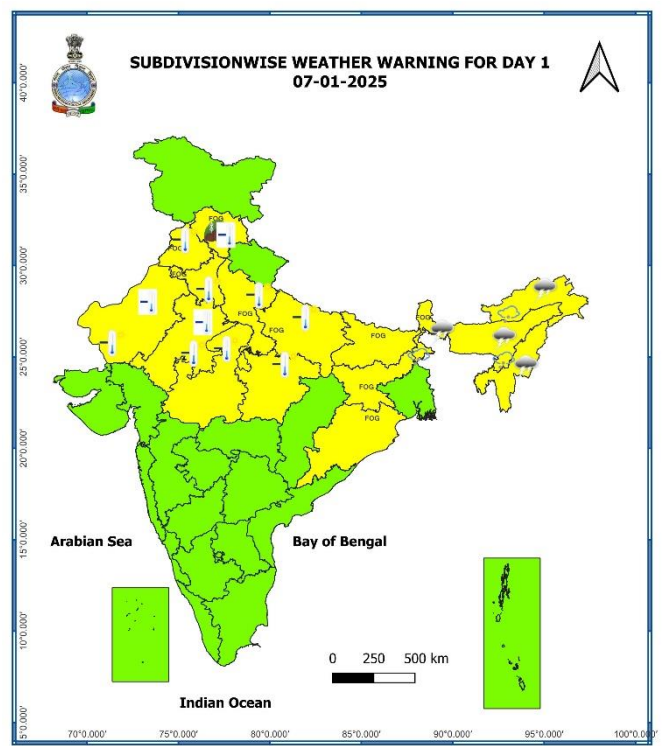
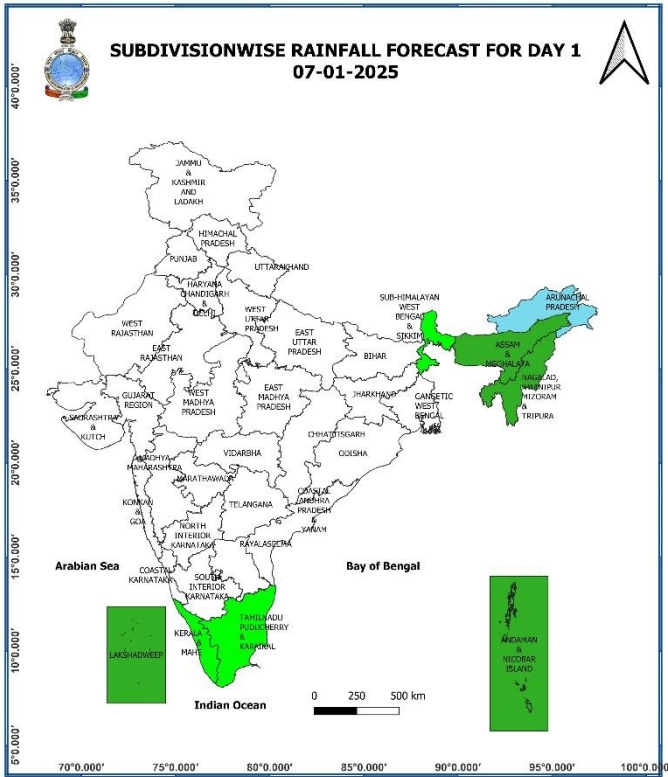
## Main Weather Observations:

- ❖ **Rainfall/Snowfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at a few places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Lakshadweep, Andaman & Nicobar Islands; **at isolated places** over Himachal Pradesh, Uttarakhand, West Uttar Pradesh, Bihar, Jharkhand, Arunachal Pradesh.
- ❖ **Fog reported** (upto 0830 hours IST of today): **Dense to very dense fog** in isolated pockets of Jammu-Kashmir, Punjab, Haryana, Uttar Pradesh, Odisha and **dense fog** in isolated pockets of Himachal Pradesh, Uttarakhand, Chandigarh, Bihar, Gangetic West Bengal, Chhattisgarh and Jharkhand.
- ❖ **Visibility reported** (upto 0830 hours IST of today) ( $\leq 200$  meter): **Jammu-Kashmir:** Jammu Airport 0; **Punjab:** Patiala, Amritsar 0 each; **East Uttar Pradesh:** Azamgarh, Lucknow 0 each, Gorakhpur 100; **West Uttar Pradesh:** Bareilly 0; **Haryana:** Ambala 30; **Odisha:** Rourkela 40; **Himachal Pradesh:** Bilaspur 50, Una, Mandi 100 each; **Bihar:** Bhagalpur 50, Patna 100; **Chandigarh** 80; **Uttarakhand:** Dehradun 100; **Gangetic West Bengal:** Durgapur 100; **Jharkhand:** Deoghar 100.
- ❖ **Cold day to severe cold day conditions** prevailed in isolated pockets of East Uttar Pradesh; **Cold day conditions** in isolated pockets of West Uttar Pradesh.
- ❖ **Ground Frost conditions** reported in isolated pockets of Uttarakhand.
- ❖ **Minimum Temperature Departures (as on 07-01-2025):** Minimum temperatures are **Markedly above normal ( $5^{\circ}\text{C}$  or above)** at isolated places over Haryana, Chandigarh and Assam & Meghalaya; **appreciably above normal ( $3^{\circ}\text{C}$  to  $5^{\circ}\text{C}$ )** at many places over East Uttar Pradesh; at isolated places over Punjab, Delhi, West Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, Chhattisgarh, East Madhya Pradesh and Nagaland, Manipur, Mizoram & Tripura; **above normal ( $1^{\circ}\text{C}$  to  $3^{\circ}\text{C}$ )** at many places over Odisha and Tamilnadu Puducherry & Karaikal; at a few places over Madhya Maharashtra and Vidarbha; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, East Rajasthan, Gujarat Region. These are **below normal ( $-1^{\circ}\text{C}$  to  $-3^{\circ}\text{C}$ )** at a few places over Saurashtra & Kutch and Kerala & Mahe; at isolated places over West Rajasthan, Telangana, Konkan & Goa, Interior Karnataka and near normal over rest part of the country (Fig. 4). Today, the **lowest minimum temperature** of  $5.9^{\circ}\text{C}$  is reported at **Chittorgarh (East Rajasthan)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 06-01-2025):** Maximum temperatures were **Markedly above normal ( $5.1^{\circ}\text{C}$  or above)** at isolated places over Himachal Pradesh; **appreciably above normal ( $3.1^{\circ}\text{C}$  to  $5.0^{\circ}\text{C}$ )** at isolated places over Uttarakhand, Sub-Himalaya West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Vidarbha, Tamil Nadu; **above normal ( $1.6^{\circ}\text{C}$  to  $3.0^{\circ}\text{C}$ )** at many places over Bihar, Arunachal Pradesh; at isolated places over Jharkhand, Gangetic West Bengal, Chhattisgarh, Marathwada, Madhya Maharashtra, Telangana, Coastal Andhra Pradesh & Yanam, Kerala & Mahe. These were **markedly below normal ( $-5.1^{\circ}\text{C}$  or less)** at isolated places over East Rajasthan, Uttar Pradesh, Madhya Pradesh; **appreciably below normal ( $-3.1^{\circ}\text{C}$  to  $-5.0^{\circ}\text{C}$ )** at isolated places over Haryana-Chandigarh-Delhi; **below normal ( $-1.6^{\circ}\text{C}$  to  $-3.0^{\circ}\text{C}$ )** at isolated places over West Rajasthan, Gujarat State and near normal over rest part of the country (Fig. 2). Yesterday, the **highest maximum temperature** of  $35.6^{\circ}\text{C}$  was reported at **Karwar (Coastal Karnataka) & Kannur Airport (Kerala)** over the plains of the country.

### Meteorological Analysis (Based on 0830 hours IST)

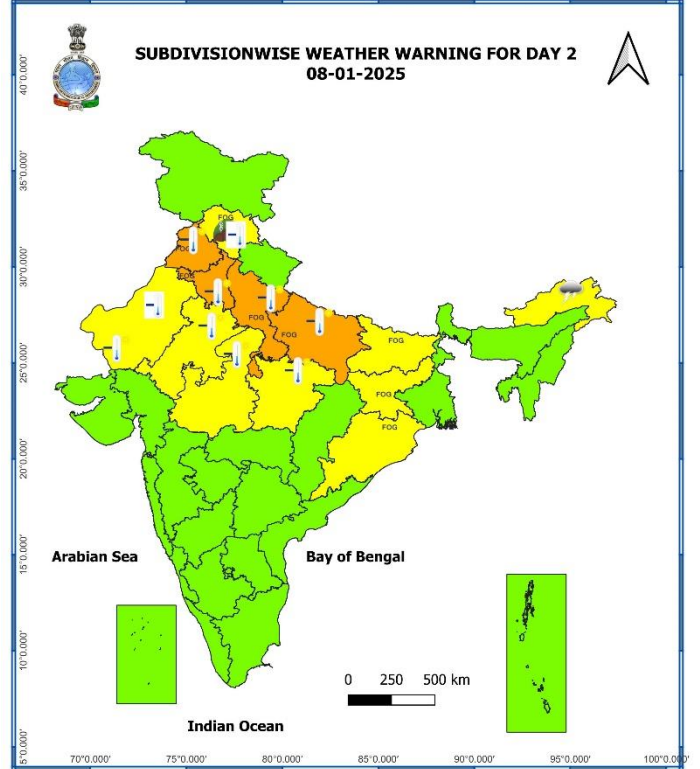
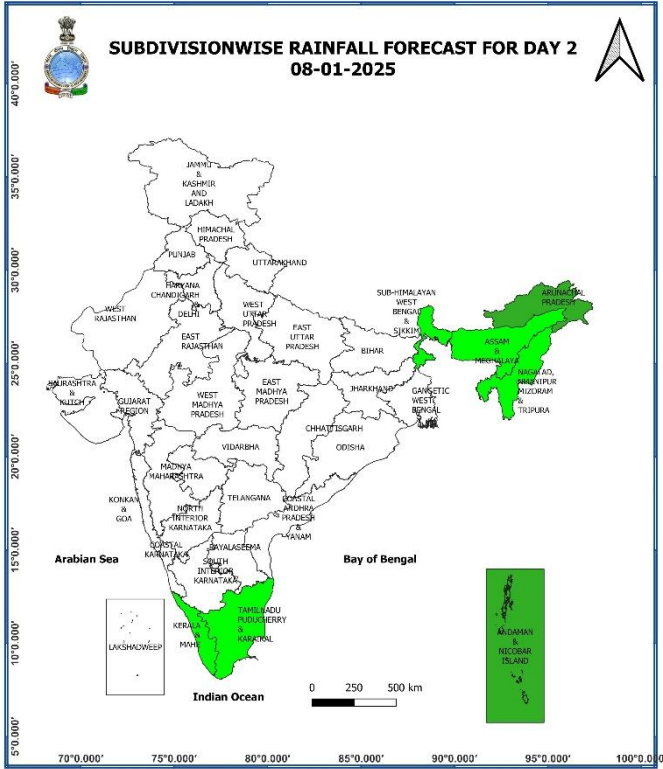
- ❖ The **Western disturbance** as a trough in middle & upper tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 84°E to the north of Lat. 28°N.
- ❖ The **cyclonic circulation** over west Uttar Pradesh now lies over northwest Uttar Pradesh & neighbourhood at 0.9 km above mean sea level.
- ❖ The **cyclonic circulation** over Northeast Assam & neighbourhood persists and now seen at 0.9 km above mean sea level.
- ❖ Subtropical **westerly Jet Stream** with core winds of the order upto 135 knots at 12.6 km above mean sea level is prevailing over East & Northeast India
- ❖ The **cyclonic circulation** over Equatorial Indian Ocean and adjoining Southeast Bay of Bengal at 1.5 km above mean sea level persists.
- ❖ The **trough** now runs from above cyclonic circulation over Equatorial Indian Ocean to south Kerala across south Bay of Bengal & south Tamil Nadu at 1.5 km above mean sea level.
- ❖ A **cyclonic circulation** lies over southeast Arabian Sea off Kerala coast at 0.9 km above mean sea level.
- ❖ A fresh **Western Disturbance** is likely to affect northwest India from 10<sup>th</sup> January, 2025.
- ❖ The **cyclonic circulation** over Madhya Maharashtra & neighbourhood at 0.9 km above mean sea level has become less marked.

**Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 13<sup>th</sup> January, 2025)**



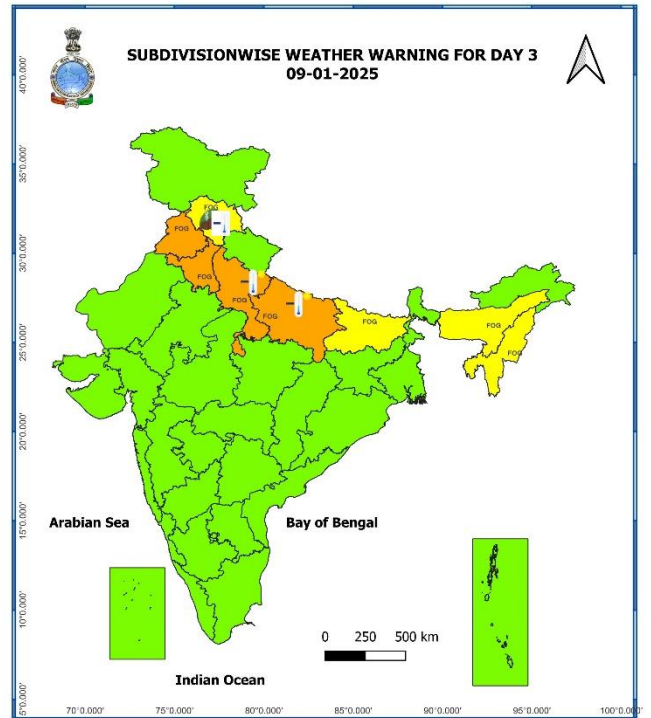
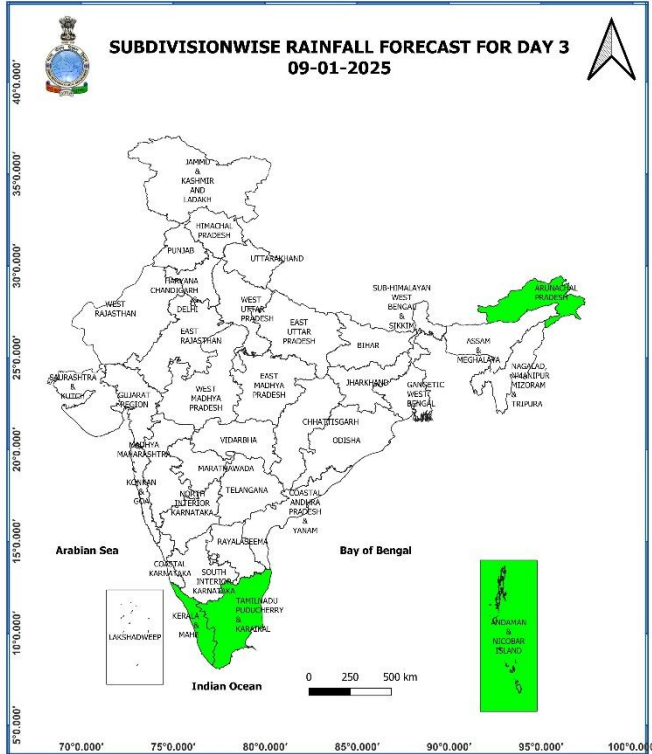
**07<sup>th</sup> January (Day 1):**

- ❖ **Dense fog conditions** very likely in some parts of Bihar and in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, Jharkhand and Odisha during night/morning hours.
- ❖ **Cold day conditions** very likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Rajasthan and north Madhya Pradesh.
- ❖ **Cold wave conditions** very likely in isolated pockets of Himachal Pradesh and Rajasthan.
- ❖ **Thunderstorm accompanied with hailstorm & lightning** very likely at isolated places over Sikkim, Arunachal Pradesh and north Assam; **with lightning** at isolated places over Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Ground frost conditions** very likely in isolated pockets of Himachal Pradesh.



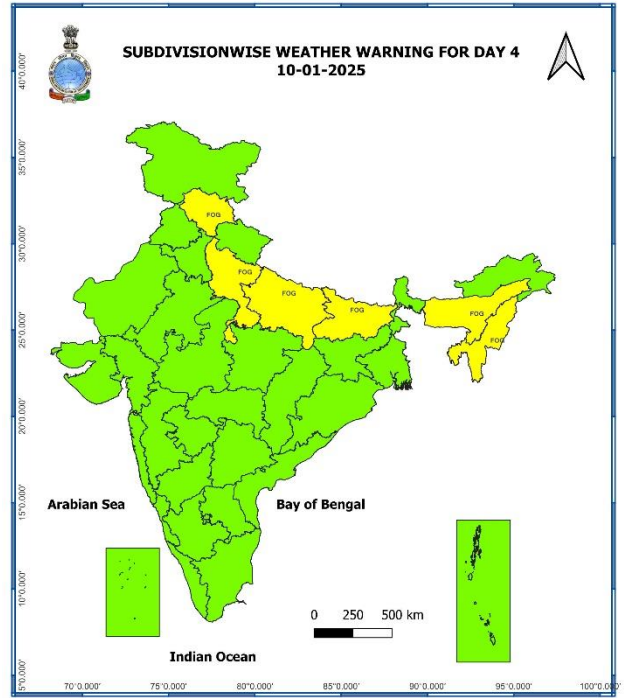
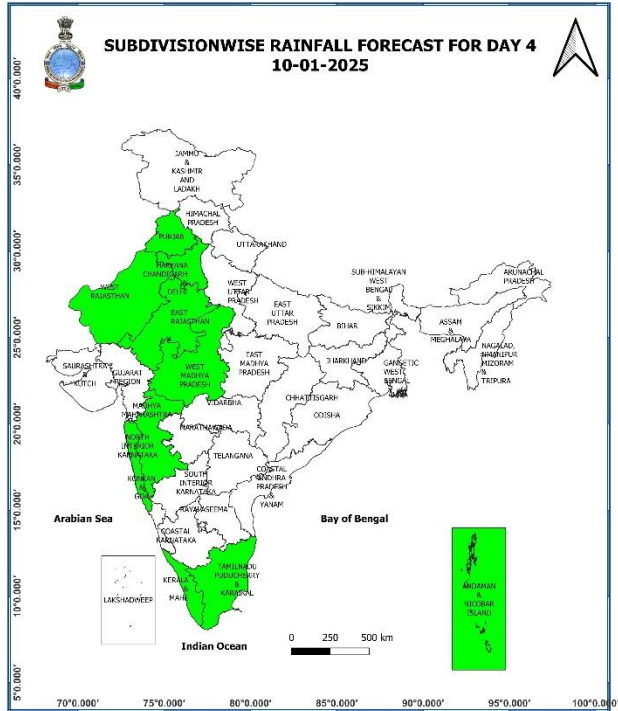
### 08<sup>th</sup> January (Day 2):

- ❖ **Dense to very dense fog conditions** very likely in some parts of Punjab, Haryana-Chandigarh-Delhi and Uttar Pradesh; **dense fog** in many parts of Bihar; in isolated pockets of Himachal Pradesh, Jharkhand and Odisha during night/morning hours.
- ❖ **Cold day conditions** very likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Rajasthan and north Madhya Pradesh.
- ❖ **Cold wave conditions** very likely in isolated pockets of Himachal Pradesh and West Rajasthan.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Arunachal Pradesh.
- ❖ **Ground frost conditions** very likely in isolated pockets of Himachal Pradesh.



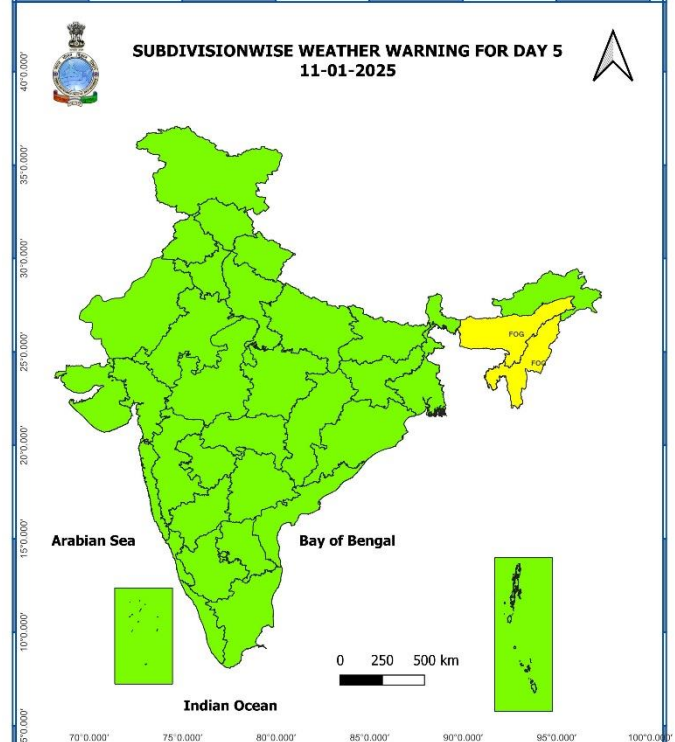
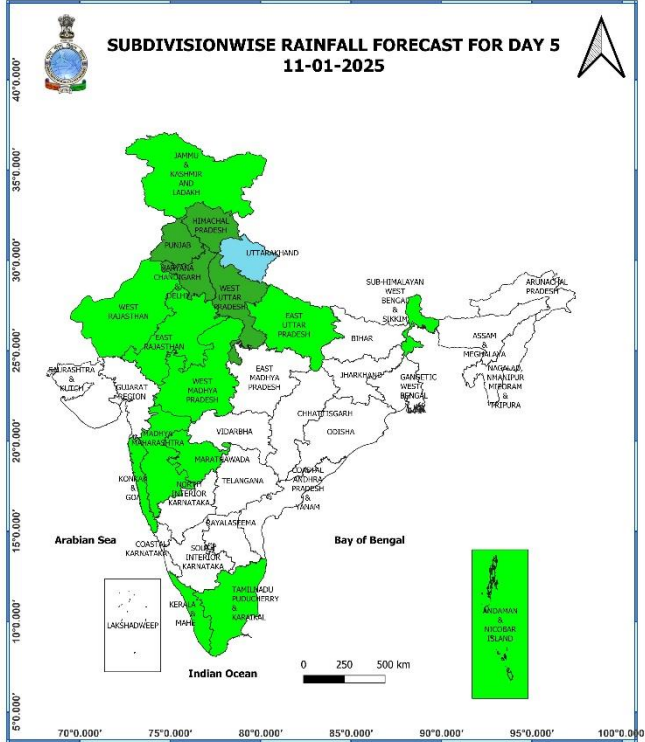
### 09<sup>th</sup> January (Day 3):

- ❖ **Dense to very dense fog conditions** very likely in some parts of Punjab, Haryana-Chandigarh-Delhi and Uttar Pradesh; **dense fog** in many parts of Bihar; in isolated pockets of Himachal Pradesh during night/morning hours.
- ❖ **Cold day conditions** very likely in isolated pockets of Uttar Pradesh.
- ❖ **Cold wave conditions** very likely in isolated pockets of Himachal Pradesh.
- ❖ **Ground frost conditions** very likely in isolated pockets of Himachal Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over few northern parts of south Bay of Bengal. Fisherman are advised not to venture in to these areas.



### 10<sup>th</sup> January (Day 4):

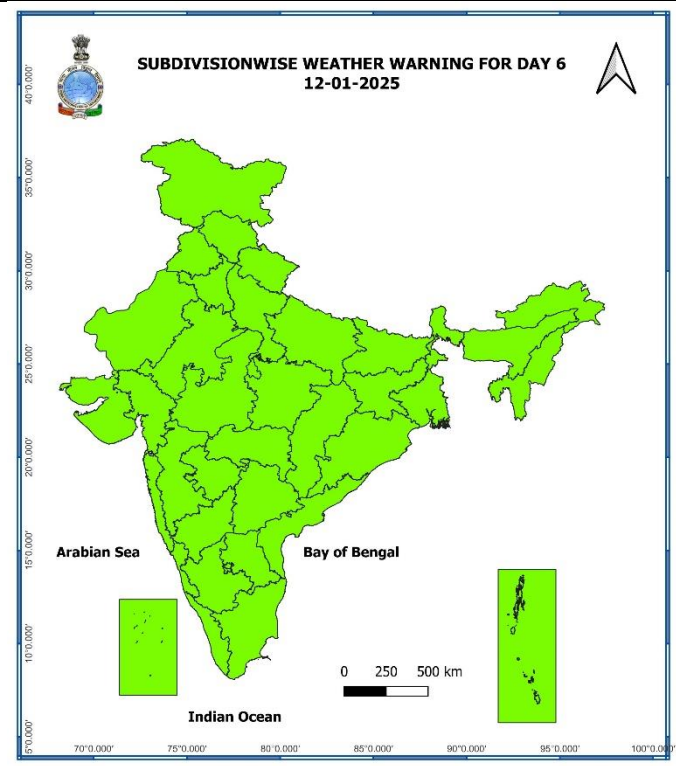
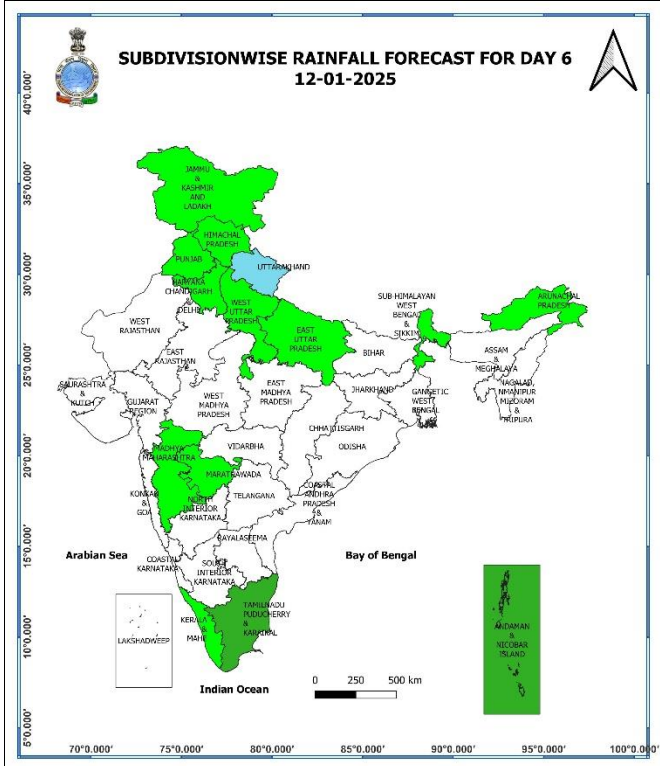
- ❖ **Dense fog conditions** likely in isolated pockets of Himachal Pradesh, Uttar Pradesh, Bihar, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during night/morning hours.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over few northern parts of southwest Bay of Bengal and adjoining parts of southeast Bay of Bengal. Fisherman are advised not to venture in to these areas.



**11<sup>th</sup> January (Day 5):**

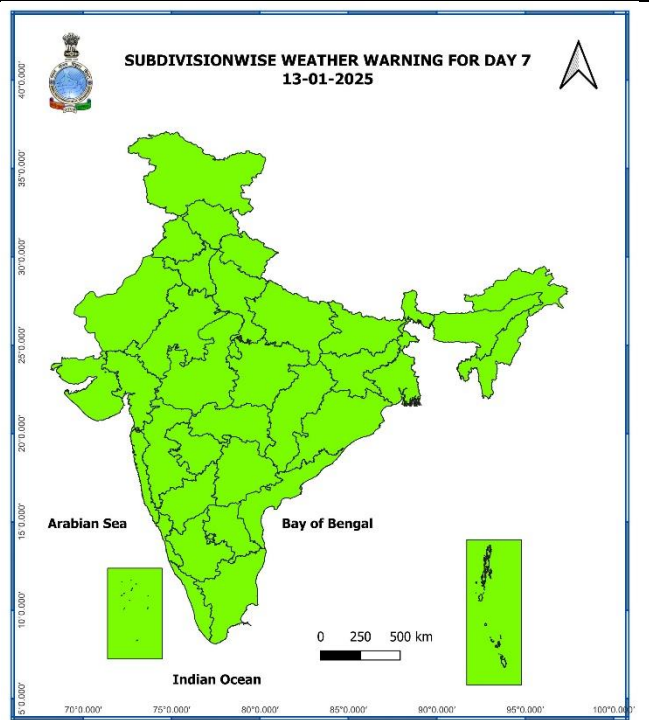
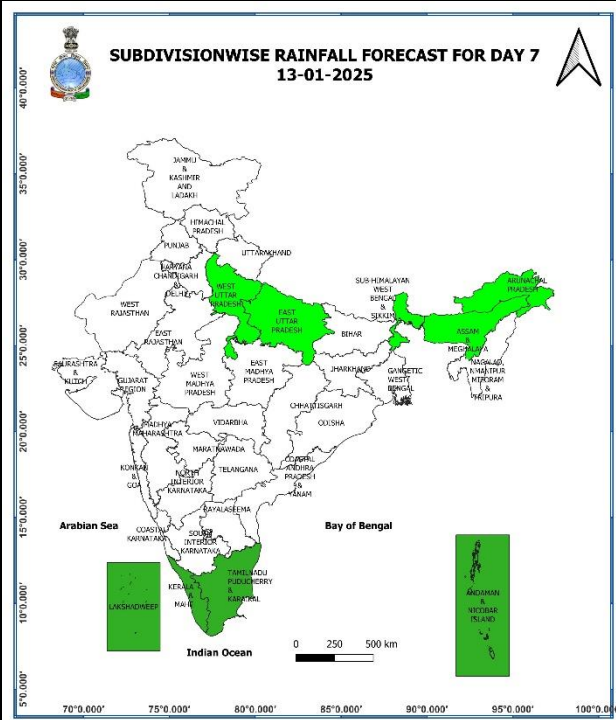
- ❖ **Dense fog conditions** likely in isolated pockets of Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during night/morning hours.





**12<sup>th</sup> January (Day 6):**

❖ **No Weather Warning.**



**13<sup>th</sup> January (Day 7):**

❖ **No Weather Warning.**

**Weather Outlook for subsequent 3 days (During 14<sup>th</sup> January– 16<sup>th</sup> January, 2025)**

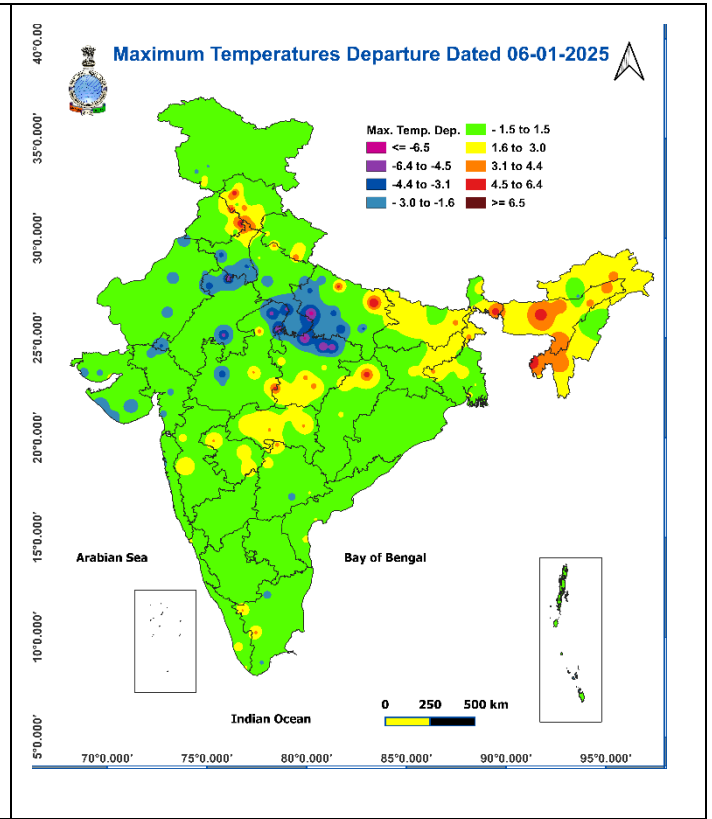
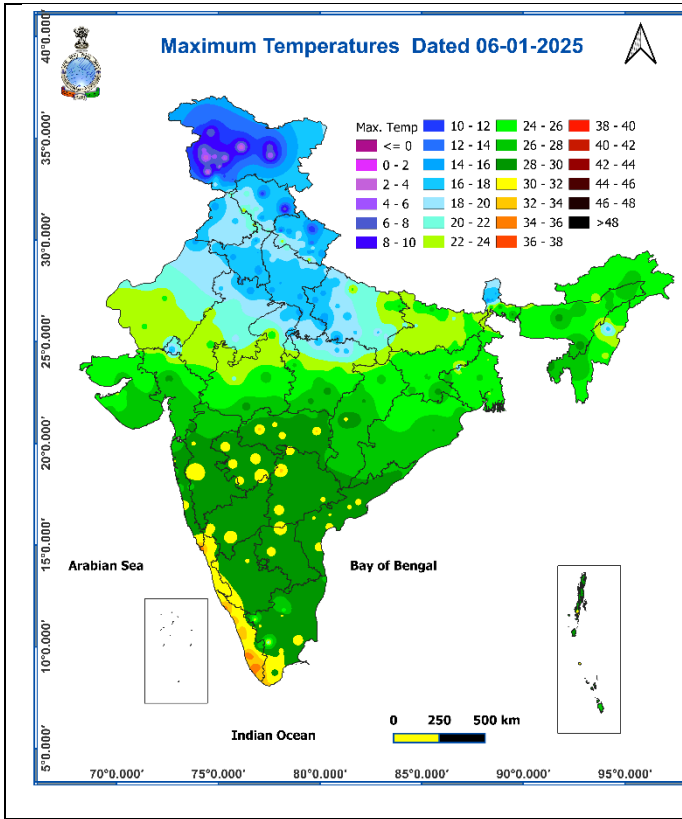
- ❖ Isolated to scattered light to moderate rainfall over Northwest, Central India and South Peninsular India.
- ❖ Isolated to scattered rainfall/snowfall over Himalayan Region.
- ❖ Mainly dry weather will prevail over rest parts of country.

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.

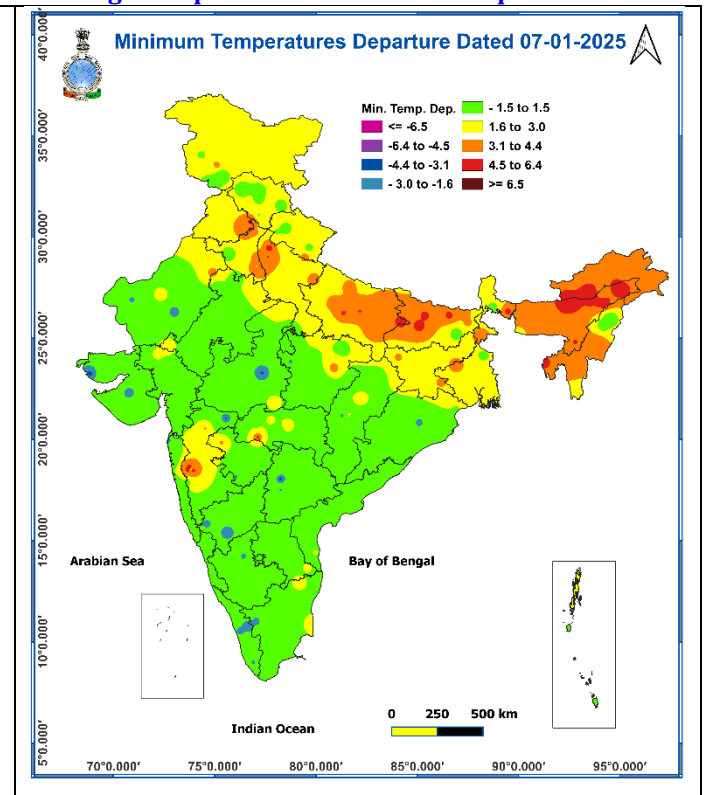
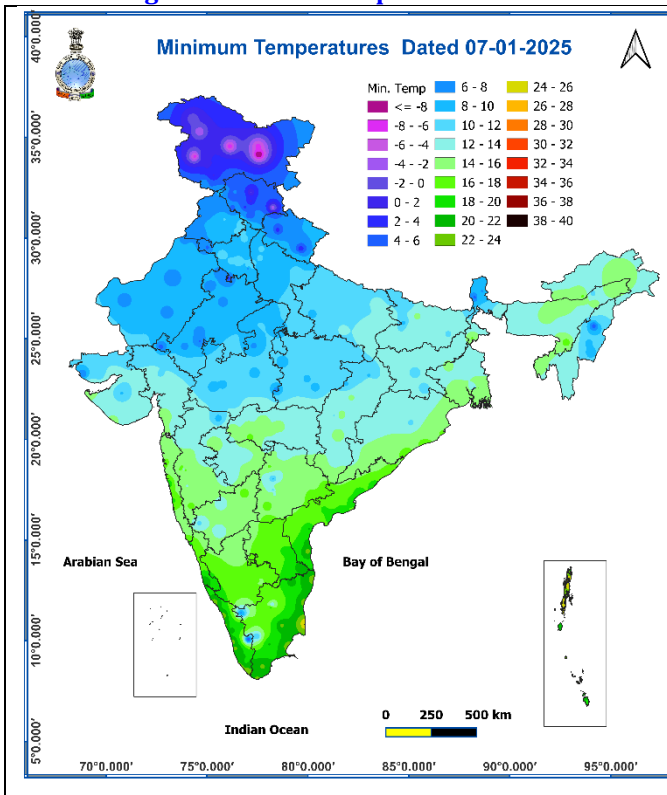
**Fig. 1: Maximum Temperatures**

**Fig. 2: Departure of Maximum Temperatures**



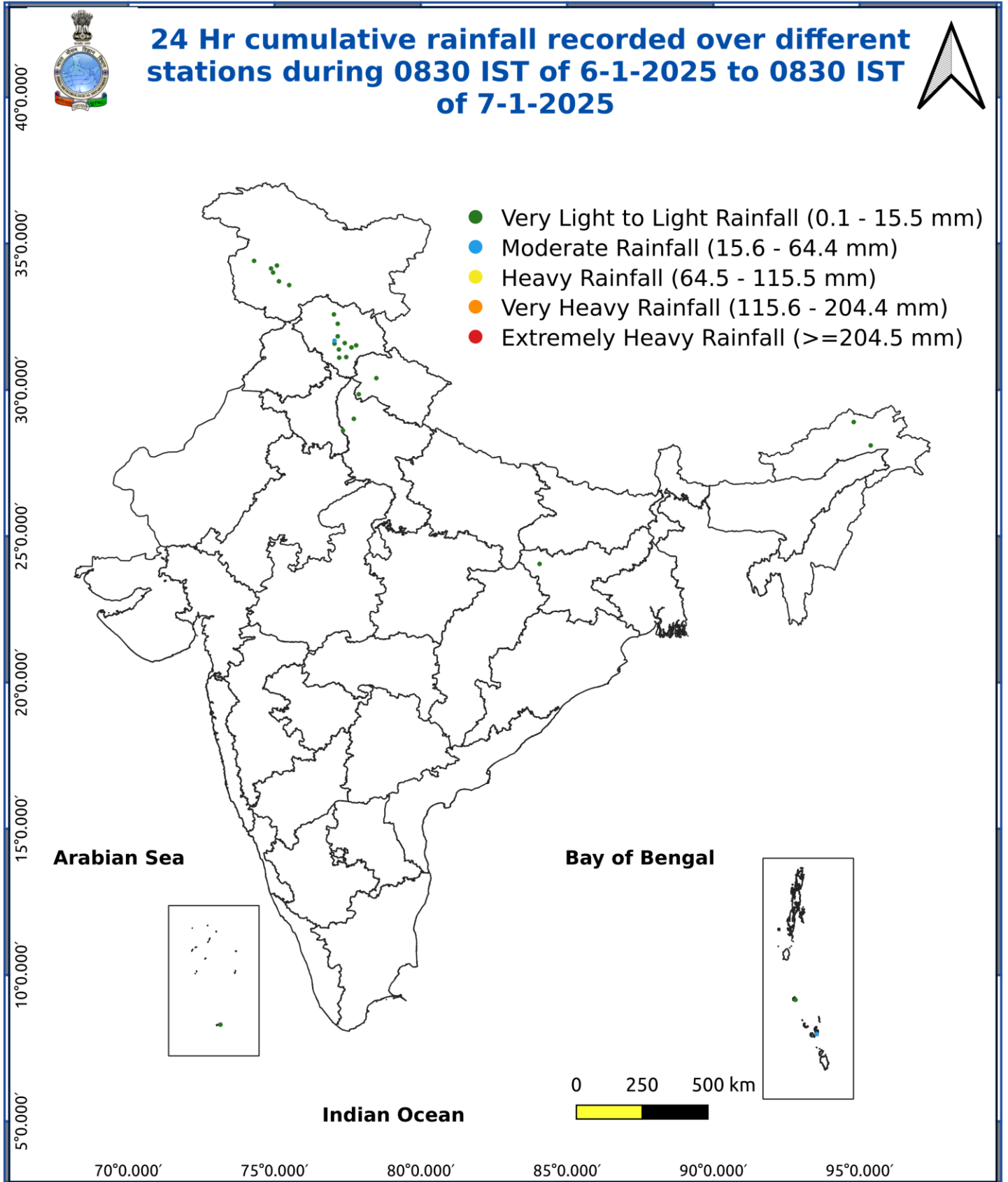
**Fig. 3: Minimum Temperatures**

**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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### Impact expected due to dense/very 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 Day/Severe Cold day 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 Woolen 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 likely impact of Hailstorm / Cold Wave

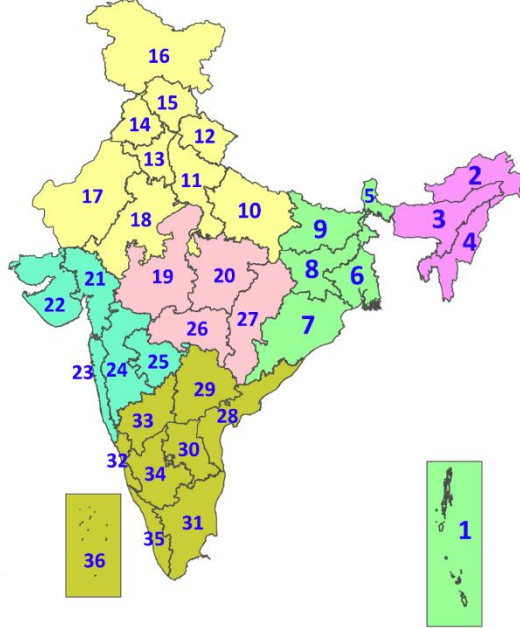
- Use hail nets to protect orchards and vegetable plants in Sikkim, Arunachal Pradesh, Assam and Meghalaya.
- In **Himachal Pradesh** and **West Rajasthan**, apply light and frequent irrigation to the standing crops in the evening to protect them from low temperature stress or cold injuries. Use mulching and cover vegetable nurseries and young fruit plants with straw/polythene sheets to maintain optimum soil temperature.
- Provide mechanical support to horticultural crops and staking to vegetables.

### Livestock

- Keep the animals inside the shed during heavy rainfall period and provide them balanced feed. Store feed and fodder in a safe place to prevent spoilage.
- 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.

## 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)