

Thursday, January 16, 2025  
Time of Issue: 1400 hours IST  
(MID-DAY)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features:

#### Weather Systems, Forecast and warning

- ❖ A Western Disturbance as a cyclonic circulation over north Pakistan with a trough aloft in middle & upper tropospheric levels runs roughly along Long. 72°E to the north of Lat. 25°N. An induced cyclonic circulation lies over south Haryana in lower tropospheric levels. Under their influence,
  - ✓ Scattered to Fairley widespread rainfall/snowfall activity likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad & Uttarakhand on 16<sup>th</sup>; Himachal Pradesh on 16<sup>th</sup> & 17<sup>th</sup> and Isolated rainfall activity over Punjab, Haryana, Chandigarh, Uttar Pradesh, East Rajasthan & Madhya Pradesh on 16<sup>th</sup> January.
  - ✓ Thunderstorm activity at isolated places likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand and West Uttar Pradesh on 16<sup>th</sup> January.
- ❖ A fresh Western Disturbance is likely to affect Northwest India from 18<sup>th</sup> January and another from 22<sup>nd</sup> January 2025. Under their influence, isolated to scattered rainfall/snowfall activity likely over Western Himalayan region during 18<sup>th</sup>-22<sup>nd</sup> and Isolated rainfall activity over Punjab, Haryana, Chandigarh, West Uttar Pradesh and Rajasthan on 21<sup>st</sup> & 22<sup>nd</sup> January.
- ❖ An upper air cyclonic circulation lies over southeast Arabian Sea off south Kerala coast in lower tropospheric levels. Under its influence,
  - ✓ Light to moderate rainfall accompanied with thunderstorm & lightning very likely at a few places over Tamil Nadu, Puducherry & Karaikal during 18<sup>th</sup>-20<sup>th</sup> and Kerala & Mahe on 19<sup>th</sup> & 20<sup>th</sup> January with isolated **heavy rainfall** likely over Tamilnadu, Puducherry & Karaikal on 18<sup>th</sup> & 19<sup>th</sup> and Kerala & Mahe on 19<sup>th</sup> January.
- ❖ Isolated **heavy rainfall** likely over Nicobar Islands on 16<sup>th</sup> January.

#### ii. Temperature, Cold Day 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; **1-4°C** over some parts of Himachal Pradesh; **6-10°C** over many parts of Northwest India; **10-15°C** over many parts of Central & East India; **15-20°C** over many parts of West India. Today, the lowest minimum temperature of **3.7°C** is reported at **Nagaur (Rajasthan)** over the plains of the country.
- ❖ During the past 24 hours, there has been **fall in minimum temperatures by 1-3°C** in many parts of Gujarat State; in some parts of Gangetic West Bengal; in isolated pockets of East Uttar Pradesh, East Rajasthan and Vidarbha and **rise by 1-4°C** in many parts of Madhya Pradesh; in some parts of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Haryana Chandigarh & Delhi; in isolated pockets of Uttarakhand, West Uttar Pradesh and Chhattisgarh.

##### Forecast of temperature:

- ❖ Gradual fall in minimum temperatures by 2-3°C likely over Northwest India during next 2 days and gradual rise by 2-4°C thereafter.
- ❖ Gradual rise in minimum temperatures by 2-3°C likely over Gujarat Region during next 3 days and no significant change thereafter.
- ❖ No significant change in minimum temperatures likely over Central & East India and Maharashtra region during next 5 days.

##### Dense Fog Warnings:

**Dense to very Dense fog Condition** very likely to continue to prevail during night/early morning hours in many parts of Punjab, Haryana, Chandigarh on 16<sup>th</sup> & 17<sup>th</sup>; in isolated pockets of Uttar Pradesh & East Rajasthan on 16<sup>th</sup> & 17<sup>th</sup> and West Rajasthan on 16<sup>th</sup> January.

**Dense fog conditions** very likely to continue to prevail during night/early morning hours in some parts of Punjab, Haryana, Chandigarh on 18<sup>th</sup>; in isolated pockets of Punjab, Haryana, Chandigarh on 19<sup>th</sup> & 20<sup>th</sup>; Himachal Pradesh, Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura during 17<sup>th</sup>-20<sup>th</sup>; West Rajasthan during 17<sup>th</sup>-19<sup>th</sup>; Uttarakhand, Sub-Himalayan West Bengal & Sikkim, Odisha till 18<sup>th</sup>; Uttar Pradesh & East Rajasthan during 18<sup>th</sup>-20<sup>th</sup>; Madhya Pradesh till 19<sup>th</sup> January.

##### Cold Day Warnings:

**Cold day** conditions very likely in isolated pockets of Himachal Pradesh during 16<sup>th</sup>-18<sup>th</sup> and East Rajasthan on 16<sup>th</sup> & 17<sup>th</sup> January.

##### Fishermen Warnings

Fishermen are advised not to venture into Gulf of Mannar, adjoining Comorin area during 16<sup>th</sup>-19<sup>th</sup> and Somalia coast & adjoining sea area on 16<sup>th</sup> & 17<sup>th</sup> January.

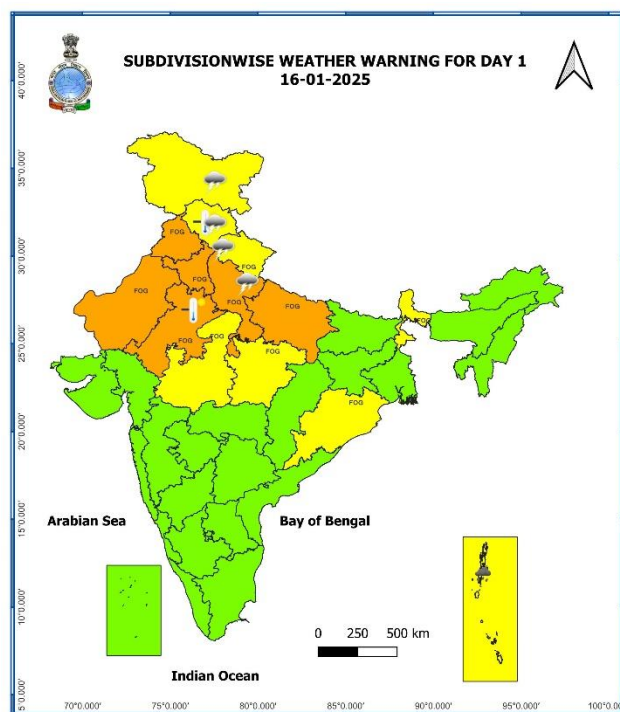
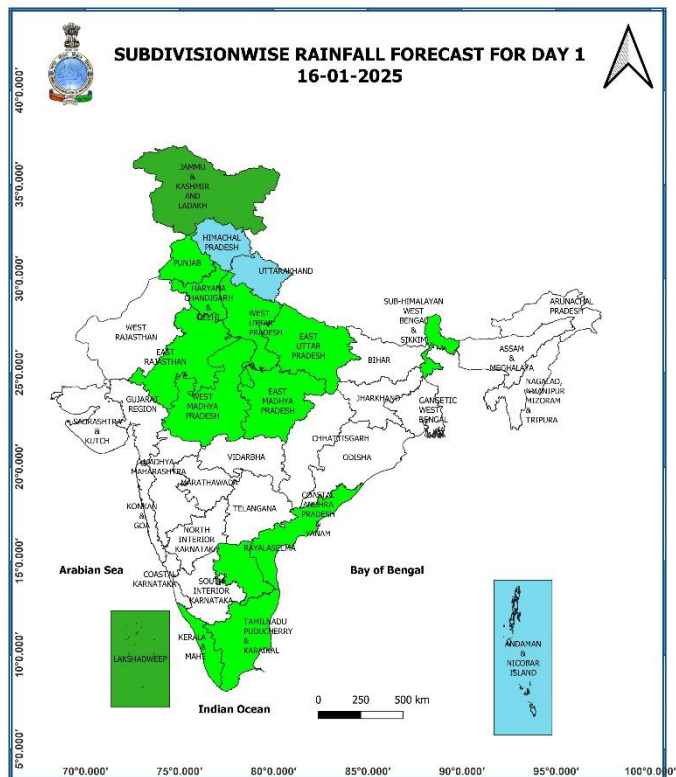
## Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at many places over** Uttarakhand, Haryana-Chandigarh-Delhi, Lakshadweep; **at a few places over** West Uttar Pradesh, Tamil Nadu, Puducherry & Karaikal; **at isolated places over** Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, East Rajasthan, West Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Tamilnadu Puducherry & Karaikal:** Oothu (dist Tirunelveli) 13, Nalumukku (dist Tirunelveli) 12, Kakkachi (dist Tirunelveli) 11, Manjolai (dist Tirunelveli) 9, Kamudhi (dist Ramanathapuram), Kamudhi ARG (dist Ramanathapuram) 2 each.
- ❖ **Heavy rainfall recorded** (from 0830 hours IST of yesterday to 0830 hours IST of today): South Tamil Nadu.
- ❖ **Dense fog** (at 0830 hours IST of today): **Dense to very dense fog (visibility < 50 m)** reported in some parts of Punjab; in isolated pockets of Haryana, East Uttar Pradesh, Rajasthan; **Dense fog (visibility 50-199 m)** reported in isolated pockets of Chandigarh, West Uttar Pradesh, North Madhya Pradesh, Odisha, Meghalaya and Tripura.
- ❖ **Visibility reported** (at 0830 hours IST of today) ( $\leq 200$  m): **Punjab:** Amritsar 0, Patiala 20, Ludhiana 50; **Haryana:** Nahan, Ambala 0 each; **East Uttar Pradesh:** Ayodhya 0; **Rajasthan:** Churu 0, Udaipur 50; **Tripura:** Agartala 50; **West Uttar Pradesh:** Jhansi 60; **Chandigarh** 70; **Meghalaya:** Barapani 100.
- ❖ **Minimum Temperature Departures (as on 16-01-2025):** Minimum temperatures are **markedly above normal (5.1°C or above)** at a few places over West Madhya Pradesh; at isolated places over Madhya Maharashtra; **appreciably above normal (3.1°C to 5.0°C)** at many places over Coastal Karnataka; at a few places over Haryana, Chandigarh; at isolated places over Punjab, East Rajasthan, East Madhya Pradesh, Bihar, Vidarbha, Marathawada, Telangana, Kerala & Mahe, Tamilnadu Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at many places over Coastal Andhra Pradesh & Yanam; at a few places over Konkan & Goa, Rayalaseema; at isolated places over Odisha and Chhattisgarh. These are **below normal (-1.6°C to -3.0°C)** at isolated places over Saurashtra & Kutch **and near** normal over rest part of the country (Fig. 4). Today, the **lowest minimum temperature** of 3.7°C is reported at **Nagaur (Rajasthan)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 15-01-2025):** Maximum temperatures were **appreciable above normal (3.1°C to 5.0°C)** at isolated places over Himachal Pradesh; **above normal (1.6°C to 3.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Assam, Nagaland, Manipur, Mizoram & Tripura. These were **markedly below normal (-5.1°C or less)** at isolated places over East Rajasthan, Uttar Pradesh; **appreciable below normal (-3.1°C to -5.0°C)** at isolated places over East Madhya Pradesh; **below normal (-1.6°C to -3.0°C)** at many places over Saurashtra & Kutch, Delhi; at a few places over Odisha, Tamil Nadu; at isolated places over West Rajasthan, Bihar, West Bengal, Kerala & Mahe, Telangana, Punjab and South Interior Karnataka and near normal over rest part of the country (Fig. 2). Yesterday, the **highest maximum temperature** of 36.6°C was reported at **Kannur Airport (Kerala)** over the plains of the country.

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

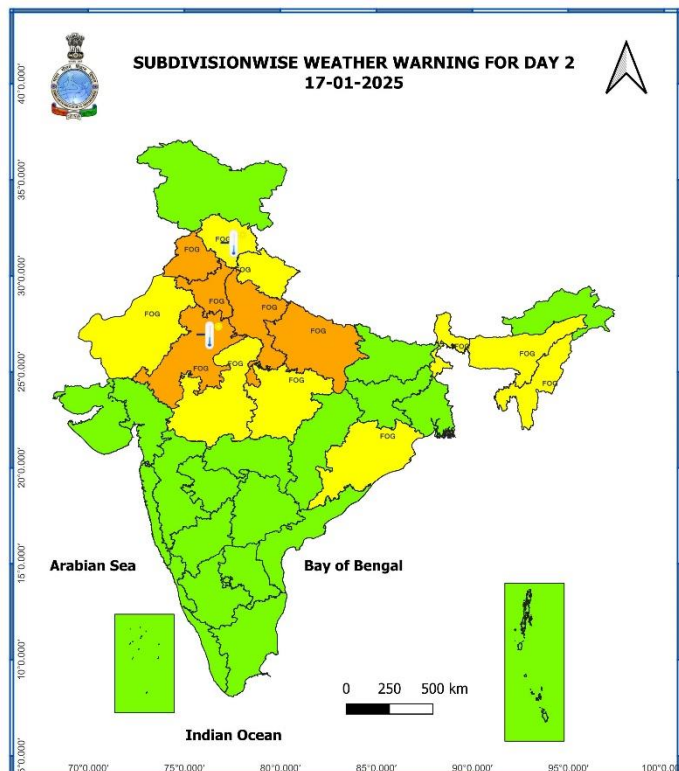
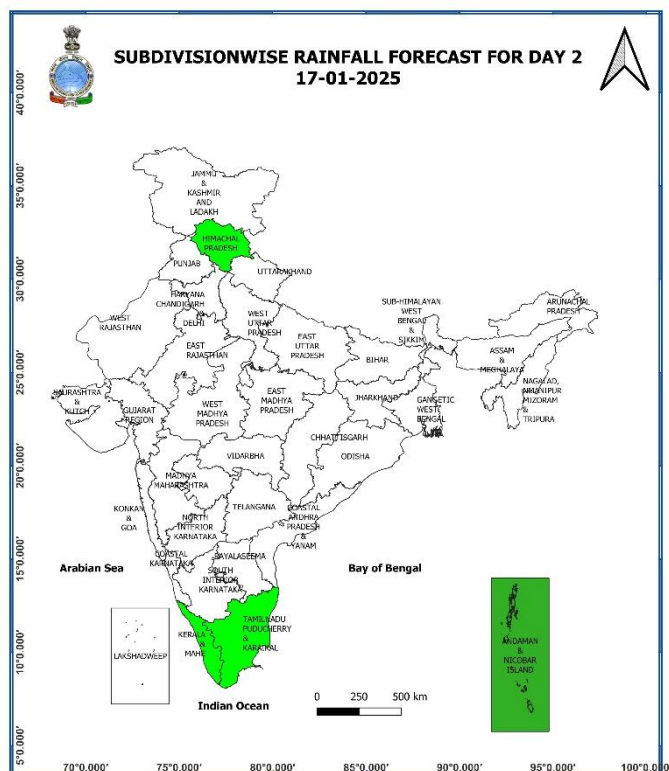
- ❖ The **Western Disturbance** as a cyclonic circulation over north Pakistan & neighbourhood persists and seen between 3.1 & 4.5 km above mean sea level. The trough aloft in middle & upper tropospheric levels with its axis at 5.8 km above mean sea level runs roughly along Long. 72°E to the north of Lat. 25°N also persists.
- ❖ The induced **cyclonic circulation** over south Haryana & neighbourhood persists and now extends upto 1.5 km above mean sea level.
- ❖ Subtropical **westerly Jet Stream** with core winds of the order upto 140 knots at 12.6 km above mean sea level continue to prevail over North India.
- ❖ A fresh **Western Disturbance** is likely to affect Northwest India from 18<sup>th</sup> January and another from 22<sup>nd</sup> January 2025.
- ❖ An upper air **cyclonic circulation** lies over southeast Arabian Sea off south Kerala coast at 1.5 km above mean sea level.
- ❖ The **cyclonic circulation** over southwest Rajasthan & neighbourhood at 1.5 km above mean sea level has become less marked.

**Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 23<sup>rd</sup> January, 2025)**



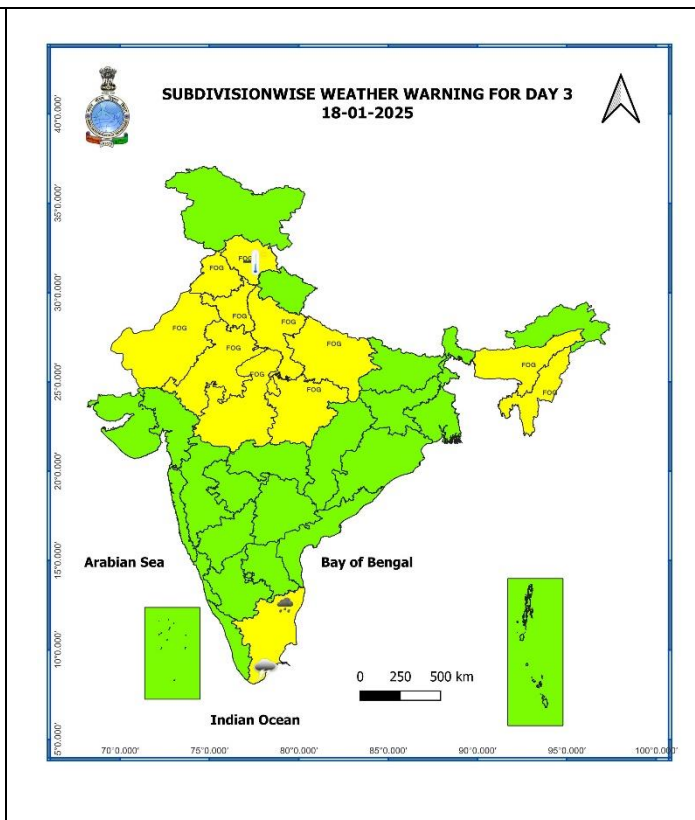
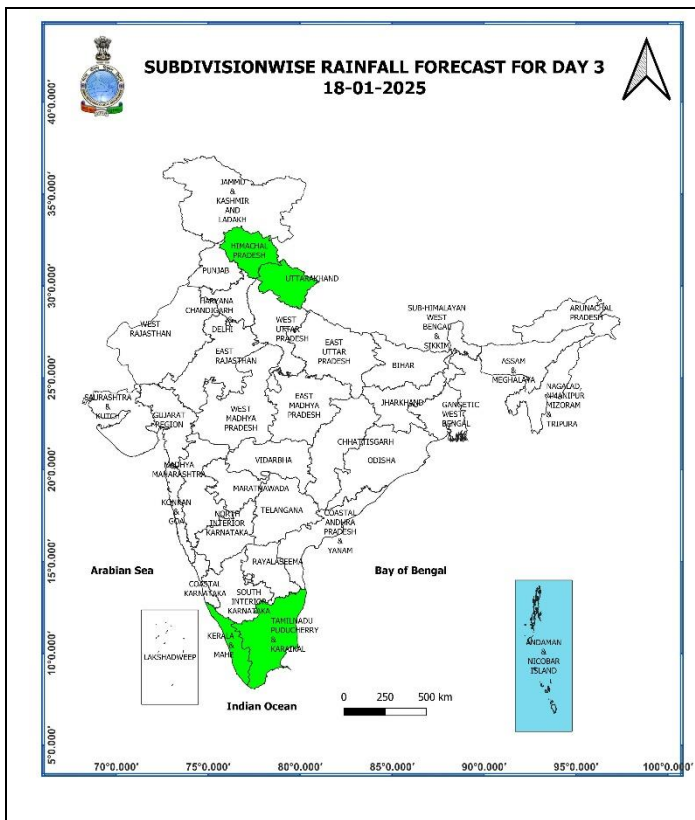
**16<sup>th</sup> January (Day 1):**

- ❖ **Heavy rainfall ( $\geq 7$  cm)** very likely at isolated places over Andaman & Nicobar Islands.
- ❖ **Dense to very dense fog conditions** very likely in many parts of Punjab, Haryana-Chandigarh-Delhi; in isolated pockets of Uttar Pradesh and Rajasthan; **Dense fog conditions** in isolated pockets of Uttarakhand, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim and Odisha during night/morning hours.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand and West Uttar Pradesh.
- ❖ **Cold day conditions** very likely in isolated pockets of Himachal Pradesh and East Rajasthan.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over Comorin area and adjoining gulf of Mannar. **Squally wind with speed 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over Somalia coast and adjoining sea area. Fishermen are advised not to venture in to these areas.



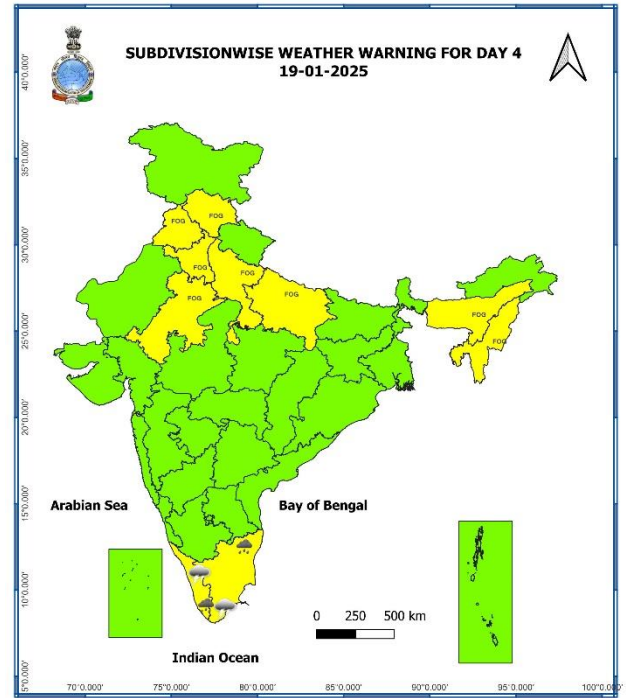
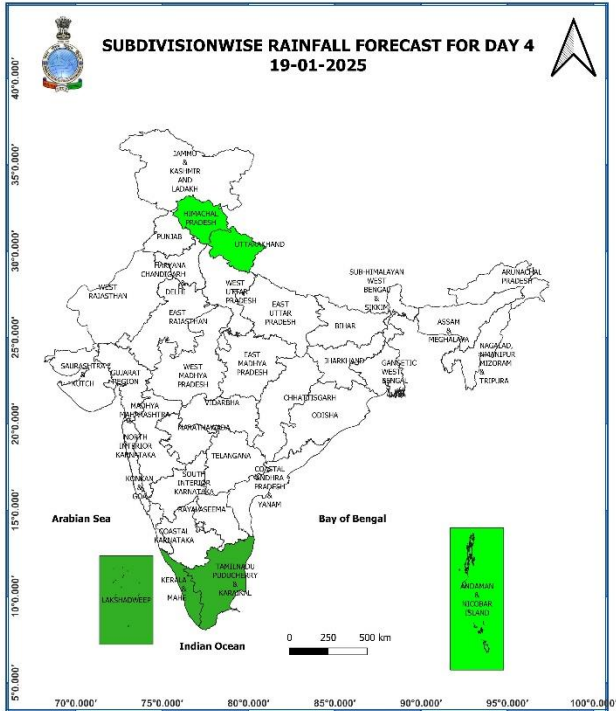
### 17<sup>th</sup> January (Day 2):

- ❖ **Dense to very dense fog conditions** very likely in many parts of Punjab and Haryana-Chandigarh-Delhi; isolated places over Uttar Pradesh and East Rajasthan; **Dense fog conditions** in isolated pockets of Himachal Pradesh, Uttarakhand, West Rajasthan, Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during night/morning hours.
- ❖ **Cold day conditions** very likely in isolated pockets of Himachal Pradesh and East Rajasthan.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over Comorin area and adjoining gulf of Mannar. **Squally wind with speed 45 kmph to 55 kmph gusting to 65 kmph** likely to prevail over Somalia coast and adjoining sea area. Fishermen are advised not to venture in to these areas.



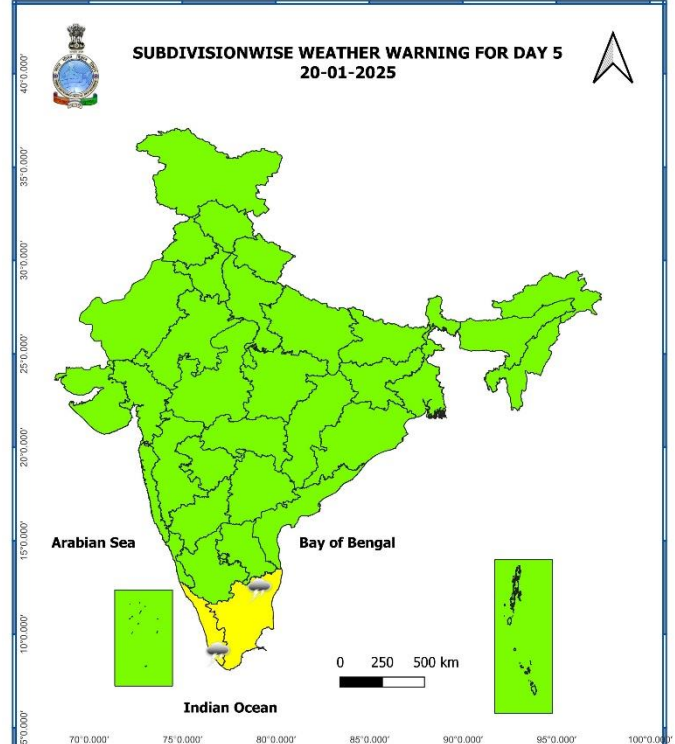
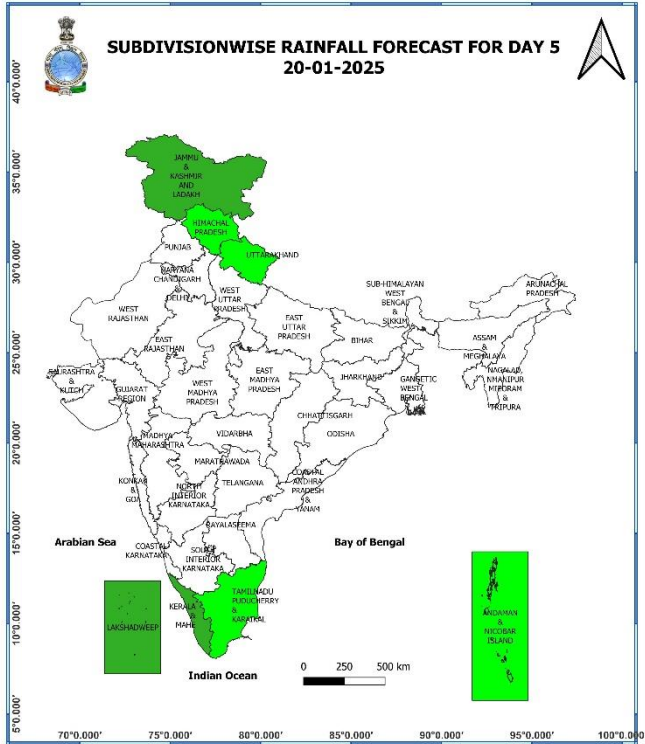
**18<sup>th</sup> January (Day 3):**

- ❖ **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Dense fog conditions** likely at a few places over Punjab and Haryana-Chandigarh-Delhi; at isolated pockets of Himachal Pradesh, Uttar Pradesh, Rajasthan, Madhya Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during night/morning hours.
- ❖ **Cold day 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 Comorin area and adjoining gulf of Mannar. Fishermen are advised not to venture in to these areas.



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

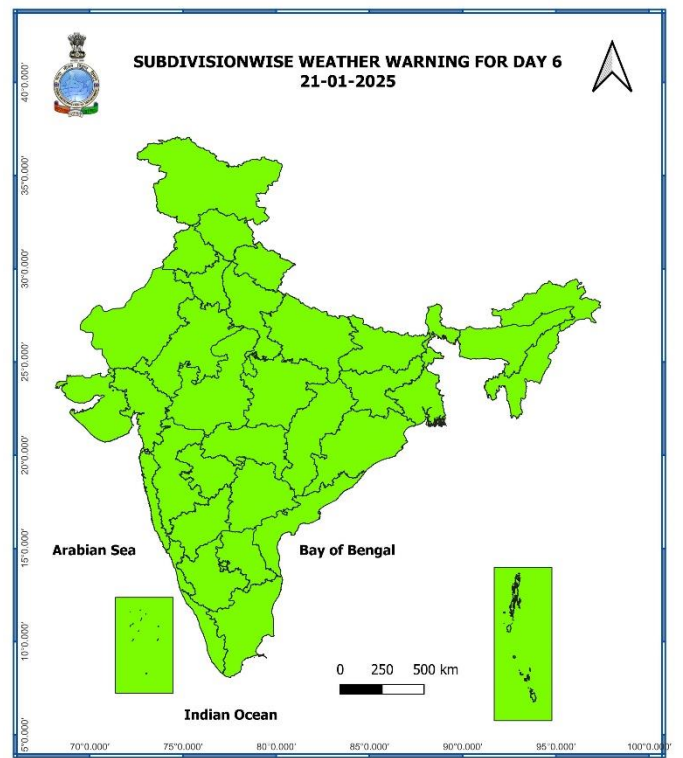
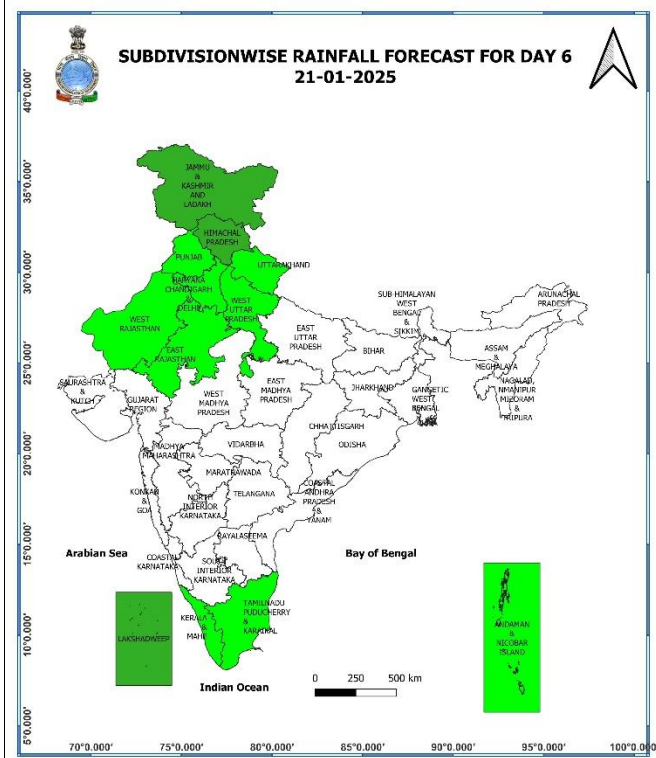
- ❖ **Heavy rainfall ( $\geq 7$  cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ **Dense fog conditions** likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, East Rajasthan, 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 Comorin area and adjoining gulf of Mannar. Fishermen are advised not to venture in to these areas.



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

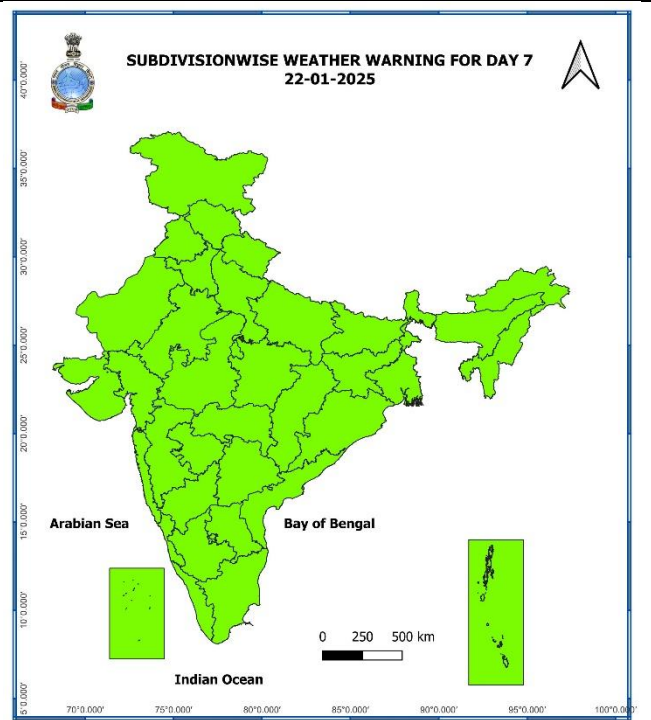
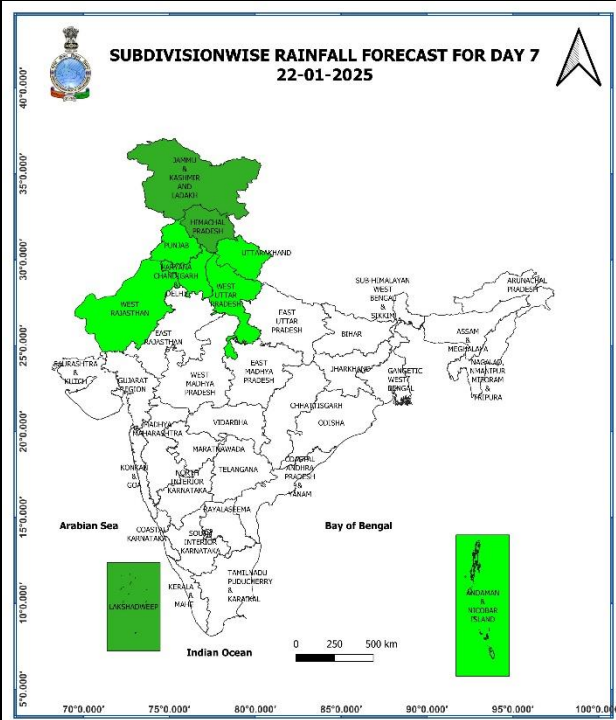
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.





**21<sup>st</sup> January (Day 6):**

- ❖ No Weather Warning.



**22<sup>nd</sup> January (Day 7):**

❖ **No Weather Warning.**

**Weather Outlook for subsequent 3 days (During 23<sup>rd</sup> January– 25<sup>th</sup> January, 2025)**

- ❖ Fairly widespread to widespread rainfall/snowfall over western Himalayan region & scattered to fairly widespread rainfall over adjoining plains of Northwest India.
- ❖ Isolated rainfall over Tamil Nadu and scattered to fairly widespread rainfall over Nicobar Islands.
- ❖ Isolated rainfall/snowfall over Arunachal Pradesh.

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

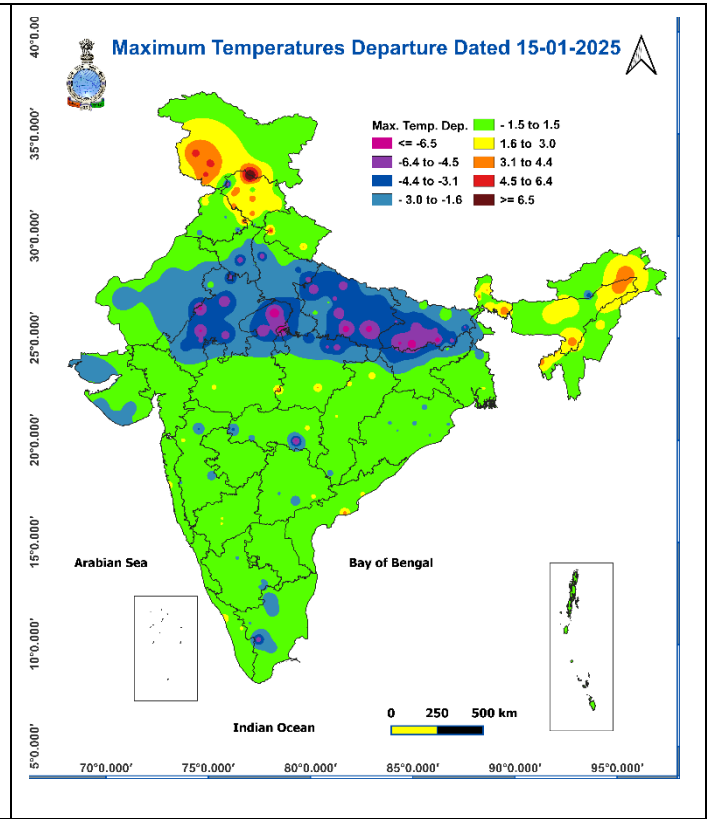
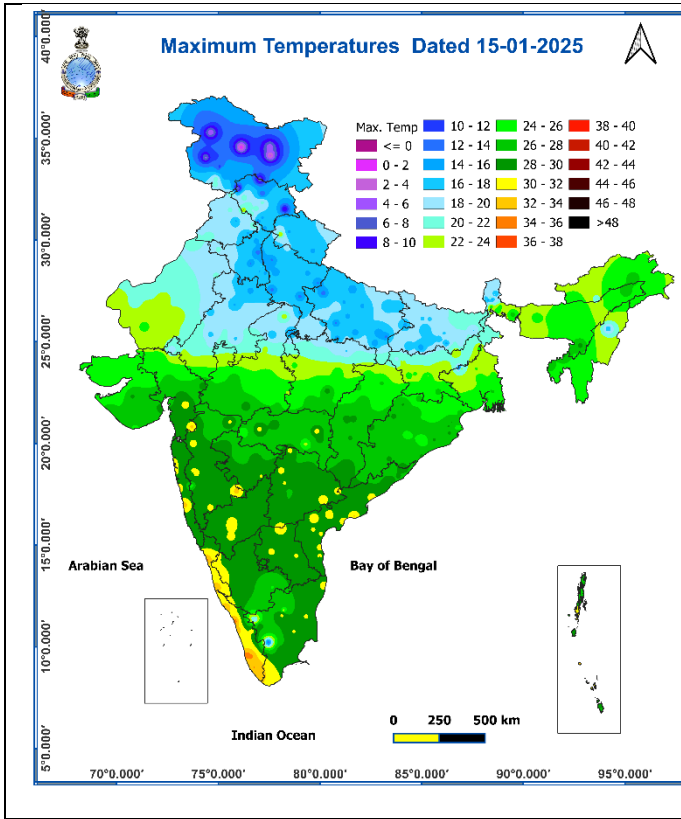


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

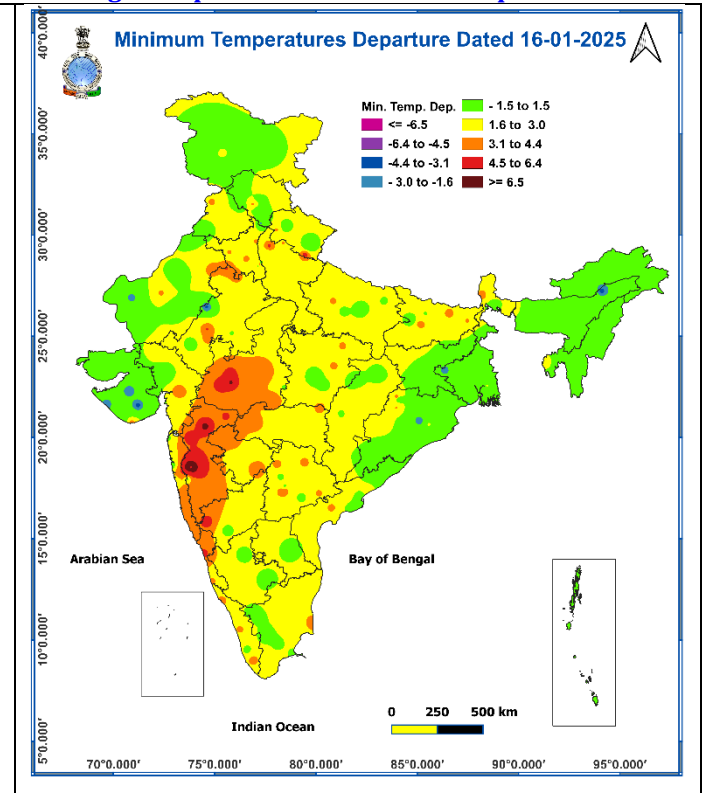
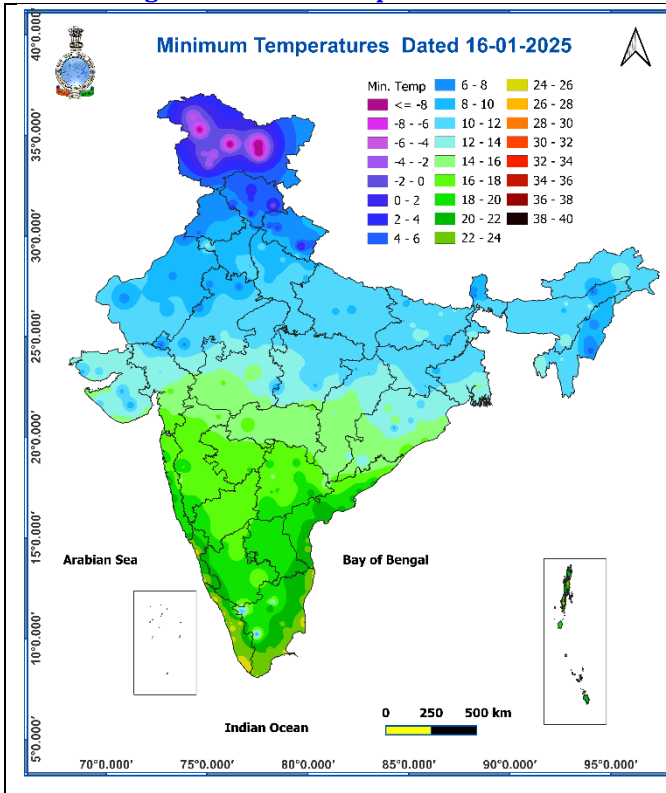
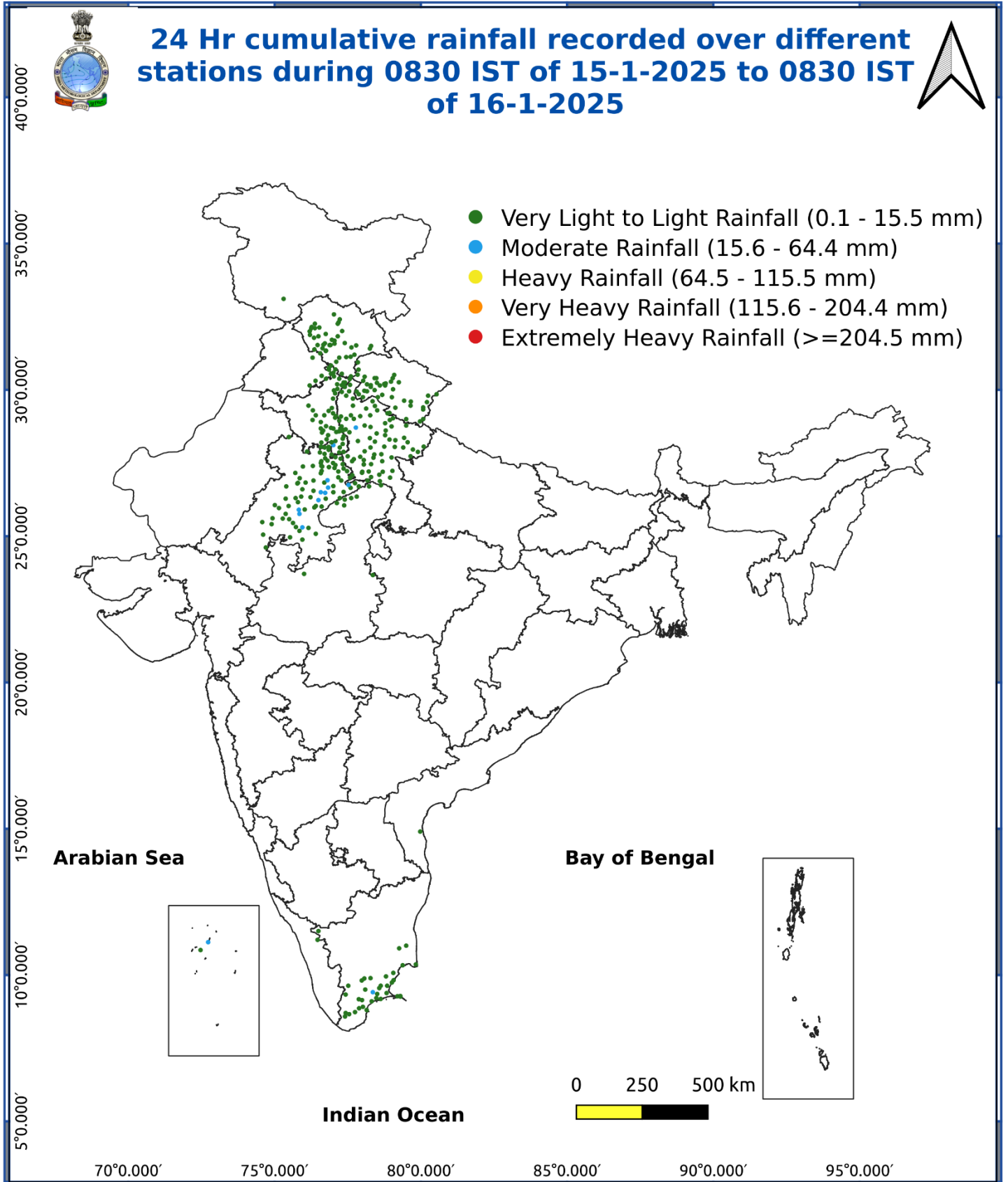


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



\* 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)

### 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

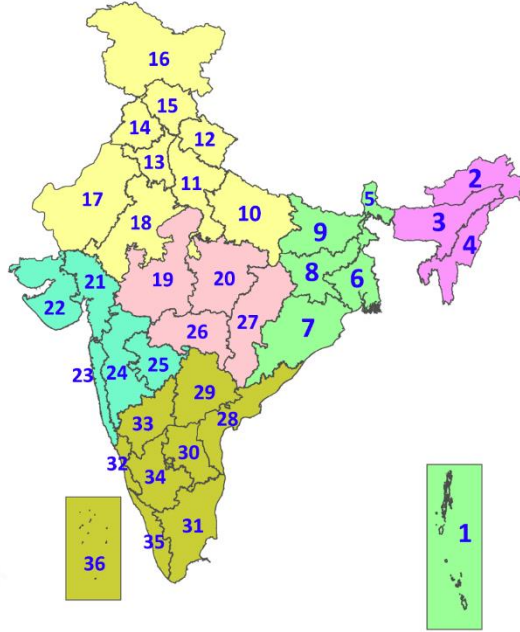
- ❖ An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- ❖ Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- ❖ Frostbite can occur due to prolonged 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.

## 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)