

Monday, January 13, 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 **cyclonic circulation** lies over Comorin area & neighbourhood in lower tropospheric levels. Under its influence,
 - ✓ Light to moderate rainfall accompanied with thunderstorm, lightning very likely at isolated places over Tamil Nadu, Puducherry & Karaikal during 13th-15th and Kerala & Mahe during 13th-16th; Coastal Andhra Pradesh & Yanam & Rayalaseema on 13th & 14th January with Isolated **heavy rainfall** likely over Tamilnadu, Puducherry & Karaikal on 14th and Kerala & Mahe on 15th January.
- ❖ A fresh **western disturbance** is likely to affect northwest India from the night of 14th January, 2025. Under its influence,
 - ✓ Isolated to scattered rainfall/snowfall activity likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad & Himachal Pradesh during 16th-19th; Uttarakhand during 15th-19th and Isolated rainfall activity over Punjab, Haryana, Chandigarh, Uttar Pradesh, East Rajasthan on 15th & 16th and West Rajasthan on 15th January. Isolated hailstorm also likely over Punjab and Haryana on 15th January.
 - ✓ Thunderstorm activity at isolated places likely over Madhya Pradesh on 15th January.
- ❖ Light to moderate rainfall accompanied with thunderstorm, lightning very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 13th January.

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; **2-5°C** over some parts of Himachal Pradesh; **6-12°C** over many parts of Northwest & Central India; **12-18°C** over many parts of East & West India. Today, the lowest minimum temperature of **4.7°C** is reported at **Amritsar (Punjab)** over the plains of the country.
- ❖ During the past 24 hours, there has been **fall in minimum temperatures by 1-5°C** in some parts over Uttarakhand, West Uttar Pradesh, Madhya Pradesh; in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, East Rajasthan and **rise by 1-3°C** in some parts of Bihar, Saurashtra & Kutch, Odisha West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam, Tamil Nadu; in isolated pockets of Chhattisgarh and Madhya Maharashtra.
- ❖ Minimum temperatures are **below normal (-1°C to -3°C)** at isolated places over East Rajasthan. These are **markedly above normal (5°C or more)** at isolated places over Bihar, Konkan & Goa; **appreciably above normal (3°C to 5°C)** at isolated places over East Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Vidarbha, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Rayalaseema, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Andaman & Nicobar Islands; **above normal (1°C to 3°C)** at isolated places over Punjab, West Uttar Pradesh, Haryana-Chandigarh-Delhi, West Rajasthan, Gujarat state, Telangana, Gangetic West Bengal, Coastal Karnataka, Odisha and near normal over rest part of the country.

Forecast of temperature:

- ❖ No significant change in minimum temperatures likely over Northwest India during next 48 hours and gradual rise by 2-4°C thereafter.
- ❖ No significant change in minimum temperatures likely over Central India and Maharashtra during next 24 hours and gradual rise by 2-3°C during subsequent 2-3 days.
- ❖ No significant change in minimum temperatures likely over East India during next 5 days.

Cold Wave Warnings:

Cold wave conditions very likely in isolated pockets over Himachal Pradesh on 13th & 14th January.

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 13th & in isolated pockets on 14th & 15th; Uttar Pradesh till 15th January.

Dense fog conditions very likely to continue to prevail during night/early morning hours in isolated pockets of West Rajasthan during 13th-15th & on 17th & 18th; East Rajasthan on 13th, 14th, 16th, 17th, 18th; Bihar till 14th; Uttarakhand till 15th; Punjab, Haryana Chandigarh & Uttar Pradesh during 16th-20th; Sub-Himalayan West Bengal & Sikkim & Odisha till 15th; Himachal Pradesh, Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura till 16th January.

Cold Day Warnings:

Cold day conditions very likely in isolated pockets of Haryana, Chandigarh on 13th & 14th; Rajasthan and West Madhya Pradesh on 13th January.

Ground Frost Warnings:

Ground frost conditions very likely in isolated pockets of Himachal Pradesh and Uttarakhand on 13th & 14th January.

Fishermen Warnings :

Fishermen are advised not to venture into South Sri Lanka coasts and southeast & adjoining southwest Bay of Bengal on 13th and Gulf of Mannar and adjoining Comorin area during 13th-16th January.

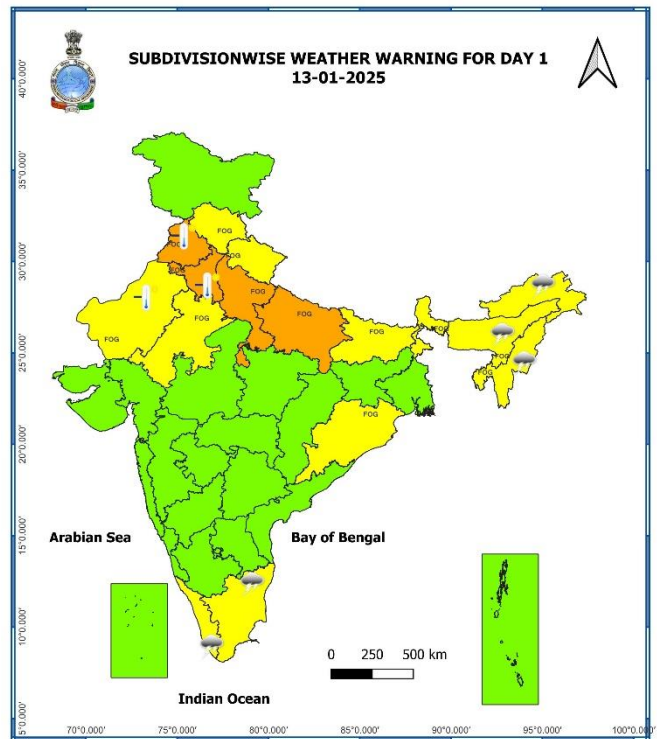
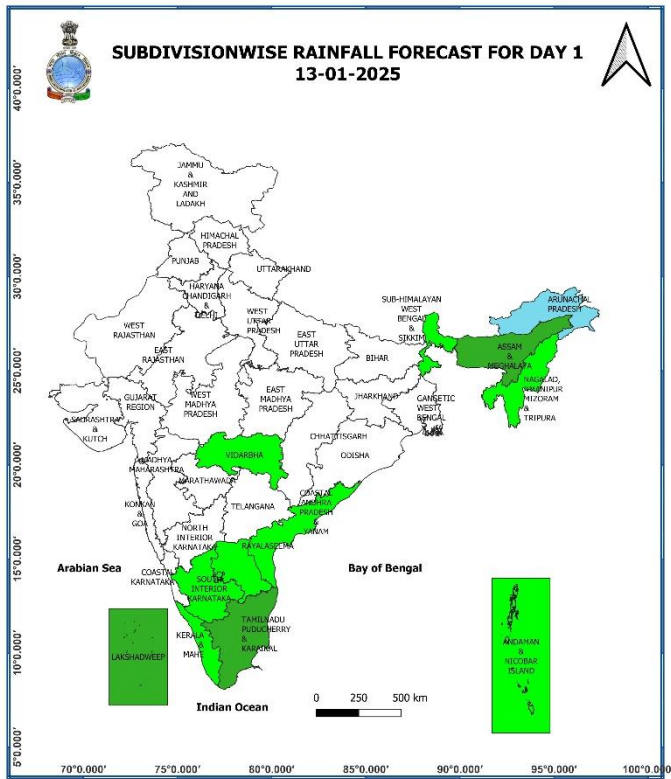
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at isolated places** over Himachal Pradesh, Punjab, Uttarakhand, East Rajasthan, East Uttar Pradesh, Madhya Pradesh, Tamil Nadu, Puducherry & Karaikal, Andaman & Nicobar Islands.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Tamilnadu Puducherry & Karaikal:** Oothu (dist Tirunelveli) 5.
- ❖ **Cold day to severe cold day conditions** prevailed in isolated pockets of East Rajasthan; **Cold wave** in isolated pockets of West Rajasthan.
- ❖ **Cold wave conditions** prevailed in isolated pockets of Himachal Pradesh.
- ❖ **Dense fog (between 0530 & 0830 hours IST of today):** **Dense to very dense fog** reported in isolated pockets of Punjab, Haryana, Rajasthan, Uttar Pradesh and **dense fog** reported in isolated pockets of Himachal Pradesh and Madhya Maharashtra.
- ❖ **Visibility reported (between 0530 & 0830 hours IST of today):** (≤ 200 m) (in meter): **Punjab:** Amritsar 0; **Haryana:** Hisar, Bhiwani 0 each; **Rajasthan:** Pilani, Ganganagar, Jaisalmer 0 each; **Uttar Pradesh:** Hardoi, Fursatganj, Prayagraj 0 each, Lucknow 200; **Himachal Pradesh:** Sundernagar 50, Bilaspur 100; **Madhya Maharashtra:** Mahabaleshwar 50.
- ❖ **Minimum Temperature Departures (as on 13-01-2025):** Minimum temperatures are **markedly above normal (5.1°C or more)** at isolated places over Bihar, Konkan & Goa; **appreciably above normal (3.1°C to 5.0°C)** at isolated places over East Uttar Pradesh, East Madhya Pradesh, Chhattisgarh, Jharkhand, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Vidarbha, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Rayalaseema, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Andaman & Nicobar Islands; **above normal (1.6°C to 3.0°C)** at isolated places over Punjab, West Uttar Pradesh, Haryana-Chandigarh-Delhi, West Rajasthan, Gujarat state, Telangana, Gangetic West Bengal, Coastal Karnataka, Odisha. These are **below normal (-1.6°C to -3.0°C)** at isolated places over East Rajasthan and near normal over rest part of the country (Fig. 4). Today, the **lowest minimum temperature** of 4.7°C is reported at **Amritsar (Punjab)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 12-01-2025):** Maximum temperatures were **markedly above normal (5.1°C or more)** at isolated places over Bihar; **appreciable above normal (5.0°C to 3.0°C)** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura; **above normal (1.6°C to 3.0°C)** at many places over Gangetic West Bengal; at isolated places over Chhattisgarh, Uttar Pradesh, Odisha. These were **markedly below normal (-5.1°C or less)** at a few places over East Rajasthan; at isolated places over East Madhya Pradesh, West Rajasthan, Uttarakhand; **appreciable below normal (-5.0°C to -3.0°C)** at isolated places over West Madhya Pradesh ;**below normal (-1.6°C to -3.0°C)** at isolated places over East Uttar Pradesh, Haryana-Chandigarh-Delhi, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal and near normal over rest part of the country (Fig. 2). Yesterday, the **highest maximum temperature** of 35.0°C was reported at **Karwar (Coastal Karnataka)** over the plains of the country.

Meteorological Analysis (Based on 0830 hours IST)

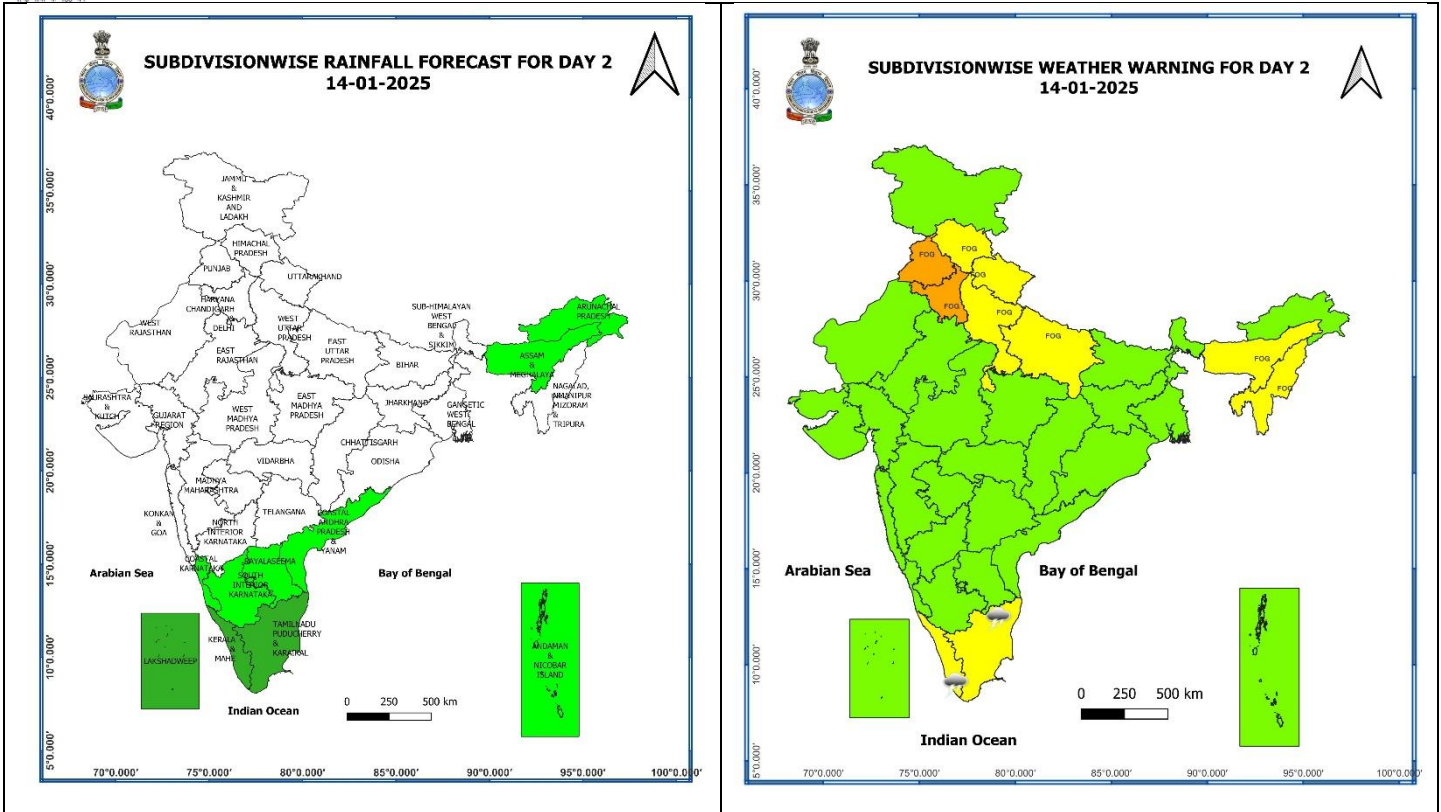
- ❖ The **cyclonic circulation** over east Sri Lanka coast & adjoining southwest Bay of Bengal now lies over Comorin area & neighbourhood at 0.9 km above mean sea level.
- ❖ A **cyclonic circulation** lies over north Bangladesh & neighbourhood and extends upto 1.5 km above mean sea level.
- ❖ Subtropical **westerly Jet Stream** with core winds of the order upto 100 knots at 12.6 km above mean sea level prevails over North India.
- ❖ A fresh **western disturbance** is likely to affect northwest India from the night of 14th January, 2025.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 20th January, 2025)



13th January (Day 1):

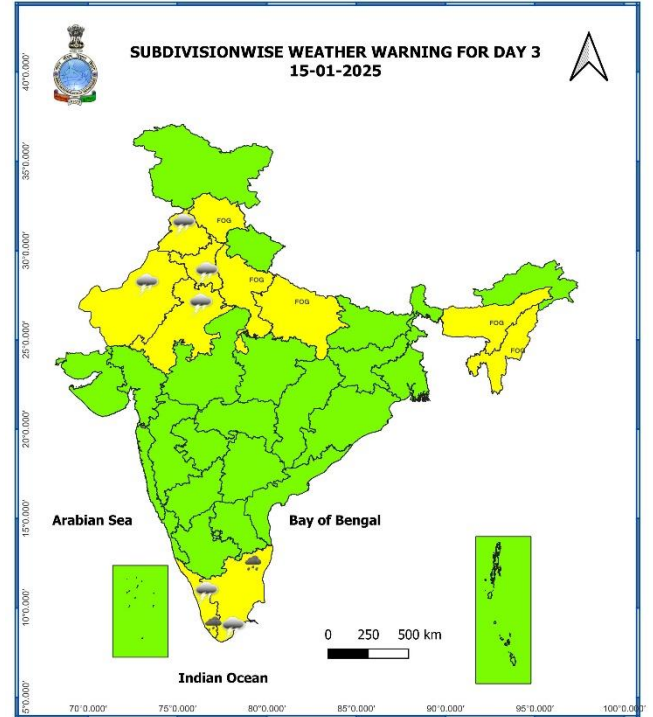
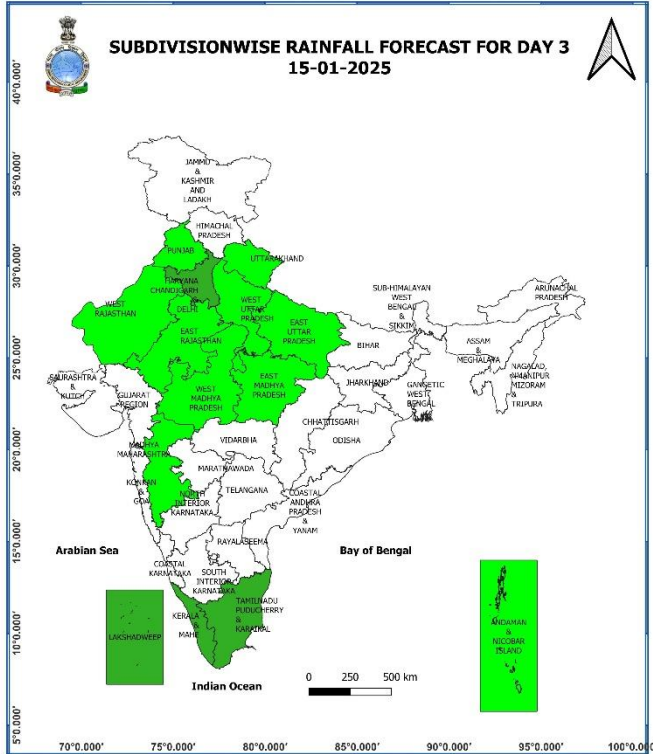
- ❖ **Dense to very dense fog conditions** very likely in many parts of Punjab, Haryana-Chandigarh; at isolated parts over Uttar Pradesh; **Dense fog** in isolated pockets of Himachal Pradesh, Uttarakhand, Rajasthan, Sub-Himalayan West Bengal & Sikkim, Bihar, Odisha, Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura during night/morning hours.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema and Kerala & Mahe.
- ❖ **Cold day conditions** very likely in isolated pockets of Haryana-Chandigarh-Delhi, Rajasthan, West Madhya Pradesh.
- ❖ **Cold wave conditions** very likely in isolated pockets of Himachal Pradesh.
- ❖ **Ground frost conditions** very likely at isolated places over Himachal Pradesh, Uttarakhand.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over few parts of southeast bay of Bengal and adjoining southwest bay of Bengal, over gulf of Mannar, Comorin area, over south Sri Lanka coasts and adjoining sea area. Fisherman are advised not to venture in to these areas.



14th January (Day 2):

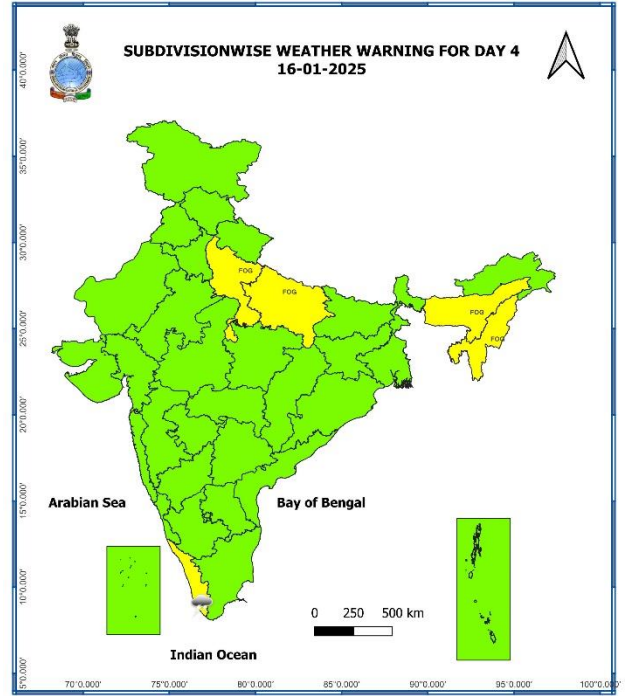
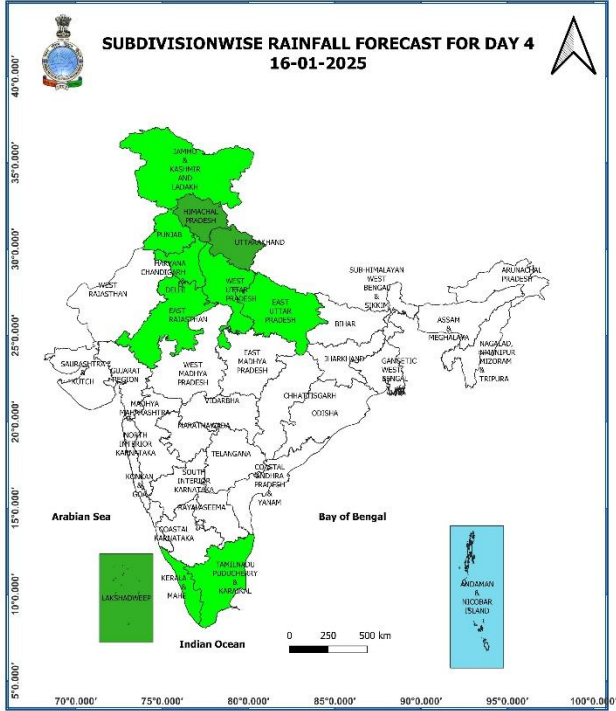
- ❖ **Heavy rainfall (≥7 cm)** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Dense to very dense fog conditions** very likely in isolated parts of Punjab, Haryana-Chandigarh, Uttar Pradesh; **Dense fog conditions** likely in isolated pockets of Himachal Pradesh, Uttarakhand, West Rajasthan, Sub-Himalayan West Bengal & Sikkim, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during night/morning hours.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema and Kerala & Mahe.
- ❖ **Cold day conditions** very likely in isolated pockets of Haryana-Chandigarh.
- ❖ **Cold wave conditions** very likely in isolated pockets of Himachal Pradesh.
- ❖ **Ground frost conditions** very likely at isolated places over Himachal Pradesh, Uttarakhand.
- ❖ **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. Fisherman are advised not to venture in to these areas.

* 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.
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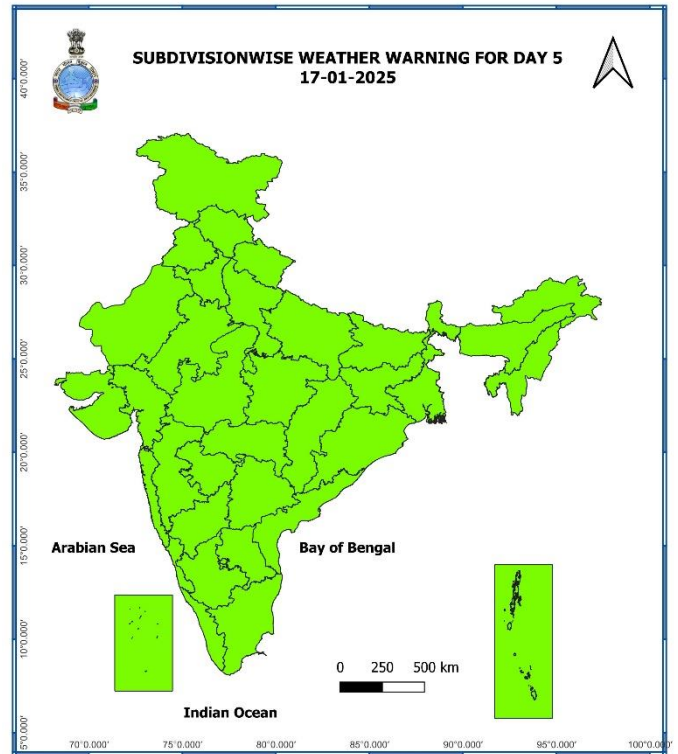
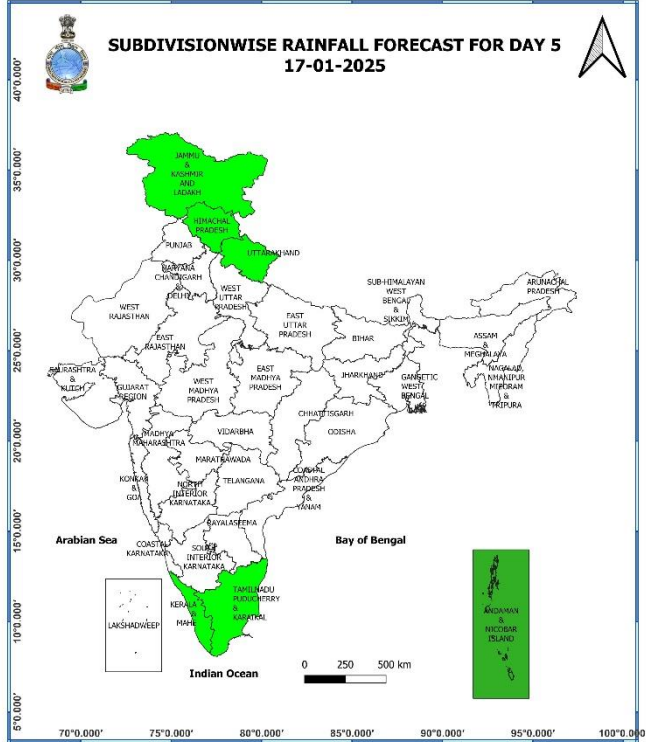
15th January (Day 3):

- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Kerala & Mahe.
- ❖ **Dense to very dense fog conditions** very likely in isolated parts of Uttar Pradesh; **Dense fog conditions** likely in isolated pockets of Himachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during night/morning hours.
- ❖ **Thunderstorm accompanied with Hailstorm** very likely at isolated places of Punjab, Haryana-Chandigarh; **with lightning** very likely at isolated places over Madhya Pradesh, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ **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. Fisherman are advised not to venture in to these areas.



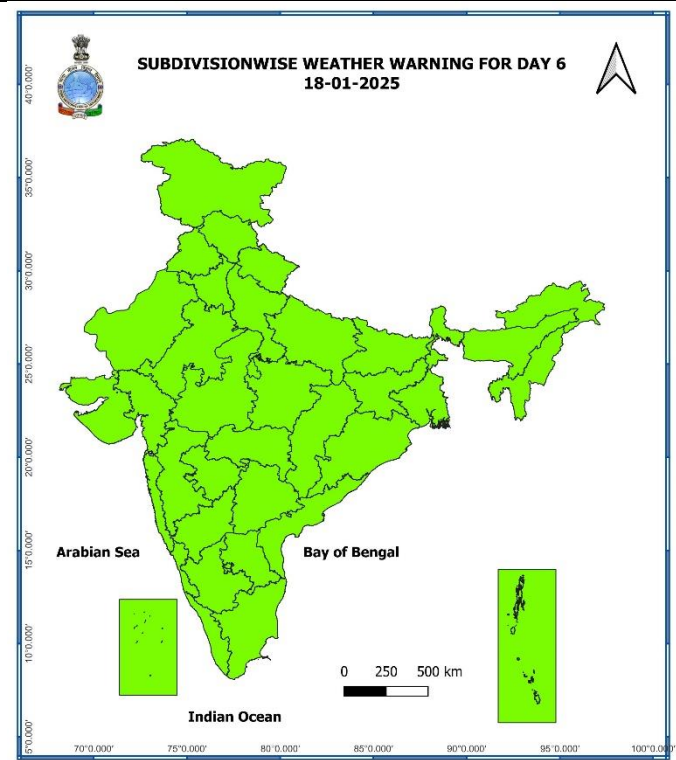
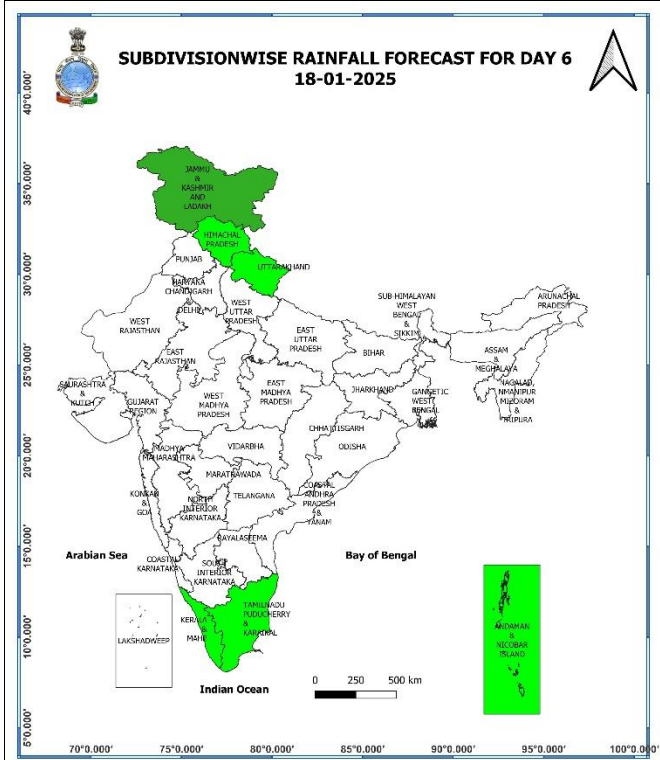
16th January (Day 4):

- ❖ **Dense fog conditions** likely in isolated pockets of Punjab, Haryana, Uttar Pradesh, East Rajasthan during night/morning hours.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places Kerala & Mahe.
- ❖ **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. Fisherman are advised not to venture in to these areas.



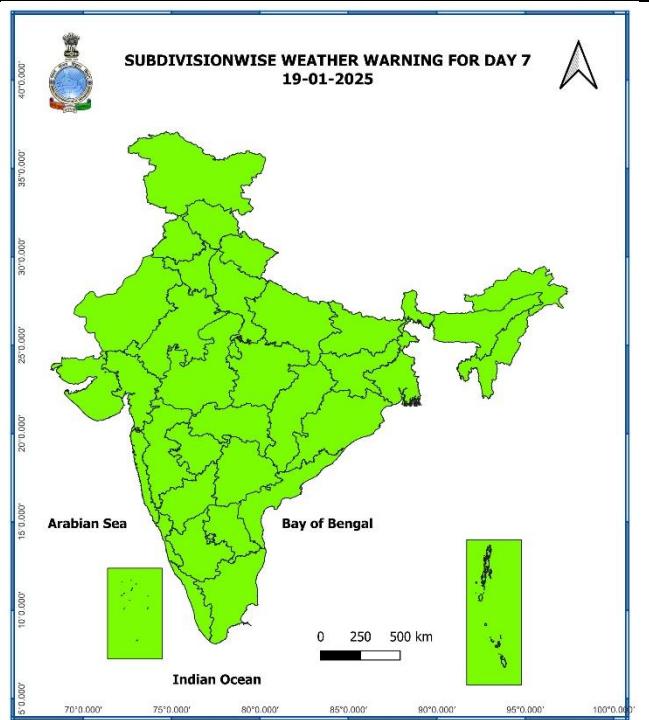
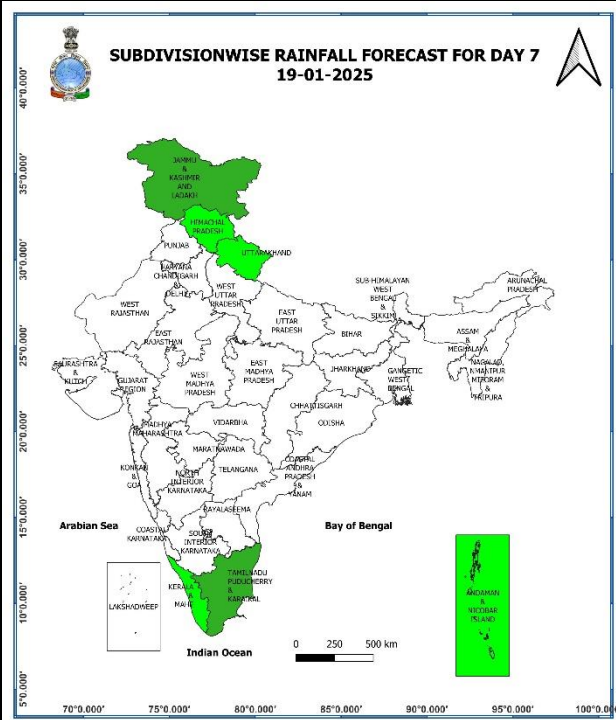
17th January (Day 5):

- ❖ **Dense fog conditions** likely in isolated pockets of Punjab, Haryana, Uttar Pradesh, Rajasthan during night/morning hours.



18th January (Day 6):

- ❖ **Dense fog conditions** likely in isolated pockets of Punjab, Uttar Pradesh during night/morning hours.



19th January (Day 7):

- ❖ **Dense fog conditions** likely in isolated pockets of Punjab, Uttar Pradesh during night/morning hours.

Weather Outlook for subsequent 3 days (During 20th January- 22nd January, 2025)

- ❖ Isolated rainfall over Tamil Nadu & Kerala and scattered to fairly widespread rainfall over Nicobar Islands.
- ❖ Isolated rainfall/snowfall over higher reaches of Jammu & Kashmir & Himachal Pradesh.
- ❖ 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

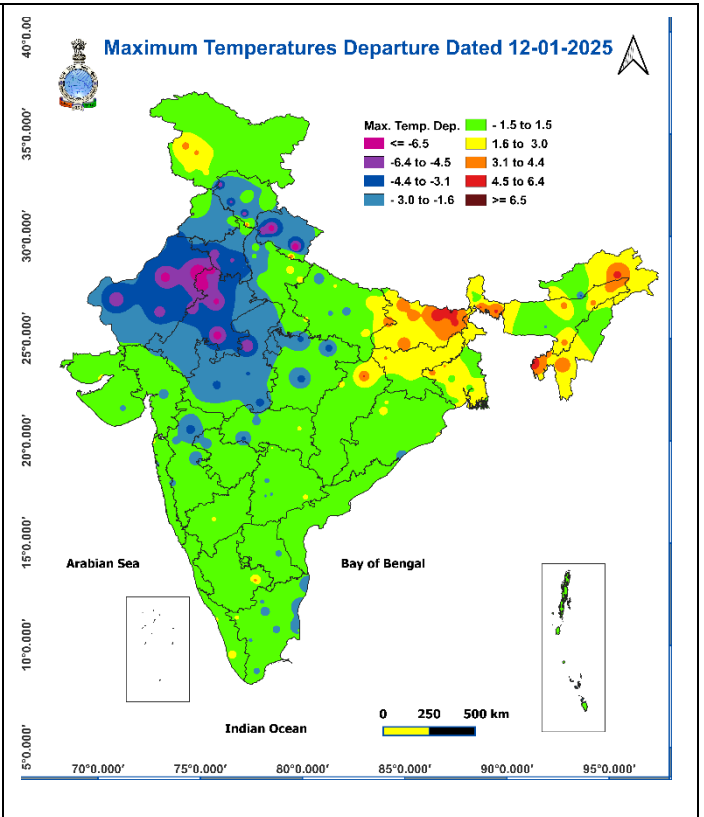
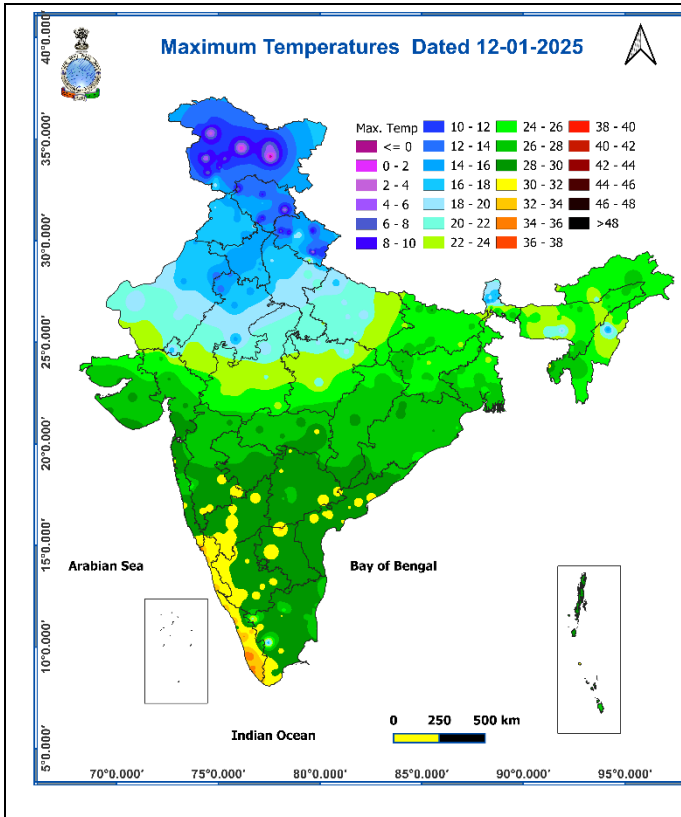


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

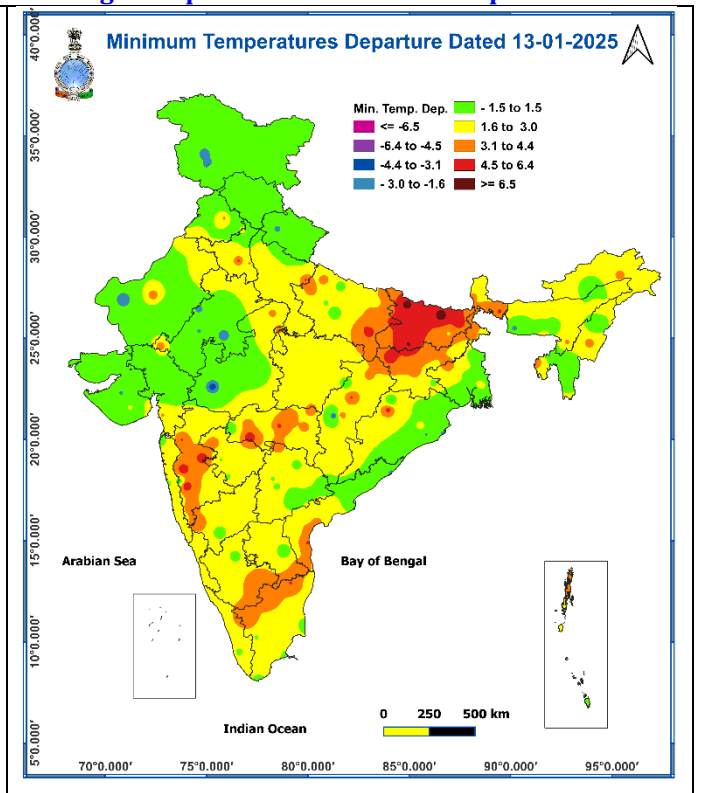
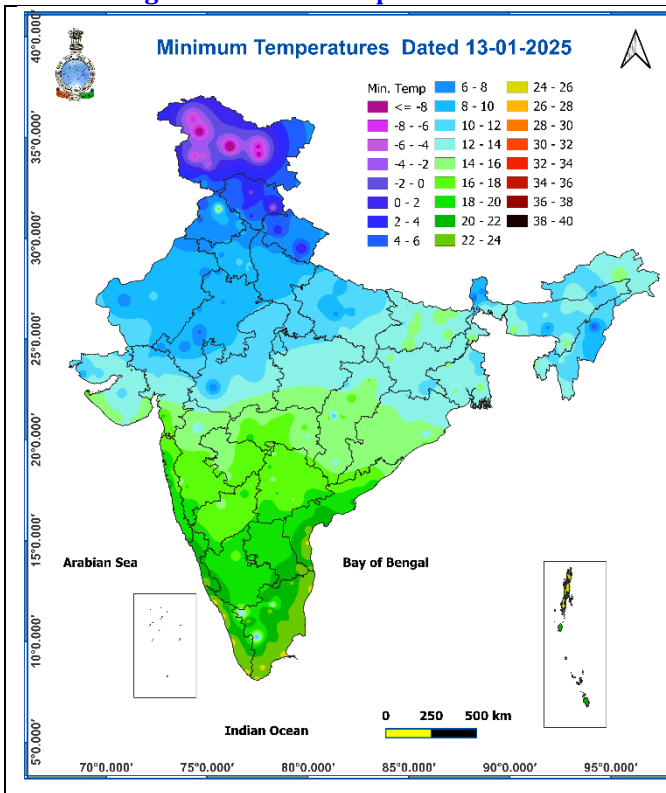
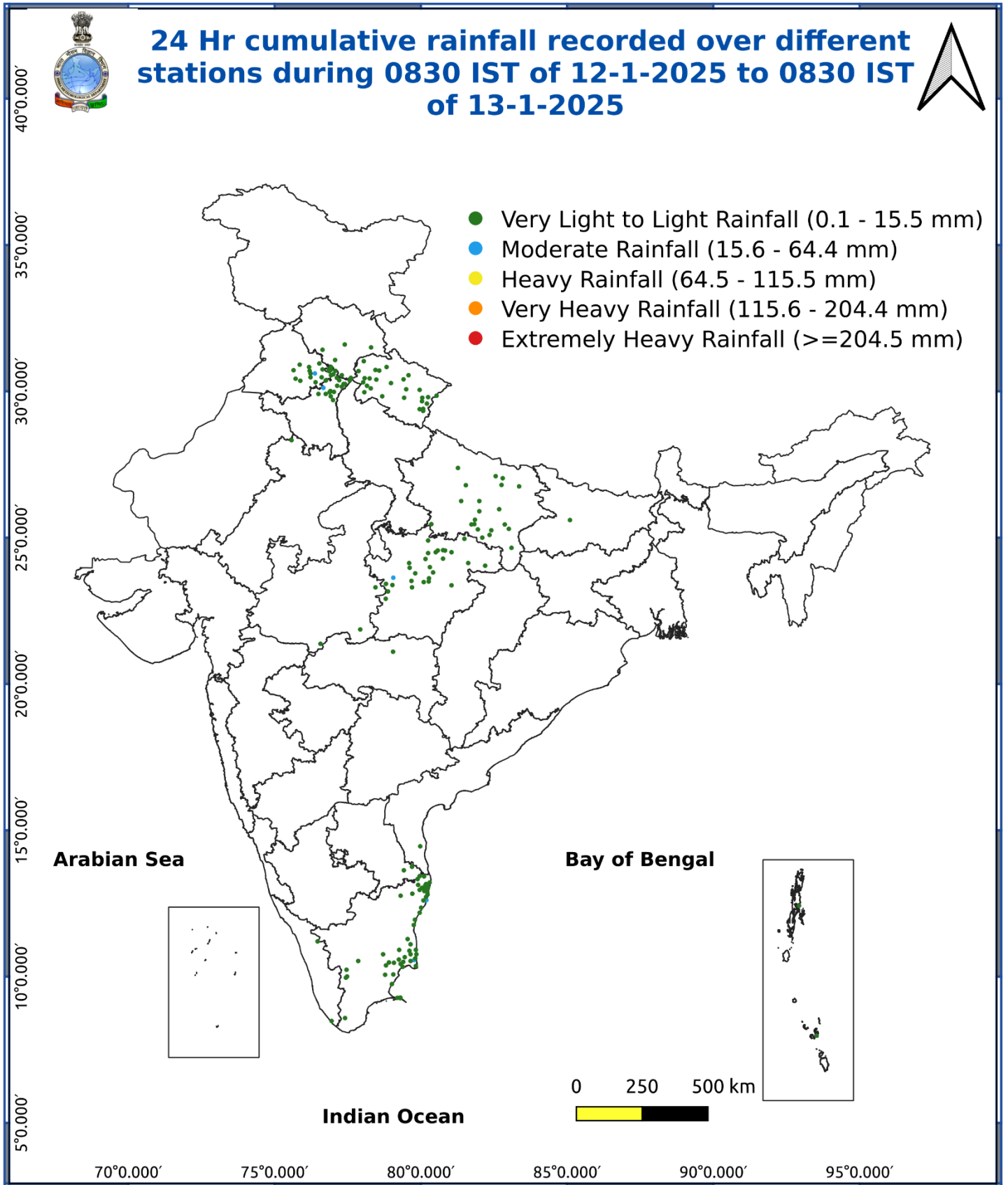


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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

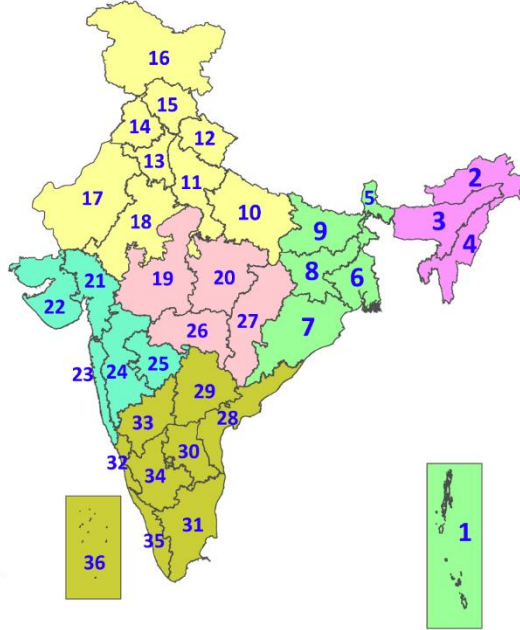
- ❖ An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- ❖ Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- ❖ Frostbite can occur due to prolonged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

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°C to 6.4°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°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°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°C to -6.4°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°C to -6.4°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)