

Wednesday, January 1, 2025
Time of Issue: 1330 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 east Afghanistan in lower tropospheric levels. Another fresh **western disturbance** as a Cyclonic Circulation lies over Iraq & neighbourhood in lower & middle tropospheric levels. It is very likely to cause
- ✓ Light isolated to scattered rainfall/snowfall over Western Himalayan region from 01st to 03rd and scattered to fairly widespread rainfall/snowfall over the region from 04th to 06th January. **Heavy rainfall/snowfall** at isolated places also likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 05th January 2025.
- ✓ Light isolated to scattered rainfall also likely over the plains of Northwest India during 04th to 06th January 2025.
- ❖ A **cyclonic circulation** lies over Equatorial Indian Ocean & adjoining southwest Bay of Bengal in lower tropospheric levels. It is very likely to cause light to moderate rainfall accompanied with thunderstorm, lightning at isolated places with **heavy rainfall** at isolated places over south Tamil Nadu on 01st January.

Temperature, Cold Wave and Fog Forecast:

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

- ❖ Minimum temperatures were **below 0°C** over many parts of Jammu, Kashmir & Ladakh; **4-9°C** over many parts of Northwest India; **9-14°C** over many parts of Central & East India, **14-18°C** over many parts of West India. Today, the lowest minimum temperature of 4.8°C is reported at Hisar (**Haryana**) over the plains of the country.
- ❖ There has been a fall in minimum temperature by 1-3⁰C over many parts of Uttar Pradesh, Madhya Pradesh, Bihar, Odisha, West Bengal during past 24 hours and rise in minimum temperature by 1-3⁰C over some parts of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Rajasthan and Gujarat State.
- ❖ Minimum temperatures are **below normal (-1°C to -3°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Madhya Pradesh and Saurashtra & Kutch. These are **appreciably above normal (3°C to 5°C)** at a few places over Madhya Maharashtra & Odisha; at isolated places over Punjab and Marathwada; **above normal (1°C to 3°C)** at many places over Telangana, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam; at a few places over East Uttar Pradesh, East Madhya Pradesh, Bihar, Gujarat Region, Konkan & Goa, Gangetic West Bengal, Rayalaseema and Kerala & Mahe; at isolated places over Haryana, Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Vidarbha and near normal over rest parts of the country.

Forecast of temperature:

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

Cold Day Warnings:

Cold Day to severe cold day conditions very likely in some parts of Punjab, Haryana, Chandigarh and Uttar Pradesh on 01st January; in isolated pockets of Uttar Pradesh on 02nd January.

Cold Day conditions very likely in isolated pockets of Madhya Pradesh on 01st & 02nd January.

Dense Fog Warnings:

Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Punjab, Haryana-Chandigarh, Odisha till 02nd, Himachal Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim till 03rd and Assam & Meghalaya & Nagaland, Manipur, Mizoram & Tripura till 06th January.

Ground Frost Warnings:

Ground Frost conditions very likely in isolated pockets of Arunachal Pradesh & Nagaland, Manipur, Mizoram & Tripura during 01st - 03rd January.

Fishermen Warnings (Annexure V):

Fishermen are advised not to venture into Gulf of Mannar & adjoining Comorin area during 01st-04th; along and off Sri Lanka coast on 01st; southwest Bay of Bengal on 01st & 02nd; southern parts of southeast Arabian sea on 03rd & 04th January.

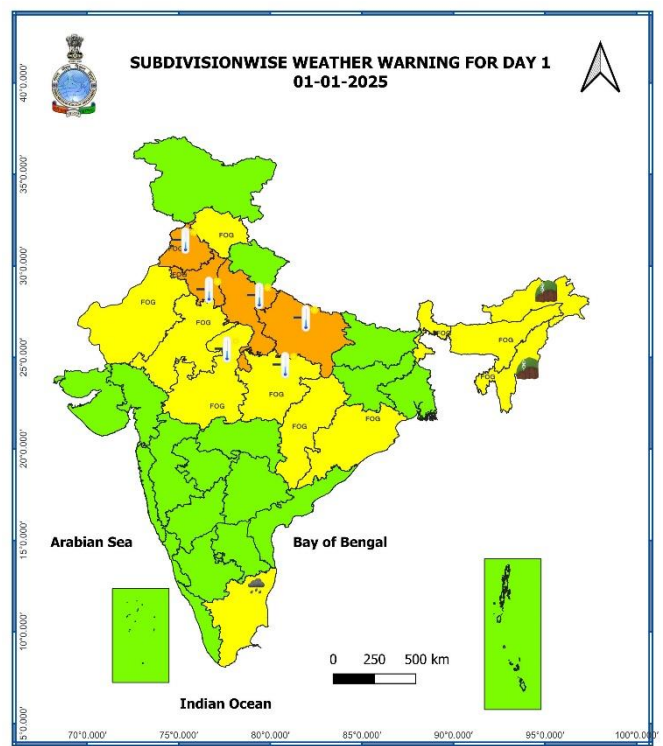
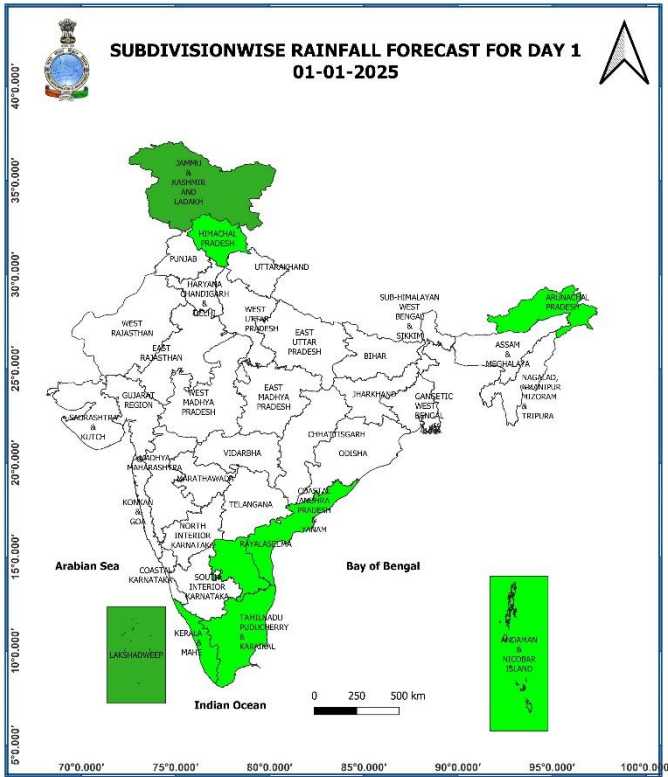
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at isolated places** over Arunachal Pradesh, Andaman & Nicobar Islands, Tamil Nadu, Puducherry & Karaikal.
- ❖ **Heavy rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today): **Heavy to very heavy rainfall** recorded at isolated places over south Tamil Nadu.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Tamilnadu, Puducherry & Karaikal:** Oothu (dist Tirunelveli) 18, Nalumukku (dist Tirunelveli) 16, Kakkachi (dist Tirunelveli) 15, Manjolai (dist Tirunelveli) 13
- ❖ **Fog reported** (at 0830 hours IST of today): **Vvery dense fog (visibility < 50 m)** reported in isolated pockets of Haryana, West Rajasthan, West Bengal, Assam & Meghalaya; **dense fog (visibility 50-200 m)** reported in isolated pockets of Himachal Pradesh, Delhi, Odisha, Chhattisgarh and Tripura.
- ❖ **Visibility reported** (at 0830 hours IST of today) (≤ 200 meter): **Haryana:** Sirsa 00, Hisar 40; **West Rajasthan:** Ganganagar-0, Churu-0; **West Bengal:** Bagdogra-0, Cooch Behar 100; **Assam & Meghalaya:** Barapani 30, Silchar 100; **Delhi:** Palam-100; **Himachal Pradesh:** Mandi, Kangra 100; **Tripura:** Agartala, Kailashahar 150
- ❖ **Minimum Temperature Departures (as on 31-12-2024):** Minimum temperatures are **appreciably above normal (3°C to 5°C)** at a few places over Madhya Maharashtra & Odisha; at isolated places over Punjab and Marathwada; **above normal (1°C to 3°C)** at many places over Telangana, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam; at a few places over East Uttar Pradesh, East Madhya Pradesh, Bihar, Gujarat Region, Konkan & Goa, Gangetic West Bengal, Rayalaseema and Kerala & Mahe; at isolated places over Haryana, Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Vidarbha. These are **below normal (-1°C to -3°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Madhya Pradesh and Saurashtra & Kutch and near normal over rest part of the country. Today, the **lowest minimum temperature of 4.8°C** is reported at **Hissar (Haryana)** over the plains of the country (Fig. 4).
- ❖ **Maximum Temperature Departures (as on 31-12-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Coastal Andhra Pradesh & Yanam; **above normal (1.6°C to 3.0°C)** at most places over Coastal Karnataka and Marathwada; at many places over Konkan & Goa, Madhya Maharashtra, Telangana and North Interior Karnataka; at a few places over Saurashtra & Kutch, Rayalaseema and South Interior Karnataka; at isolated places Vidarbha, Odisha, Assam & Meghalaya, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal. These were **markedly below normal (-5.1° C or less)** at most places over East Rajasthan; at many places over Punjab and East Uttar Pradesh; at a few places over Haryana-Chandigarh-Delhi, West Uttar Pradesh and East Madhya Pradesh; at isolated places over West Rajasthan and West Madhya Pradesh; **appreciably below normal (-3.1°C to -5.0°C)** at a few places over Himachal Pradesh; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Jharkhand; **below normal (-1.6°C to -3.0°C)** at most places over Gangetic West Bengal; at isolated places over Andaman & Nicobar Islands and Bihar and near normal over rest part of the country. Yesterday, the **highest maximum temperature of 37.4°C** was reported at **Kannur Airport (Kerala)** over the plains of the country (Fig. 2).

Meteorological Analysis (Based on 0830 hours IST)

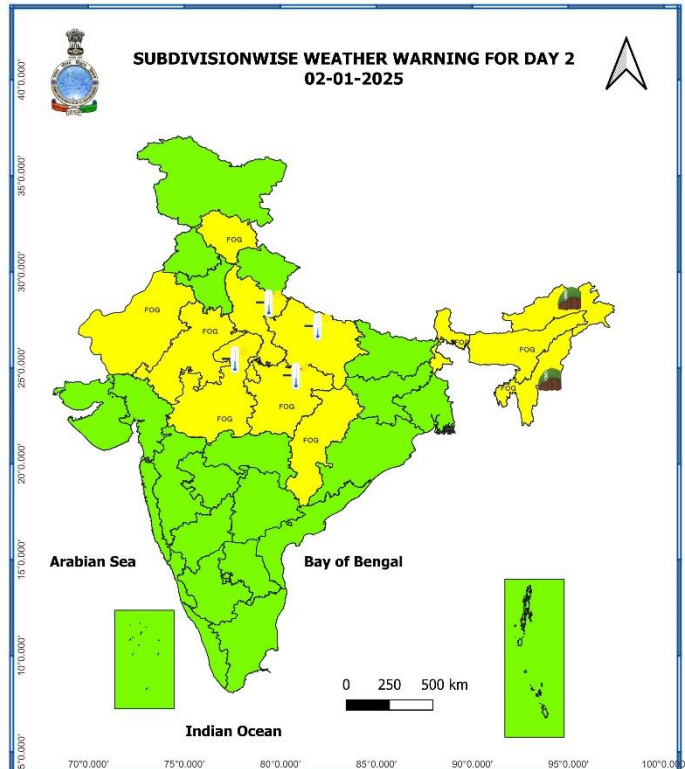
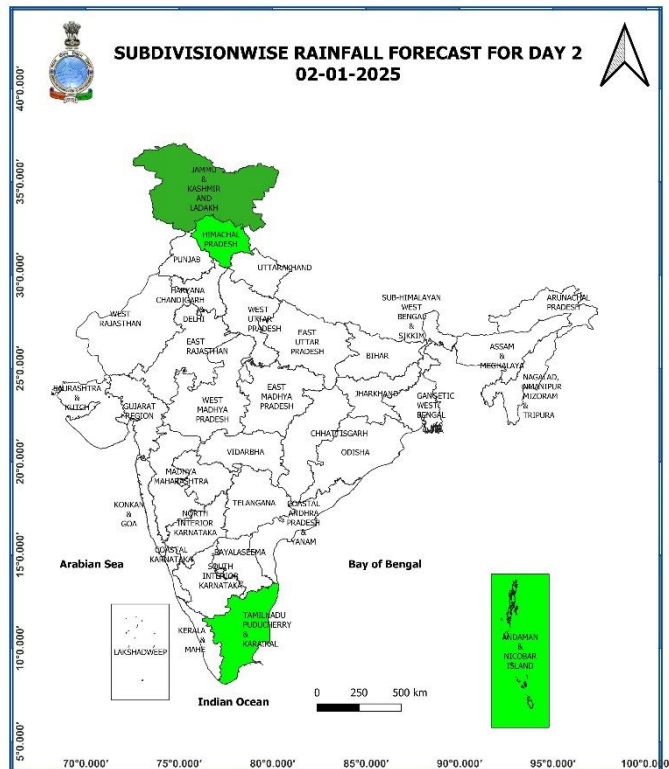
- ❖ The **Western disturbance** as a cyclonic circulation over east Afghanistan & neighbourhood at 3.1 km above mean sea level persists.
- ❖ The **cyclonic circulation** over Equatorial Indian Ocean & adjoining southwest Bay of Bengal persists and now seen at 0.9 km above mean sea level.
- ❖ A fresh **Western Disturbance** as a Cyclonic Circulation lies over Iraq & neighbourhood between 3.1 & 5.8 km above mean sea level.
- ❖ The **cyclonic circulation** over South Assam & neighbourhood extending upto 3.1 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 08th January, 2025)



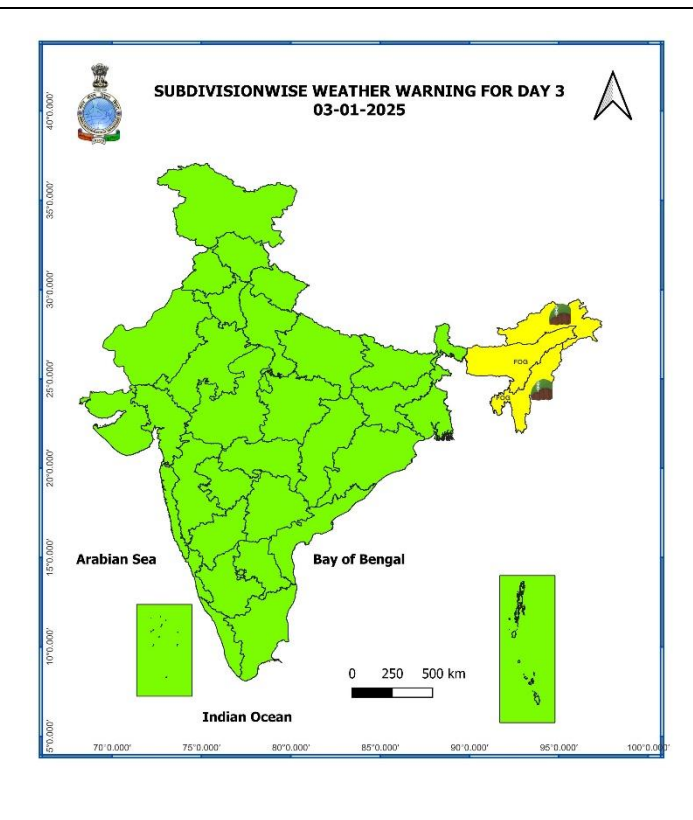
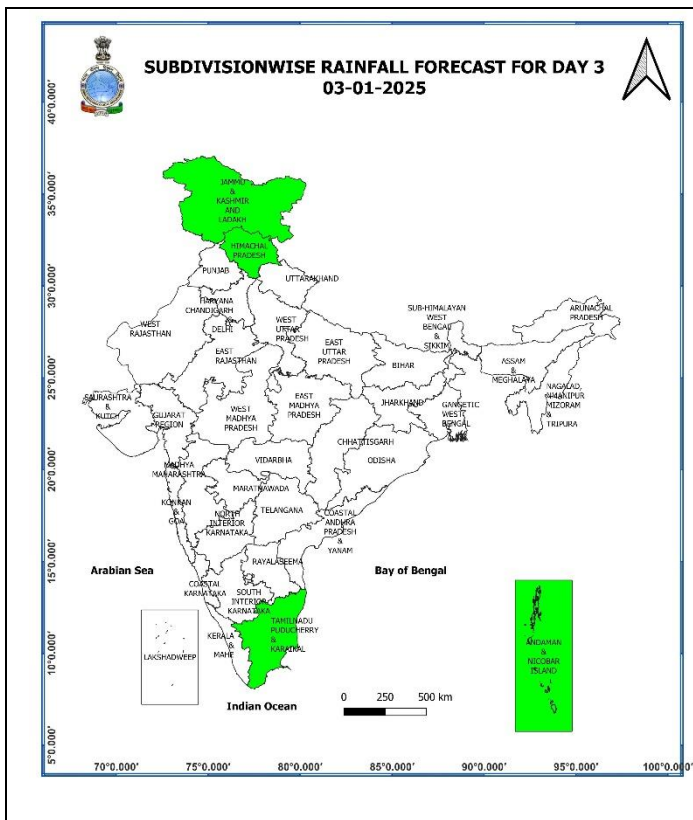
01st January (Day 1):

- ❖ **Heavy rainfall** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Madhya Pradesh, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold Day to severe cold day conditions** very likely at a few places over Punjab, Haryana, Chandigarh and Uttar Pradesh; **Cold Day conditions** at isolated places over Madhya Pradesh.
- ❖ **Ground Frost** very likely at places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind (speed 35 kmph to 45 kmph gusting to 55 kmph)** very likely to prevail over Gulf of Mannar and Comorin area and adjoining Maldives area, along and off Sri Lanka coast and adjoining southwest Bay of Bengal. Fisherman are advised not to venture in to these areas.



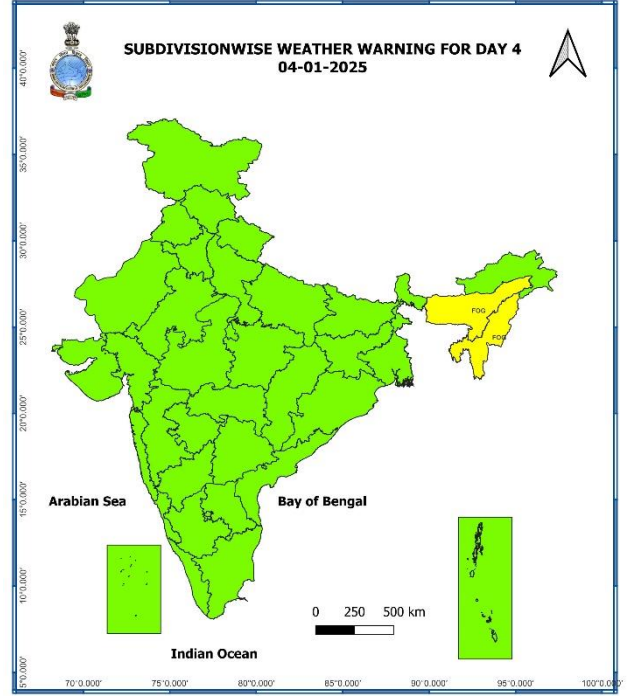
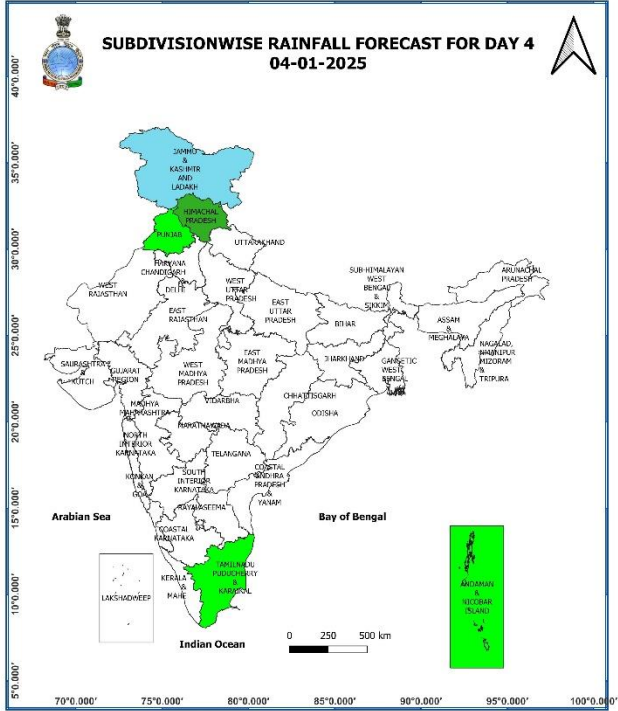
02nd January (Day 2):

- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold Day to severe cold day conditions** very likely at isolated places over Uttar Pradesh; **Cold Day conditions** at isolated places over Madhya Pradesh.
- ❖ **Ground Frost** very likely at places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind (speed 35 kmph to 45 kmph gusting to 55 kmph)** very likely to prevail over Gulf of Mannar, Comorin area and Maldives area, some southern parts of southwest Bay of Bengal. Fisherman are advised not to venture in to these areas.



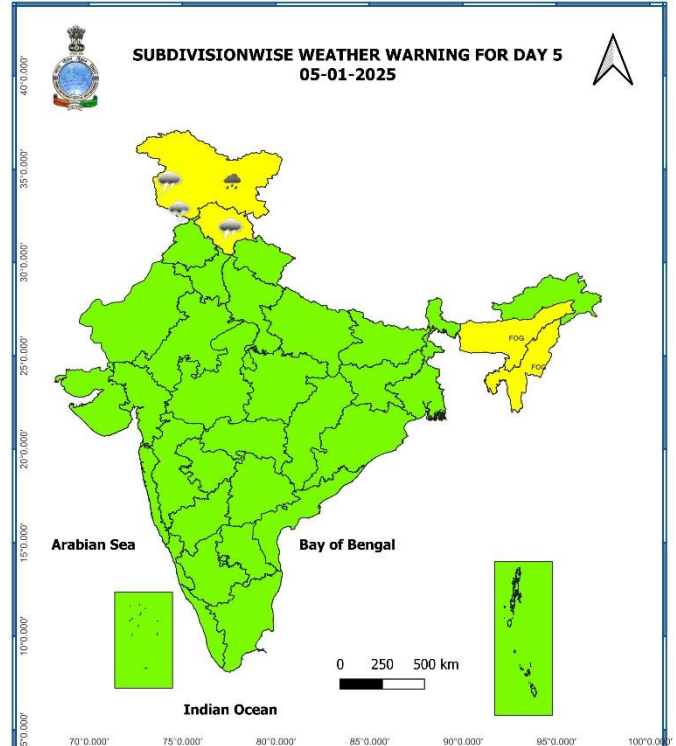
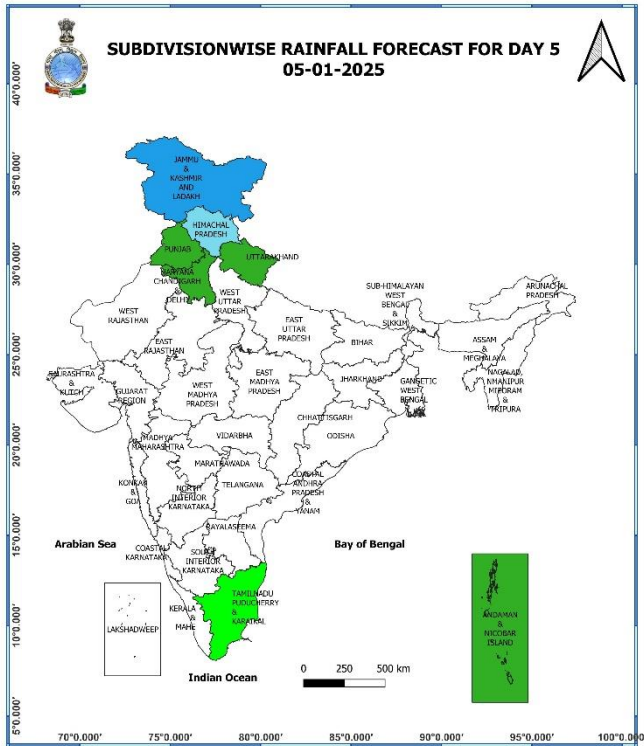
03rd January (Day 3):

- ❖ **Dense fog** very likely in isolated pockets of Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Ground Frost** very likely at places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind (speed 35 kmph to 45 kmph gusting to 55 kmph)** very likely to prevail over Gulf of Mannar, Comorin area and Maldives area, over southern parts of southeast Arabian sea. Fisherman are advised not to venture in to these areas.



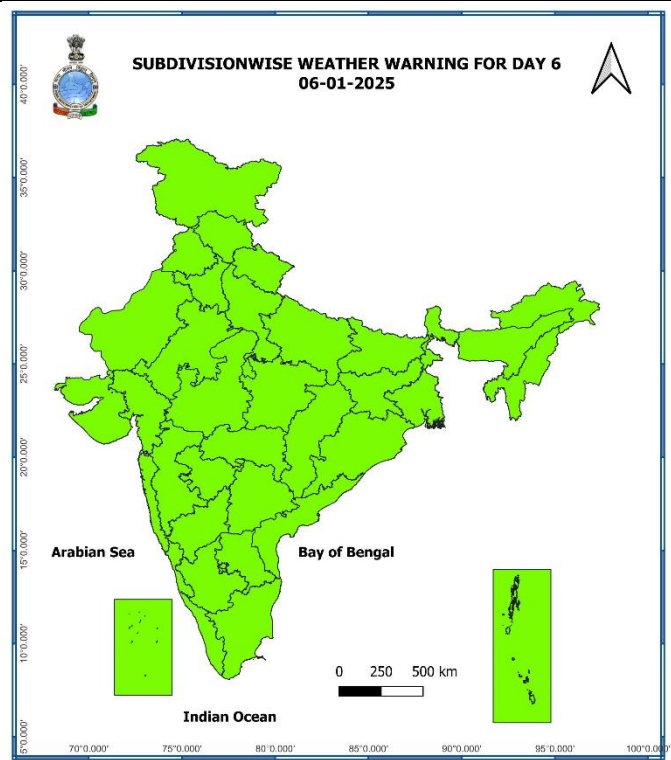
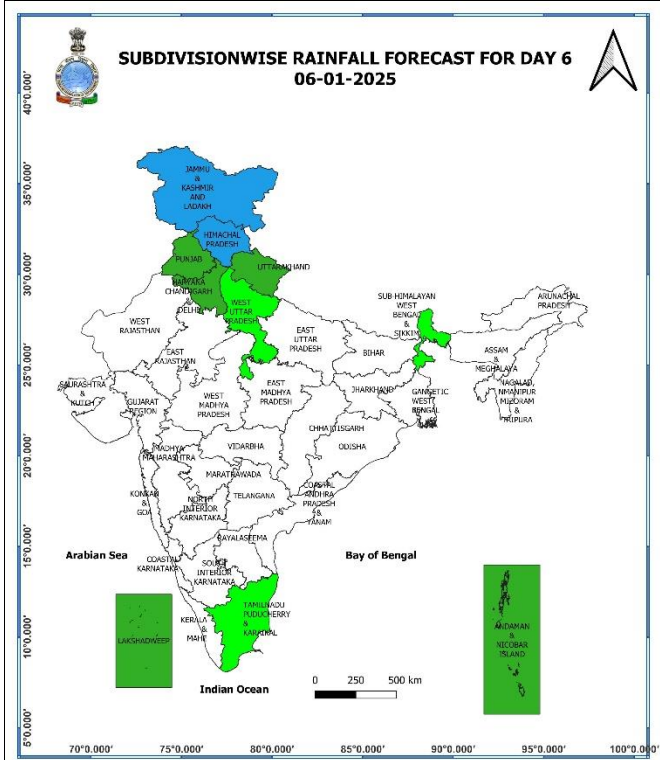
04th January (Day 4):

- ❖ **Dense fog** likely in isolated pockets of Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Squally weather with wind (speed 35 kmph to 45 kmph gusting to 55 kmph)** likely to prevail over Gulf of Mannar, Comorin area and Maldives area, over southern parts of southeast Arabian sea. Fisherman are advised not to venture in to these areas.



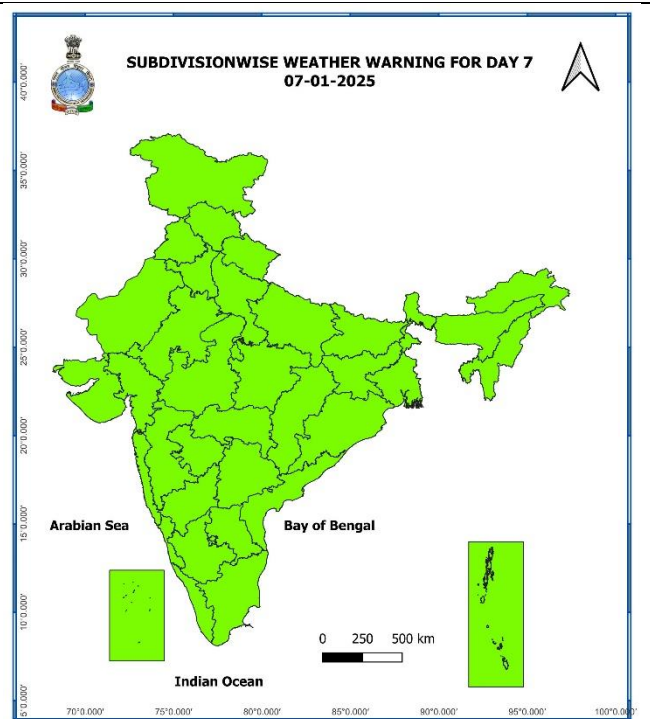
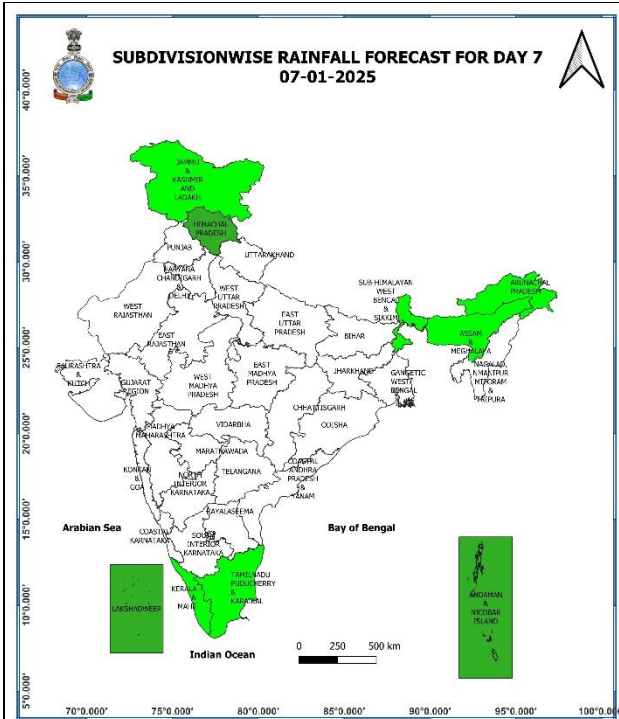
05th January (Day 5):

- ❖ **Dense fog** likely in isolated pockets of Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Heavy Rainfall/snowfall** likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Thunderstorm and lightning** likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh.



06th January (Day 6):

❖ **No Weather Warning.**



07th January (Day 7):

❖ **No Weather Warning.**

Weather Outlook for subsequent 3 days (During 08th January- 10th 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.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

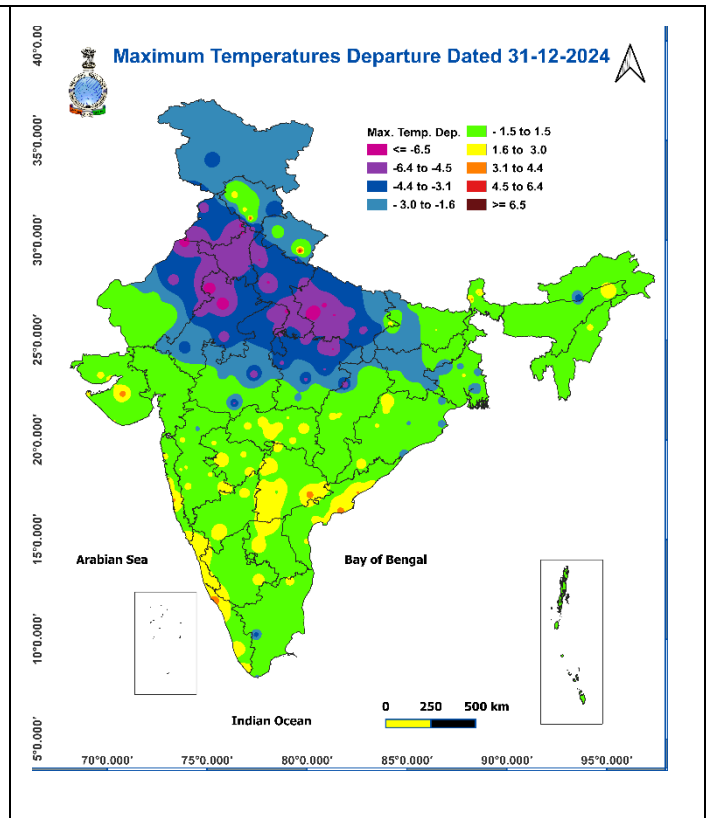
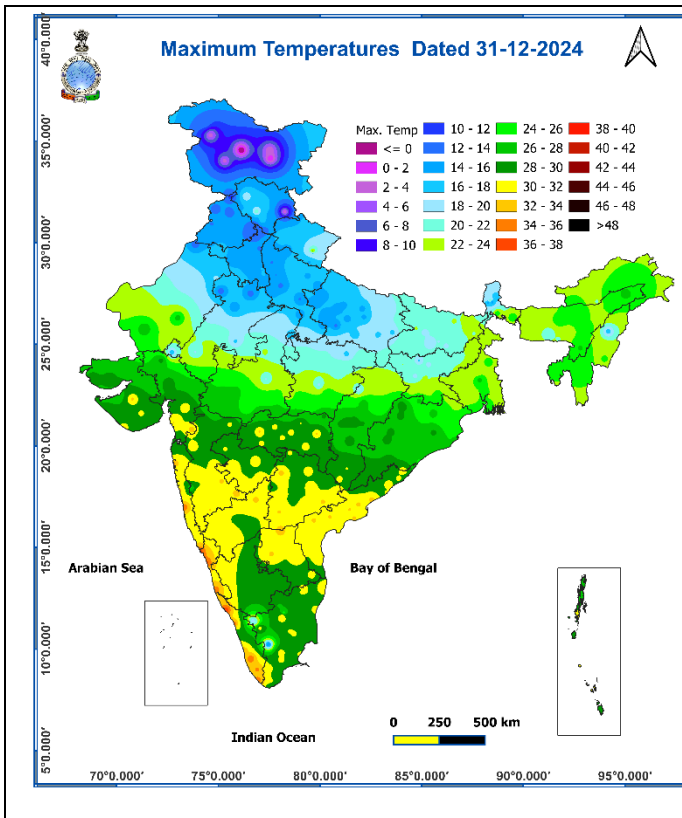


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

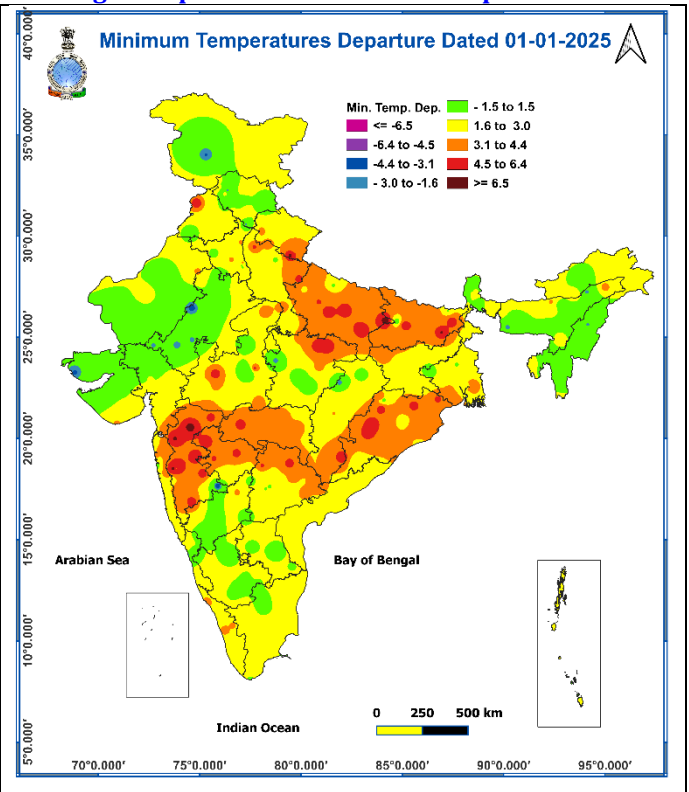
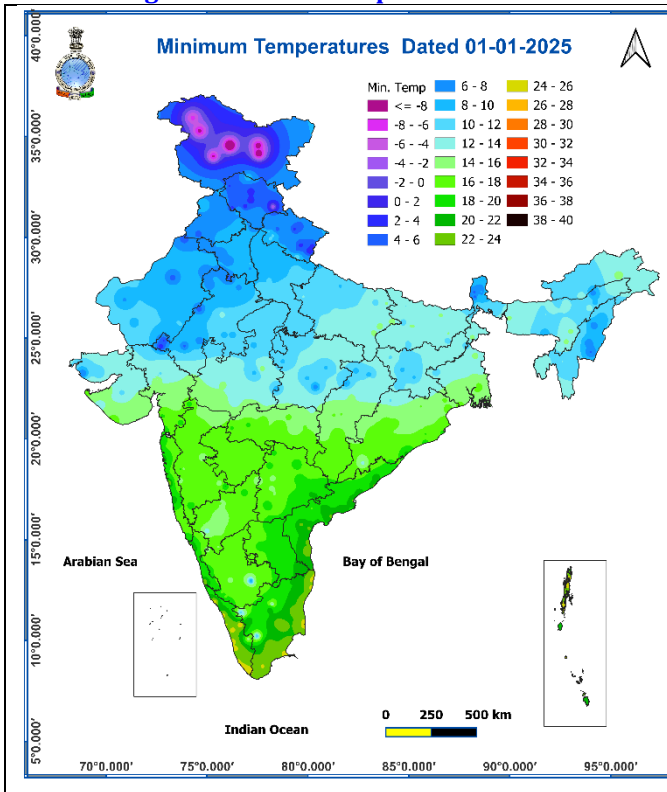
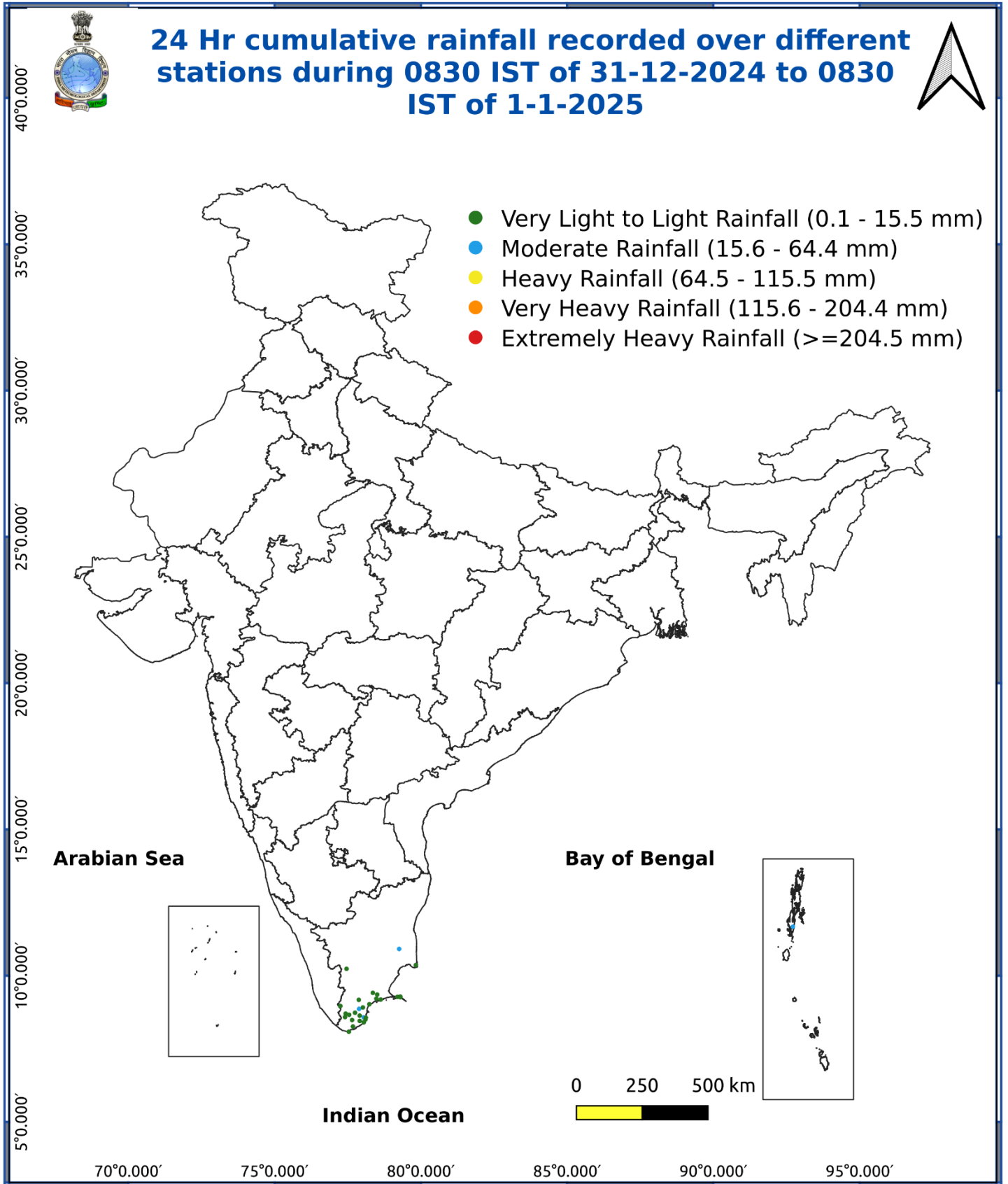


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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 Heavy Rainfall / Cold Wave/ Ground Frost

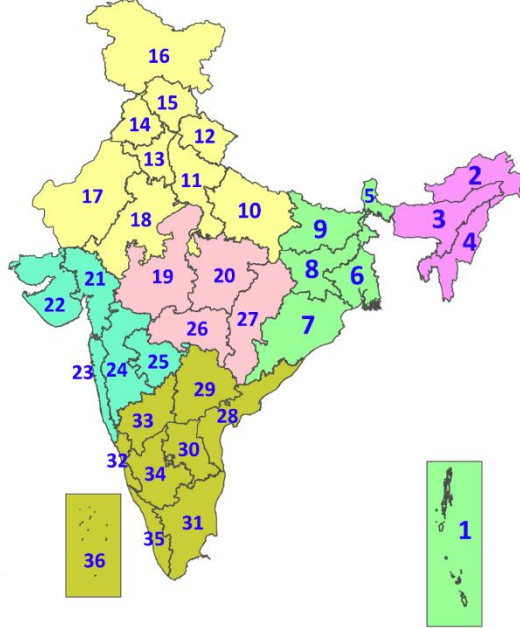
- Drain out excess water from rice, sugarcane, cotton, turmeric, vegetables, and other standing crop fields, as well as coconut and banana orchards in **Tamil Nadu**.
- In **North Eastern States**, apply light and frequent irrigation to the standing crops in the evening to protect them from low temperature 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 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°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)