

Monday, December 30, 2024
Time of Issue: 0830 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems, Forecast and warning

- ❖ A Western disturbance seen as a trough in middle tropospheric westerlies roughly along Long. 55°E to the north of Lat. 32°N. it is very likely to cause light isolated to scattered rainfall/snowfall over Western Himalayan region from 1st to 4th January 2025.
- ❖ A fresh **Western Disturbance** in quick succession likely to affect Northwest India from 06th January, 2025.

ii. 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; **6-12°C** over many parts of Northwest India; **12-18°C** over many parts of Central, West & East India. Today, the lowest minimum temperature of 5.7°C is reported at Sikar (Rajasthan) over the plains of the country.
- ❖ There has been a fall in minimum temperature by 1-3⁰C over many parts of Uttar Pradesh, East Madhya Pradesh, Chhattisgarh and in some parts of Himachal Pradesh, Uttarakhand, Haryana-Chandigarh-Delhi and West Rajasthan; by 3-6⁰C over many parts of East Rajasthan and in isolated parts of Jammu-Kashmir-Ladakh and Punjab during past 24 hours and rise in minimum temperature by 1-2⁰C over some parts of East India.

Forecast of temperature:

- ❖ Fall in minimum temperatures by 4-6°C likely over Uttar Pradesh during next 5 days and by 3-4°C over Punjab, Haryana-Chandigarh-Delhi and Rajasthan during next 3 days & no significant change thereafter.
- ❖ No significant change in minimum temperatures during next 24 hours and fall by 3-5°C likely over Central India during Subsequent 5 days.
- ❖ No significant change in minimum temperatures during next 24 hours and fall by 3-4°C likely over East India during Subsequent 3 days.
- ❖ Fall in minimum temperatures by 2-4°C likely over Maharashtra during next 5 days.

Cold Wave Warnings:

Cold wave conditions very likely in isolated pockets of Punjab and Haryana-Chandigarh during 31st December-02nd January and over Rajasthan during 30th December-02nd January.

Cold Day Warnings:

Cold Day conditions very likely in Punjab and Haryana-Chandigarh on 30th December.

Dense Fog Warnings:

Dense to Very dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Punjab, Haryana-Chandigarh on 30th December;

Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Himachal Pradesh during 30th December-01st January; Uttar Pradesh on 30th; Rajasthan on 30th & 31st December and over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura till 02nd January,

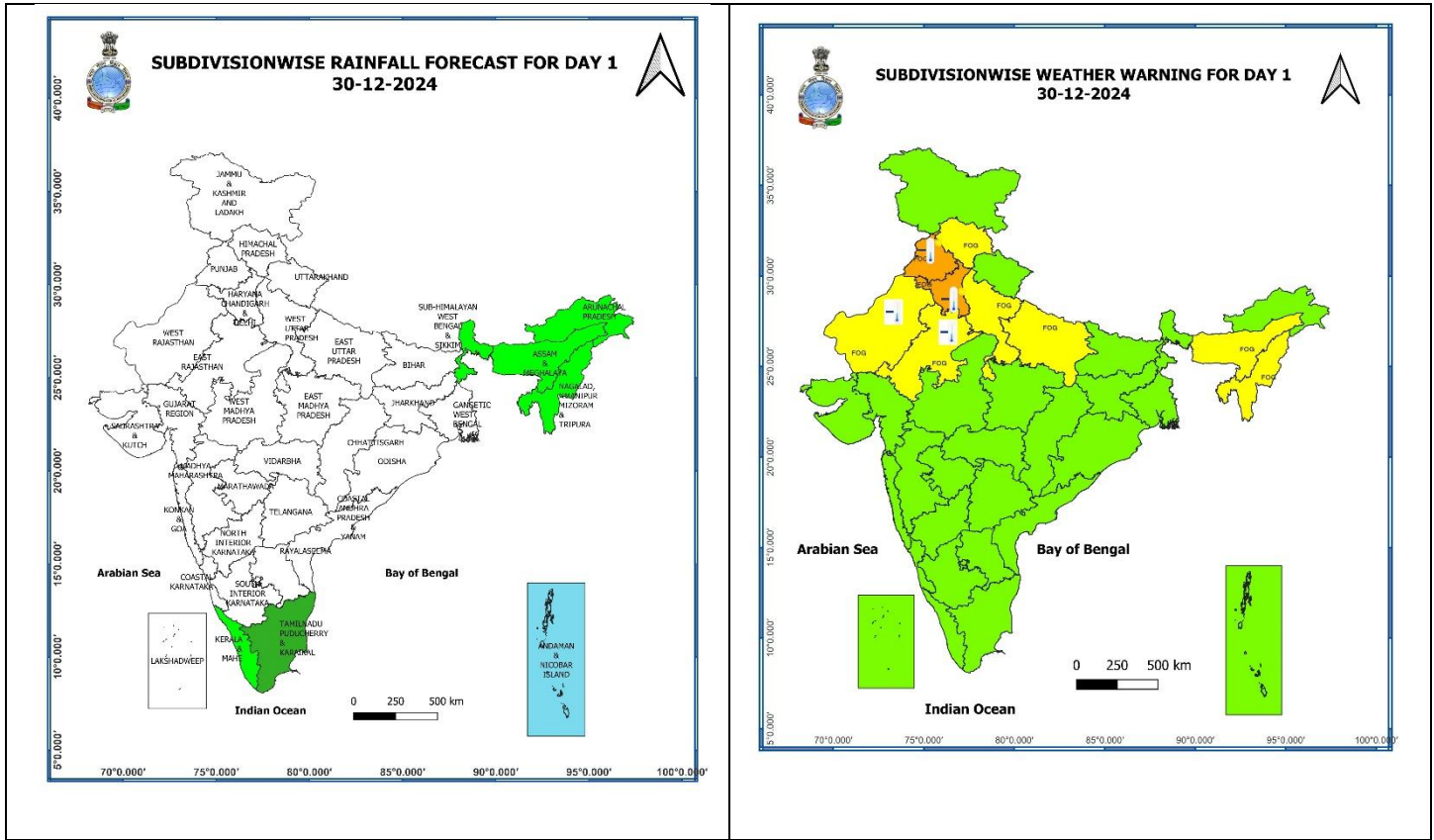
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours to 1730 hours IST of yesterday): **at a few places over** Andaman & Nicobar Islands; **at isolated places over** Tamil Nadu, Puducherry & Karaikal;
- ❖ **Heavy rainfall observed** (from 0830 hours IST to 1730 hours IST of yesterday): **NIL**.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday): **Andaman & Nicobar Islands:** Hut Bay- 2.
- ❖ **Fog reported** (at 0530 hours IST): **Dense to very dense fog** reported in many pockets of Punjab; in isolated pockets of Haryana, Uttarakhand, Rajasthan, Uttar Pradesh, West Madhya Pradesh.
- ❖ **Visibility reported** (at 0530 hours IST) ($\leq 200\text{m}$): **Punjab:** Pathankot, Amritsar, Adampur, 0 each, Halwara 200; **Haryana-Chandigarh:** Ambala, Chandigarh 200 each; **Uttarakhand:** Dehradun 200; **West Rajasthan:** Bikaner 200; **East Rajasthan:** Ajmer, Jaipur 200 each; **West Uttar Pradesh:** Agra, IAF, Sarsawa, IAF 200 each; **East Uttar Pradesh:** Kanpur, IAF 200; **West Madhya Pradesh:** Gwalior, Guna 200 each.
- ❖ **Minimum Temperatures Departures (as on 29-12-2024):** Minimum temperatures were **markedly above normal (5.1°C or more)** at many places over Bihar, Jharkhand, East Uttar Pradesh, Madhya Maharashtra, Vidarbha; at a few places over West Madhya Pradesh; at isolated places over East Madhya Pradesh, East Uttar Pradesh, Punjab, Chhattisgarh, East Madhya Pradesh, Marathwada; **appreciably above normal (3.1°C to 5.0°C)** at many places over Haryana-Chandigarh-Delhi, West Bengal & Sikkim, Odisha, Telangana, North Interior Karnataka, Konkan & Goa, Andaman & Nicobar Islands; at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; at isolated places over East Rajasthan, Himachal Pradesh, Gujarat Region; **above normal (1.6°C to 3.0°C)** at most places over South Interior Karnataka; at many places over Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam, Rayalaseema, Coastal Karnataka, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe; at isolated places over West Rajasthan, Assam & Meghalaya. These were **below normal (-1.6°C to -3.0°C)** at isolated places over Saurashtra & Kutch and near normal over rest parts of the country. Yesterday, **the lowest minimum temperature** of 5.7°C was reported at **Sikar (Rajasthan)** over the plains of the country (Fig. 4).
- ❖ **Maximum Temperature Departures (as on 29-12-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at many places over Bihar; at a few places over Sub-Himalayan West Bengal & Sikkim; at isolated places over Gangetic West Bengal, East Uttar Pradesh, Odisha, Chhattisgarh; **above normal (1.6°C to 3.0°C)** at most places over Jharkhand; at a few places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam; at isolated places over Telangana, North Interior Karnataka, Kerala & Mahe. These were **markedly below normal (-5.1°C or less)** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Haryana-Chandigarh-Delhi, Rajasthan; at isolated places over West Madhya Pradesh; **below normal (-1.6°C to -3.0°C)** at few places over Gujarat State; at isolated places over East Madhya Pradesh, Himachal Pradesh, Madhya Maharashtra and near normal over rest part of the country. Yesterday, **the highest maximum temperature** of 36.6°C was reported at **Karwar (Coastal Karnataka)** over the plains of the country (Fig. 2).

Meteorological Analysis (Based on 0530 hours IST)

- ❖ The **Western disturbance** as a trough in upper tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 85°E to the north of Lat. 25°N.
- ❖ The **cyclonic circulation** over northeast Rajasthan & neighbourhood at 1.5 km above mean sea level persists.
- ❖ The **trough** from **cyclonic circulation** over northeast Rajasthan & neighbourhood to north Gujarat at 1.5 km above mean sea level persists.
- ❖ A **cyclonic circulation** lies over Northeast Bihar & neighbourhood at 1.5 km above mean sea level.
- ❖ Another **Western disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along Long. 55°E to the north of Lat. 32°N.
- ❖ The **trough** in easterlies from southeast Arabian sea to south Maharashtra coast at 0.9 km above mean sea level persists.
- ❖ The **cyclonic circulation** over Northwest Uttar Pradesh at 3.1 km above mean sea level has become less marked.
- ❖ The **cyclonic circulation** over east Bangladesh & neighbourhood extending upto 1.5 km above mean sea level has become less marked.
- ❖ A **fresh western disturbance in quick succession** is likely to affect Northwest India to 6th January, 2025.

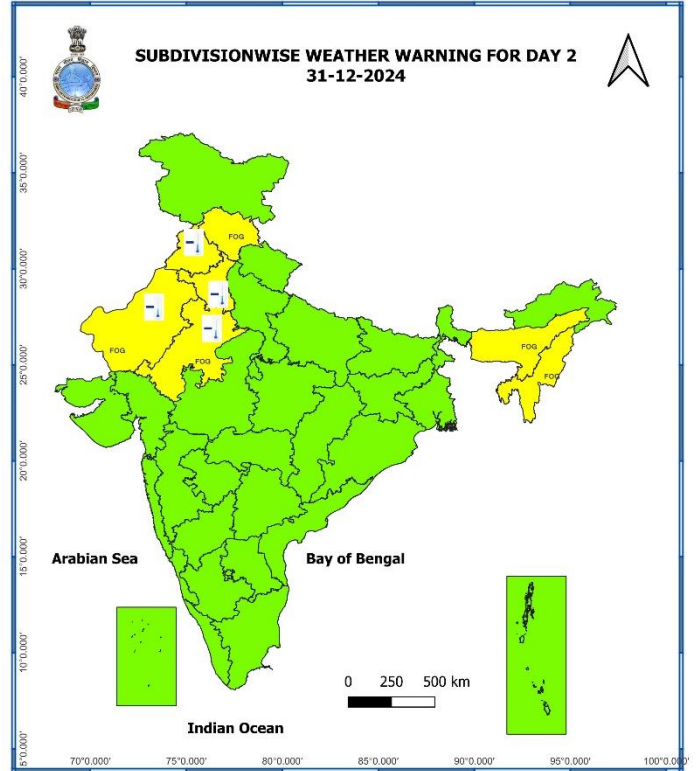
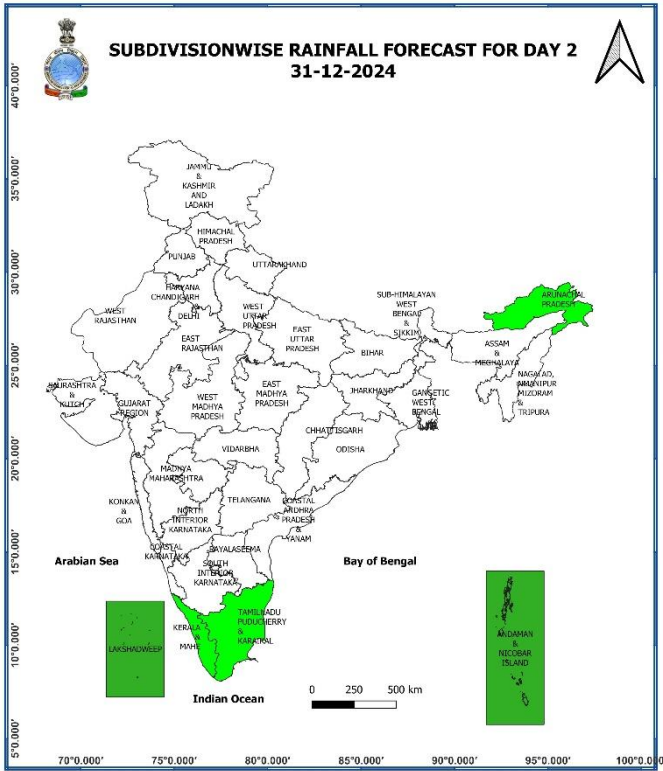
Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 06th January, 2025)



30th December (Day 1):

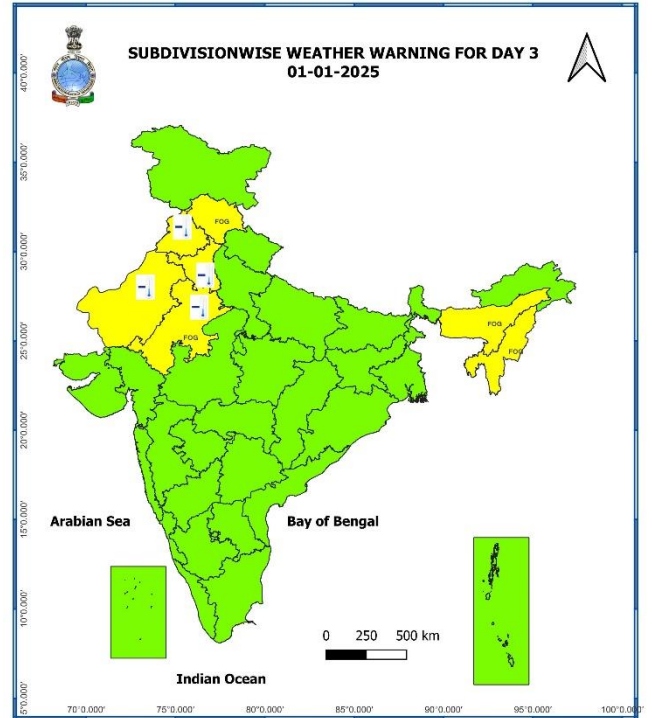
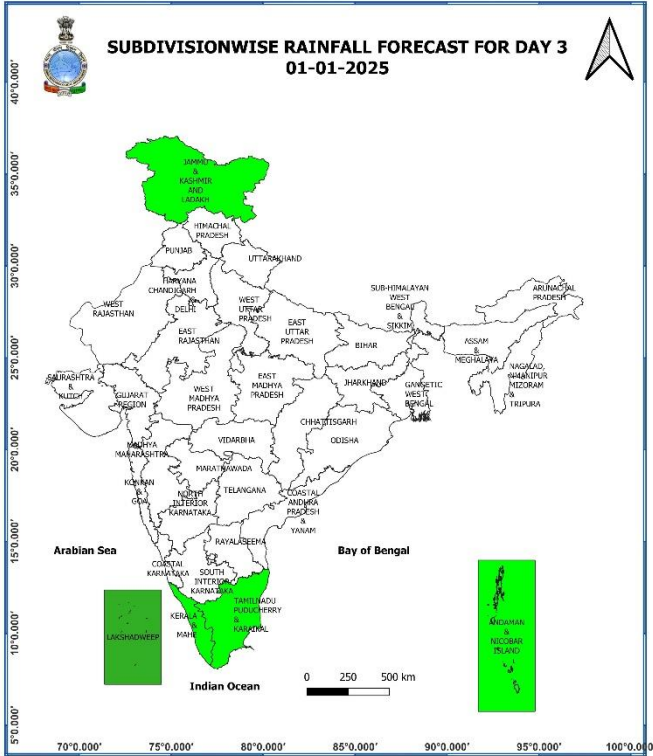
- ❖ **Dense fog to very dense fog** very likely in isolated pockets of Punjab, Haryana; **Dense fog** in isolated pockets of Himachal Pradesh, Uttar Pradesh, Rajasthan, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold wave conditions** very likely in a few pockets of Rajasthan.
- ❖ **Cold day conditions** very likely in isolated pockets of Punjab and Haryana.
- ❖ **Squally weather with wind** (speed 35 kmph to 45 kmph gusting to 55 kmph) very likely to prevail over southern parts of southwest Bay of Bengal, off Sri Lanka coast. 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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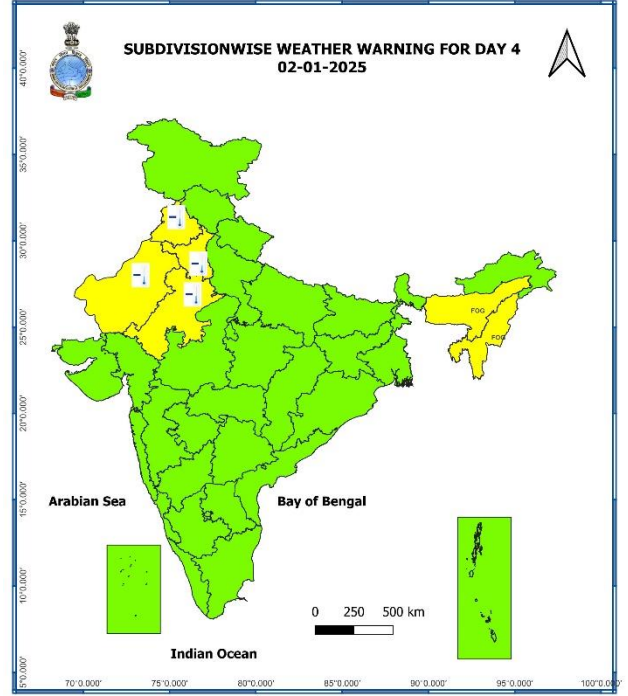
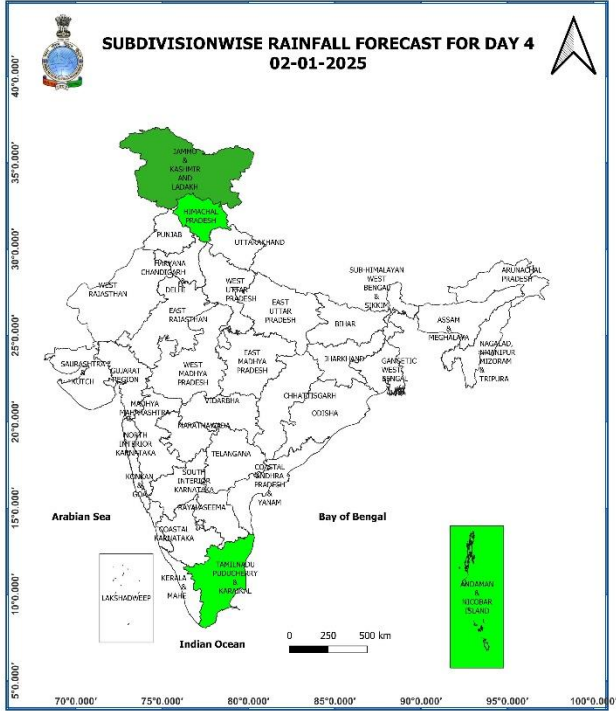
31st December (Day 2):

- ❖ **Dense fog** likely in isolated pockets of Himachal Pradesh, Rajasthan, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold wave to severe cold wave conditions** likely in a few pockets of Himachal Pradesh; cold wave conditions in isolated pockets of Punjab, Haryana, Rajasthan.
- ❖ **Squally weather with wind** (speed 35 kmph to 45 kmph gusting to 55 kmph) very likely to prevail over along and off Sri Lanka coast, Gulf of Mannar and adjoining Comorin area. Fisherman are advised not to venture in to these areas.



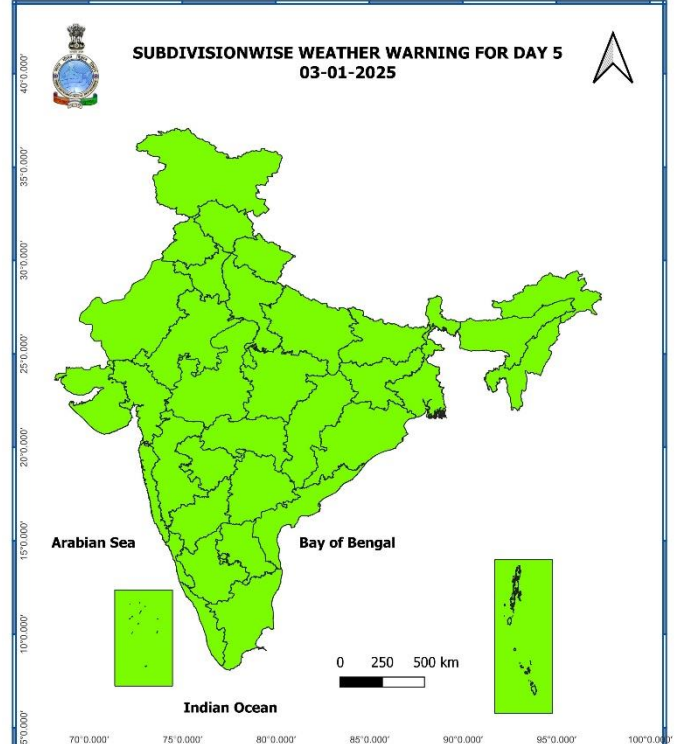
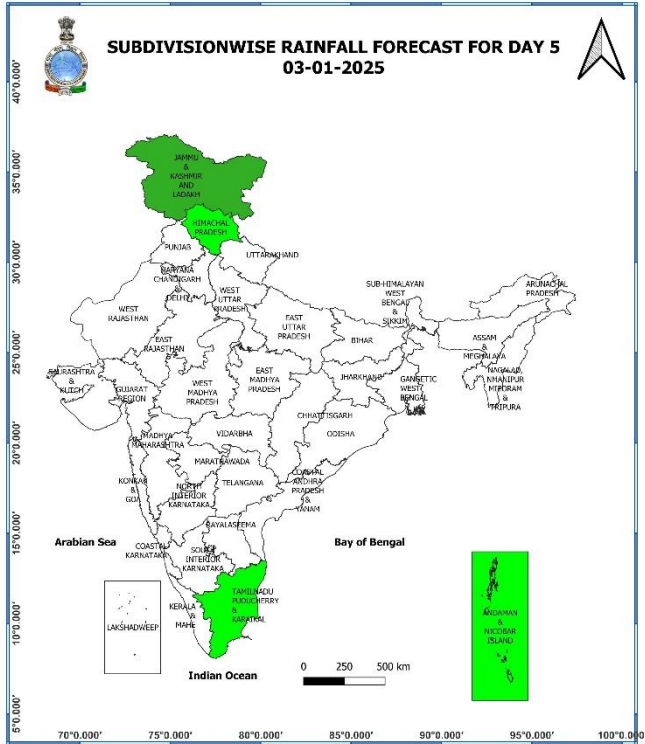
01st January (Day 3):

- ❖ **Dense fog** likely in isolated pockets of Himachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold wave conditions** likely in a few pockets of Punjab, Haryana and Rajasthan.
- ❖ **Squally weather with wind** (speed 35 kmph to 45 kmph gusting to 55 kmph) likely to prevail over Gulf of Mannar and Comorin area. Fisherman are advised not to venture in to these areas.



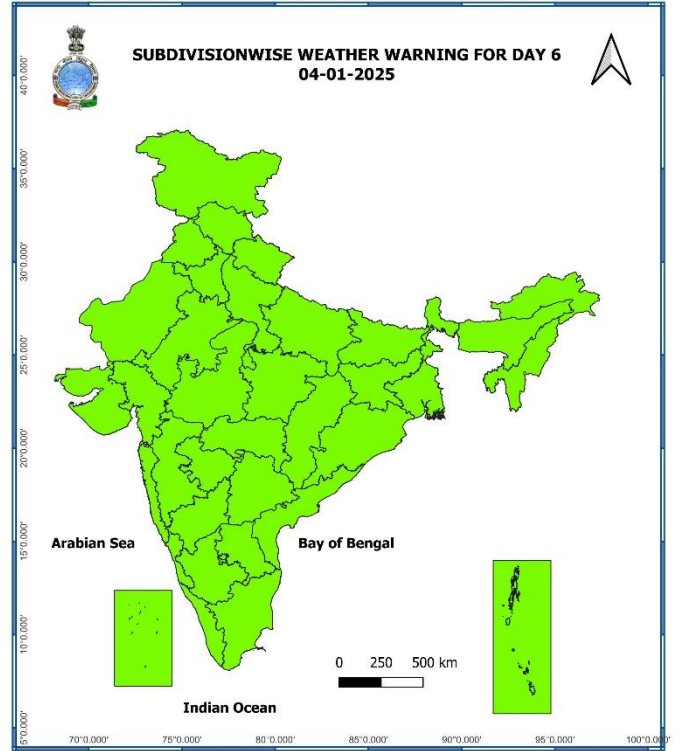
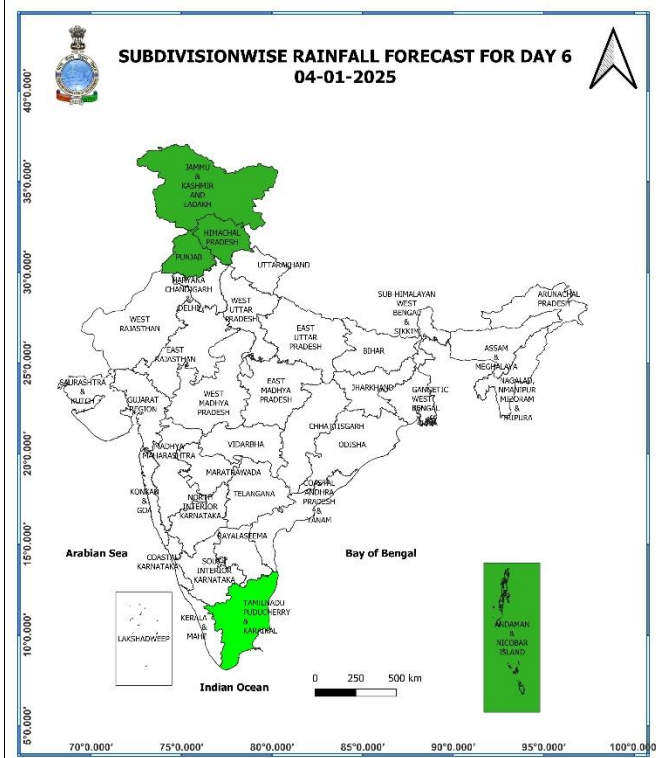
02nd January (Day 4):

- ❖ **Dense fog** likely in isolated pockets 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 adjoining Maldives islands area. Fisherman are advised not to venture in to these areas.



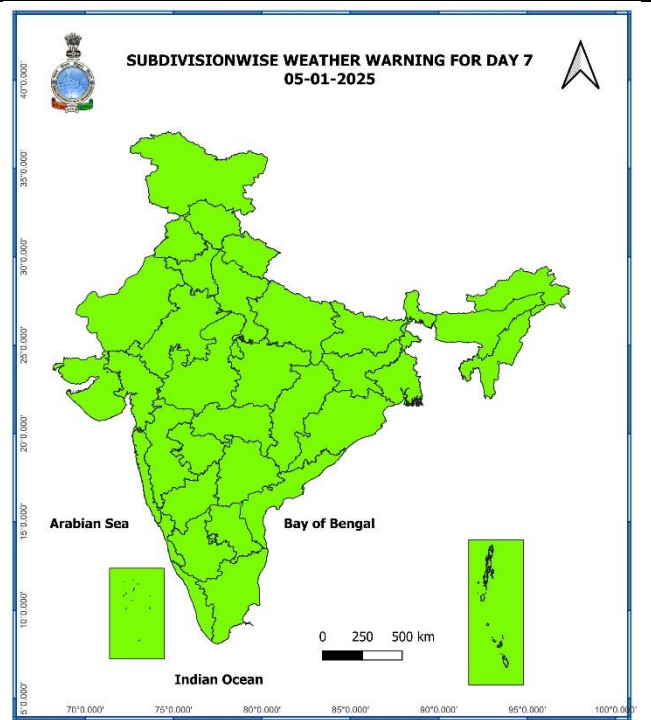
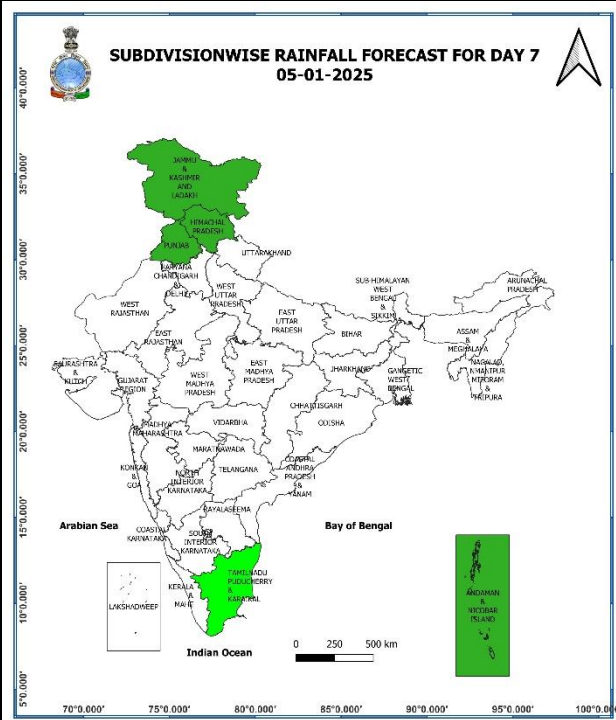
03rd January (Day 5):

❖ **No Weather Warning.**



04rd January (Day 6):

❖ **No Weather Warning.**



05th January (Day 7):

❖ **No Weather Warning.**

Weather Outlook for subsequent 3 days (During 06th January, 2025– 08th January, 2025)

- ❖ Isolated to scattered light to moderate rainfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Andaman & Nicobar Islands.
- ❖ Mainly dry weather will prevail over rest parts of country.

Action may be taken based on **ORANGE AND RED** COLOUR warnings.

- Vulnerable regions likely urban and hilly areas action may be initiated for heavy rainfall warning.
- As the lead period increases forecast accuracy decreases.

Impact expected due to cold wave/severe cold wave conditions

- An increased likelihood of various illnesses like flu, running/ stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- Frostbite can occur due to prolonged exposure to cold. The skin turns pale, hard and numb and eventually black blisters appear on exposed body parts such as fingers, toes, nose and or earlobes. Severe frostbite needs immediate medical attention and treatment.
- Impact on agriculture, crop, livestock, water supply, transport and power sector at some places.

Action suggested:

- Wear several layers of loose fitting, light weight; warm woollen clothing.
- Cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts. Wear several layers of loose fitting, light weight; warm woollen clothing rather than one layer of heavy cloth.
- Eat vitamin-C rich fruits & vegetable and drink sufficient fluids preferably warm fluids to maintain adequate immunity.
- Avoid or limit outdoor activities.
- Keep dry, if wet, change cloths immediately to prevent loss of body heat. Wear insulated/waterproof shoes.
- Warm the affected area of the body slowly with lukewarm water; do not rub the skin vigorously.
- If the affected skin area turns black, immediately consult a doctor.
- Maintain ventilation while using Heaters to avoid inhaling toxic fumes.
- Take safety measures while using electrical and gas heating devices.
- Extreme care needed for vulnerable people.
- Seek medical attention as soon as possible for someone suffering from frostbite/ Hypothermia.
- Protect livestock from cold weather.

Agromet advisories for Heavy Rainfall / Cold Wave likely over various parts of the country

- Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields.
- Make necessary arrangements to drain out excess water from standing crop fields and vegetables in **Jammu & Kashmir, Himachal Pradesh, Uttarakhand** and drain out excess water from standing crop fields and vegetables in **Punjab, Haryana and Tamil Nadu**.
- Use hail nets to protect orchards and vegetable plants in **Uttarakhand, Sub Himalayan West Bengal & Sikkim, Madhya Pradesh, Vidarbha, and Chhattisgarh**.
- In **Jammu & Kashmir, Himachal Pradesh** and **Uttarakhand**, in case of heavy snowfall, shake the trees to remove snow immediately from the branches.
- Provide mechanical support to horticultural crops and staking to vegetables.
- In **Himachal Pradesh, Punjab and Haryana**, 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 and Fishery

- Keep the animals inside the shed during heavy rainfall/ hailstorms and provide them with balanced feed.
- Store feed and fodder in a safe place to prevent spoilage.
- Remove excess water from fish ponds to avoid losses of fish (if feasible).
- To protect from cold, keep cattle inside the sheds during night and provide dry bedding. Also keep the chicks warm by providing artificial light in the poultry sheds.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

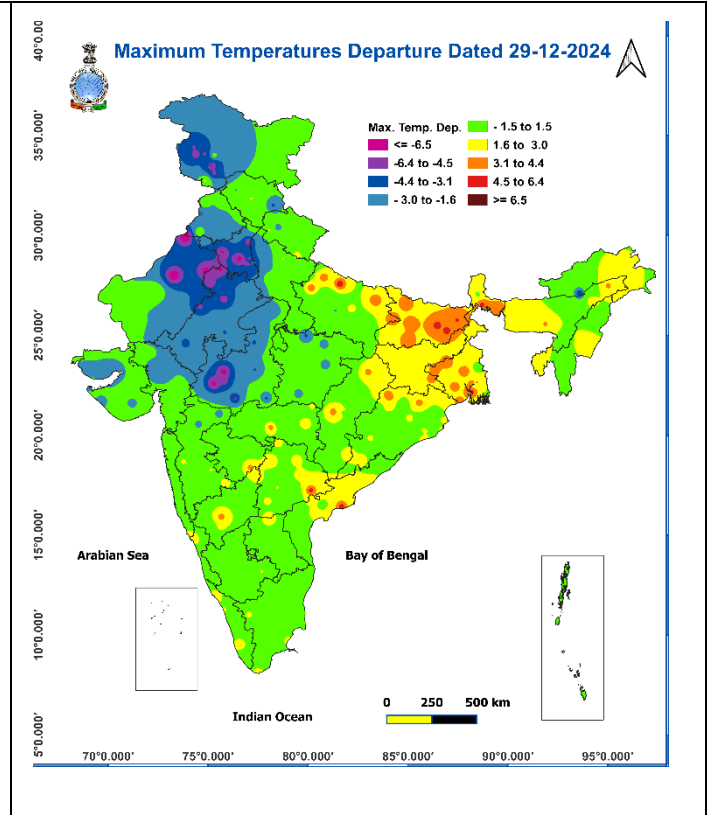
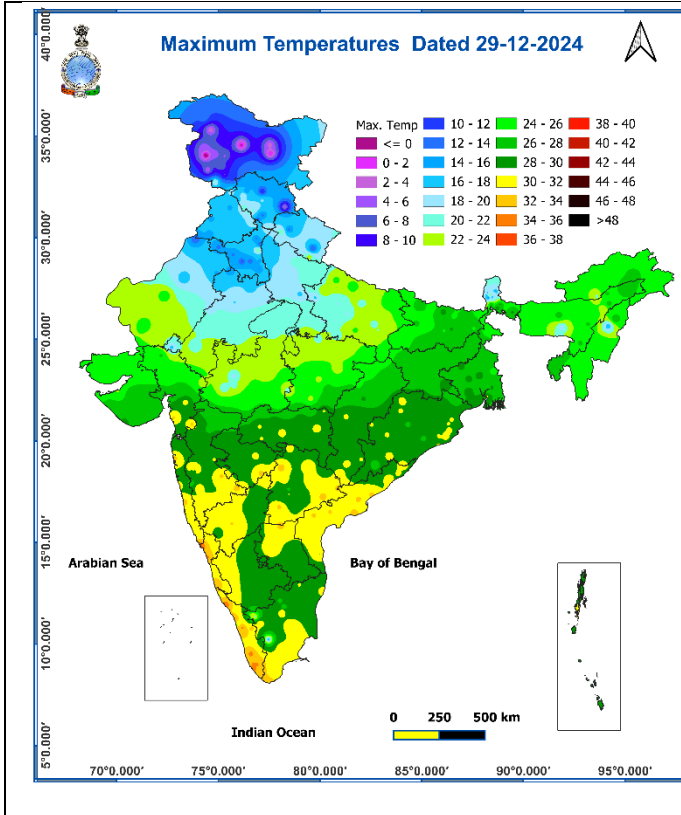


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

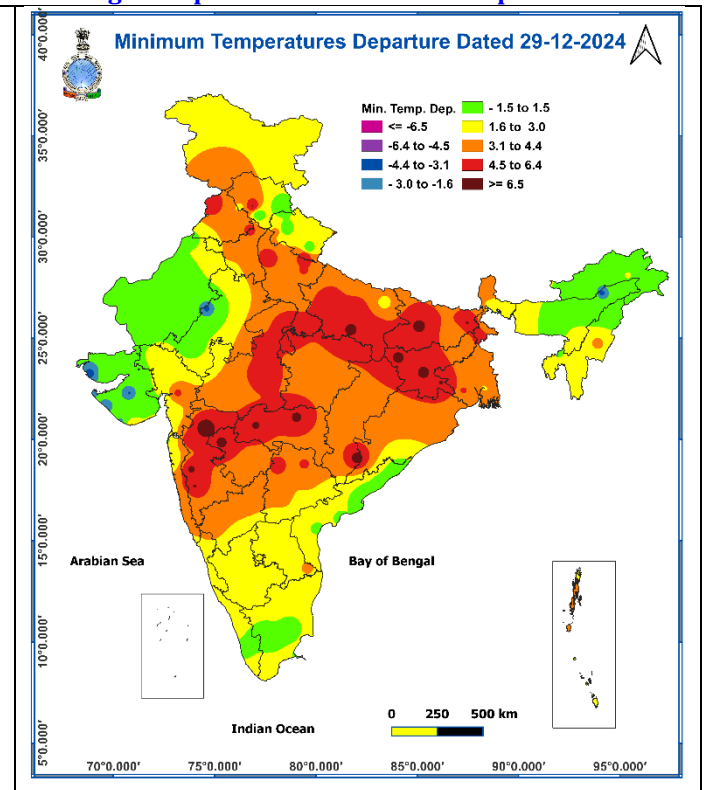
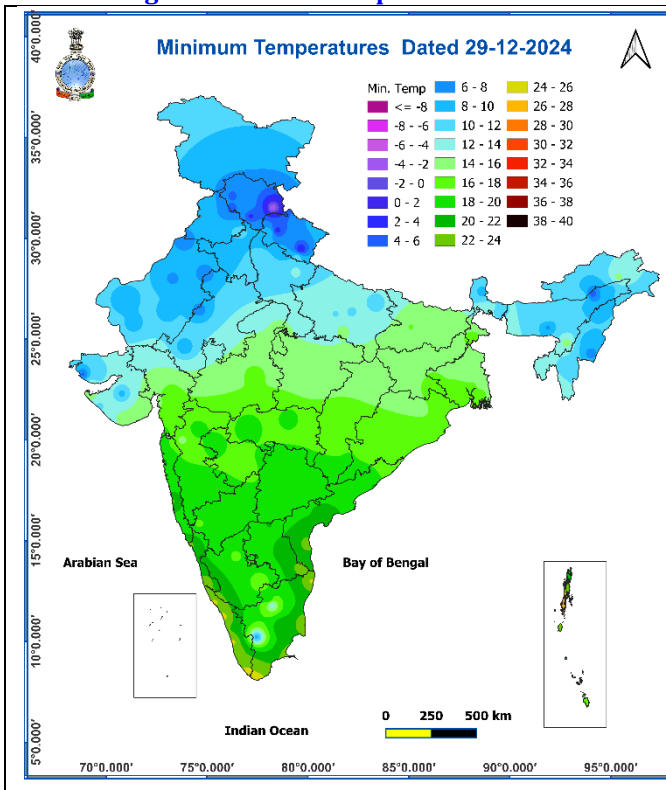
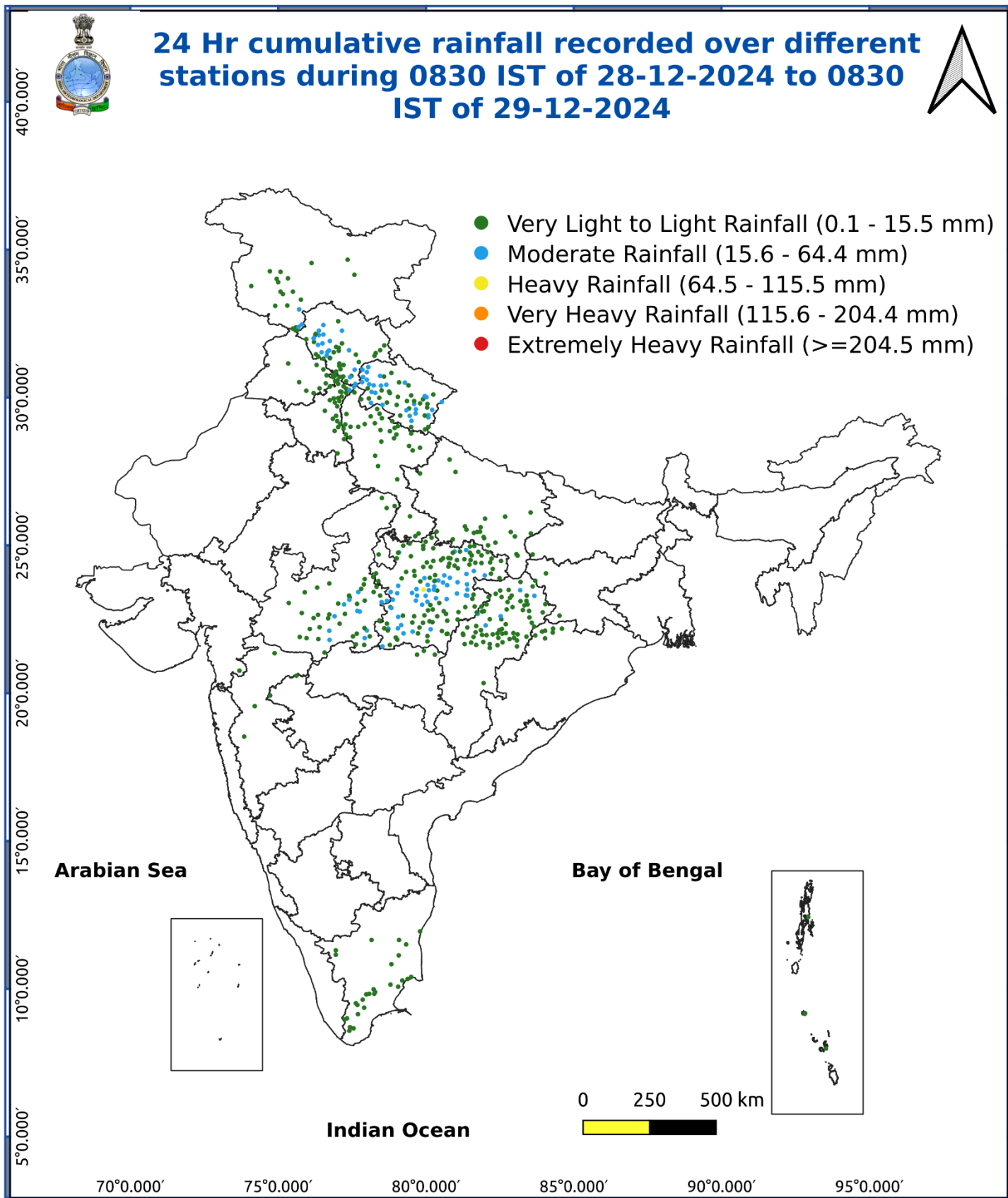


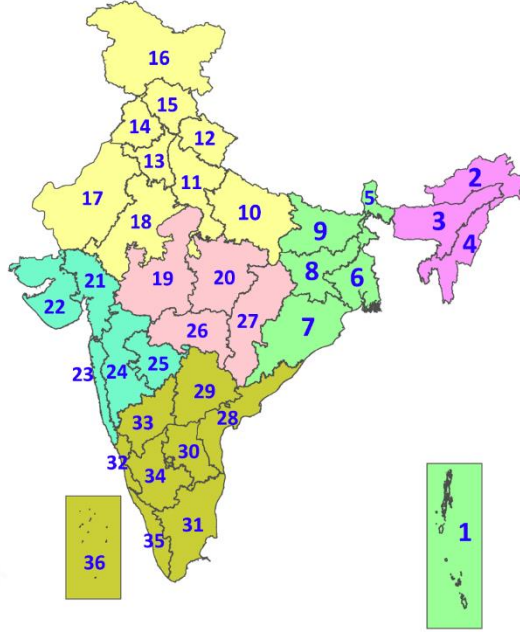
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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 *	<p>Heavy: 64.5 to 115.5 mm/cm *</p> <p>Very Heavy: 115.6 to 204.4 mm/cm*</p> <p>Extremely Heavy: > 204.4 mm/cm *</p>
Heat Wave	<p>When maximum temperature of a station reaches $\geq 40^\circ\text{C}$ for plains and $\geq 30^\circ\text{C}$ for hilly regions</p> <p>(a) Based on Departure from normal</p> <p>Heat Wave: Maximum Temperature Departure from normal 4.5°C to 6.4°C.</p> <p>Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^\circ\text{C}$</p> <p>(b). Based on Actual maximum temperature</p> <p>Heat Wave: When actual maximum temperature $\geq 45^\circ\text{C}$.</p> <p>Severe Heat Wave: When actual maximum temperature $\geq 47^\circ\text{C}$</p> <p>(c). Criteria for heat wave for coastal stations</p> <p>When maximum temperature departure is $>4.5^\circ\text{C}$ from normal. Heat Wave may be described provided maximum temperature $\geq 37^\circ\text{C}$</p>
Warm Night	<p>When maximum temperature remains 40°C</p> <p>Warm Night: When minimum temperature departure 4.5°C to 6.4°C.</p> <p>Severe Warm Night: When minimum temperature departure $>6.4^\circ\text{C}$.</p>
Cold Wave	<p>When minimum temperature of a station $\leq 10^\circ\text{C}$ for plains and $\leq 0^\circ\text{C}$ for hilly regions.</p> <p>(a). Based on departure</p> <p>Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C.</p> <p>Severe Cold Wave: Minimum Temperature Departure from normal $\leq -6.5^\circ\text{C}$</p> <p>(b) Based on actual Minimum Temperature (for Plains only)</p> <p>Cold Wave : When Minimum Temperature is $\leq 4.0^\circ\text{C}$</p> <p>Severe Cold Wave: When Minimum Temperature is $\leq 2.0^\circ\text{C}$</p> <p>(c) For Coastal Stations</p> <p>When Minimum Temperature departure is $\leq -4.5^\circ\text{C}$ & actual Minimum Temperature is $\leq 15^\circ\text{C}$</p>
Cold Day	<p>When minimum temperature of a station $\leq 10^\circ\text{C}$ for plains and $\leq 0^\circ\text{C}$ for hilly regions</p> <p>Based on departure</p> <p>Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C.</p> <p>Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^\circ\text{C}$</p>
Fog	<p>Phenomenon of small droplets suspended in air and the horizontal visibility $< 1\text{km}$</p> <p>Moderate Fog: When the visibility between 500-200 metres</p> <p>Dense Fog: when the visibility between 50- 200 metres</p> <p>Very Dense Fog: when the visibility < 50 metres</p>
Thunderstorm	<p>Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)</p>
Dust/Sand Storm	<p>An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.</p>
Frost	<p>Ice deposits on ground</p> <p>Air temperature $\leq 4^\circ\text{C}$ (over Plains)</p>
Squall	<p>A strong wind that rises suddenly, lasts for atleast 1 minute.</p> <p>Moderate: Wind speed 52-61 kmph</p> <p>Severe: Wind speed 62-87 kmph</p> <p>Very Severe: Wind speed >87 kmph</p>
Sea State	<p>Effect of various waves in the sea over specific area</p> <p>Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre</p> <p>High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre</p> <p>Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre</p>
Cyclone	<p>Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)</p> <p>Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)</p> <p>Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)</p> <p>Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)</p> <p>Super Cyclone Strom: Wind speed >220 kmph (>119 knots)</p>