

Sunday, December 22, 2024
Time of Issue: 1500 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems, Forecast and warning:

- ❖ Yesterday's depression over westcentral Bay of Bengal weakened into well marked low pressure area over the same region at 1730 hours IST of yesterday, the 21st December 2024. It persisted over the same region at 0830 hrs IST of today, the 22nd December 2024. The associated cyclonic circulation extends upto 3.1 km above mean sea level. It is likely to move west-southwestwards and reach southwest Bay of Bengal near north Tamil Nadu & south Andhra Pradesh coasts around 24th December.
- ❖ Under the influence of these systems:
 - ✓ Light to moderate rainfall very likely at a few places with **heavy rainfall** at isolated places over Coastal Andhra Pradesh during 23th-26th December.
 - ✓ Light to moderate rainfall very likely at a few places likely over coastal Odisha on 24th-25th December with possibility of isolated **heavy rainfall** on 24th December; Light to moderate rainfall very likely at many places likely over north coastal Tamil Nadu & Puducherry during 24th-26th December; with possibility of isolated **heavy rainfall** on 25th & 26th December.
 - ✓ Thunderstorm accompanied with lightening over Coastal Andhra Pradesh, Rayalaseema during 23th-26th; Tamil Nadu, Puducherry & Karaikal on 25th & 26th; Madhya Maharashtra during 26th to 28th December.
- ❖ **The Western disturbance now seen as a cyclonic circulation in middle tropospheric levels over central parts of Afghanistan.**
Under its influence, **Light/moderate rainfall/snowfall** likely at a few places over Western Himalayan Region during 22nd -24th December, 2024 and light isolated rainfall at isolated places over Punjab, Haryana, Chandigarh, Delhi, Rajasthan on 22nd & 23rd December, 2024.
- ❖ **Another intense Western Disturbance is very likely to affect Northwest India from the night of 26th December onwards. Under its influence, an induced cyclonic circulation very likely to form over southwest Rajasthan & neighbourhood on 27th December, 2024. These systems likely to interact with lower levels easterlies leading to high moisture feeding from Arabian Sea as well as Bay of Bengal till 28th December. Under the influence of these systems:**
 - ✓ Isolated to Scattered Rainfall/Snowfall is likely over Western Himalayan Region during 26th-28th December with peak activity on 27th and 28th December.
 - ✓ Scattered to fairly widespread rainfall also likely over plains of northwest India and adjoining central India on 27th and 28th December; Maharashtra & Gujarat on 28th December.
 - ✓ Thunderstorm accompanied with hailstorms also likely over Northwest India, on 27th & 28th December.

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 & Himachal Pradesh; **5-10°C** over plains of northwest India, **10-15°C** over central India & Eastern India & adjoining northeast India, Gujarat & north Maharashtra; **>15°C** over remaining parts of India. Today, **the lowest minimum temperature of 5.6°C** is reported at **Khajuraho (East Madhya Pradesh) & Ludhiana (Punjab)** over the plains of the country.

Minimum temperatures are **below normal (-1°C to -3°C)** at isolated places over Gujarat, western Himalayan region; **above normal by (2-4°C)** over Rajasthan, Bihar, Punjab & most parts of Central India; **(4-6°C)** over remaining parts of India.

Forecast of temperature:

- ❖ No significant change in minimum temperatures likely over Western Himalayan during next 2 days & gradual fall by 2-3°C Thereafter.
- ❖ Rise in minimum temperatures likely over Northwest India during next 2 days and gradual fall thereafter.
- ❖ No significant change in minimum temperatures likely over Central India during the next 3 days & gradual fall by 2-3°C Thereafter.
- ❖ Gradual rise in minimum temperatures likely over West India by 2-3°C during next 3-4 days.

Cold Wave Warnings:

Cold wave to severe cold wave conditions very likely in some parts of Himachal Pradesh during 24th-26th; **Cold wave** conditions very likely in isolated pockets over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during 22nd -26th; Himachal Pradesh on 22nd & 23rd December.

Dense Fog Warnings:

Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Himachal Pradesh during 24th & 26th; Punjab, Haryana during 22nd to 25th; Sub Himalayan West Bengal, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 22nd to 24th; Uttar Pradesh, Odisha & Rajasthan on 22nd & 23rd; Jharkhand on 22nd December.

Ground Frost Warnings:

Ground Frost conditions very likely in isolated pockets of Uttarakhand on 22nd; Himachal Pradesh during 24th-26th; Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 22nd to 24th December.

iii. Weather conditions and forecast over Delhi/NCR during 22nd to 25th Dec. 2024

Weather Forecast:

22.12.2024: Mainly clear sky. The predominant surface wind is likely to be variable direction with wind speed less than 06 kmph till evening. It would decrease thereafter becoming less than 04 kmph from southeast direction during night. Smog/shallow fog is likely in the evening/night.

23.12.2024: Partly cloudy sky with possibility of very light rain to light rain. The predominant surface wind is likely to be from southeast direction with speed less than 04 kmph during morning hours. Smog/shallow fog in most of the places and moderate fog in isolated places is likely in the morning. The wind speed will increase thereafter becoming less than 06 kmph from northeast direction during afternoon. It will decrease thereafter becoming less than 04 kmph from east direction during evening and night. Smog/shallow fog is likely in the evening/night.

24.12.2024: Mainly clear sky. The predominant surface wind is likely to be from southeast direction with speed less than 04 kmph during morning hours. Smog/ moderate fog in most of the places and dense fog in isolated places is likely in the morning. The wind speed will gradually increase becoming 04-06 kmph from southeast direction during afternoon. It will decrease thereafter becoming less than 04 kmph from northeast direction during evening and night. Smog/shallow fog is likely in the evening/night.

25.12.2024: Mainly clear sky. The predominant surface wind is likely to be from north direction with wind speed less than 04 kmph during morning hours. Smog/ moderate fog in most of the places and dense fog in isolated places is likely in the morning. The wind speed will increase thereafter becoming 08-10 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 04 kmph from northwest direction during evening and night. Smog/shallow fog is likely in the evening/night.

*** 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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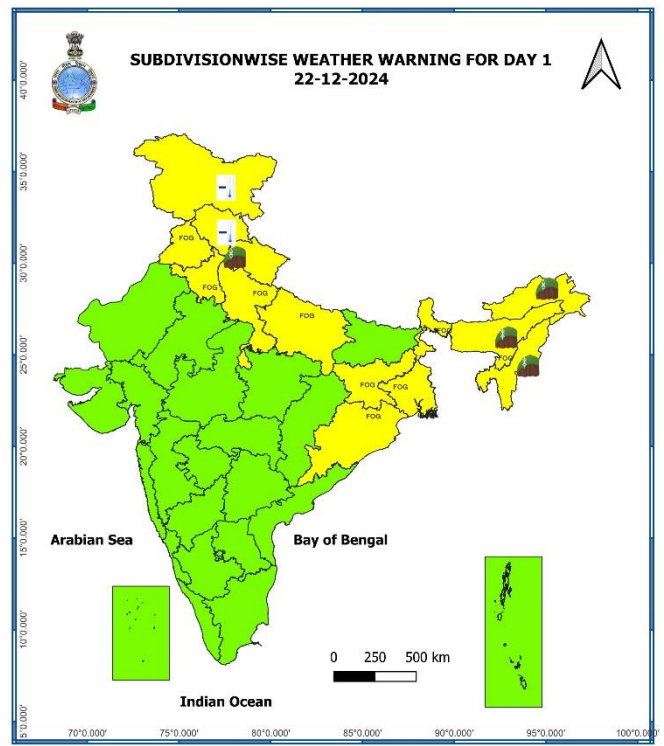
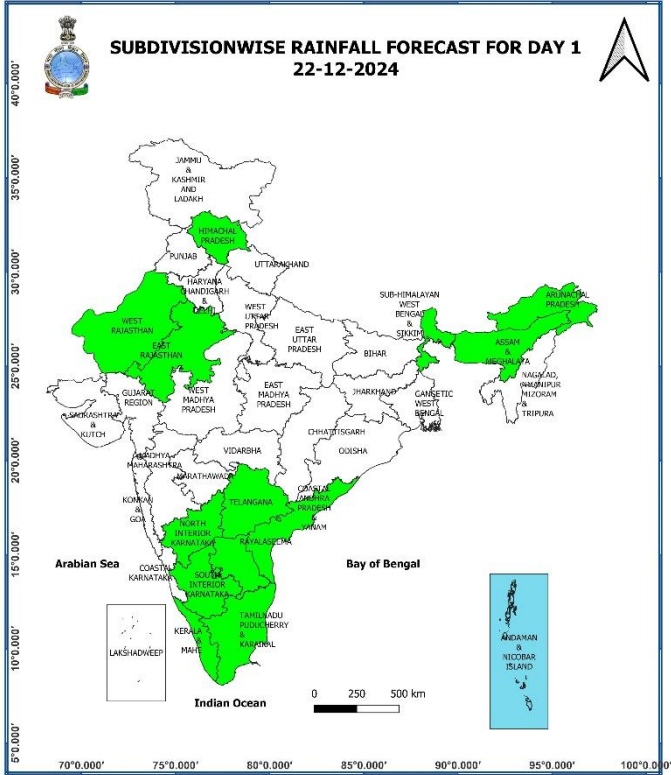
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at many places** over Andaman & Nicobar Islands and Gangetic West Bengal; **at a few places** over Odisha and Coastal Andhra Pradesh & Yanam; **at isolated places** over Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, North Interior Karnataka, Rayalaseema and Telangana.
- ❖ **Heavy rainfall observed** (from 0830 hours IST of yesterday to 0830 hours IST of today): **Tamil Nadu.**
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Tamil Nadu, Puducherry & Karaikal:** Pochampalli ARG (dist Krishnagiri) 8.
- ❖ **Very dense fog** reported in isolated pockets of Assam; **Dense fog** in isolated pockets Himachal Pradesh, East Rajasthan, East Uttar Pradesh, Odisha, Gangetic West Bengal.
- ❖ **Visibility reported (≤ 200 m)** (in meter): **Assam:** Barapani 30; **Gangetic West Bengal:** Dum Dum Airport 50; **East Uttar Pradesh:** Varanasi 50; **Tripura:** Agartala 200.
- ❖ **Cold wave to severe cold wave conditions** observed in isolated pockets over Himachal Pradesh; **cold wave conditions** observed in isolated pockets over Jammu -Kashmir, Uttarakhand, Punjab & Haryana.
- ❖ **Minimum Temperatures Departures (as on 22-12-2024):** Minimum temperatures are **markedly above normal (5.1°C or more)** at isolated places over Chhattisgarh, Telangana, Coastal Andhra Pradesh & Yanam and Rayalaseema; **appreciably above normal (3.1°C to 5.0°C)** at many places over Gujarat Region and Tamil Nadu, Puducherry & Karaikal; at isolated places over Rajasthan, Madhya Maharashtra, Marathwada, Vidarbha, Jharkhand, Odisha, Gangetic West Bengal and South Interior Karnataka; **above normal (1.6°C to 3.0°C)** at many places over Kerala & Mahe; at a few places over West Madhya Pradesh; at isolated places over East Uttar Pradesh, East Madhya Pradesh, Bihar, Assam & Meghalaya, Andaman & Nicobar Islands and North Interior Karnataka. These are **below normal (-1.6°C to -3.0°C)** at isolated places over West Uttar Pradesh and near normal over rest parts of the country. Today, **the lowest minimum temperature of 5.6°C** is reported at **Ludhiana (Punjab) & Khajuraho (East Madhya Pradesh)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 21-12-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** ; at a few places over Tamil Nadu, Puducherry & Karaikal; at isolated places over Bihar, East Uttar Pradesh, Telangana, South Interior Karnataka; **above normal (1.6°C to 3.0°C)** at many places over Kerala & Mahe; at a few places over Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Vidarbha, Madhya Maharashtra, Rayalaseema; at isolated places over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh. These were **markedly below normal (5.1°C or less)** at a few places over Odisha; at isolated places over Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal; Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over West Rajasthan, Saurashtra & Kutch; **below normal (-1.6°C to -3.0°C)** at isolated places over East Rajasthan, Konkan & Goa, Coastal Karnataka and near normal over rest parts of the country. Yesterday, **the highest maximum temperature of 35.2°C** was reported at **Erode (Tamil Nadu)** over the plains of the country. (Fig. 2)

Meteorological Analysis (Based on 0830 hours IST)

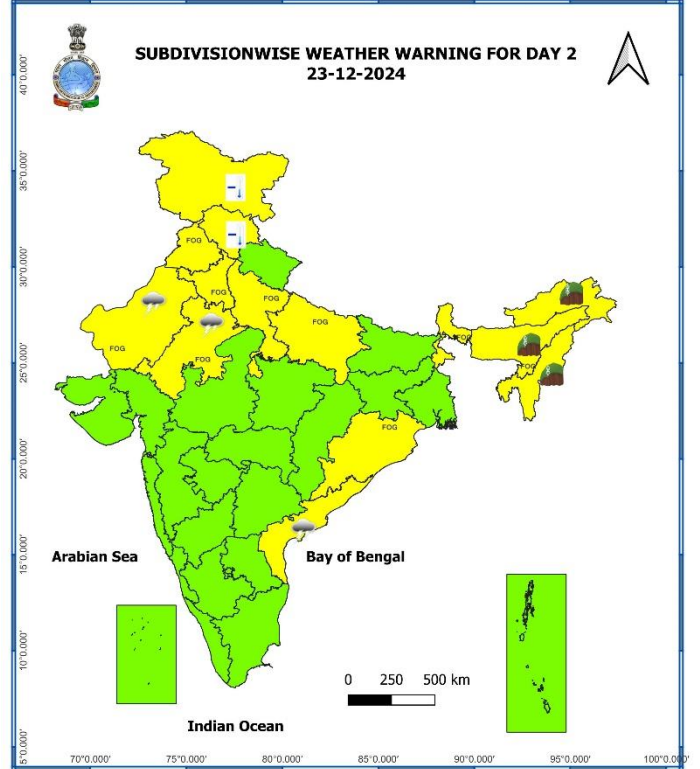
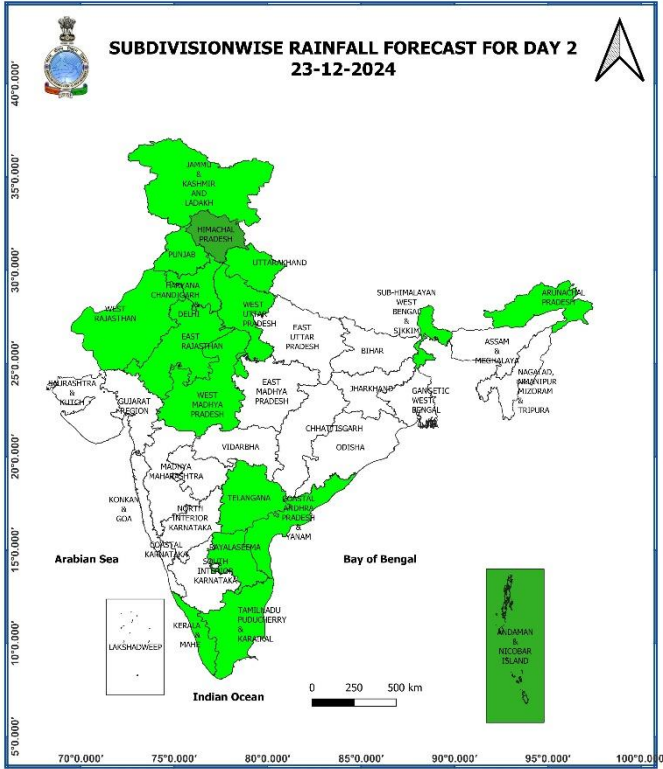
- ❖ The **well marked low pressure area** over westcentral Bay of Bengal persists over the same region at 0830 hrs IST of today, the 22nd December 2024. The associated cyclonic circulation extends upto 3.1 km above mean sea level. It is likely to move west-southwestwards and reach southwest Bay of Bengal near north Tamil Nadu & south Andhra Pradesh coasts around 24th December.
- ❖ The **Western disturbance** now seen as a cyclonic circulation in middle tropospheric levels over central parts of Afghanistan.
- ❖ A **cyclonic circulation** lies over Punjab & adjoining Haryana at 1.5 km above mean sea level.
- ❖ A **cyclonic circulation** lies over southwest Rajasthan & adjoining Pakistan and 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 is prevailing over North India.
- ❖ Another fresh and active **western disturbance** is likely to affect western Himalayan region & adjoining plains from 27th December 2024.
- ❖ The **upper air cyclonic circulation** over east Bangladesh & neighbourhood at 1.5 km above mean sea level has become less marked.
- ❖ The **upper air cyclonic** circulation over south 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 29th December, 2024)



22 December (Day 1):

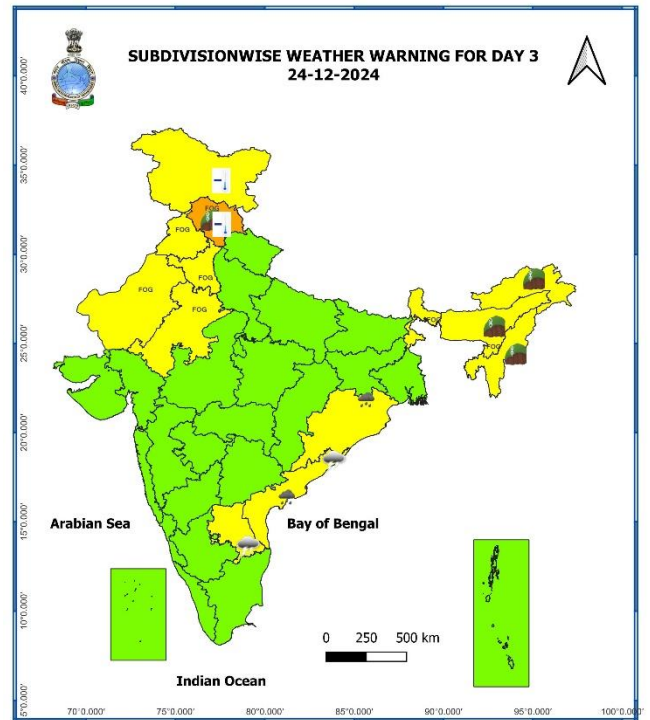
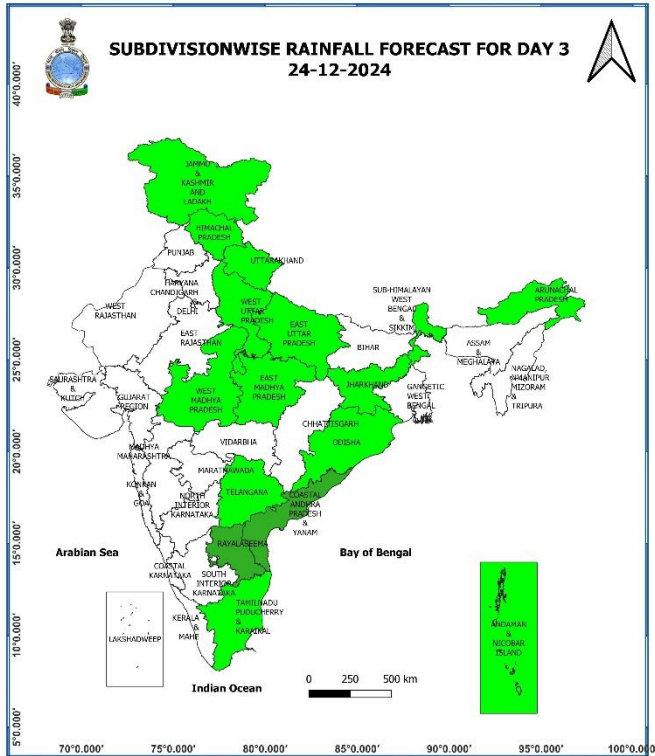
- ❖ **Dense fog** very likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, West Bengal & Sikkim, Jharkhand, Odisha, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold Wave Conditions** very likely in some parts of Himachal Pradesh; in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Ground Frost condition** very likely at isolated places over Uttarakhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Arunachal Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over westcentral Bay of Bengal and adjoining southwest Bay of Bengal, along and off Andhra Pradesh coast. Fishermen are advised not to venture into these areas.



23 December (Day 2):

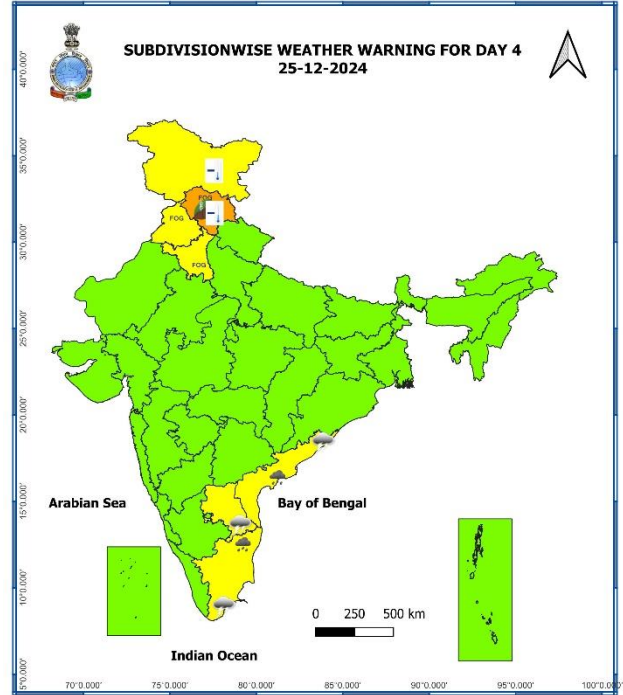
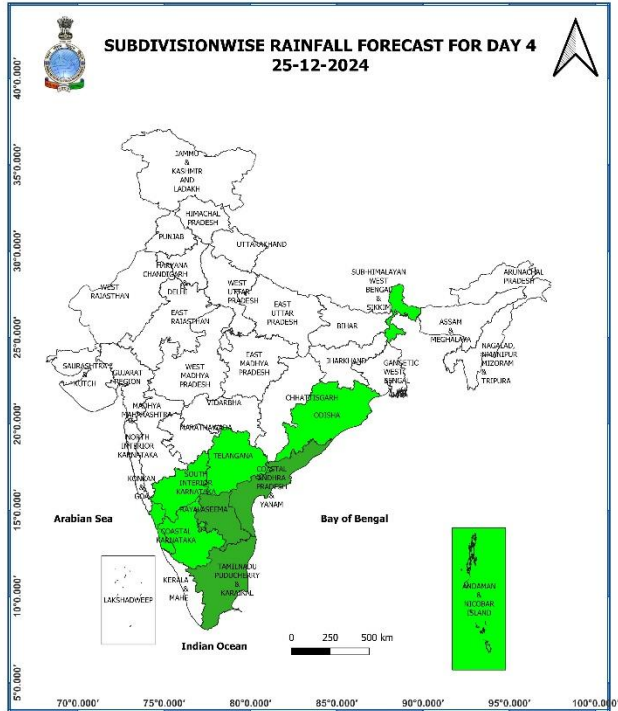
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Rajasthan and Coastal Andhra Pradesh & Yanam.
- ❖ **Dense fog** very likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Rajasthan, Sub-Himalayan West Bengal & Sikkim, Odisha, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold Wave Conditions** very likely in isolated pockets of Himachal Pradesh and Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Ground Frost condition** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over many parts of westcentral Bay of Bengal and adjoining parts of southwest Bay of Bengal, along and off Andhra Pradesh coast. Fishermen are advised not to venture into these areas.

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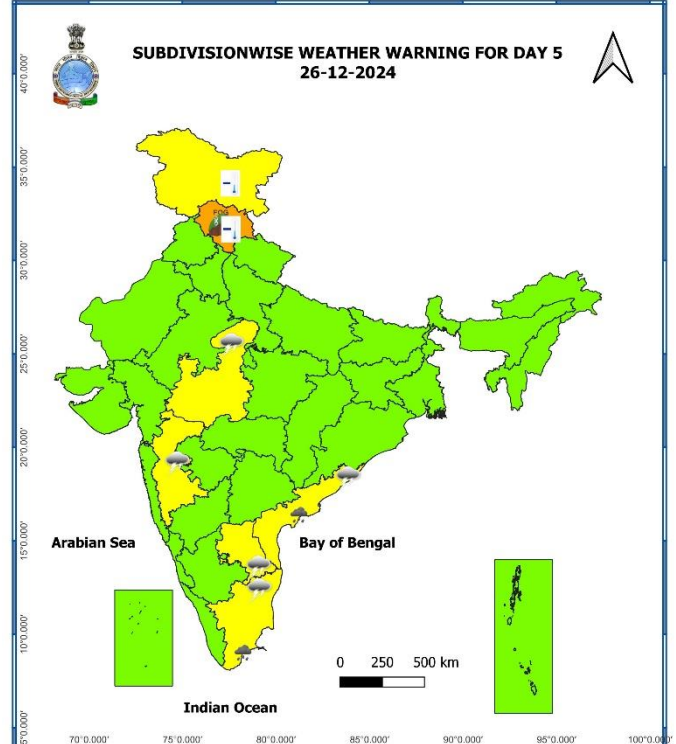
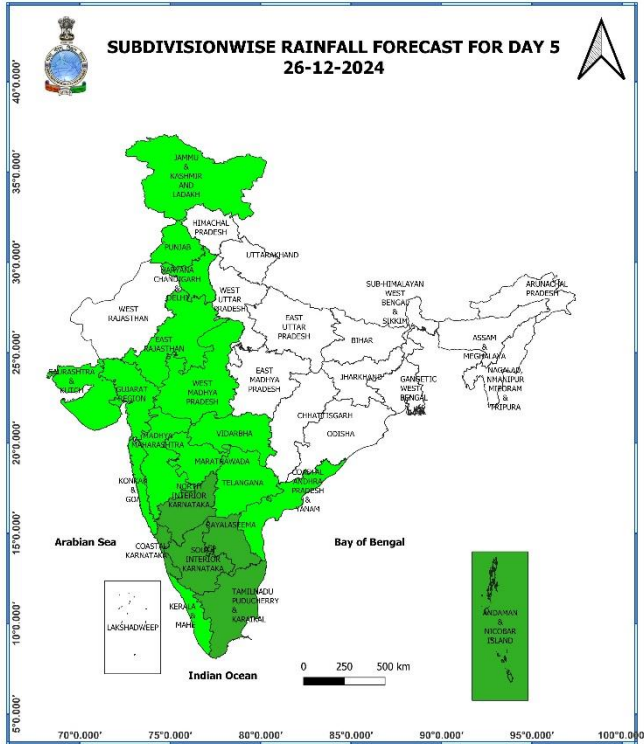
24 December (Day 3):

- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Coastal Andhra Pradesh & Yanam & Odisha.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Coastal Andhra Pradesh & Yanam, Rayalaseema.
- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold wave to severe cold wave Conditions** very likely in some parts of Himachal Pradesh; **Cold wave Conditions** in some parts of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Ground Frost condition** very likely at isolated places over Himachal Pradesh, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over some parts of westcentral Bay of Bengal and adjoining parts of southwest Bay of Bengal, along and off south Andhra Pradesh coast. Fishermen are advised not to venture into these areas.



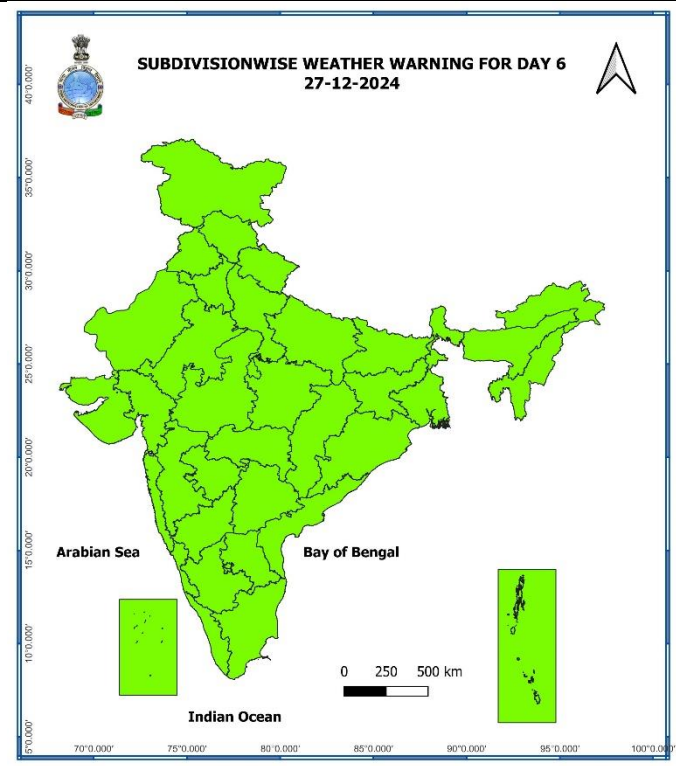
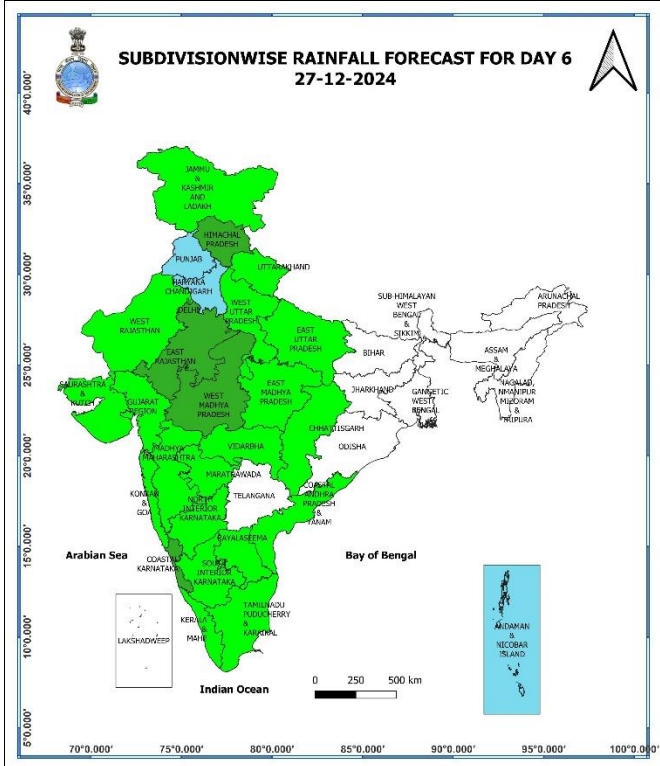
25 December (Day 4):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Coastal Andhra Pradesh & Yanam & Tamil Nadu, Puducherry & Karaikal.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Dense fog** likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh in night/morning hours.
- ❖ **Cold wave to severe cold wave Conditions** likely in some parts of Himachal Pradesh; **Cold wave Conditions** in some parts of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Ground Frost condition** likely at isolated places over Himachal Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over few parts of westcentral Bay of Bengal and adjoining parts of southwest Bay of Bengal, along and off south Andhra Pradesh and Tamil Nadu coasts. Fishermen are advised not to venture into these areas.



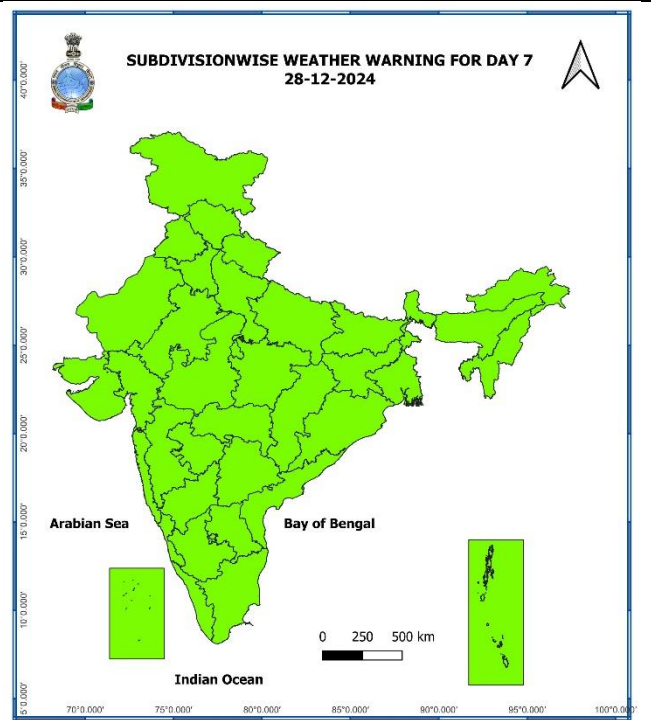
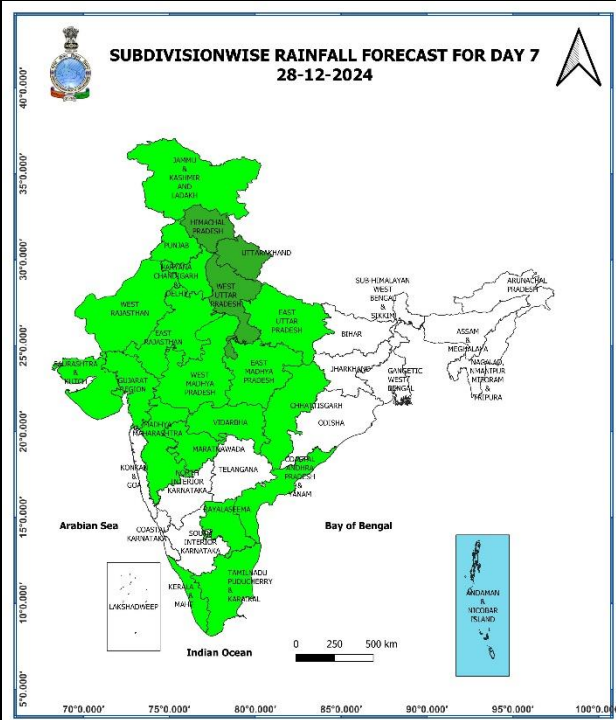
26 December (Day 5):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Coastal Andhra Pradesh & Yanam & Tamil Nadu, Puducherry & Karaikal.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over West Madhya Pradesh, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Dense fog** likely in isolated pockets of Himachal Pradesh in night/morning hours.
- ❖ **Cold wave to severe cold wave Conditions** very likely in some parts of Himachal Pradesh; **Cold wave Conditions** in some parts of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Ground Frost condition** likely at isolated places over Himachal Pradesh.



27 December (Day 6):

- ❖ **Thunderstorm accompanied with hailstorm & lightning** likely at isolated places over northwest India except East Uttar Pradesh.



28 December (Day 7):

- ❖ **Thunderstorm accompanied with hailstorm & lightning** likely at isolated places over northwest India except East Uttar Pradesh.

Weather Outlook for subsequent 3 days (During 29th December – 31st December, 2024)

- ❖ Scattered to Fairly widespread light to moderate rainfall likely over some parts of south peninsular India and Isolated to scattered light to moderate rainfall over Madhya Pradesh and Maharashtra.
- ❖ 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 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 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

- In **Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Arunachal Pradesh, Meghalaya, Nagaland and Manipur**, 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

- 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

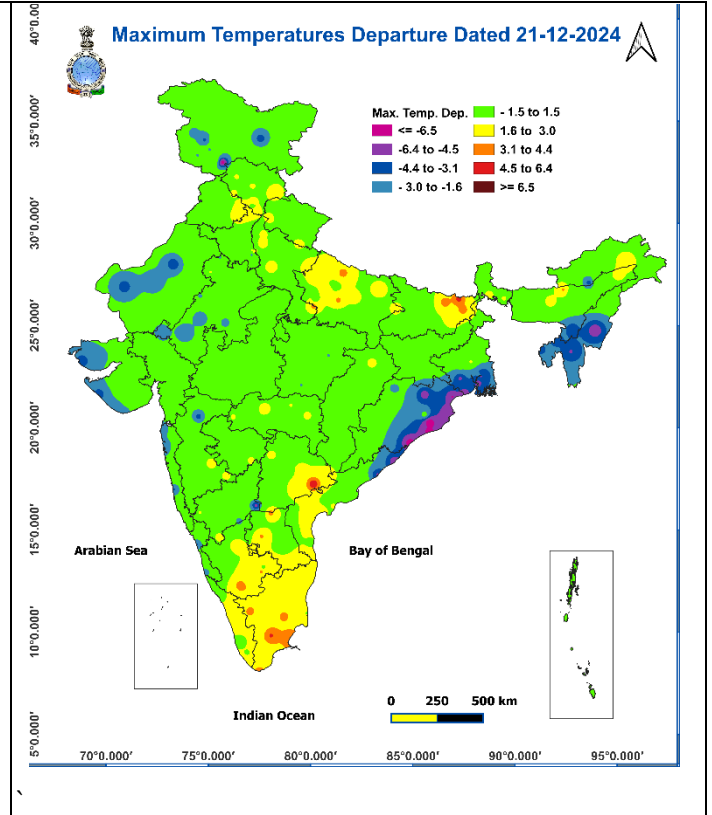
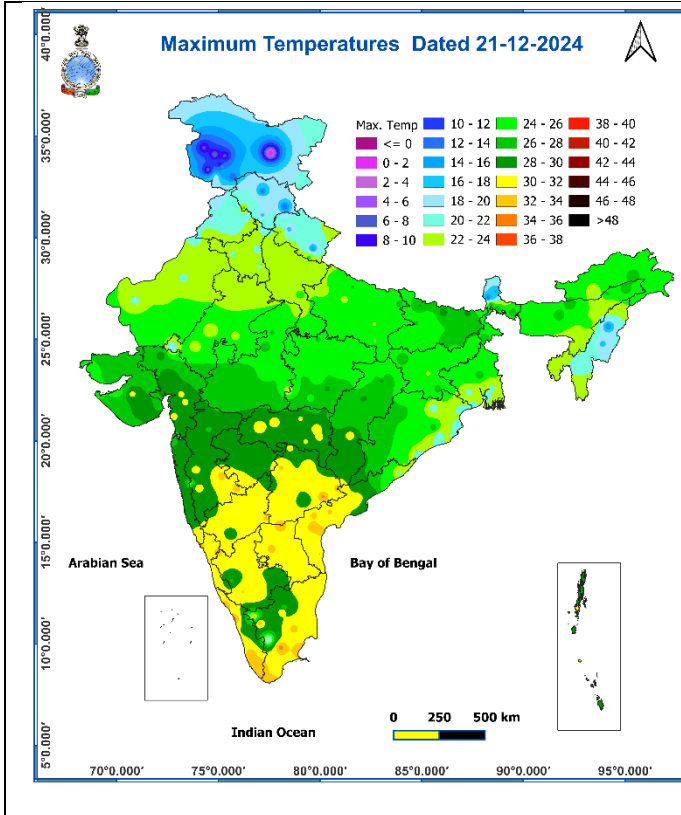


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

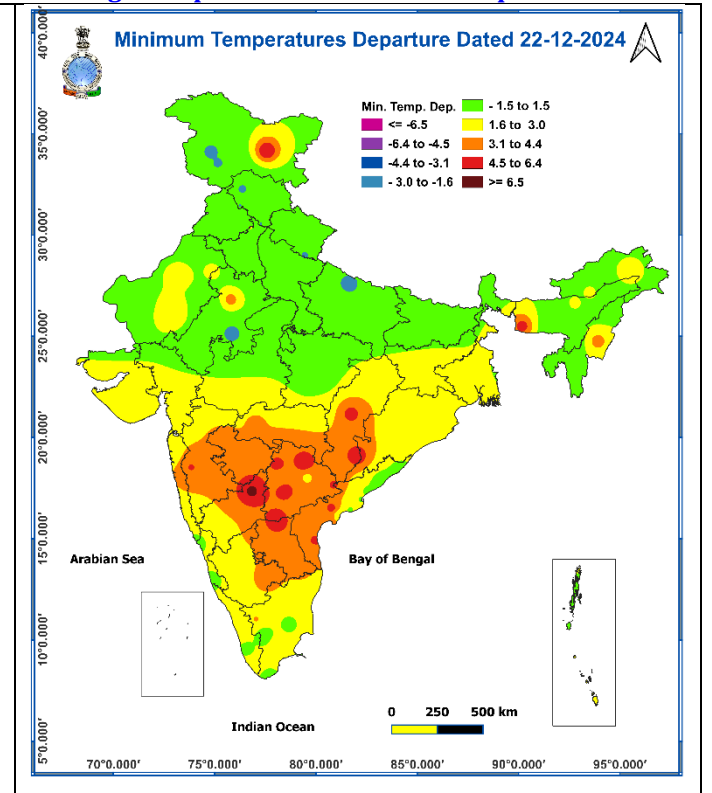
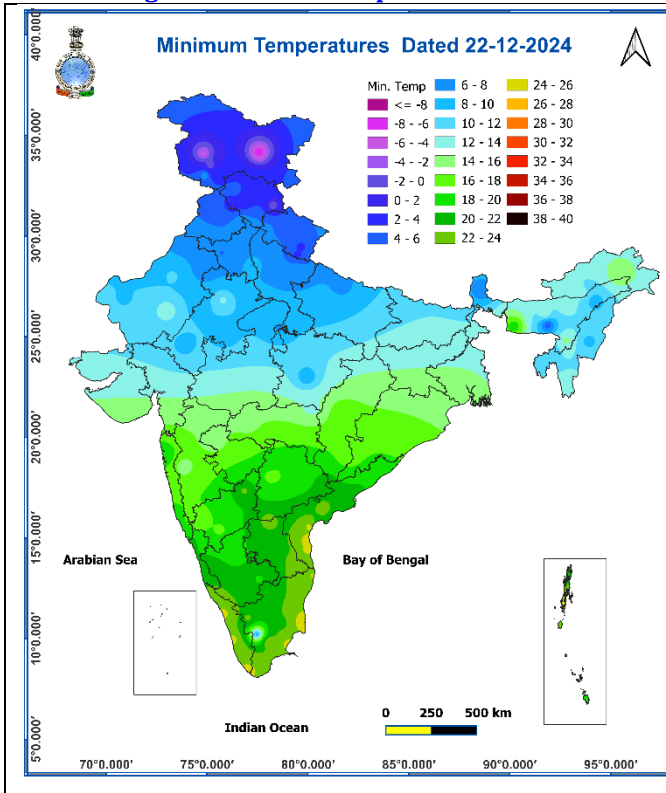
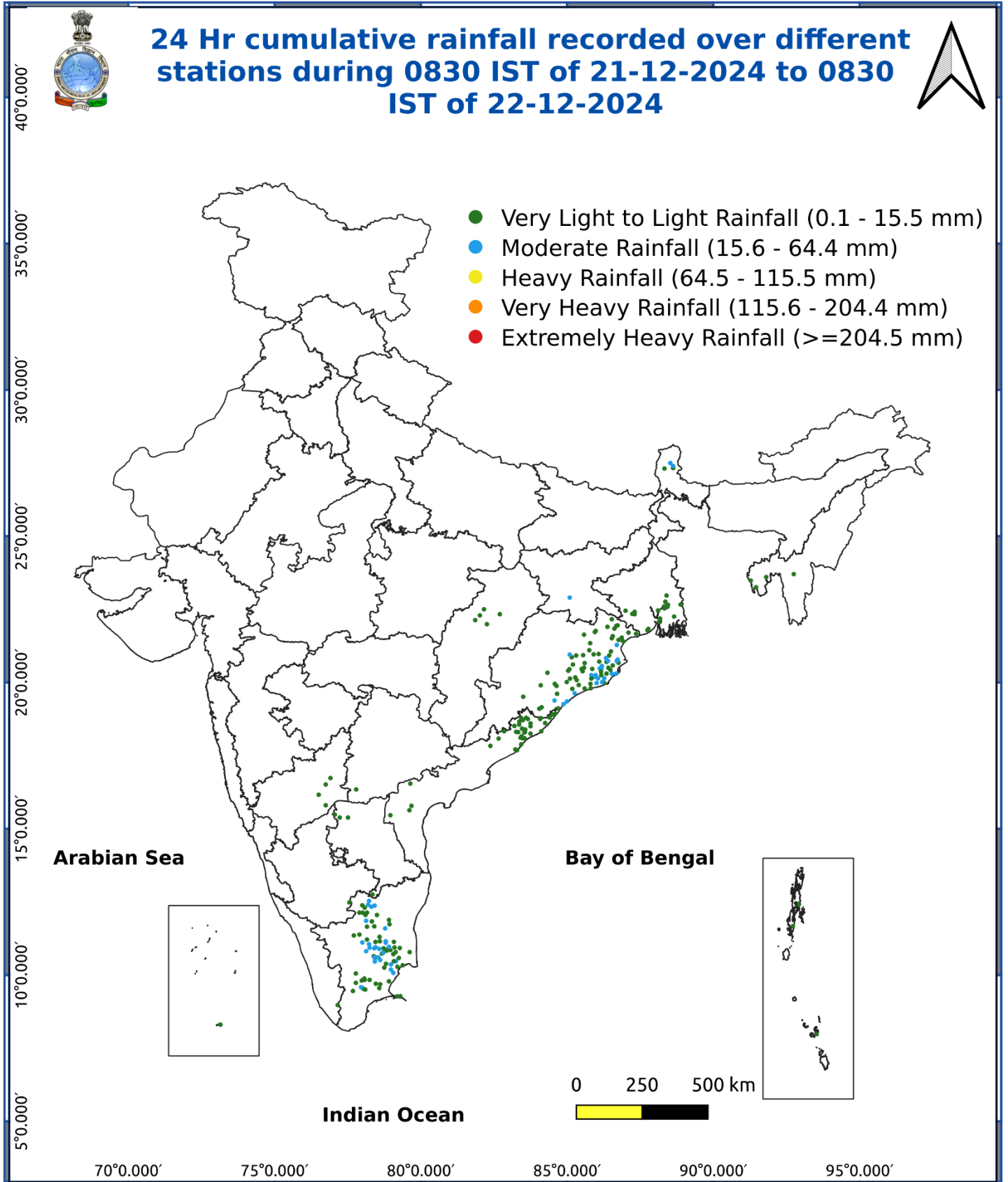


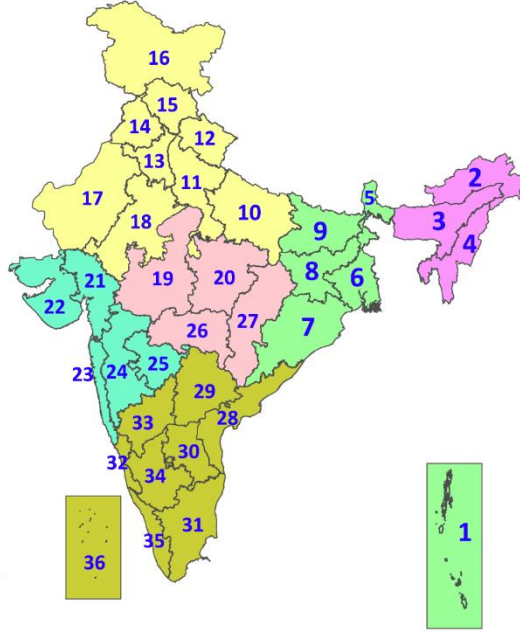
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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 *

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)