

Monday, December 23, 2024
Time of Issue: 1345 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems, Forecast and warning:

- ❖ Yesterday's **well marked low pressure area** over Westcentral Bay of Bengal moved west- southwestwards and lay over Southwest and adjoining Westcentral Bay of Bengal off South Andhra Pradesh- North Tamil Nadu coasts at 0830 hrs IST of today, the 23rd December 2024. It is likely to move west-southwestwards and reach southwest Bay of Bengal near north Tamil Nadu & south Andhra Pradesh coasts on 24th December.
- ❖ Under the influence of these systems:
 - ✓ Light to moderate rainfall accompanied with thunderstorm, lightening very likely at a few places with **heavy rainfall** at isolated places over Coastal Andhra Pradesh during 24th-26th; Rayalaseema on 24th & 25th December.
 - ✓ Light to moderate rainfall very likely at a few places likely over coastal Odisha with possibility of isolated **heavy rainfall** on 24th & 25th December.
 - ✓ Light to moderate rainfall at isolated places accompanied with thunderstorm, lightening over Tamil Nadu, Puducherry & Karaikal on 23rd & 24th and at a few places on 25th & 26th December.
- ❖ The Western disturbance as a cyclonic circulation lay over north Pakistan & neighbourhood in lower & middle tropospheric levels and an induced low pressure area over lay over northwest Rajasthan. Under their influence, **Light to moderate rainfall/snowfall** likely at isolated places over Western Himalayan Region on 23rd & 24th December, 2024 and light isolated rainfall at isolated places over Punjab, Haryana, Chandigarh, Delhi, Uttar Pradesh, Rajasthan on 23rd December, 2024.
- ❖ Another active western disturbance is likely to affect western Himalayan region & adjoining plains from 26th December 2024. It is very likely to interact with lower levels easterly winds over central parts of the country 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 27th-29th December with peak activity on 27th and 28th December.
 - ✓ Scattered to fairly widespread rainfall accompanied with thunderstorm and lightning also likely over plains of northwest India and adjoining central India on 27th December; Maharashtra & Gujarat during 26th-28th December.
 - ✓ **Thunderstorm accompanied with hailstorms also likely over Punjab, Haryana, Chandigarh, West Uttar Pradesh, Rajasthan, Madhya Pradesh, Madhya Maharashtra and Marathwada on 27th 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; **5-10°C** over plains of & Himachal Pradesh, Uttarakhand **10-15°C** over Northwest India, Central India, Eastern India & adjoining northeast India, Gujarat & north Maharashtra; **>15°C** over remaining parts of India. Today, **the lowest minimum temperature of 6.0°C** is reported at **Amritsar (Punjab)** over the plains of the country.
- ❖ There has been a rise by 2-5^oC in minimum temperature over many parts of the plains of northwest India; by 1-3^oC over central and west India; fall by 1-2^oC over some parts of east, northeast and south peninsular India during past 24 hours.

Forecast of temperature:

- ❖ Fall in minimum temperatures by about 2°C over Northwest India Plains except over Uttar Pradesh where these are likely to rise by about 3°C during next 2 days and no significant change thereafter on 26th December. Thereafter, Likely Rise in minimum temperatures by about 2-4°C over Northwest India Plains during 27th -28th December.
- ❖ Gradual rise in minimum temperatures likely over Central India & Maharashtra by 2-4°C during next 5 days.
- ❖ No significant change in minimum temperatures likely over Western Himalayan during next 2 days & gradual rise by 2-4°C thereafter.

Cold Wave Warnings:

Cold wave to severe cold wave conditions very likely in some parts of Himachal Pradesh during 23rd-26th; **Cold wave** conditions very likely in isolated pockets over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during 24th -26th; Punjab, Haryana, Chandigarh during 23rd-25th December.

Dense Fog Warnings:

Dense fog conditions very likely to prevail during late night/early morning hours in isolated pockets of Uttar Pradesh, Odisha till 24th; Himachal Pradesh during 24th-27th; Punjab, Haryana, Chandigarh, Delhi, Sub Himalayan West Bengal, Bihar, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 23rd-26th; Rajasthan till 25th and during 28th-30th December.

Ground Frost Warnings:

Ground Frost conditions very likely in isolated pockets of Himachal Pradesh during 24th -26th; Punjab, Haryana, Chandigarh on 24th & 25th; Northeast India on 23rd & 24th December.

iii. Weather conditions and forecast over Delhi/NCR during 23rd to 26th Dec. 2024

Weather Forecast:

23.12.2024: Generally cloudy sky with possibility of very light rain to light rain. The predominant surface wind is likely to be east 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.

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 increase thereafter becoming less than 06 kmph from east 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 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 08-10 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 06 kmph from northwest direction during evening and night. Smog/shallow fog is likely in the evening/night.

26.12.2024: Partly cloudy sky with very light rain during late night. The predominant surface wind is likely to be from northwest direction with wind 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 08-10 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 04 kmph from north 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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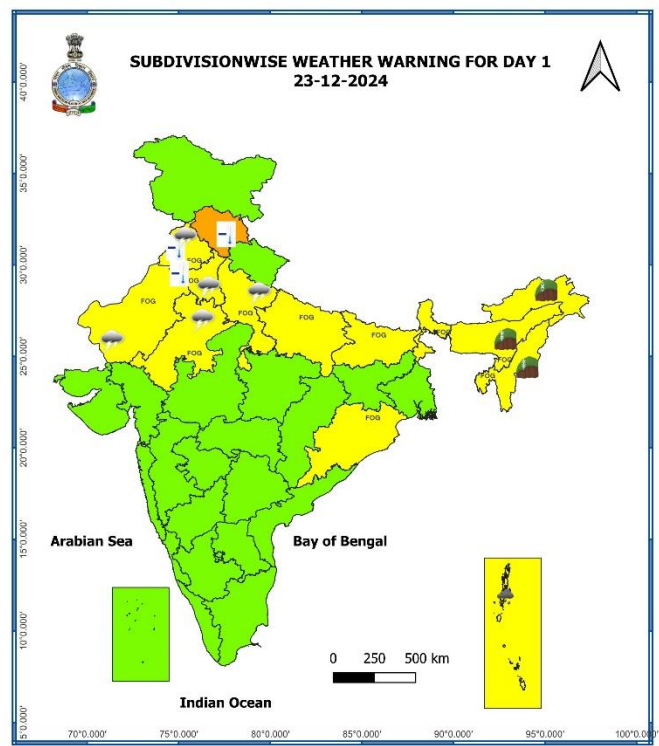
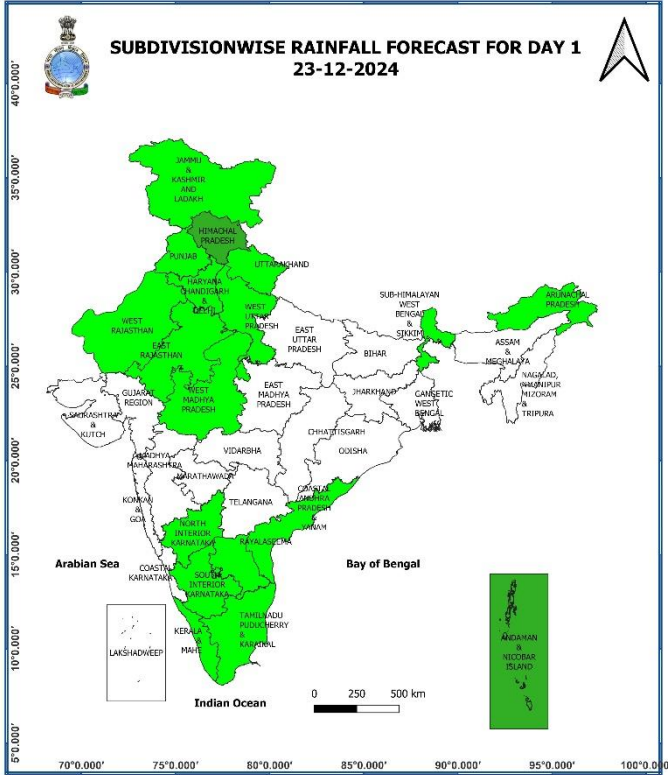
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): at many places over Andaman & Nicobar Islands; at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Jharkhand, Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Rajasthan and Tamil Nadu.
- ❖ **Heavy rainfall observed** (from 0830 hours IST of yesterday to 0830 hours IST of today): NIL.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Andaman & Nicobar Islands:** IAF Car Nicobar- 6; **Tamil Nadu:** Vembakottai (dist Virudhunagar) 5, Sivakasi (dist Virudhunagar) 4, Yercaud (dist Salem), Kangeyam (dist Tiruppur), Peraiyur (dist Madurai), Rajapalayam (dist Virudhunagar) 3 each, Edapadi (dist Salem), Uthukuli (dist Tiruppur), Mangalapuram (dist Namakkal) 2 each.
- ❖ **Cold wave to severe cold wave conditions** observed in isolated pockets over Himachal Pradesh.
- ❖ **Fog reported** (from 0830 hours IST of yesterday to 0830 hours IST of today): **Dense fog** in isolated pockets Assam, Manipur, Bihar, East Uttar Pradesh, Gangetic West Bengal, West Uttar Pradesh, West Rajasthan.
- ❖ **Visibility reported** (from 0830 hours IST of yesterday to 0830 hours IST of today): (**≤ 200 m**) (in meter): **Assam:** Barapani 50; **Manipur:** Imphal 50; **Tripura:** Agartala 50; **East Uttar Pradesh:** Balia 50; **Bihar:** Purnea-50; **Gangetic West Bengal:** Durgapur 150; **West Uttar Pradesh:** Bareilly 200; **West Rajasthan:** Jaisalmer 100.
- ❖ **Minimum Temperatures Departures (as on 23-12-2024):** Minimum temperatures are **markedly above normal (5.1°C or more)** at a few places over East Rajasthan; at isolated places over West Rajasthan, Madhya Maharashtra, Marathwada and Gujarat Region; **appreciably above normal (3.1°C to 5.0°C)** at many places over West Madhya Pradesh and Telangana; at a few places over Odisha and Chhattisgarh; at isolated places over Haryana-Chandigarh-Delhi, East Madhya Pradesh and Vidarbha; **above normal (1.6°C to 3.0°C)** at many places over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam and Andaman & Nicobar Islands; at a few places over Gangetic West Bengal and Bihar; at isolated places over Punjab, Jharkhand, Saurashtra & Kutch, Konkan & Goa, North Interior Karnataka and Rayalaseema. These are **below normal (-1.6°C to -3.0°C)** at isolated places over Nagaland, Manipur, Mizoram & Tripura and near normal over rest parts of the country. Today, **the lowest minimum temperature of 6.0°C** is reported at **Amritsar (Punjab)** over the plains of the country. (Fig. 4)
- ❖ **Maximum Temperature Departures (as on 22-12-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** ; at isolated places over Bihar; **above normal (1.6°C to 3.0°C)** at most places over Uttar Pradesh, Himachal Pradesh; at a few places over Himachal Pradesh, Haryana-Chandigarh-Delhi, Punjab & Nagaland, Manipur, Mizoram & Tripura; at isolated places over Arunachal Pradesh, Assam & Meghalaya, Coastal Karnataka, Jharkhand, West Madhya Pradesh, Rajasthan, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, South Interior Karnataka & Telangana. These were **below normal (-1.6°C to -3.0°C)** at many places over Saurashtra & Kutch & Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; at isolated places over Odisha, Coastal Karnataka, Konkan & Goa, Saurashtra & Kutch and near normal over rest parts of the country. Yesterday, the **highest maximum temperature of 35.2°C** was reported at **Kozhikode (Kerala & Mahe)** over the plains of the country. (Fig. 2)

Meteorological Analysis (Based on 0830 hours IST)

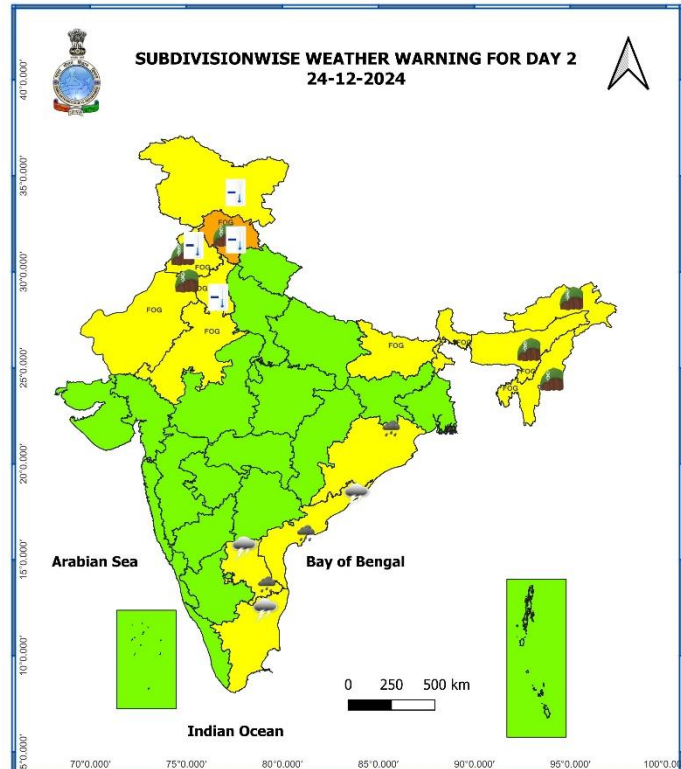
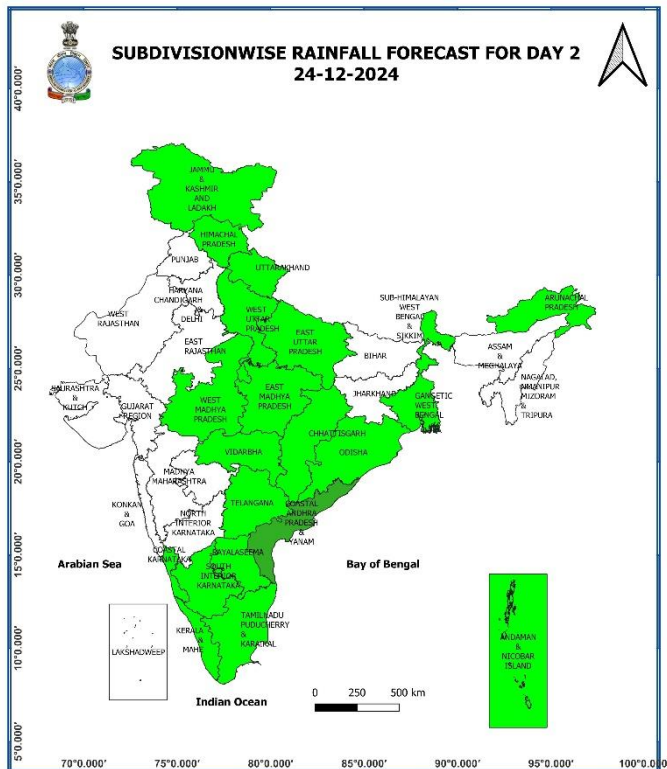
- ❖ The **well marked low pressure area** over Westcentral and adjoining Southwest Bay of Bengal off South Andhra Pradesh- North Tamil Nadu coasts moved west- southwestwards and lay over Southwest and adjoining Westcentral Bay of Bengal off South Andhra Pradesh- North Tamil Nadu coasts at 0830 hrs IST of today, the 23rd 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 on 24th December.
- ❖ The **Western disturbance** as a cyclonic circulation over north Pakistan & adjoining Afghanistan now lies over north Pakistan & neighbourhood between 3.1 & 5.8 km above mean sea level with a trough aloft its axis at 7.6 km above mean sea level runs roughly along Longitude 70°E to the north of Latitude 28°N.
- ❖ The **induced cyclonic circulation** now seen as an **induced low pressure area** over northwest Rajasthan & neighbourhood and associated cyclonic circulation extends upto 1.5 km above mean sea level.
- ❖ **Subtropical westerly Jet Stream** with core winds of the order upto 140 knots at 12.6 km above mean sea level continue to prevail over North India.
- ❖ An active **western disturbance** is likely to affect western Himalayan region & adjoining plains from 27th December 2024.
- ❖ The **cyclonic circulation** over Punjab & adjoining Haryana at 1.5 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 30th December, 2024)



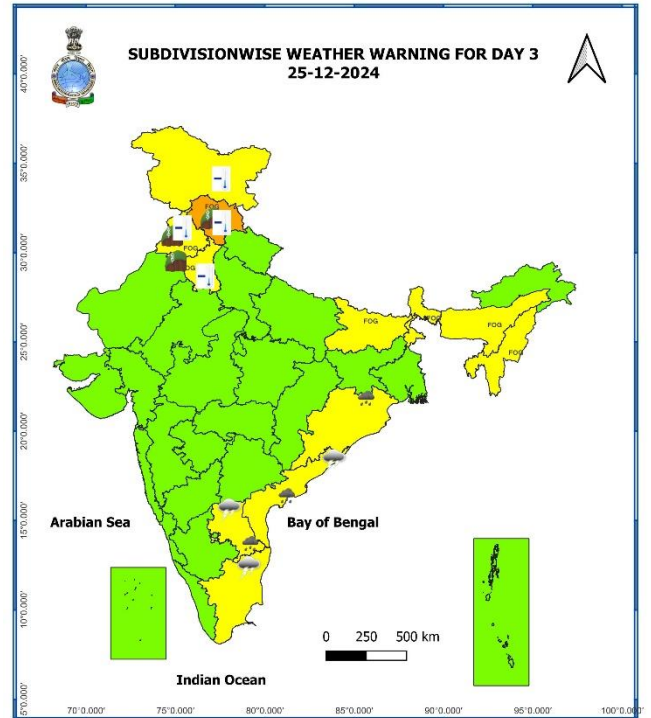
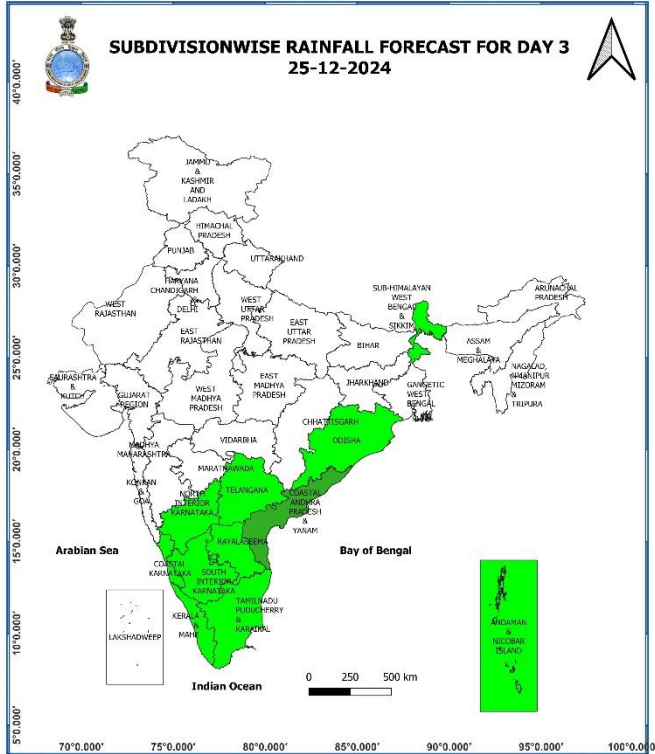
23 December (Day 1):

- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Punjab, Haryana-Chandigarh-Delhi and north Rajasthan.
- ❖ **Dense fog** very likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Rajasthan, Sub-Himalayan West Bengal & Sikkim, Bihar, Odisha, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold Wave to Sever Cold Wave Conditions** very likely in some parts of Himachal Pradesh; **Cold Wave Conditions** very likely in isolated pockets of Punjab and Haryana-Chandigarh.
- ❖ **Ground Frost conditions** 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, adjoining north Tamil Nadu coast. Fishermen are advised not to venture into these areas.



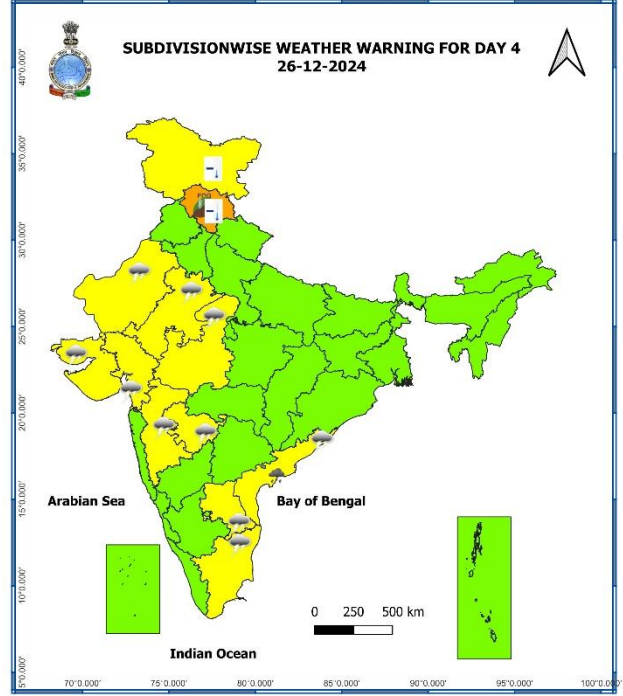
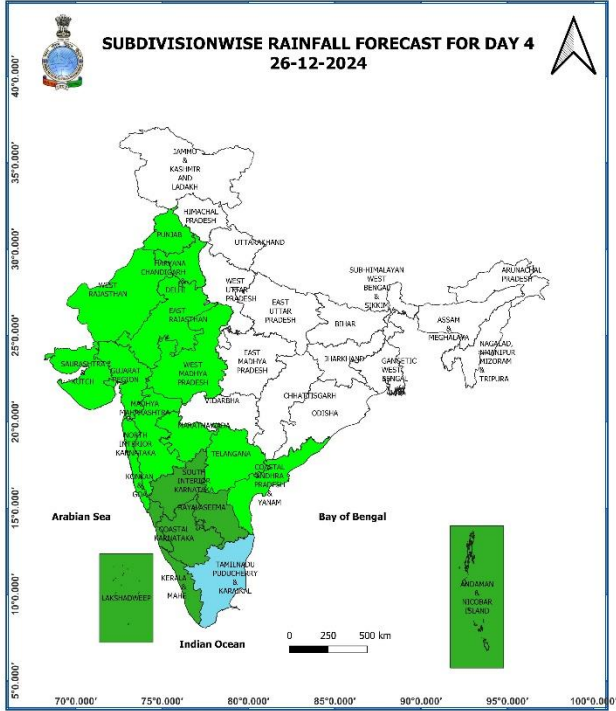
24 December (Day 2):

- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Odisha, Coastal Andhra Pradesh & Yanam and Rayalaseema.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam and Rayalaseema.
- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Sub-Himalayan West Bengal & Sikkim, Bihar, 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 isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab and Haryana-Chandigarh.
- ❖ **Ground Frost conditions** very likely at isolated places over Himachal Pradesh, Punjab, Haryana-Chandigarh, 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, adjoining north Tamil Nadu coast. Fishermen are advised not to venture into these areas



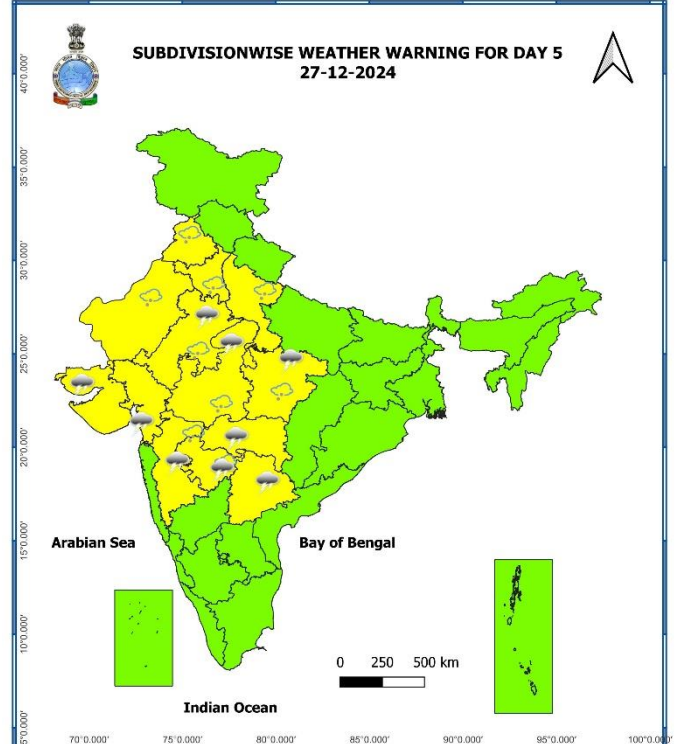
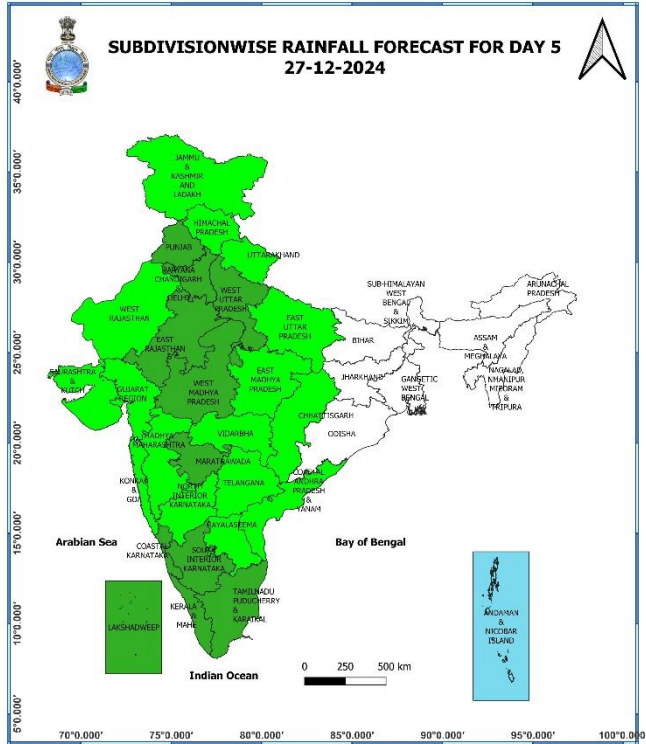
25 December (Day 3):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Odisha, Coastal Andhra Pradesh & Yanam and Rayalaseema.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam and Rayalaseema.
- ❖ **Dense fog** likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, Sub-Himalayan West Bengal & Sikkim, Bihar, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura 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 Punjab, Haryana-Chandigarh and Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ **Ground Frost conditions** likely at isolated places over Himachal Pradesh, Punjab and Haryana-Chandigarh.
- ❖ **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 north Tamil Nadu coasts. Fishermen are advised not to venture into these areas.



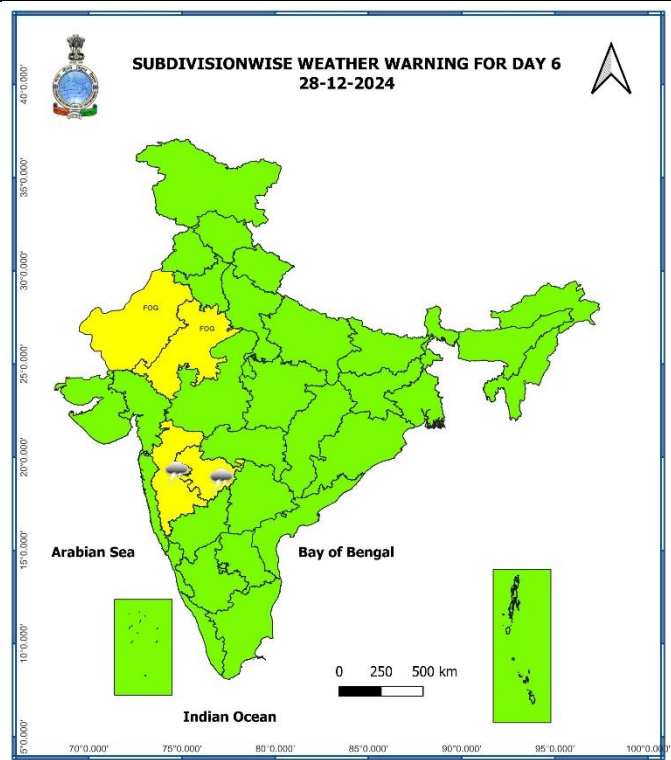
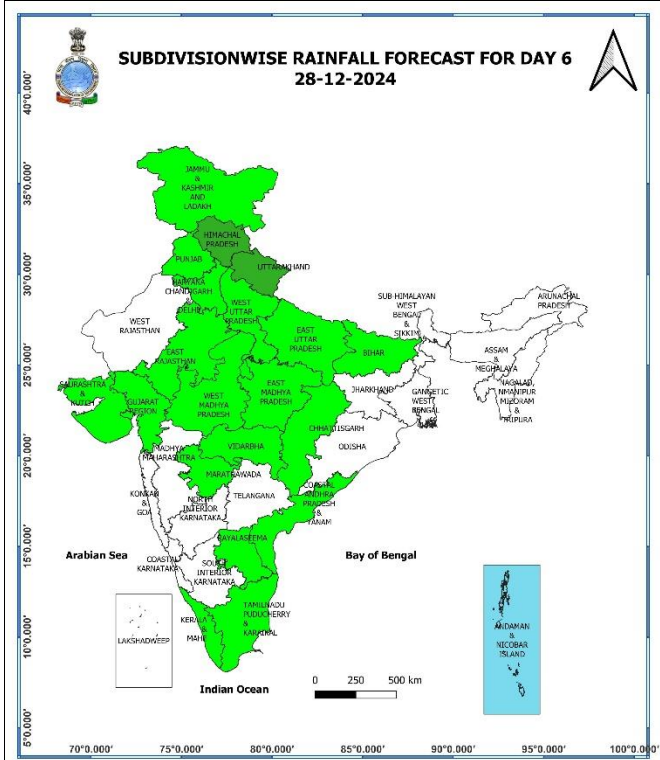
26 December (Day 4):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Coastal Andhra Pradesh & Yanam.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Rajasthan, West Madhya Pradesh, Madhya Maharashtra, Marathwada, Gujarat Region, Saurashtra & Kutch, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam and Rayalaseema.
- ❖ **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 conditions** likely at isolated places over Himachal Pradesh.



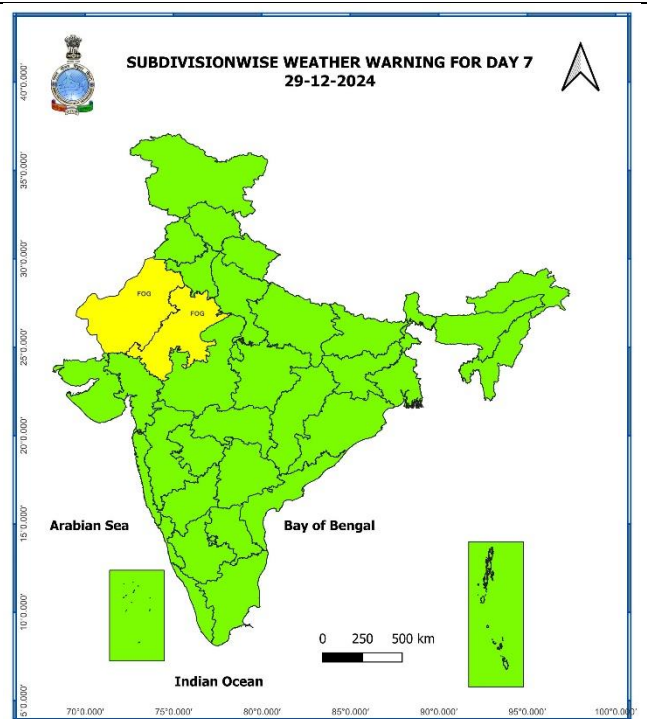
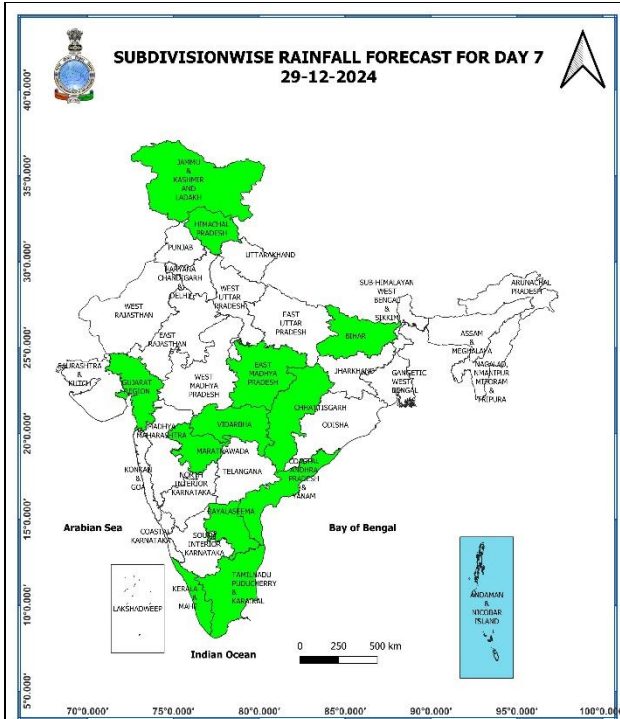
27 December (Day 5):

- ❖ **Thunderstorm accompanied with hailstorm & lightning** likely at isolated places over Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Rajasthan, Madhya Pradesh, Marathwada and Madhya Maharashtra; **with lightning** Vidarbha, Gujarat state and Telangana.



28 December (Day 6):

- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Madhya Maharashtra and Marathwada.
- ❖ **Dense fog** likely in isolated pockets of Rajasthan in night/morning hours.



29 December (Day 7):

- ❖ **Dense fog** likely in isolated pockets of Rajasthan in night/morning hours.

Weather Outlook for subsequent 3 days (During 30th December, 2024– 01st January, 2025)

- ❖ Scattered to Fairly widespread light to moderate rainfall likely over some parts of Andaman & Nicobar Islands and Isolated to scattered light to moderate rainfall over Marathwada, Vidarbha, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal.
- ❖ 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/ Frost likely over various parts of the country

- Make necessary arrangements to drain out excess water from rice, green gram, black gram, mustard, vegetables and other standing crop fields in **Odisha**; from rice nurseries, green gram, black gram, sesame and other standing crop fields and vegetables in **Coastal Andhra Pradesh** and **Rayalaseema**.
- Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields.
- In **Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Arunachal Pradesh, Nagaland, Manipur, and Mizoram**, 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

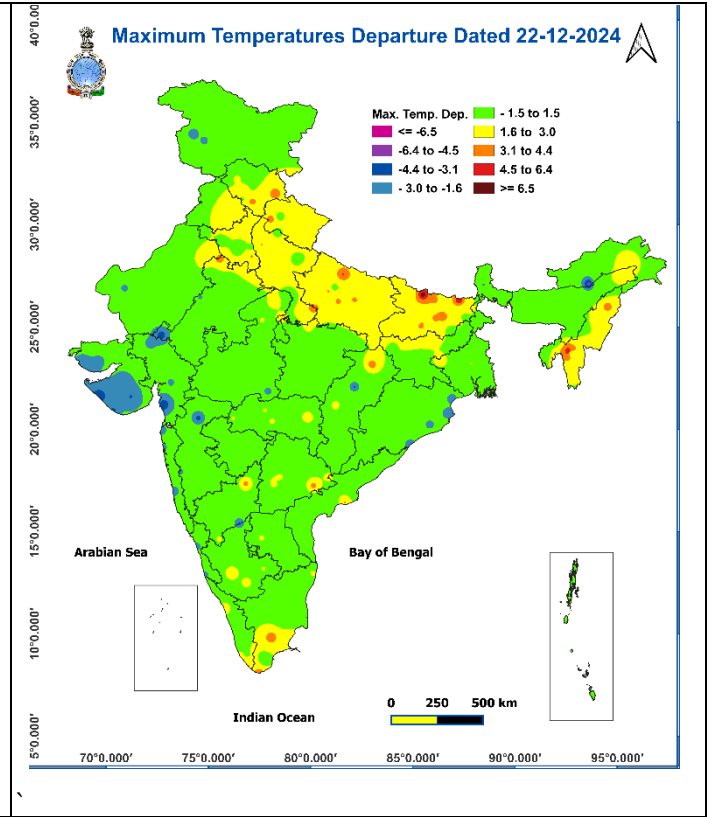
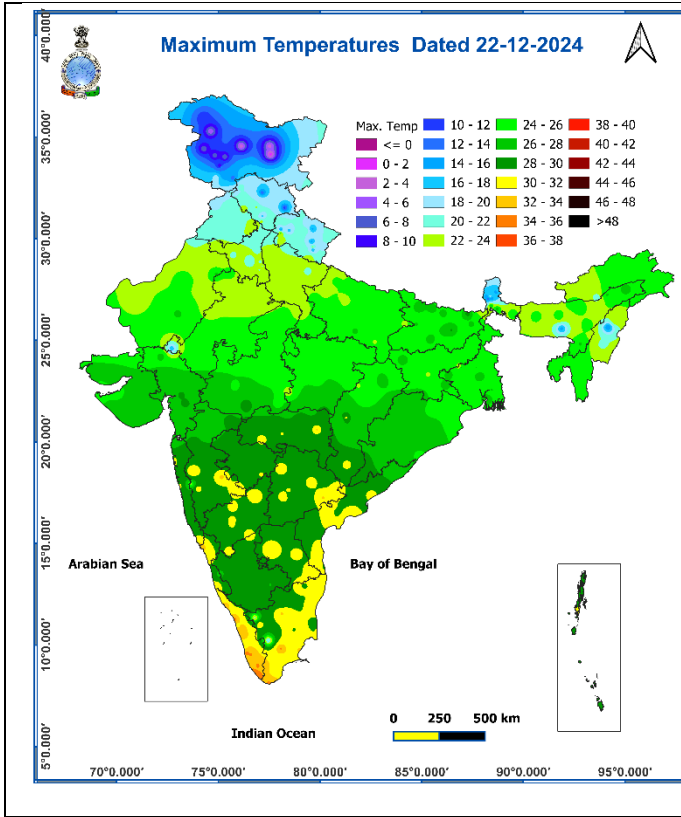
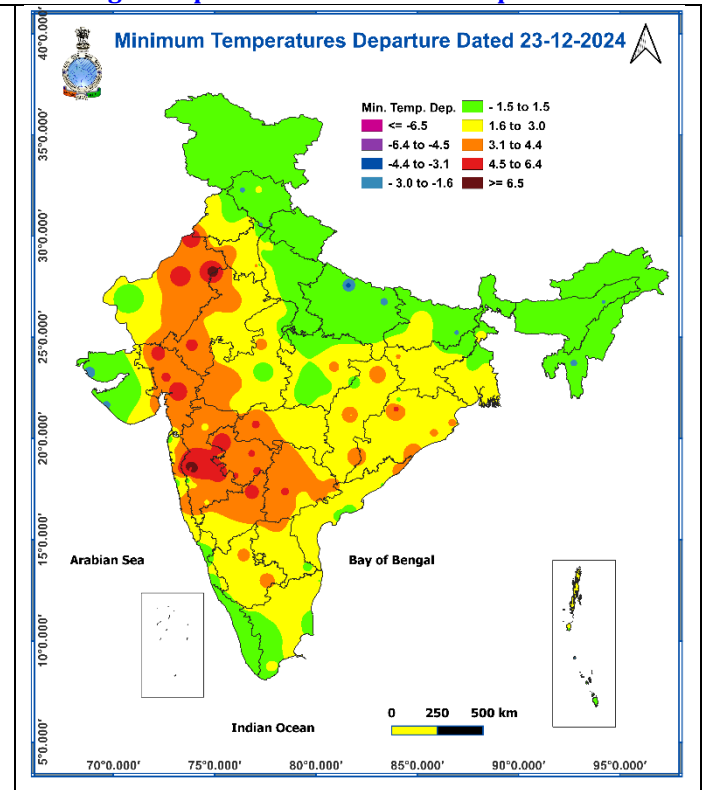
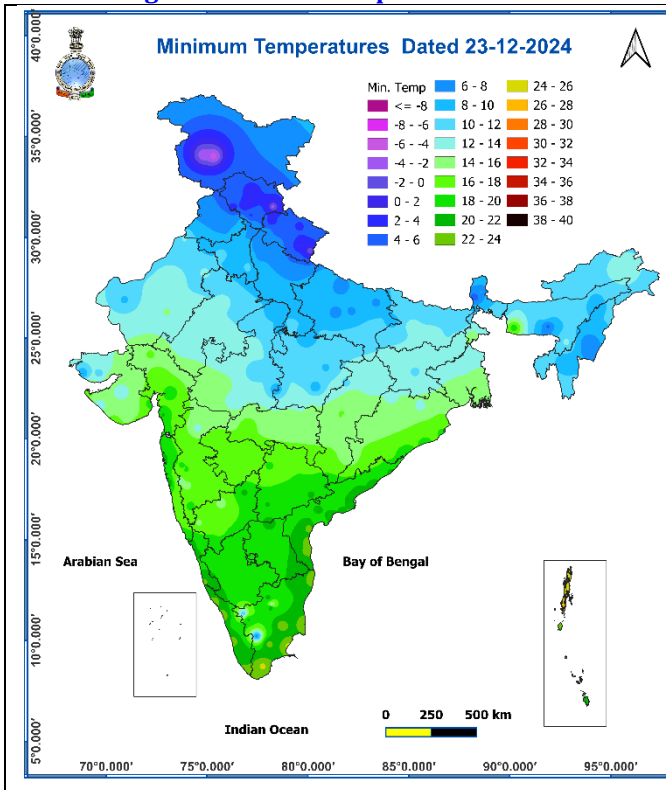


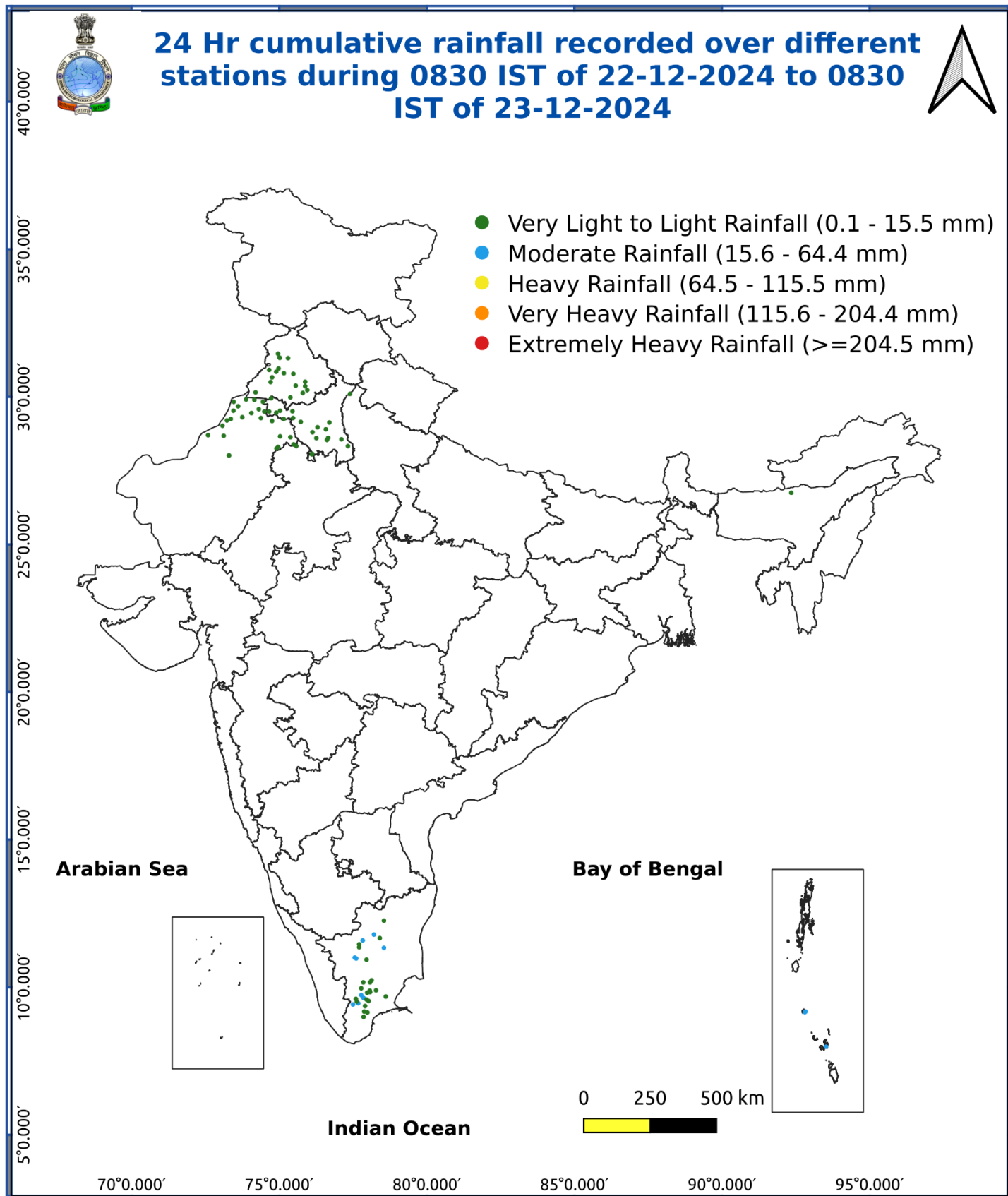
Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures



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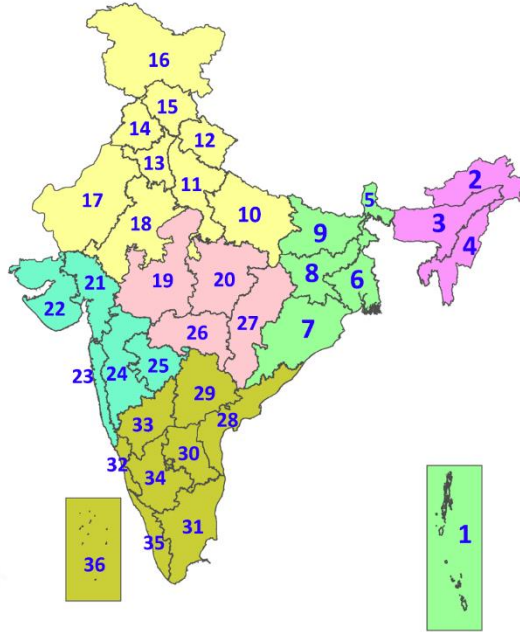
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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)