

Monday, December 9, 2024
Time of Issue: 1330 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- ❖ The **low pressure area** over southeast Bay of Bengal & adjoining east Equatorial Indian Ocean with the associated **cyclonic circulation** extending upto middle tropospheric levels persists. It is likely to move west-northwestwards & become **more marked** during next 24 hours. It is very likely to continue to move west-northwestwards thereafter and reach over southwest Bay of Bengal off Sri-Lanka-Tamil Nadu coasts around 11th December.
- ❖ The **Western Disturbance** as a cyclonic circulation now lies over Northwest Uttar Pradesh in lower tropospheric levels.

Forecast & Warnings (upto 7 days):

- ❖ **Tamil Nadu, Puducherry & Karaikal: Heavy rainfall** at isolated places very likely over Tamil Nadu, Puducherry & Karaikal during 10th - 13th December. Isolated very heavy rainfall is also very likely over the region during 11th & 12th December.
- ❖ **Coastal Andhra Pradesh & Yanam & Rayalaseema: Heavy rainfall** at isolated places very likely over Coastal Andhra Pradesh & Yanam & Rayalaseema during 11th -13th December.
- ❖ **Kerala & Mahe: Heavy rainfall** at isolated places very likely over Kerala & Mahe during 12th -14th December.
- ❖ **South Interior Karnataka: Heavy rainfall** at isolated places very likely over South Interior Karnataka on 12th & 13th December.
- ❖ Light to moderate rainfall at a few places accompanied with isolated thunderstorm & lightning very likely over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe during 09th-13th, Coastal Andhra Pradesh & Yanam & Rayalaseema on 11th & 12th December.

ii. Temperature, Cold Wave and Fog Forecast:

Forecast of temperature:

- ❖ Gradual fall in minimum temperatures by 2-4°C likely over Northwest, central & East India during next 3 days and no significant change thereafter.

Cold Wave Warnings:

- ❖ **Cold wave** conditions very likely in isolated pockets over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad & West Uttar Pradesh during 09th-11th, Uttarakhand on 09th & 10th, East Rajasthan during 09th -13th, Himachal Pradesh on 10th & 11th, Punjab, Haryana, Chandigarh during 10th-12th, West Rajasthan during 10th-13th, West Madhya Pradesh during 11th -13th December.

Dense Fog Warnings:

- ❖ **Dense fog conditions** very likely to prevail during late night/early morning hours in isolated pockets of Punjab, Haryana-Chandigarh till 10th, West Bengal & Sikkim, Gangetic West Bengal, Bihar, Jharkhand till 11th, East Uttar Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura till 12th, Himachal Pradesh & West Uttar Pradesh during 10th-12th December morning hours.

Weather forecast (during 09th Dec. to 12th Dec. 2024) over Delhi/NCR

- 09.12.2024:** Mainly clear sky. The predominant surface wind is likely to be north-northeast direction with wind speed less than 10 kmph till evening. It would decrease thereafter becoming less than 06 kmph from variable direction during night. Smog/mist is likely in the evening/night.
- 10.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/shallow to moderate fog is likely in the morning. The wind speed will increase thereafter becoming less than 12 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 08 kmph from northwest direction during evening and night. Smog/mist is likely in the evening/night.
- 11.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/shallow to moderate fog is likely in the morning. The wind speed will gradually increase becoming 10-12 kmph from northwest direction during afternoon. It will decrease thereafter becoming less than 08 kmph from northwest direction during evening and night. Smog/mist is likely in the evening/night.
- 12.12.2024:** Mainly clear sky. The predominant surface wind is likely to be from northwest direction with wind speed less than 08 kmph during morning hours. Smog/mist in the morning. The wind speed will increase thereafter becoming 10-12 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 08 kmph from northwest direction during evening and night. Smog/mist is likely in the evening/night.

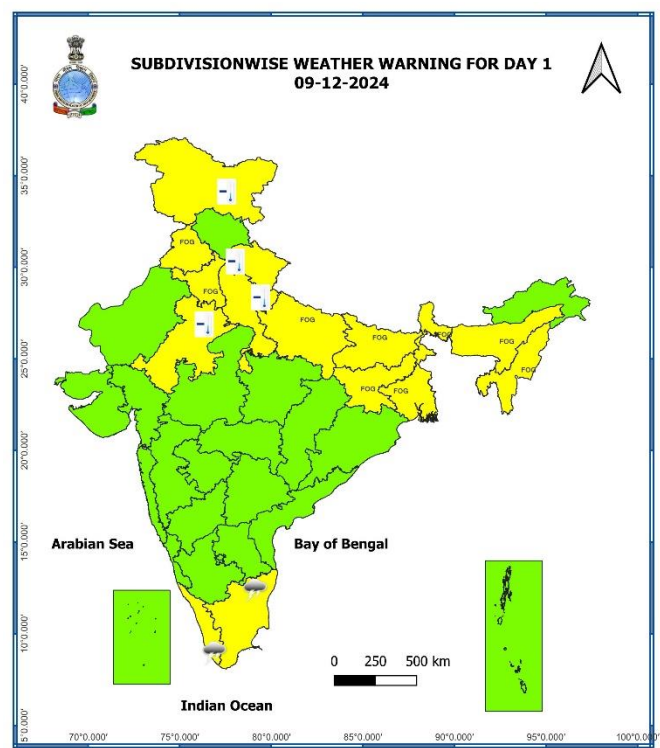
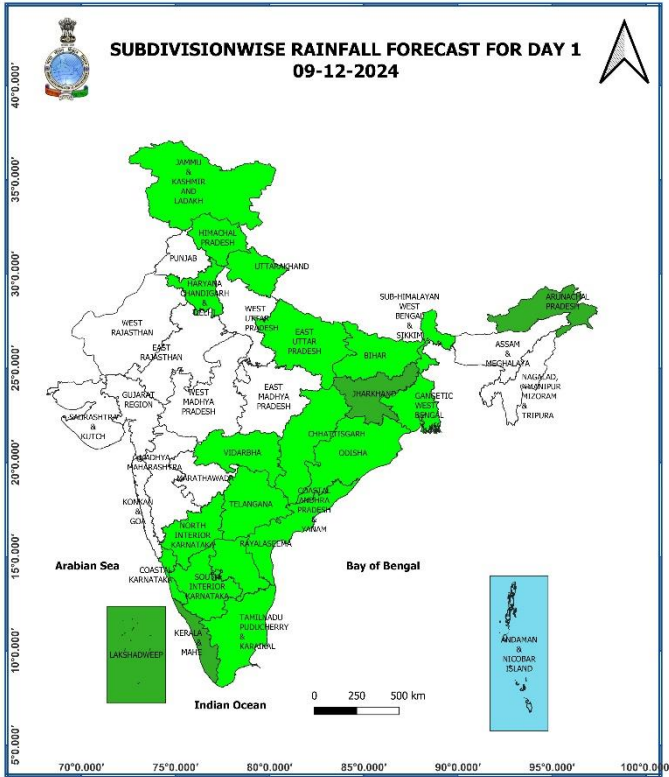
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most** places over Andaman & Nicobar Islands; **at many** places over Lakshadweep; **at a few** places over Jharkhand, Himachal Pradesh; **at isolated** places over Arunachal Pradesh, Odisha, Bihar, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Vidarbha, Chhattisgarh, Karnataka, Coastal Andhra Pradesh & Yanam, Telangana, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Coastal Karnataka:** Puttur Hms (dist Dakshina Kannada) 4.
- ❖ **Fog Condition Observed** (at 0830 IST of today): **Shallow to moderate Fog** (200-500 meter) reported in isolated pocket of East Uttar Pradesh, Tripura, Bihar and West Bengal.
- ❖ **Visibility reported** (at 0830 IST of today) ($\leq 500\text{m}$): **Uttar Pradesh:** Kushinagar Airport 300, **Tripura:** Agartala Airport 400, **Bihar:** Purnea 500, **West Bengal:** Darjeeling 500.
- ❖ **Minimum Temperatures Departures (as on 09-12-2024):** Minimum temperatures are **markedly above normal (5.1°C or more)** at many places over Telangana; at isolated places over Chhattisgarh and North Interior Karnataka; **appreciably above normal (3.1°C to 5°C)** at a few places over Coastal Andhra Pradesh & Yanam; at isolated places over Jharkhand, East Madhya Pradesh; **above normal (1°C to 3°C)** at a few places over West Bengal & Sikkim, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal; at isolated places over Lakshadweep, Haryana and Chandigarh. These are **appreciably below normal (-3.1°C to -5°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh; **below normal (-1°C to -3°C)** at isolated places over Delhi, East Rajasthan, East Uttar Pradesh and near normal over rest parts of the country. Today, **the lowest minimum temperature** of 5.2°C is reported at Amritsar (**Punjab**) and Udaipur Dabok (**East Rajasthan**) over the plains of the country. (Fig.4)
- ❖ **Maximum Temperature Departures (as on 08-12-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Rayalaseema, South Interior Karnataka; **above normal (1.6°C to 3.0°C)** at many places over Tamil Nadu, Puducherry & Karaikal; at isolated places over Madhya Maharashtra, Telangana, Coastal Andhra Pradesh & Yanam, North Interior Karnataka. These were **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand; **below normal (-1.6°C to -3.0°C)** at isolated places Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Odisha, Konkan & Goa and near normal over rest parts of the country. Yesterday, **the highest maximum temperature** of 34.9°C was reported at **Anantapur (Rayalaseema)** over the country. (Fig. 2)

Meteorological Analysis (Based on 0830 hours IST)

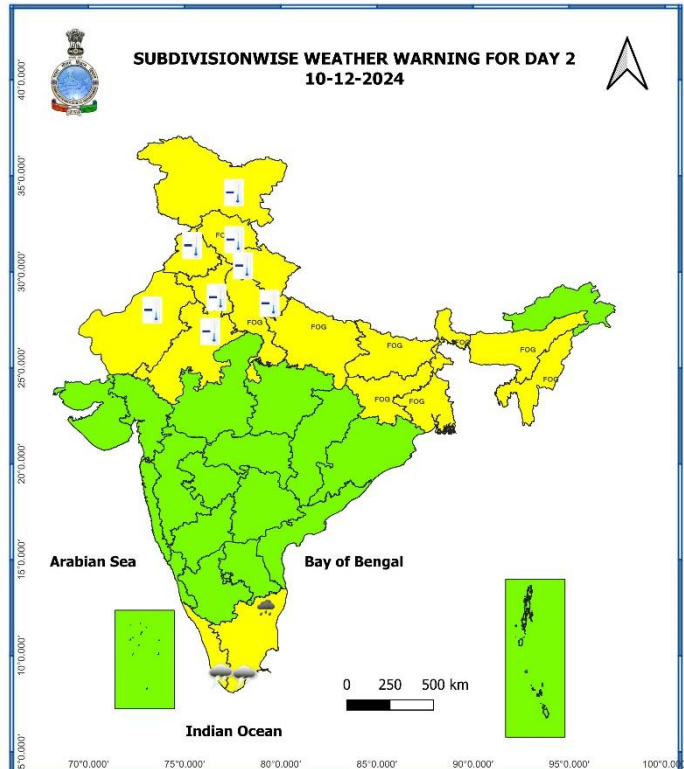
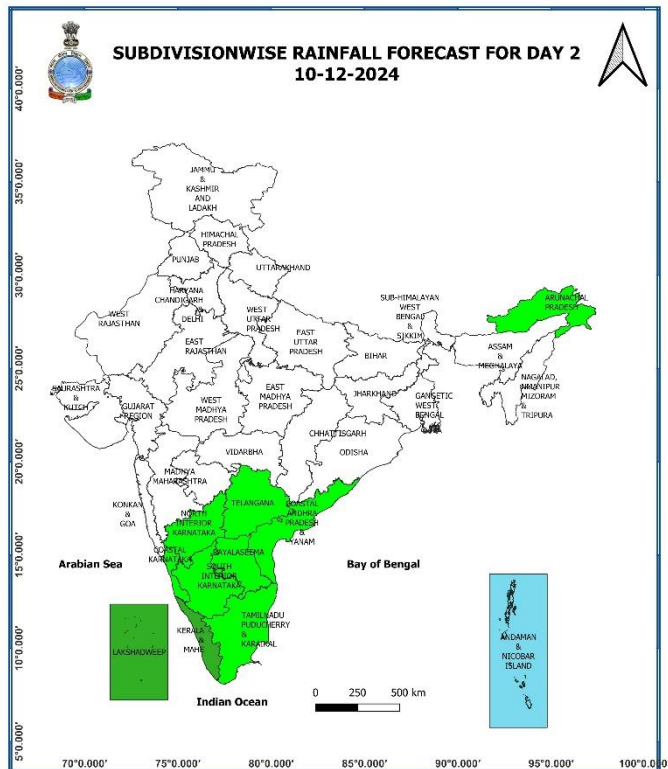
- ❖ The **low pressure area** over southeast Bay of Bengal & adjoining east Equatorial Indian Ocean with the associated **cyclonic circulation** extending upto 5.8 Km above mean sea level persists. It is likely to move west-northwestwards & become **more marked** during next 24 hours. It is very likely to continue to move west-northwestwards thereafter and reach over southwest Bay of Bengal off Sri-Lanka-Tamil Nadu coasts around 11th December.
- ❖ The **Western Disturbance** as a cyclonic circulation over central Pakistan & neighbourhood now lies over Northwest Uttar Pradesh between 1.5 & 3.1 km above mean sea level.
- ❖ The **cyclonic circulation** over South Assam & neighbourhood at 1.5 km above mean sea level persists.
- ❖ A **cyclonic circulation** lies over Bangladesh at 0.9 km above mean sea level.
- ❖ **Subtropical westerly Jet Stream with core winds** of the order upto 150 knots at 12.6 km above mean sea level continue to prevail over Northwest India.
- ❖ The **induced cyclonic circulation** over central Pakistan & adjoining Rajasthan has become less marked.
- ❖ The **cyclonic circulation** over Northeast Assam & neighbourhood at 3.1 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 16th December, 2024)



09 December (Day 1):

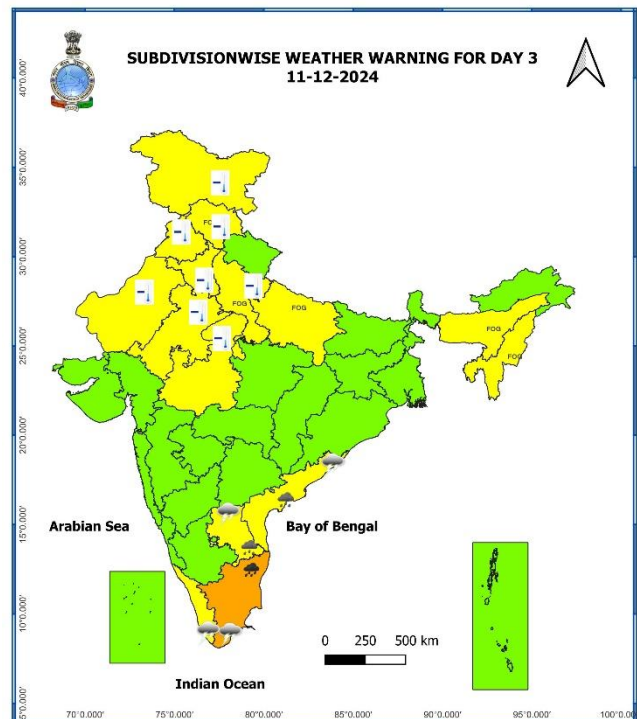
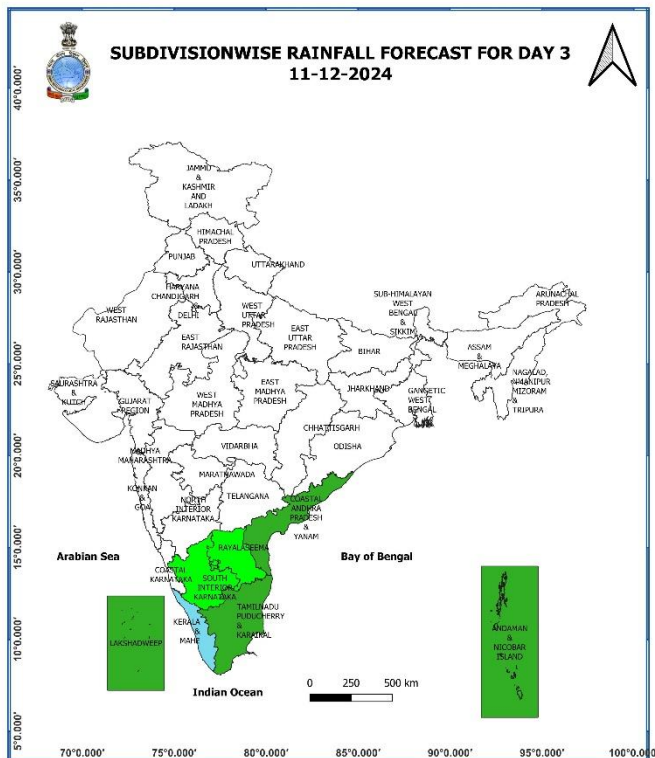
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe.
- ❖ **Dense fog** very likely in isolated pockets of Punjab, Haryana-Chandigarh, East Uttar Pradesh, Bihar, West Bengal & Sikkim, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold Wave Conditions** very likely in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, East Rajasthan, West Uttar Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over Southeast and adjoining parts of Southwest Bay of Bengal. **Squally winds with speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevailing over Somalia Coast and adjoining sea area. Fishermen are advised not to venture into these areas.



10 December (Day 2):

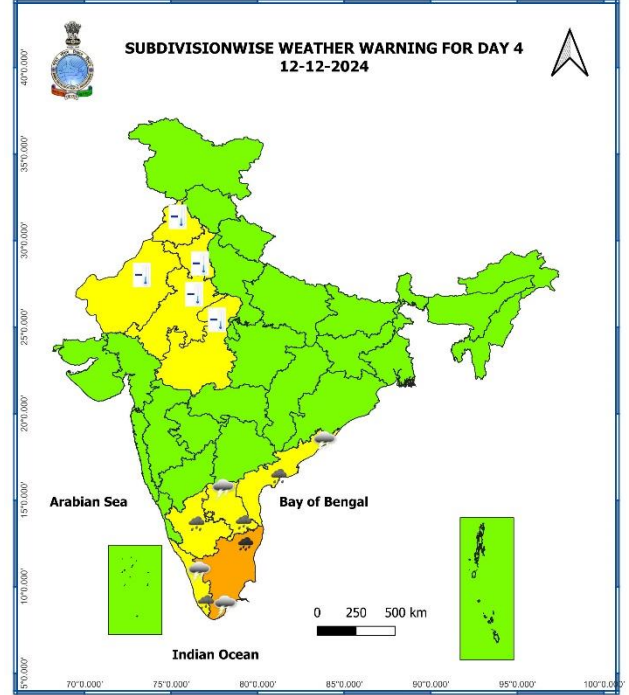
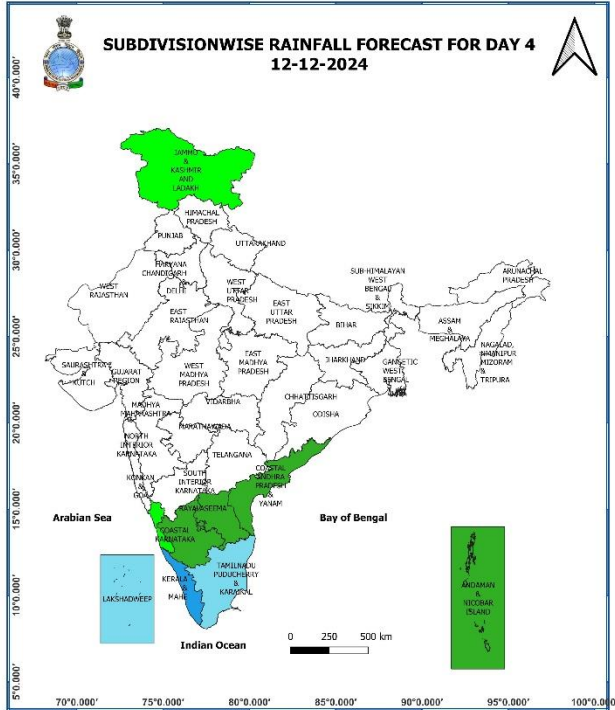
- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe.
- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh, Uttar Pradesh, Bihar, West Bengal & Sikkim, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold Wave Conditions** very likely in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Rajasthan, West Uttar Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over most parts of southwest Bay of Bengal and adjoining parts of southeast & westcentral Bay of Bengal. Fishermen are advised not to venture into these areas.

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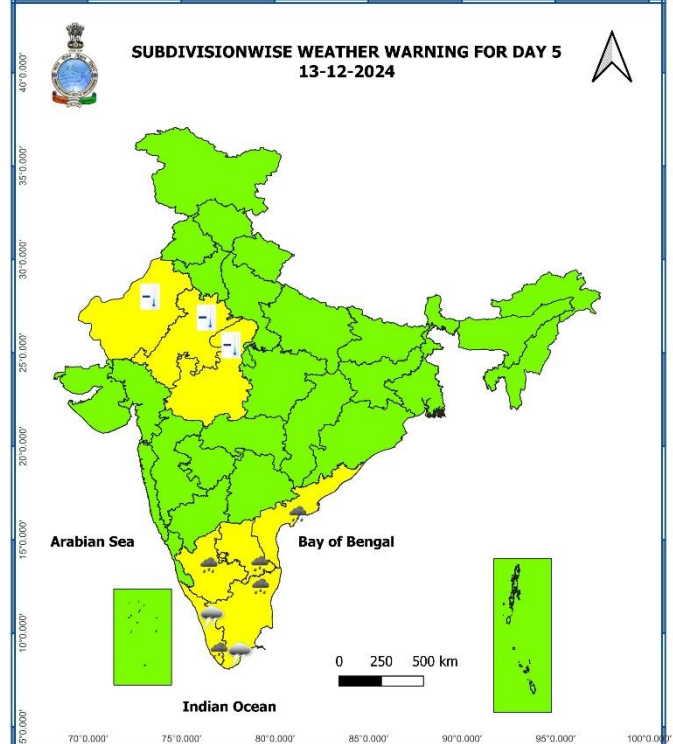
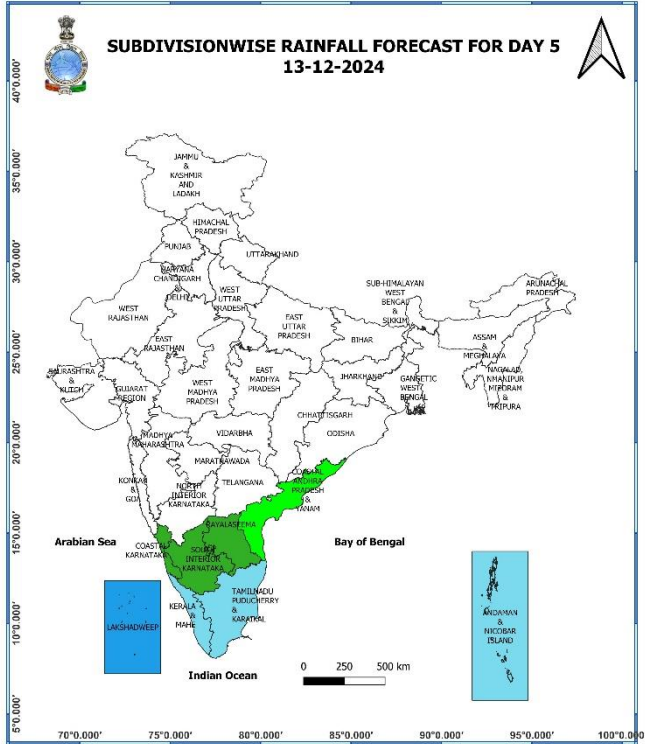
11 December (Day 3):

- ❖ **Heavy to very Heavy rainfall (≥ 12 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal; **Heavy rainfall (≥ 7 cm)** likely at isolated places over Rayalaseema, Coastal Andhra Pradesh & Yanam.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema.
- ❖ **Dense fog** likely in isolated pockets of Himachal Pradesh, Uttar Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura in night/morning hours.
- ❖ **Cold Wave Conditions** likely in isolated pockets of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Rajasthan, West Madhya Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over most parts of southwest Bay of Bengal and adjoining parts of southeast Bay of Bengal, off North Tamil Nadu Coasts. Fishermen are advised not to venture into these areas.



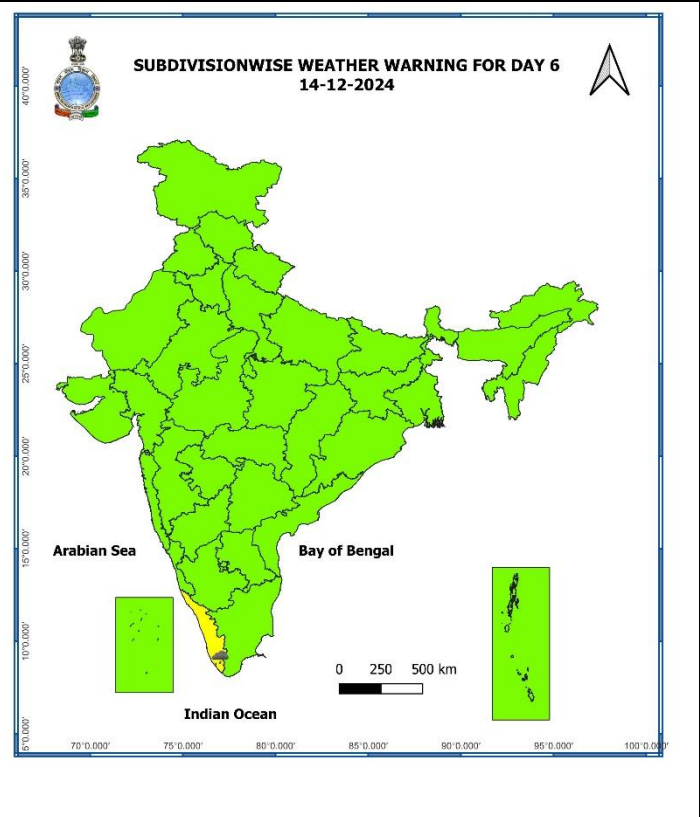
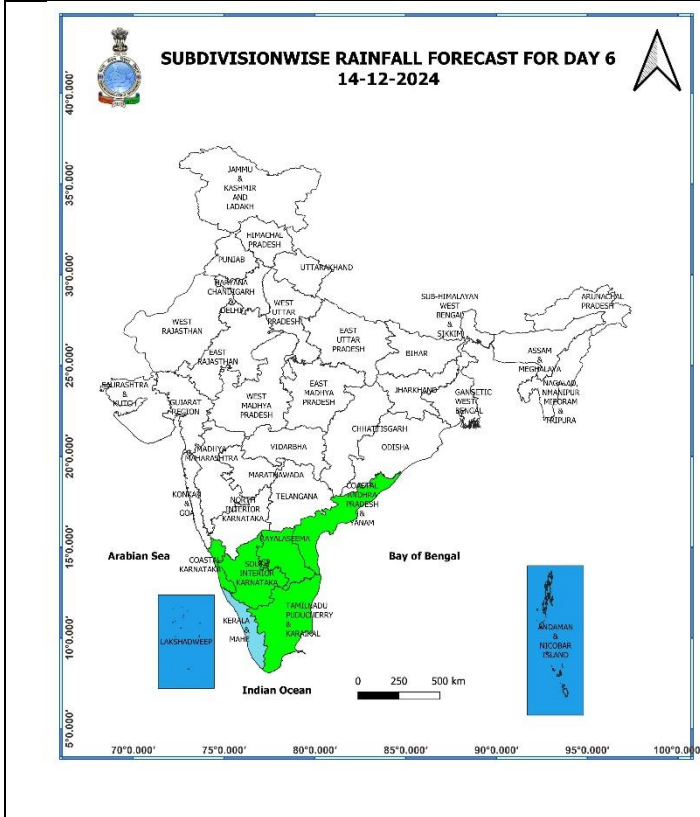
12 December (Day 4):

- ❖ **Heavy to very Heavy rainfall (≥ 12 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal; **Heavy rainfall (≥ 7 cm)** likely at isolated places over Kerala & Mahe, South Interior Karnataka, Rayalaseema and Coastal Andhra Pradesh & Yanam.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema.
- ❖ **Cold Wave Conditions** likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi, Rajasthan, West Madhya Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over Kerala coasts, Comorin area, Gulf of Mannar, many parts of southwest Bay of Bengal, along and off Sri Lanka and Tamil Nadu coasts. Fishermen are advised not to venture into these areas.



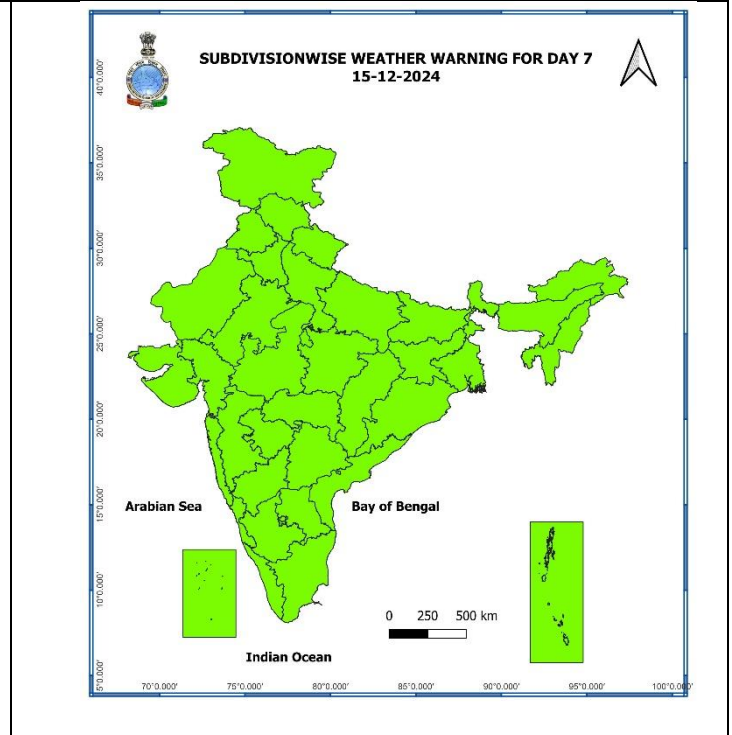
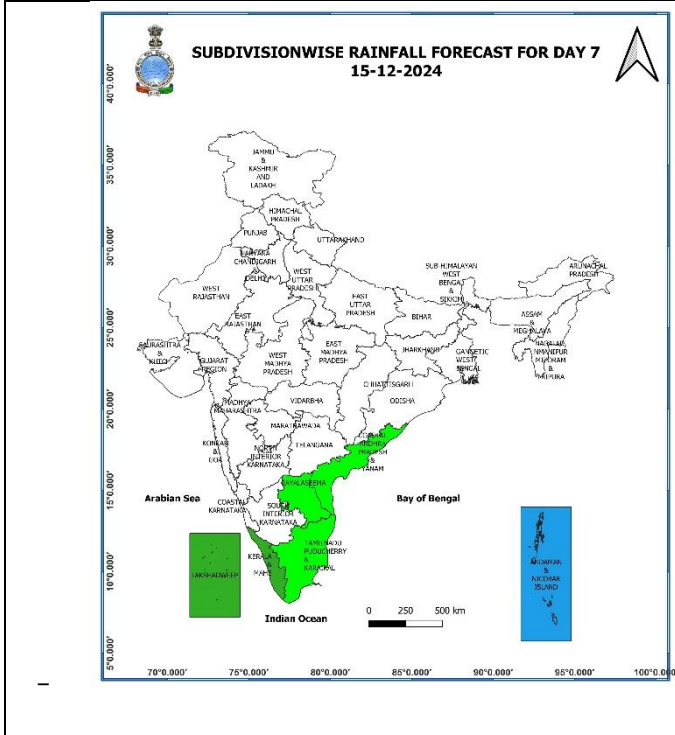
13 December (Day 5):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, South Interior Karnataka.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe.
- ❖ **Cold Wave Conditions** likely in isolated pockets of Rajasthan, West Madhya Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over Kerala coasts, Lakshadweep, Comorin area and Gulf of Mannar. Fishermen are advised not to venture into these areas.



14 December (Day 6):

- ❖ Heavy rainfall (≥ 7 cm) likely at isolated places over Kerala & Mahe.



15 December (Day 7):

❖ **No Warning.**

Weather Outlook for subsequent 3 days (During 16th December – 18th December, 2024)

- ❖ Isolated to Scattered to light to moderate rainfall likely over some parts of south peninsular India and light rainfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad.
- ❖ 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.

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Impact due to heavy rainfall:

- ✓ **Isolated heavy to very heavy rainfall** likely over Tamil Nadu, Puducherry & Karaikal on 11th & 12th December.

Impact Expected:

- ✓ Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- ✓ Occasional reduction in visibility due to heavy rainfall.
- ✓ Disruption of traffic in major cities and roadways due to water logging in roads leading to increased travel time. ✓ Minor damage to kutcha roads.
- ✓ Possibilities of damage to vulnerable structure.
- ✓ Localized Landslides/Mudslides/landslips/mud slips/land sinks/mud sinks.
- ✓ Damage to horticulture and standing crops in some areas due to inundation and wind.
- ✓ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC).

Action Suggested:

- ✓ Judicious regulation of surface transports including railways and roadways.
- ✓ Check for traffic congestion on your route before leaving for your destination.
- ✓ Follow any traffic advisories that are issued in this regard.
- ✓ Avoid going to areas that face the water logging problems often.
- ✓ Avoid staying in vulnerable structure.

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 woolen 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.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

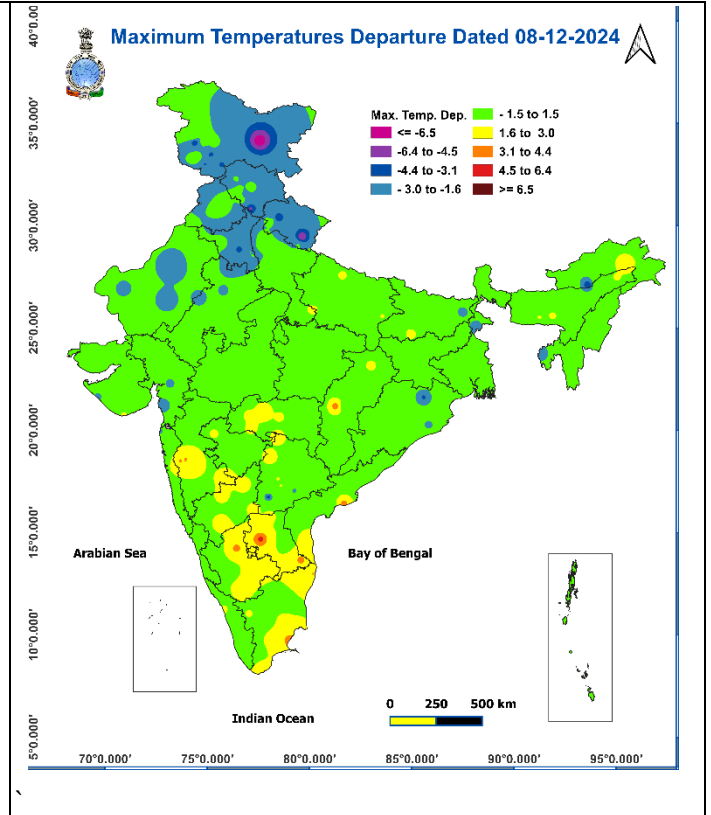
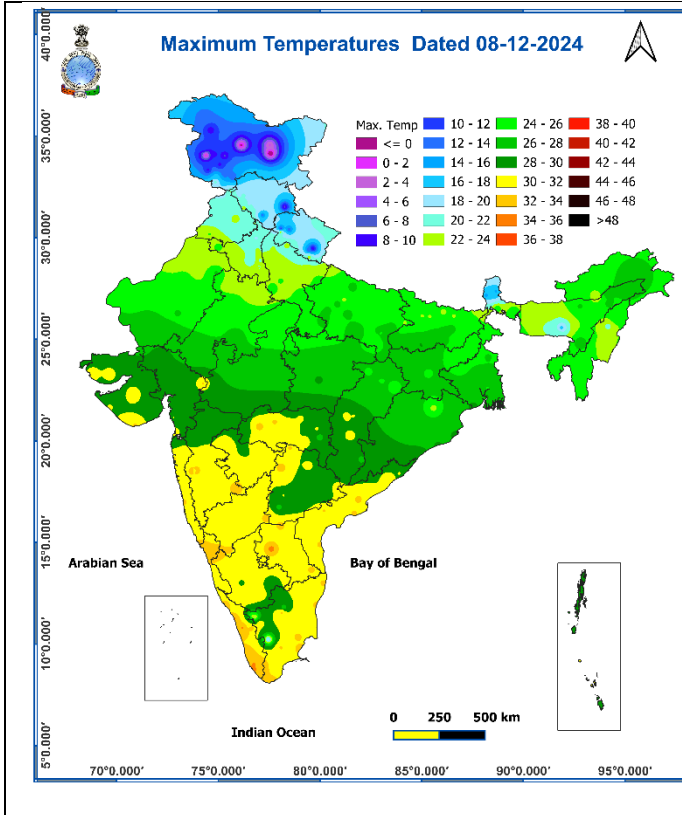


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

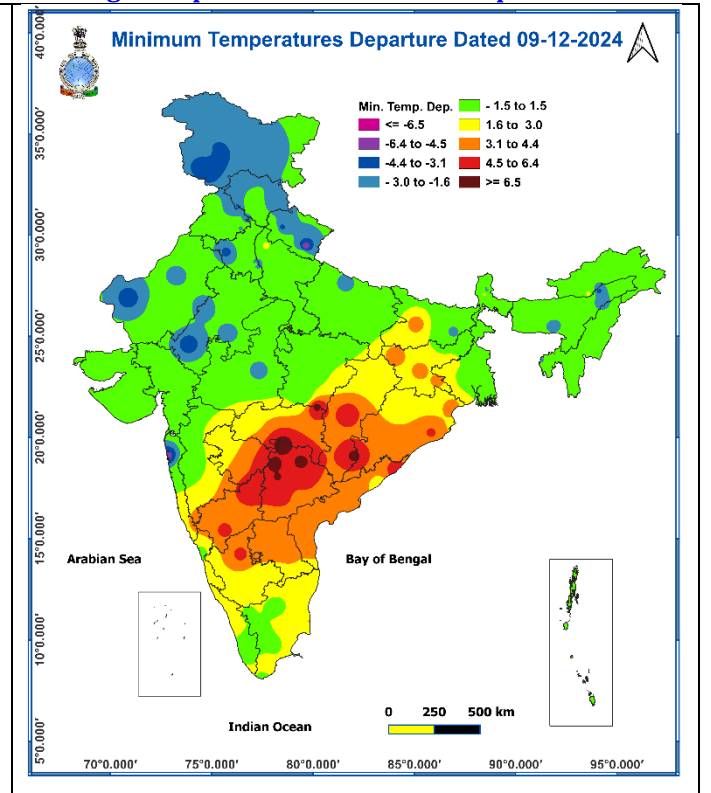
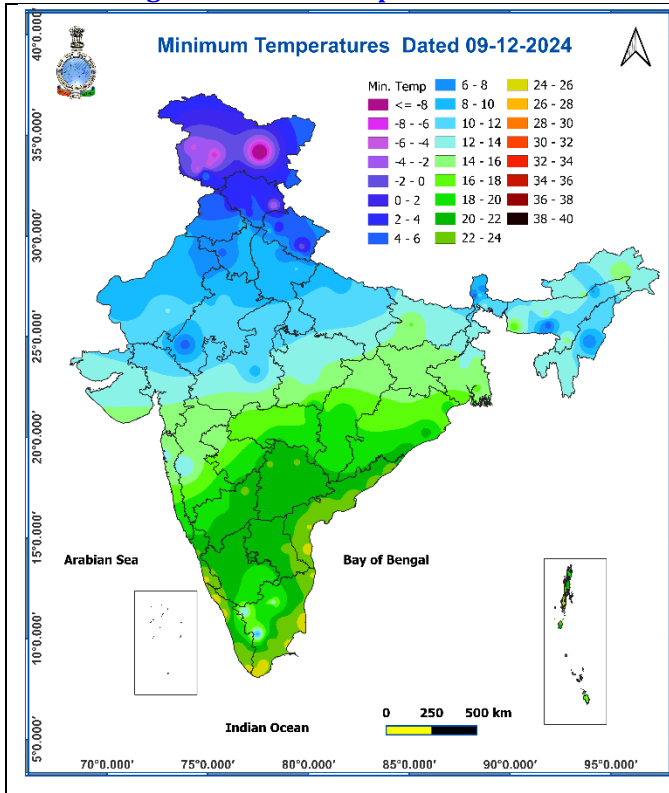
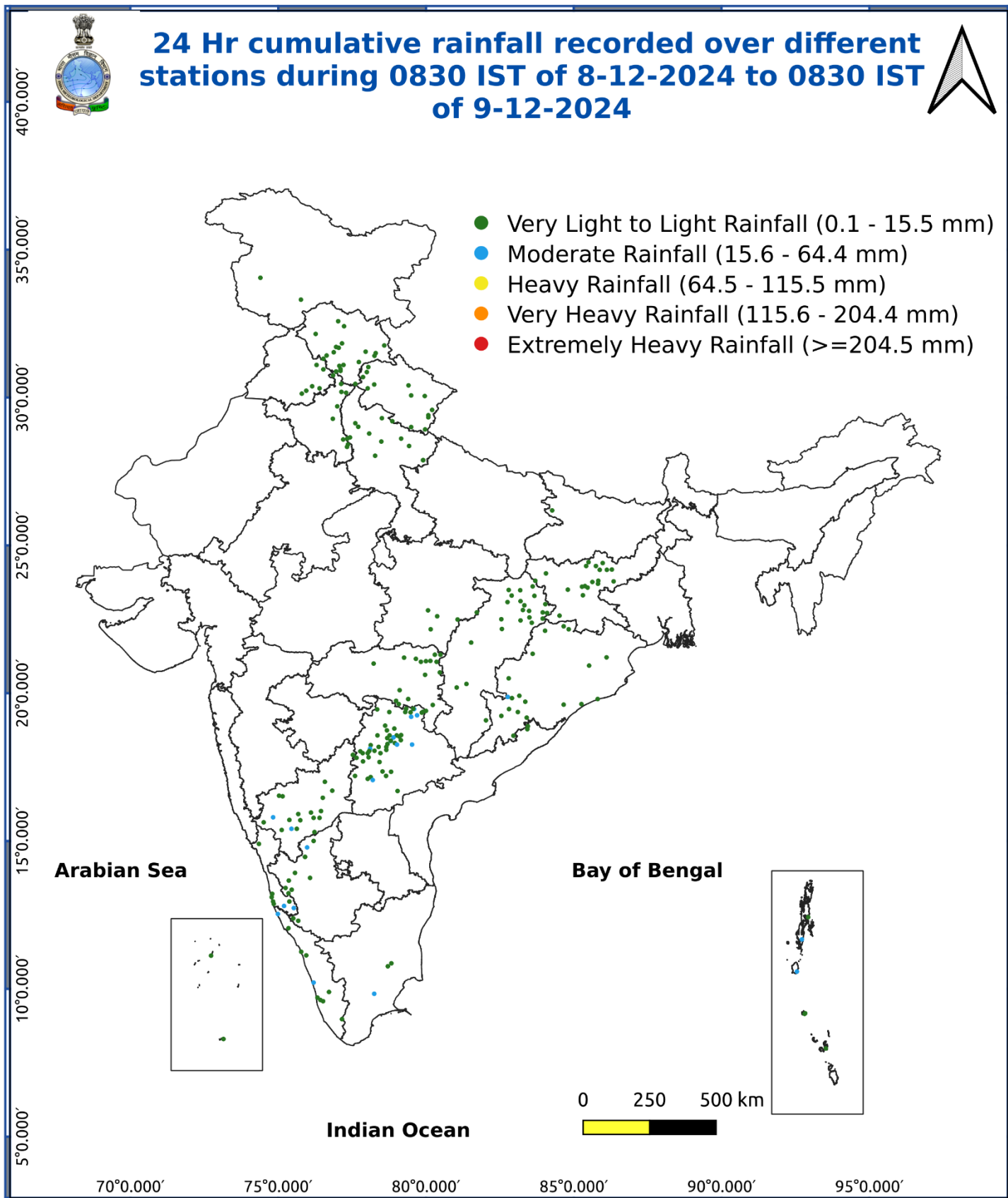


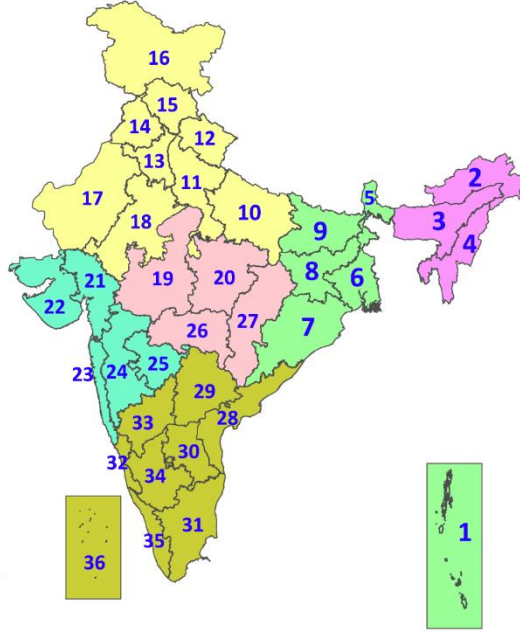
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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)



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>