

Tuesday, November 12, 2024
Time of Issue: 1330 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- ❖ Under the influence of yesterday's cyclonic circulation over southwest Bay of Bengal, a low pressure area formed over the same region yesterday, the 11 Nov 2024. It moved nearly westwards and now lies over southwest & adjoining westcentral Bay of Bengal off north Tamil Nadu & adjoining south Andhra Pradesh coasts.
- ❖ A cyclonic circulation lies over southeast Arabian sea and adjoining Kerala coast in lower tropospheric levels.
- ❖ A fresh Western Disturbance is likely to affect the Western Himalayan region from 14th November, 2024.

Forecast & Warnings (upto 7 days) (Annexure II & III):

- ✓ Light to moderate rainfall at a few places accompanied with isolated thunderstorm and lightning very likely over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam and Rayalaseema during 12th-16th November.
- ✓ **Isolated very heavy rainfall** very likely over Rayalaseema, south Coastal Andhra Pradesh & Yanam and north Tamil Nadu on 12th November, 2024.
- ✓ **Isolated heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal during 13th - 16th; Kerala & Mahe during 13th-17th; Coastal Andhra Pradesh & Yanam and Rayalaseema on 13th & 14th; South Interior Karnataka during 13th - 15th November, 2024.
- ✓ **Dense to very dense fog** conditions very likely to prevail in late night/early morning hours in isolated pockets of Punjab till 14th morning hours and dense fog for subsequent 2 days; Dense fog conditions very likely to prevail in late night/early morning hours in isolated pockets over Himachal Pradesh till 17th morning; Haryana & Uttar Pradesh till 15th November, 2024.

ii. Temperature conditions and Forecast:

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

No significant change in minimum temperature observed over most parts of the country during past 24 hours. Minimum temperatures continue to be above normal by 5-7°C at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, north Haryana, Punjab, northwest Uttar Pradesh & parts of northwest Rajasthan; above normal by 3-5°C over remaining parts of northwest India; most parts of Bihar, Jharkhand, Gangetic West Bengal and in isolated parts of north Odisha, Chhattisgarh and adjoining central India and near normal over remaining parts of the country. Today, **the lowest minimum temperature of 12.4°C** is reported at Ajmer (**Rajasthan**) over the plains of the country.

Forecast of temperature:

- ❖ No significant change in minimum temperatures very likely over northwest and central India during next 5 days.
- ❖ No significant change in minimum temperatures very likely over East India during 24 hours and gradual fall by 3-4°C thereafter for subsequent 4 days.

iii. Weather forecast over Delhi/NCR during 12th Nov. to 15th Nov. 2024

Past Weather:

There has been slight rise in maximum and minimum temperature over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 30-32°C and 14 -19°C respectively. The maximum temperature was above normal by 2 - 3°C over the region and minimum temperature was above normal by 4 -5°C over most places in the region. Mainly clear sky condition with predominant surface wind from variable directions with wind speed reaching 04-08 kmph prevailed during past 24hr. The mainly clear sky condition with wind speed less than 10 kmph from southwest/northwest direction prevailed over the region in the forenoon today.

Weather Forecast:

12.11.2024: Mainly clear sky. The predominant surface wind is likely to be southwest with wind speed upto 08 - 10 kmph till evening. It would decrease thereafter becoming less than 08 kmph from northwest direction during night. Smog/ mist is likely in the evening/night.

13.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/mist/shallow fog in the morning. The wind speed will increase thereafter becoming less than 10 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.

14.11.2024: Mainly clear sky. The predominant surface wind is likely to be variable with speed less than 06 kmph during morning hours. Smog/mist/ shallow fog in the morning. The wind speed will gradually increase becoming 08- 10 kmph from north/northwest direction during afternoon. It will decrease thereafter becoming less than 06 kmph from northwest direction during evening and night. Smog/ mist is likely in the evening/night.

15.11.2024: 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/ shallow fog in the morning. The wind speed will increase thereafter becoming 10 - 15 kmph from northwest direction during afternoon. It will gradually decrease becoming less than 10 kmph from northwest directions during evening and night. Smog/ mist is likely in the evening/night.

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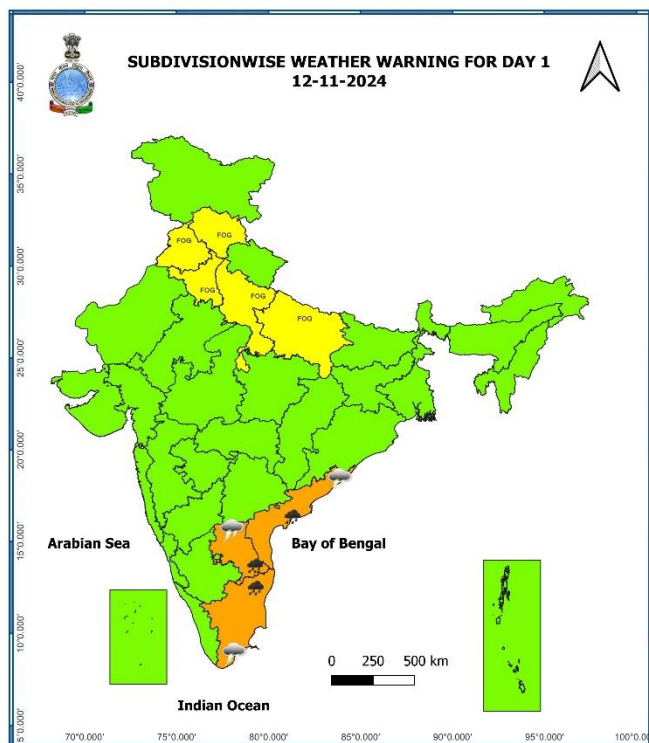
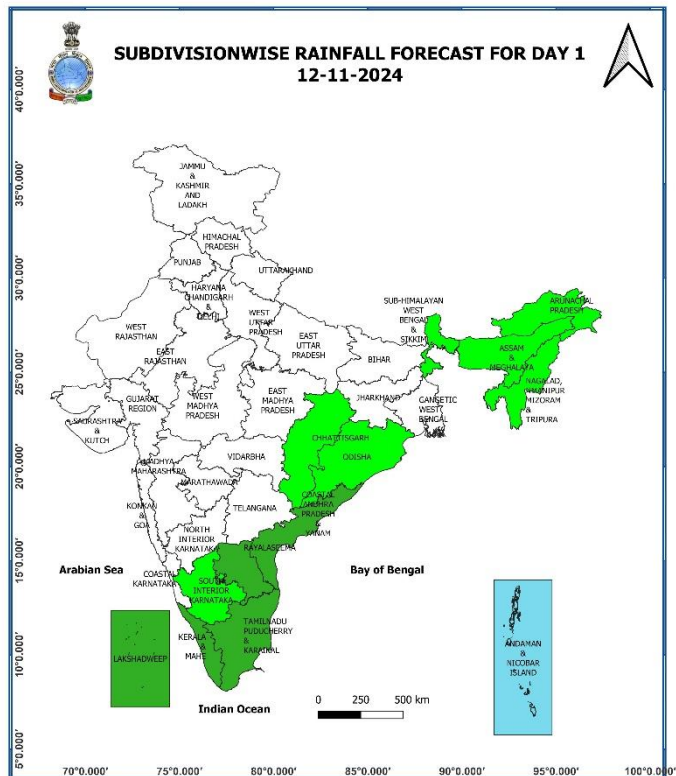
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at isolated places** over Odisha, Arunachal Pradesh, Assam & Meghalaya, Tamil Nadu, Puducherry & Karaikal.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Tamil Nadu, Puducherry & Karaikal:** Zone 14 Perungudi (dist Chennai) 8;
- ❖ **Heavy rainfall** occurred at isolated places over Tamil Nadu.
- ❖ **Fog Observed** (from 0830 hours IST of yesterday to 0830 hours IST of today): **Dense to very Dense fog** reported in isolated pockets of Haryana and Uttar Pradesh; **Dense fog** reported in isolated pockets of Himachal Pradesh, Punjab and West Rajasthan; Following stations reported visibility (≤ 50 metres): **Haryana:** Sirsa IAF-0; **Uttar Pradesh:** Bareilly IAF-0, Gorakhpur IAF-0, Bareilly-200, Varanasi-200; **Himachal Pradesh:** Sundernagar-50, Mandi-50, Bilaspur-100; **Punjab:** Amritsar, Halwara IAF-200; **West Rajasthan:** Suratgarh-200
- ❖ **Minimum Temperature Departures (as on 12-11-2024):** Minimum temperatures are **markedly above normal (5.1°C or more)** at isolated places over Punjab and Bihar; **appreciably above normal (3.1°C to 5.0°C)** at many places over Haryana-Chandigarh-Delhi and Uttar Pradesh; at a few places over West Rajasthan; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand and East Rajasthan; **above normal (1.6°C to 3.0°C)** at many places over Himachal Pradesh and Jharkhand; at a few places over Madhya Pradesh, Chhattisgarh, West Bengal & Sikkim and Gujarat Region; at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura. Today, **the lowest minimum temperature of 12.4°C** is reported at **Ajmer (Rajasthan)** over the plains of the country. (Fig.4)
- ❖ **Maximum Temperature Departures (as on 11-11-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Bihar, Tamil Nadu, Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at most places over West Rajasthan; at many places over East Rajasthan, Kerala & Mahe; at a few places over Uttarakhand, Arunachal Pradesh, Saurashtra & Kutch, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura; at isolated places over Haryana-Chandigarh-Delhi, Uttar Pradesh, Madhya Pradesh, Gujarat state, Coastal Andhra Pradesh & Yanam, Odisha, Rayalaseema, Telangana. Yesterday, **the highest maximum temperature of 37.8°C** was reported at **Rajkot (Saurashtra & Kutch)** over the country. (Fig. 2)

Meteorological Analysis (Based on 0830 hours IST)

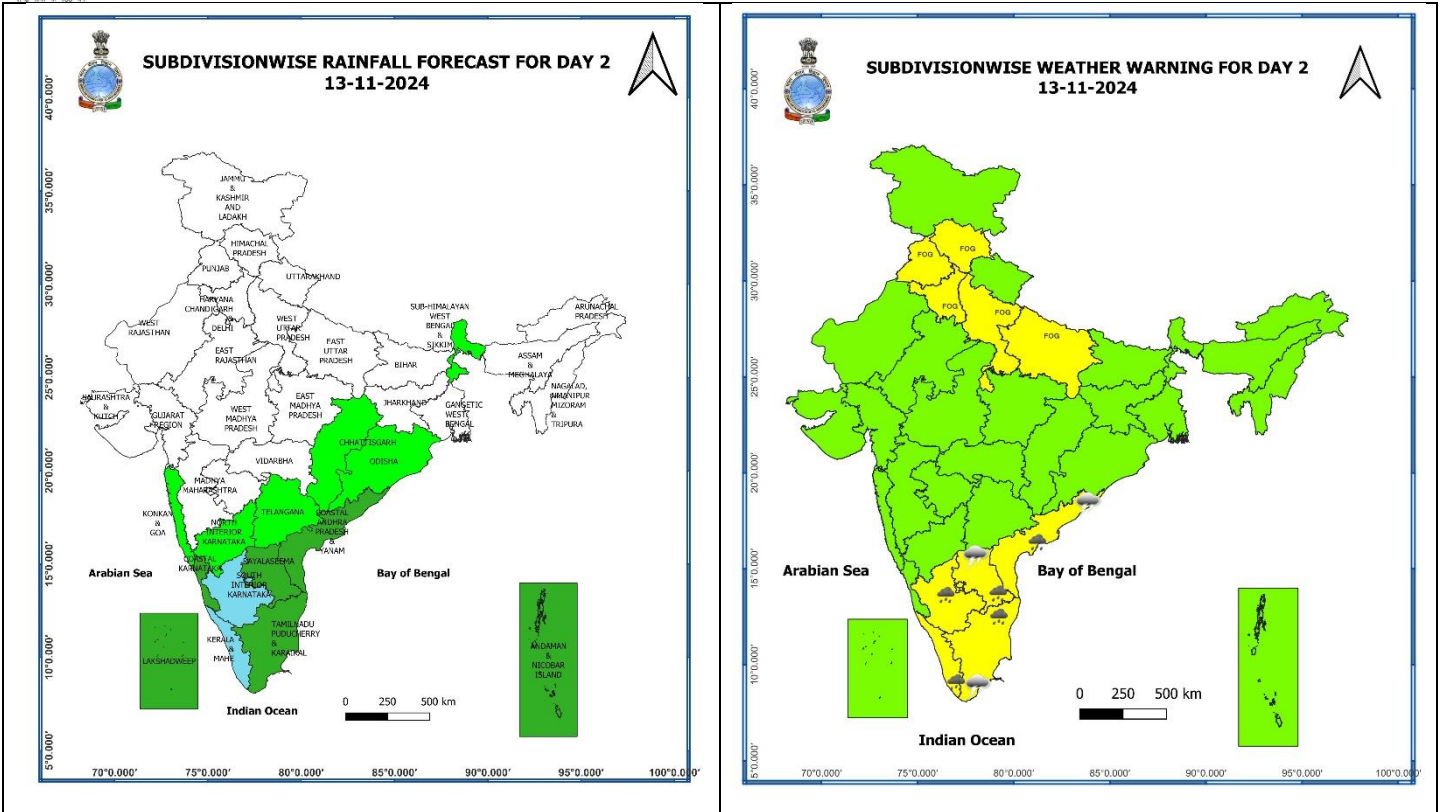
- ❖ The **low pressure area** over southwest & adjoining westcentral Bay of Bengal off north Tamil Nadu & adjoining south Andhra Pradesh coasts persists. The associated cyclonic circulation now extends upto 4.5 km above mean sea level tilting southwestwards with height.
- ❖ A **cyclonic circulation** lies over southeast Arabian sea and adjoining Kerala coast & extends upto 0.9 km above mean sea level.
- ❖ A fresh Western Disturbance is likely to affect Western Himalayan Region from 14th November, 2024.
- ❖ The **trough** from southwest Bay of Bengal to Westcentral Bay of Bengal off North Coastal Andhra Pradesh has become less marked.
- ❖ The **Western Disturbance** as a trough in middle tropospheric westerlies has moved away eastwards.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 19th November, 2024)



12 November (Day 1):

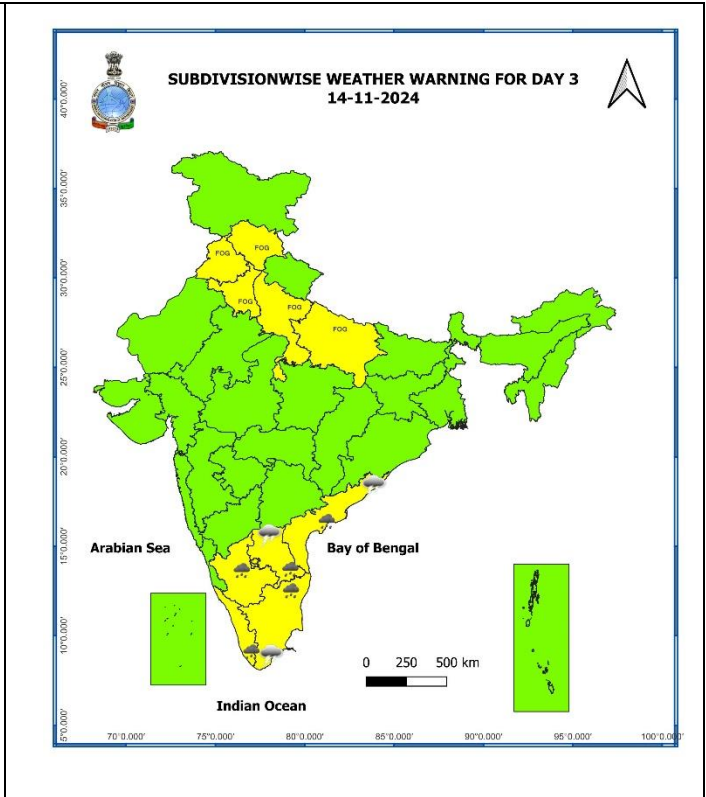
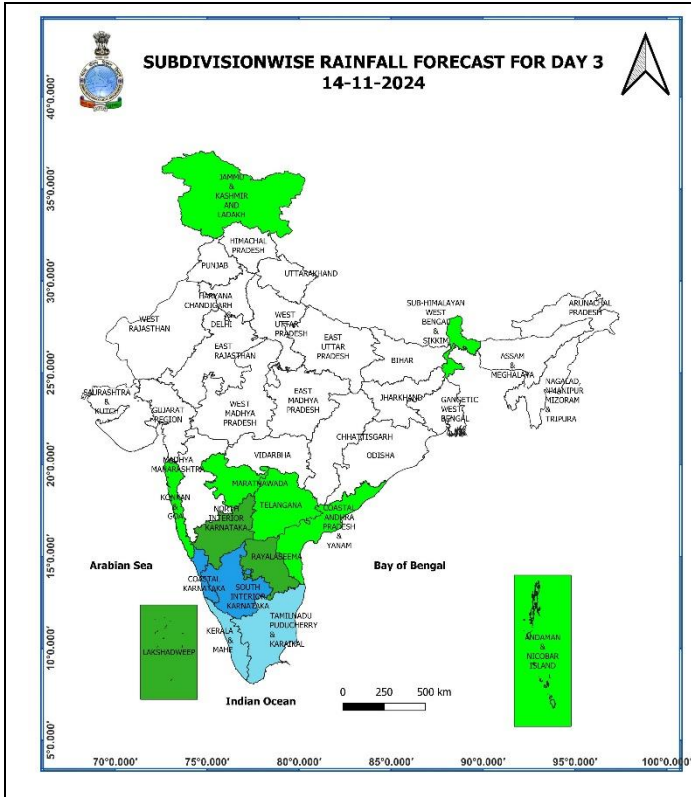
- ❖ **Heavy to very rainfall ($\geq 12\text{cm}$)** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema.
- ❖ **Dense to very dense fog conditions** very likely in isolated pockets of Punjab and **dense fog conditions** in isolated pockets of Himachal Pradesh, Haryana-Chandigarh-Delhi, Uttar Pradesh in the morning hours.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam and Rayalaseema.
- ❖ **Squally Weather With Wind Speed 35-45 Kmph Gusting To 55 Kmph** Over Many Parts Of Southwest Bay Of Bengal And Adjoining Areas Of Westcentral Bay Of Bengal, Along And Off Sri Lanka Coast, Along And Off Tamil Nadu, South Andhra Pradesh Coasts, Gulf Of Mannar And Adjoining Comorin Area.



13 November (Day 2):

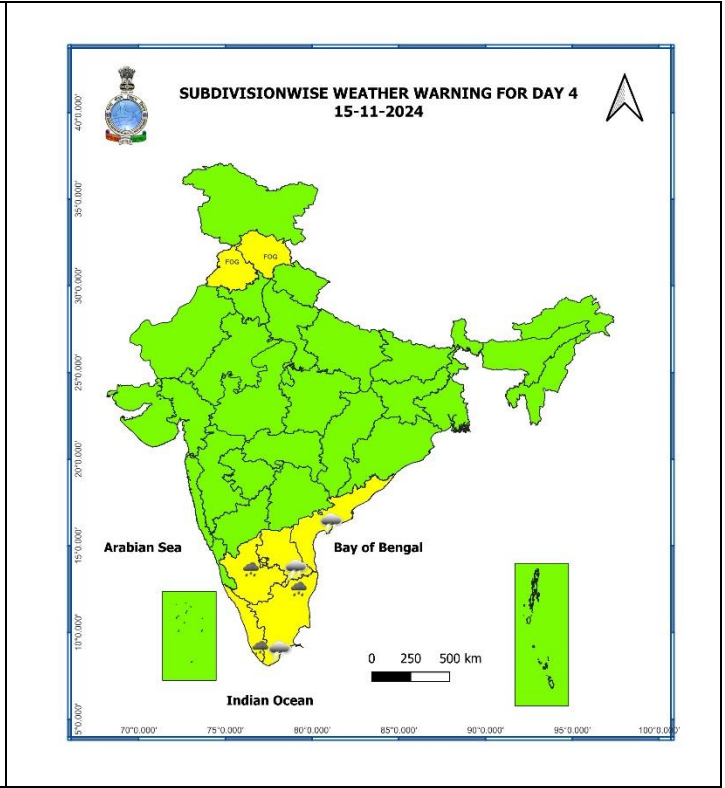
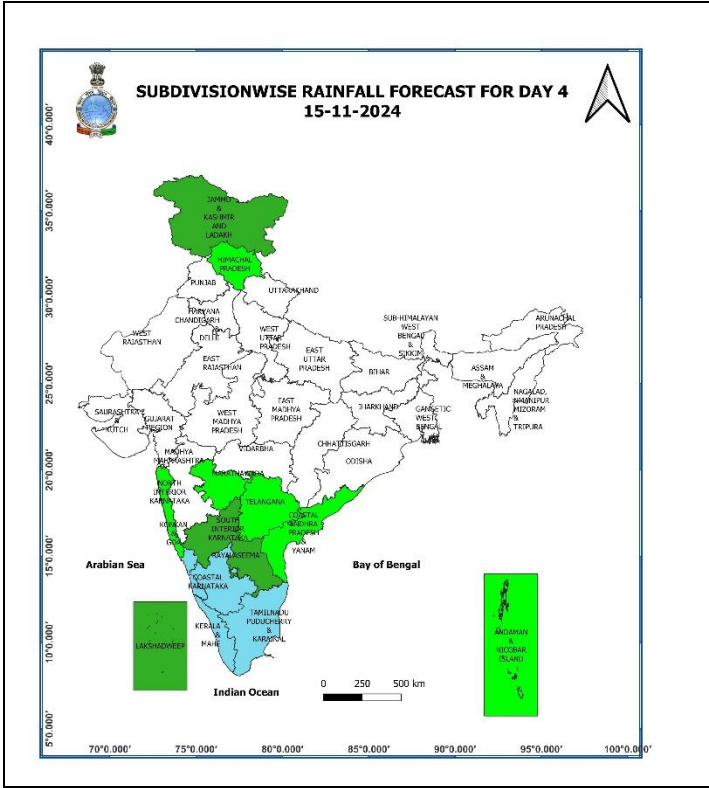
- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Rayalaseema and South Interior Karnataka.
- ❖ **Dense to very dense fog conditions** very likely in isolated pockets of Punjab and **dense fog conditions** in isolated pockets of Himachal Pradesh, Haryana-Chandigarh-Delhi, Uttar Pradesh in the morning hours.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, Coastal Karnataka and South Interior Karnataka.
- ❖ **Squally Weather With Wind Speed 35-45 Kmph Gusting To 55 Kmph** Over Parts Of Southwest Bay Of Bengal, Along And Off Sri Lanka Coast, Along And Off Tamil Nadu, South Andhra Pradesh Coasts, Gulf Of Mannar And adjoining Comorin Area.

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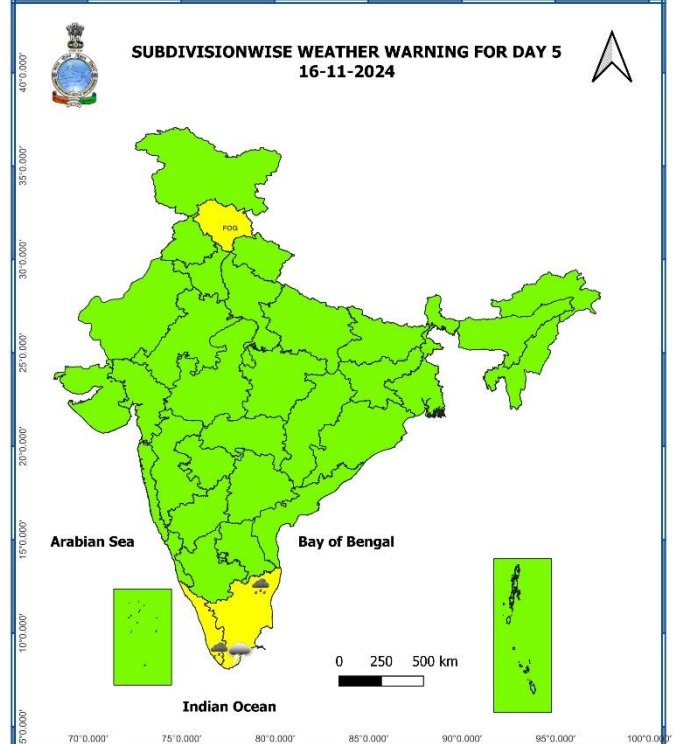
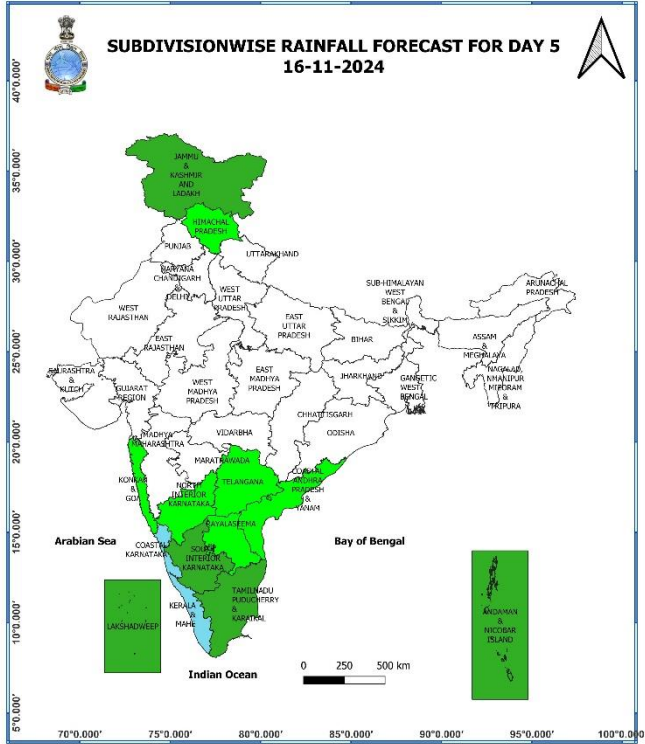
14 November (Day 3):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, South Interior Karnataka, Rayalaseema, Coastal Andhra Pradesh & Yanam and Kerala & Mahe.
- ❖ **Dense fog** conditions very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana- Chandigarh-Delhi, Uttar Pradesh,
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Konkan & Goa, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema and Karnataka.



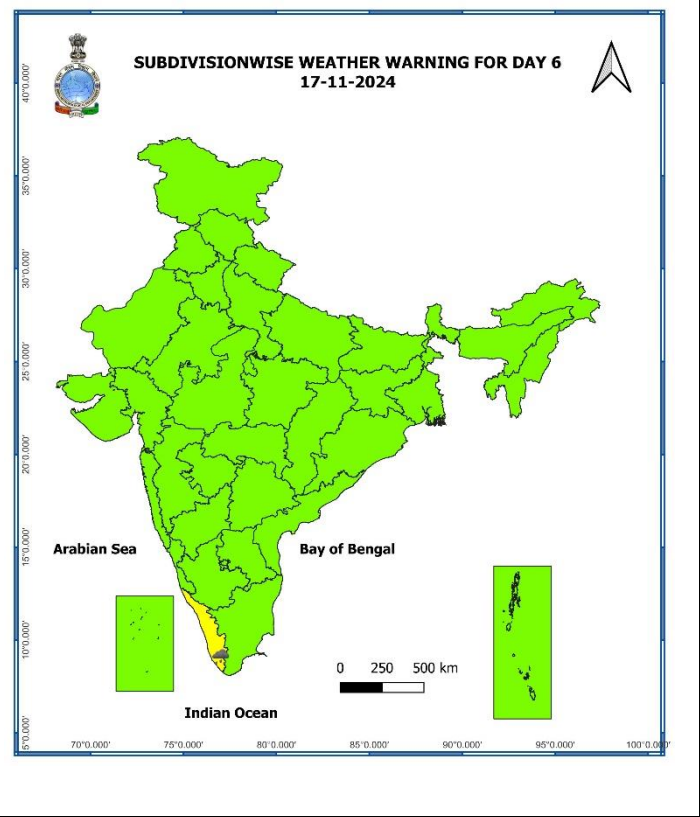
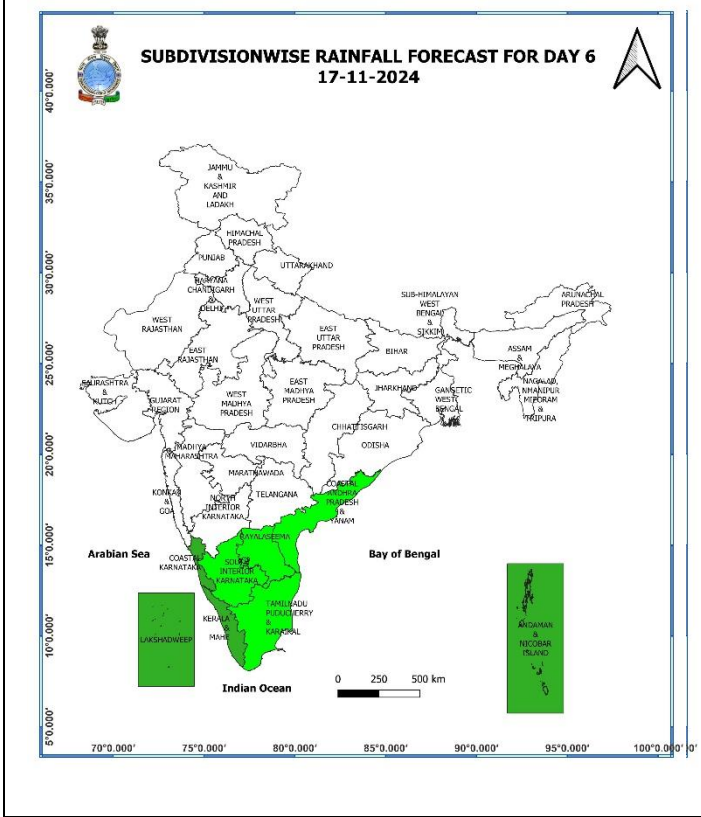
15 November (Day 4):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, South Interior Karnataka and Kerala & Mahe.
- ❖ **Dense fog** conditions very likely in isolated pockets of Himachal Pradesh, Punjab.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Konkan & Goa, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema and South Interior Karnataka.



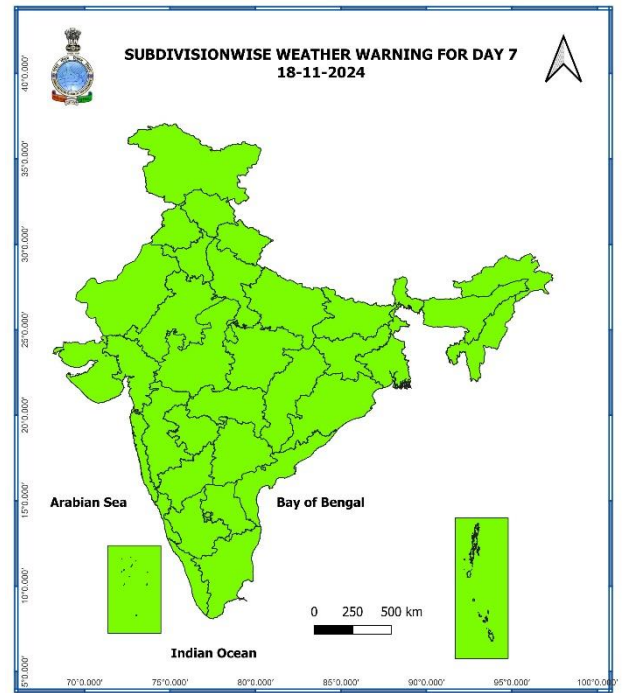
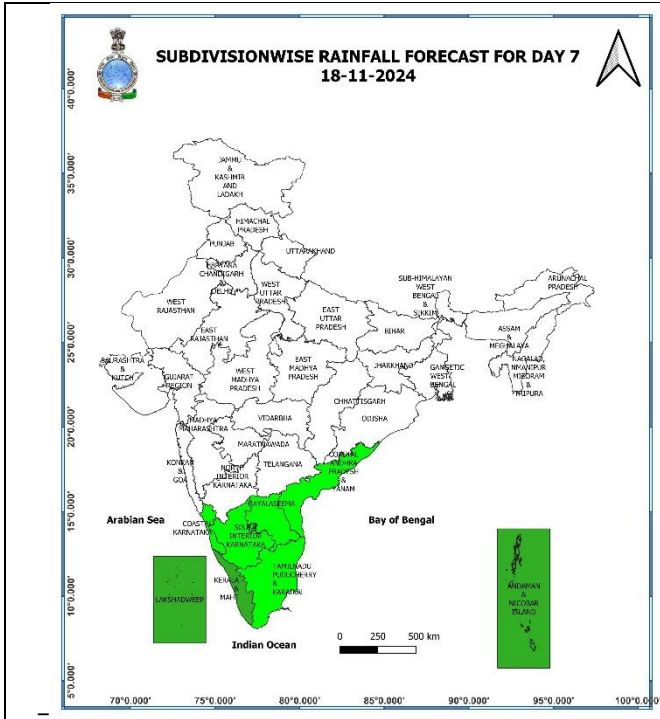
16 November (Day 5):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.
- ❖ **Dense fog** conditions very likely in isolated pockets of Himachal Pradesh.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe.



17 November (Day 6):

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



18 November (Day 7):

❖ **No Warning**

Weather Outlook for subsequent 3 days (During 19th November – 21th November, 2024)

- ❖ Isolated to Scattered light rainfall likely over some parts of western Himalayan region and south peninsular India.
- ❖ 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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राष्ट्रीय मौसम पूर्वानुमान केन्द्र
भारत मौसम विज्ञान विभाग
पृथ्वी विज्ञान मंत्रालय



National Weather Forecasting Centre
India Meteorological Department
Ministry of Earth Sciences

Agromet advisories for Heavy Rainfall likely over various parts of the country:

- ✓ Make arrangements to drain out excess water from the standing crop fields in Tamilnadu, Kerala, South Interior Karnataka and Andhra Pradesh.
- ✓ Keep the harvested produce at safer places.
- ✓ Provide mechanical support to horticultural crops and staking to vegetables.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

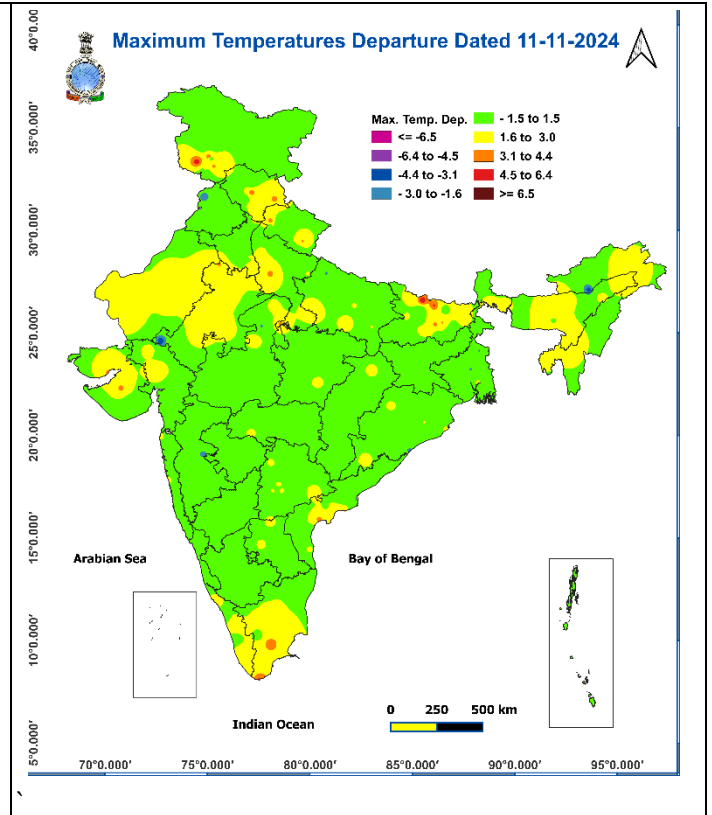
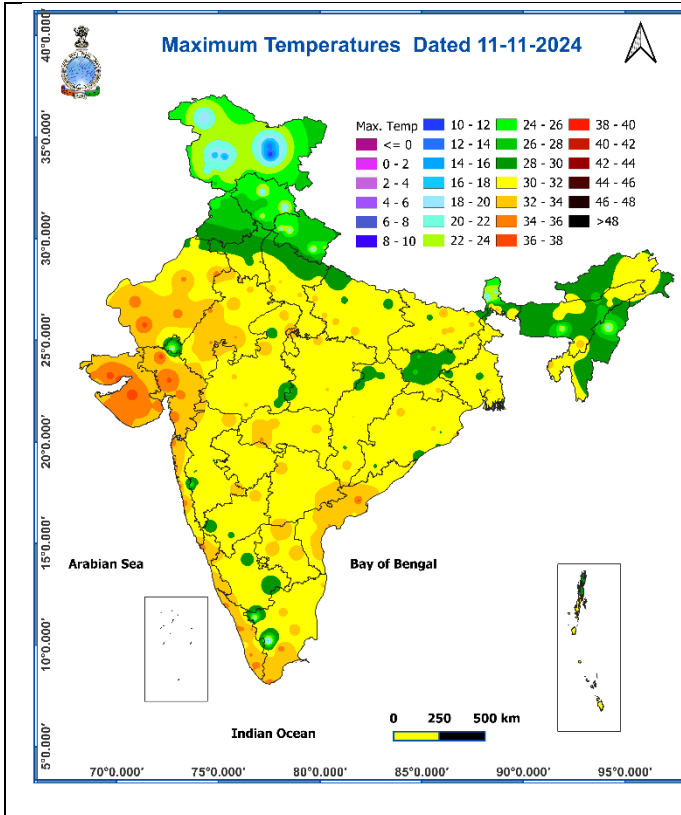


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

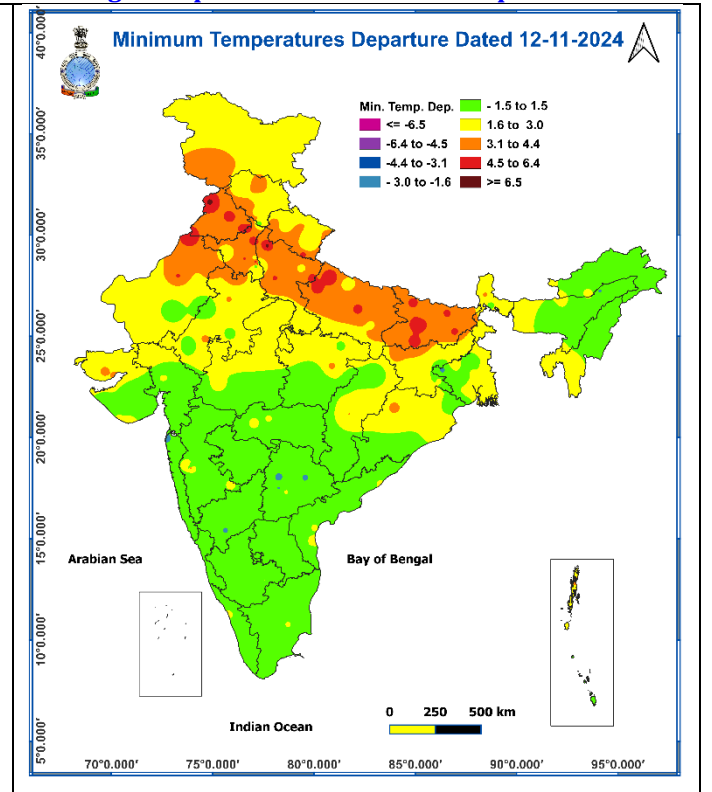
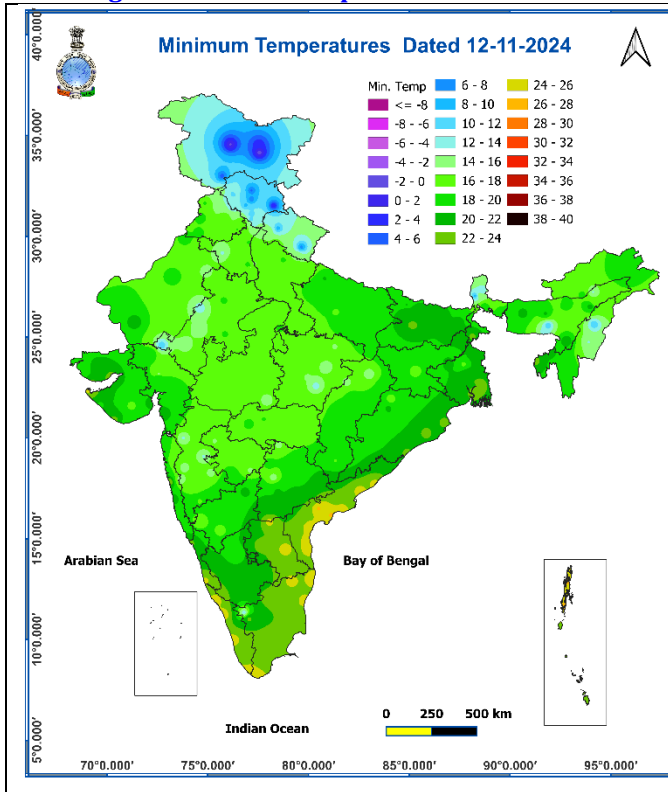
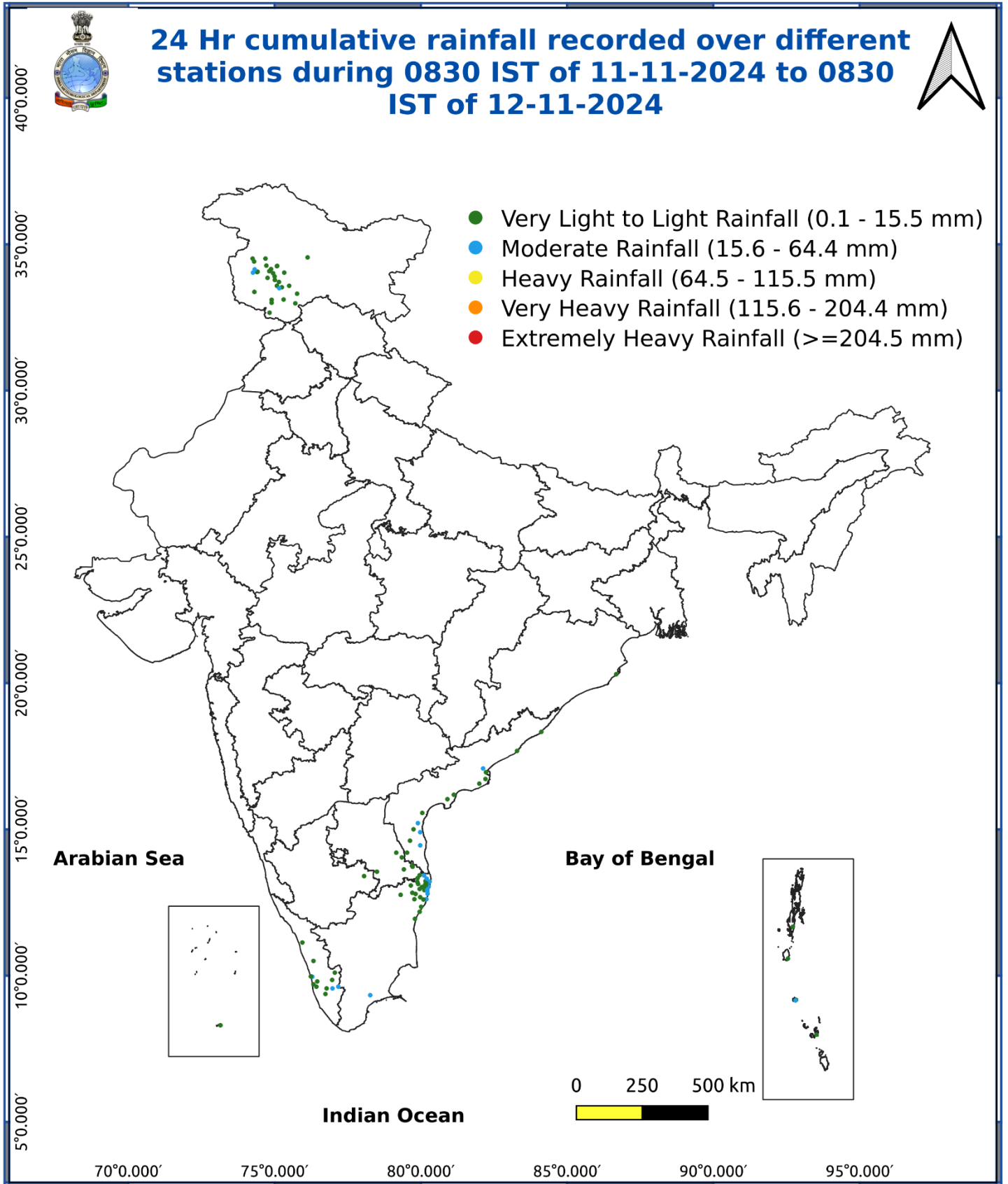


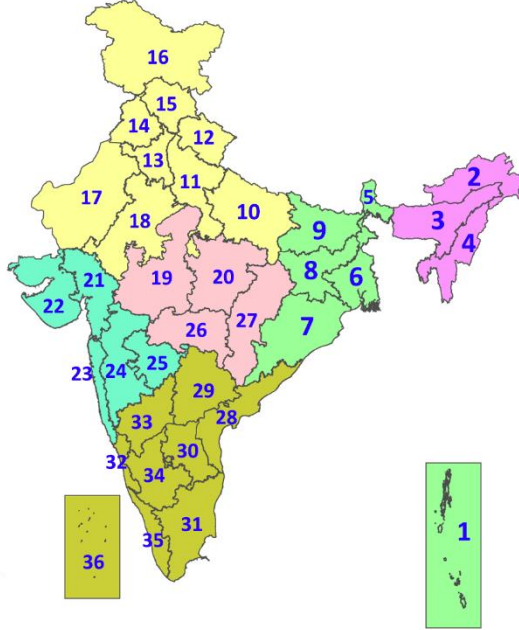
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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)