

Sunday, November 24, 2024
Time of Issue: 1315 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- ❖ The **well marked low pressure area** over southeast Bay of Bengal and adjoining East Equatorial Indian Ocean persisted over the same region at 0830 hours IST of today, the 24th November 2024. It is likely to move west-northwestwards and intensify into a depression over central parts of south Bay of Bengal on 25th November. Thereafter, it is likely to move northwestwards towards Tamil Nadu-Sri Lanka coasts during subsequent 2 days.
- ❖ The **Western disturbance** now seen as a trough in middle tropospheric levels roughly along Longitude 68° E and north of Latitude 32°N.

Forecast & Warnings (upto 7 days):

- ✓ Light to moderate rainfall at a few places accompanied with isolated thunderstorm & lightning very likely over coastal Tamil Nadu, Puducherry & Karaikal during 25th-28th, south Coastal Andhra Pradesh & Yanam on 27th & 28th November.
- ✓ Light to moderate rainfall at many places over Andaman & Nicobar Islands during the week, Nagaland, Manipur, Mizoram & Tripura during 27th - 29th; Light to moderate rainfall at isolated places over Assam & Meghalaya during 27th -30th, Sub-Himalayan West Bengal & Sikkim during 24th - 27th, Odisha during 27th -29th, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 24th, Himachal Pradesh & Gangetic West Bengal on 30th November.
- ✓ Isolated **heavy to very heavy rainfall** very likely over coastal Tamil Nadu, Puducherry & Karaikal during 25th- 27th November and isolated heavy rainfall on 28th & 29th November.
- ✓ Isolated **heavy rainfall** very likely over Kerala & Mahe during 27th - 29th and south Coastal Andhra Pradesh & Yanam during 27th - 30th November.
- ✓ **Dense fog conditions** very likely to prevail during early morning hours in isolated pockets of Punjab & Haryana-Chandigarh during 27th -29th, Himachal Pradesh during 24th-28th and Uttar Pradesh during 28th -30th November.

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 are **above normal (2°C to 3°C)** at a few places over Punjab; at isolated places over Himachal Pradesh, Haryana-Chandigarh-Delhi, Uttar Pradesh, West Rajasthan, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh, Andaman & Nicobar Islands. These are **appreciably below normal (3°C to 5°C)** at isolated places over Chhattisgarh, Odisha; **below normal (2°C to 3°C)** at a few places over East Madhya Pradesh, Vidarbha, Telangana; at isolated places over East Rajasthan, Gujarat state, West Madhya Pradesh, Gangetic West Bengal, Marathwada, Madhya Maharashtra, Konkan & Goa, North Interior Karnataka and near normal over rest parts of the country. Today, **the lowest minimum temperature** of 8.2°C is reported at **Hindon IAF (West Uttar Pradesh)** over the plains of the country.

Forecast of temperature:

- ❖ No significant change in minimum temperatures over northwest India during 48 hours and gradual fall by 2-3°C thereafter except Rajasthan.
- ❖ No significant change in minimum temperatures over Maharashtra during 24 hours and gradual fall by 2-3°C thereafter for subsequent 3-4 days.
- ❖ No significant change in minimum temperatures over rest parts of the country during next 5 days.

iii. Weather forecast over Delhi/NCR during 24rd Nov. to 27th Nov. 2024

Past Weather:

There has been no significant change in minimum temperatures and rise upto 2°C in maximum temperatures over Delhi/NCR during past 24hr. The Maximum and Minimum temperature over Delhi is in the range of 26 to 29°C and 10 to 14°C respectively. The maximum temperature was above normal by 01 to 03°C and the minimum temperature was above normal by 01 to 02°C most places over the region. Mainly smog/ shallow fog condition with predominant surface wind from variable direction with wind speed reaching 04 to 08 kmph prevailed during daytime and calm wind during night time on 23.11.2024. Shallow fog reported at Safdarjung airport during early morning today. Safdarjung airport recorded lowest visibility 800 m during at 0530 hours which improved thereafter becoming 1200m at 0730 hours IST. Mainly clear sky condition with wind speed less than 10 kmph west direction prevailed over the region in the forenoon today.

Weather Forecast:

24.11.2024: Mainly clear sky. The predominant surface wind is likely to be northwest direction with wind speed upto 06-10 kmph till evening. It would decrease thereafter becoming less than 06 kmph from northwest direction during night. Smog/shallow fog is likely in the evening/night.

25.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/ 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/ shallow fog is likely in the evening/night.

26.11.2024: Mainly clear sky. The predominant surface wind is likely to be from northwest direction with speed less than 08 kmph during morning hours. Smog/ shallow to moderate fog 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 04 kmph from variable direction during evening and night. Smog/ shallow fog is likely in the evening/night.

27.11.2024: Mainly clear sky. The predominant surface wind is likely to be from variable direction with wind speed less than 04 kmph during morning hours. Smog/moderate fog in the morning. The wind speed will increase thereafter becoming 04-06 kmph from variable direction during afternoon. It will gradually decrease becoming less than 04 kmph from variable direction during evening and night. Smog/ shallow fog is likely in the evening/night.

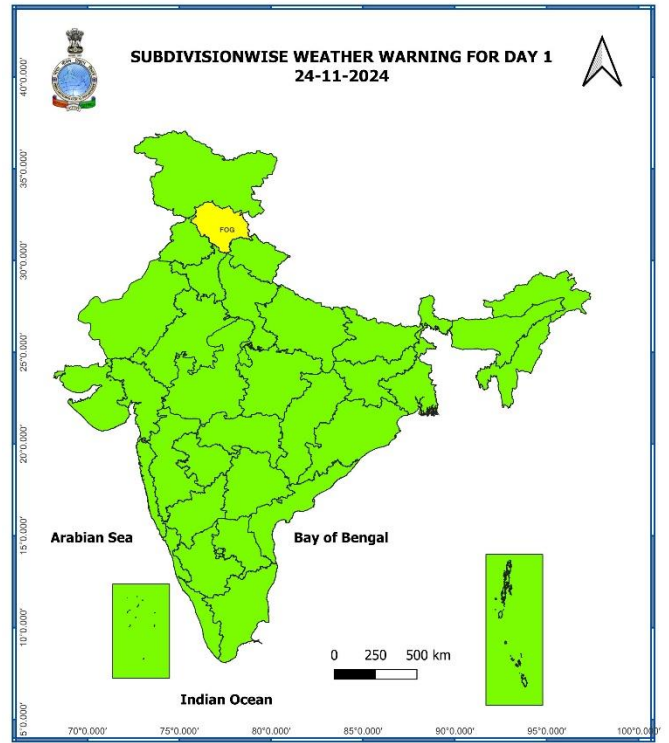
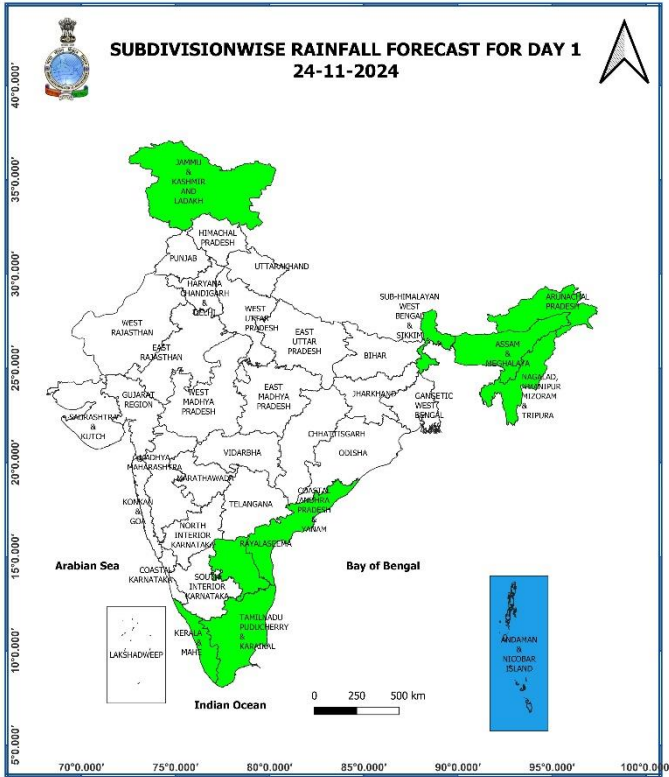
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at many places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Andaman & Nicobar Islands; **at isolated places** over Himachal Pradesh, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Andaman & Nicobar Islands:** Nancowry (dist Nicobar) 2, Car Nicobar (dist Nicobar) 1; **Tamil Nadu, Puducherry & Karaikal:** Nalumukku (dist Tirunelveli), Thalaignayer (dist Nagapattinam), Oothu (dist Tirunelveli) 2each; Nagapattinam AWS (dist Nagapattinam), Cheranmahadevi (dist Tirunelveli), Kakkachi (dist Tirunelveli), Manjolai (dist Tirunelveli) 1 each.
- ❖ **Fog conditions observed** (at 0830 hours IST of today): **Moderate fog (visibility 201-500 m)** reported in isolated pockets of West Uttar Pradesh.
- ❖ **Visibility reported** (at 0830 hours IST of today) (≤ 500 metres) (in m): West **Uttar Pradesh:** Bareilly-500.
- ❖ **Minimum Temperature Departures (as on 24-11-2024):** Minimum temperatures are **above normal (2°C to 3°C)** at a few places over Punjab; at isolated places over Himachal Pradesh, Haryana-Chandigarh-Delhi, Uttar Pradesh, West Rajasthan, Bihar, Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh, Andaman & Nicobar Islands. These are **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Chhattisgarh, Odisha; **below normal (-1.6°C to -3°C)** at a few places over East Madhya Pradesh, Vidarbha, Telangana; at isolated places over East Rajasthan, Gujarat state, West Madhya Pradesh, Gangetic West Bengal, Marathwada, Madhya Maharashtra, Konkan & Goa, North Interior Karnataka and near normal over rest parts of the country. Today, **the lowest minimum temperature of 8.2°C** is reported at **Hindan_IAF (West Uttar Pradesh)** over the plains of the country. **(Fig.4)**
- ❖ **Maximum Temperature Departures (as on 23-11-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Himachal Pradesh; **above normal (1.6°C to 3.0°C)** at isolated places over Haryana-Delhi, West Rajasthan, Rayalaseema, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe. These were **below normal (-1.6°C to -3.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, East Uttar Pradesh, Bihar, West Bengal & Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Madhya Pradesh, Gujarat state, Vidarbha, Madhya Maharashtra, Telangana. Yesterday, **the highest maximum temperature of 35.4°C** was reported at **Karwar (Coastal Karnataka)** over the country. **(Fig. 2)**

Meteorological Analysis (Based on 0830 hours IST)

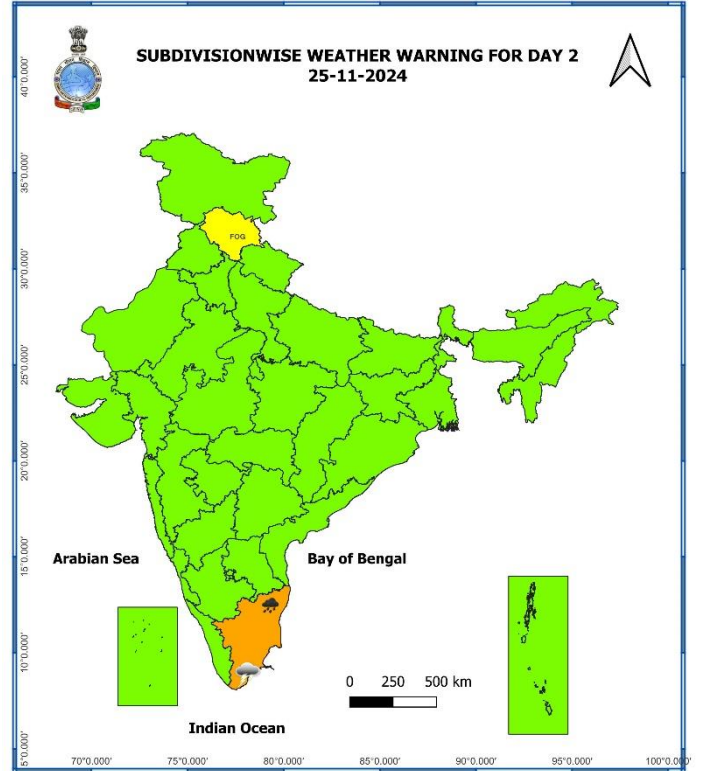
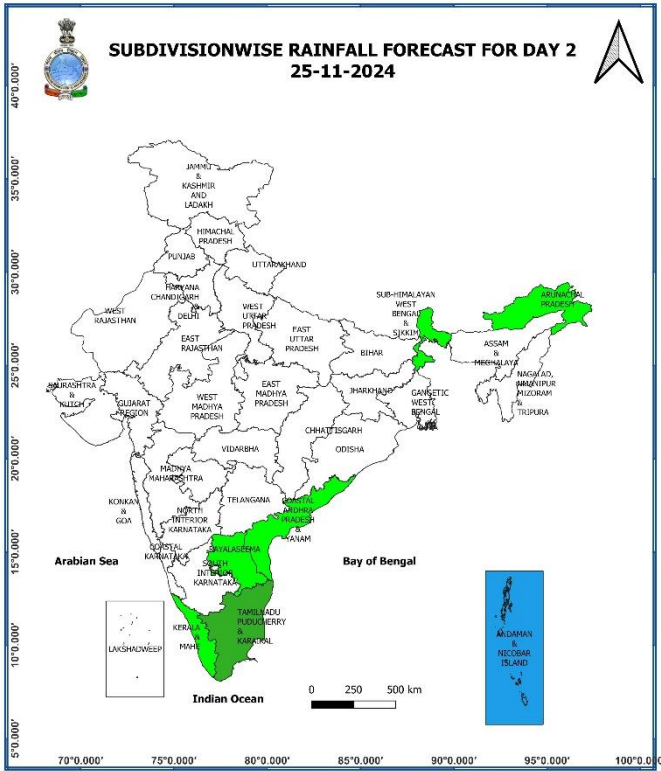
- ❖ The **Western disturbance** now seen as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 68°E to the north of Lat. 32°N.
- ❖ The **cyclonic circulation** over east Bangladesh & neighbourhood now lies over northeast Assam and extends upto 1.5 km above mean sea level.
- ❖ The **well marked low pressure area** over southeast Bay of Bengal and adjoining East Equatorial Indian Ocean persisted over the same region at 0830 hours IST of today, the 24th November 2024. It is likely to move west-northwestwards and intensify into a depression over central parts of south Bay of Bengal on 25th November. Thereafter, it is likely to move northwestwards towards Tamil Nadu-Sri Lanka coasts during subsequent 2 days.
- ❖ The **trough** from the cyclonic circulation associated with the well marked low pressure system over southeast Bay of Bengal and adjoining east Equatorial Indian Ocean to Comorin area has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 01st December, 2024)



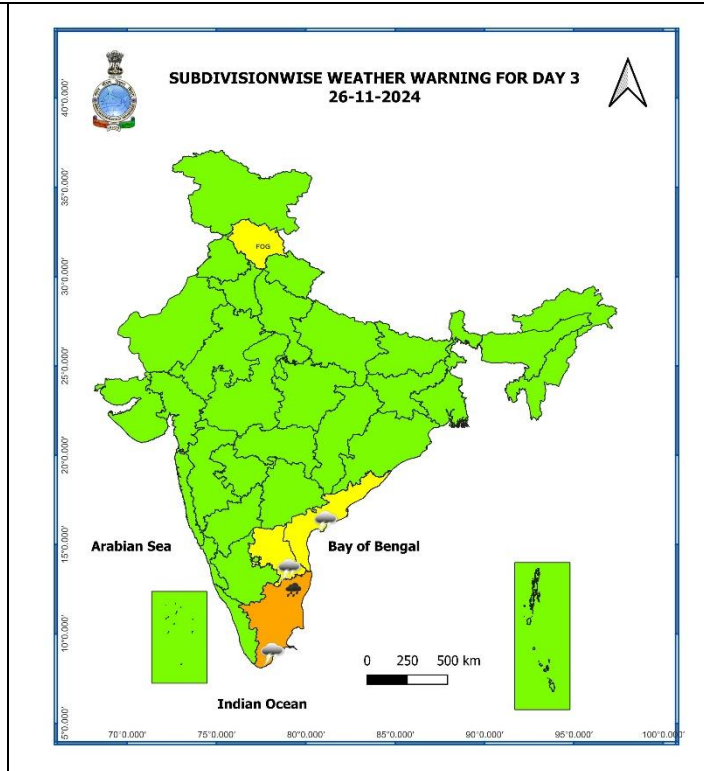
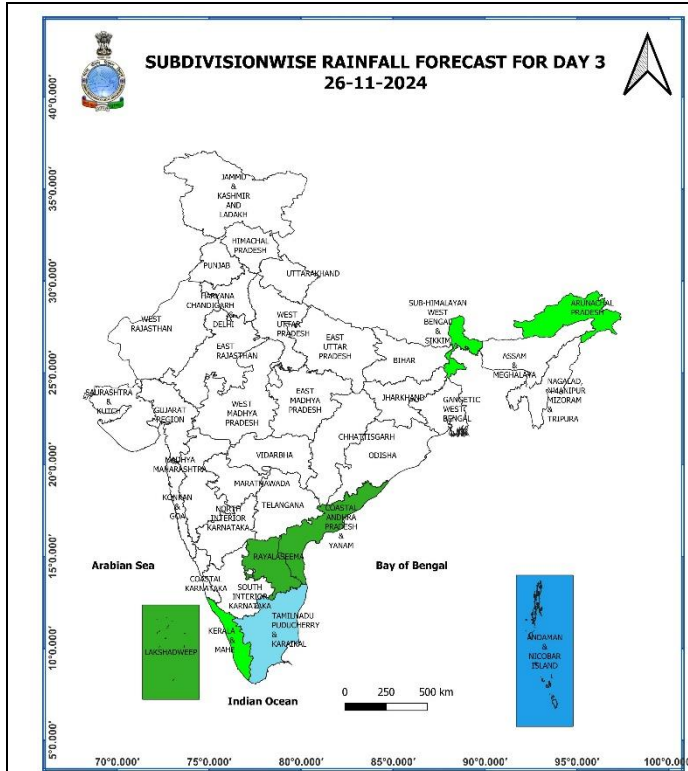
24 November (Day 1):

- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh in night/morning hours.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is very likely to prevailing over most parts of south Bay of Bengal and south Andaman Sea. Fishermen are advised not to venture into these areas.



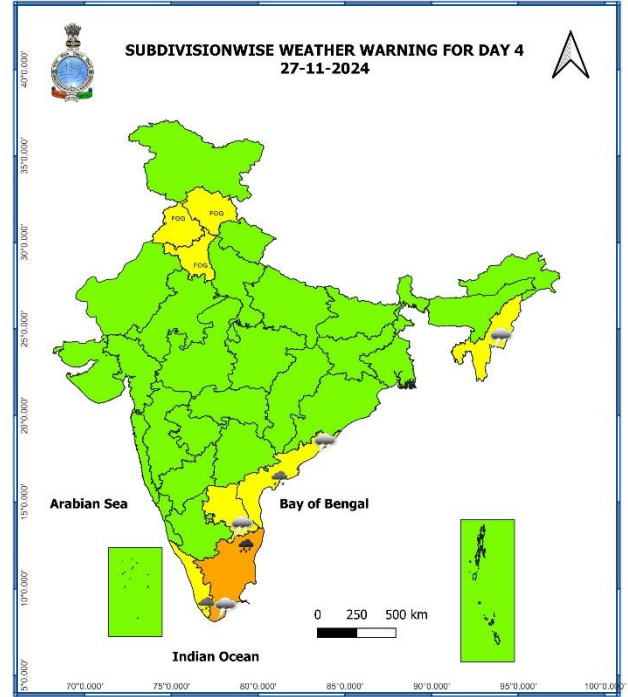
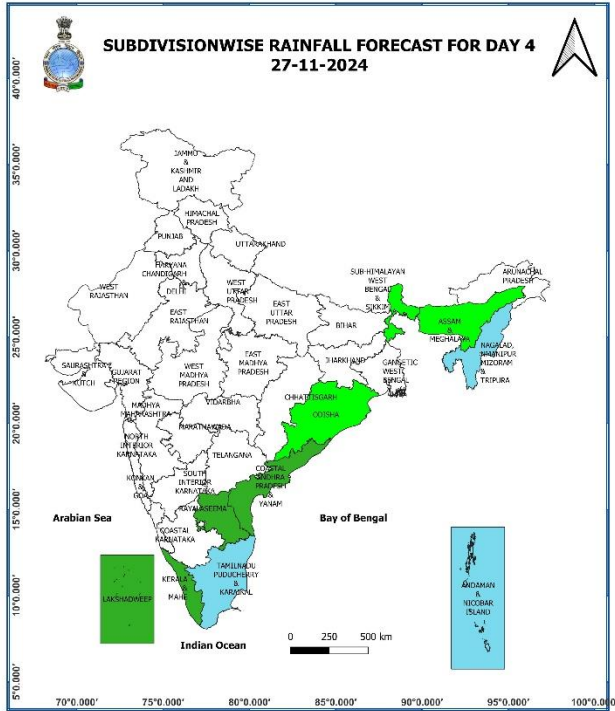
25 November (Day 2):

- ❖ **Heavy to very Heavy rainfall (≥ 12 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.
- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh in night/morning hours.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing over Gulf of Mannar & adjoining parts of Comorin area, over most parts of south Bay of Bengal along & off Sri Lanka coast and adjoining parts of south Andaman Sea. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevailing over southwest & adjoining parts of southeast Bay of Bengal. Fishermen are advised not to venture into these areas.



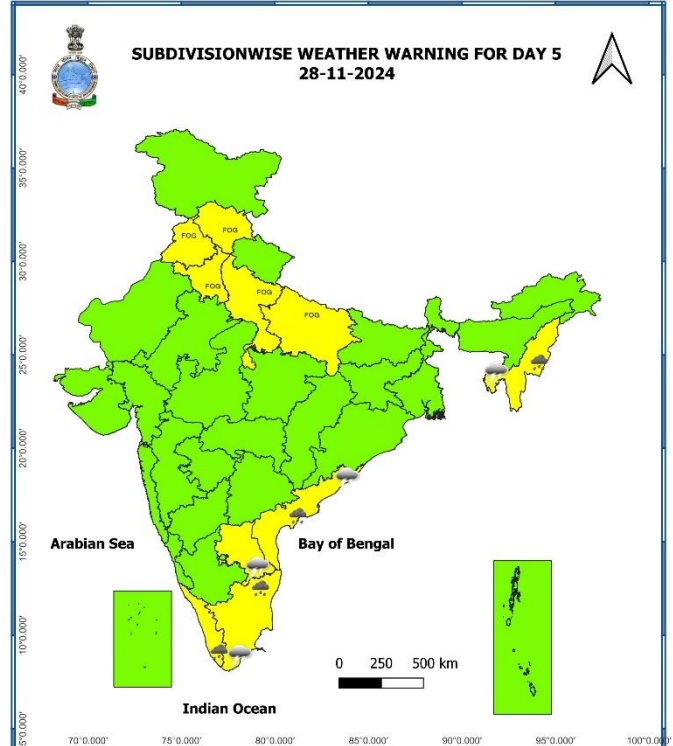
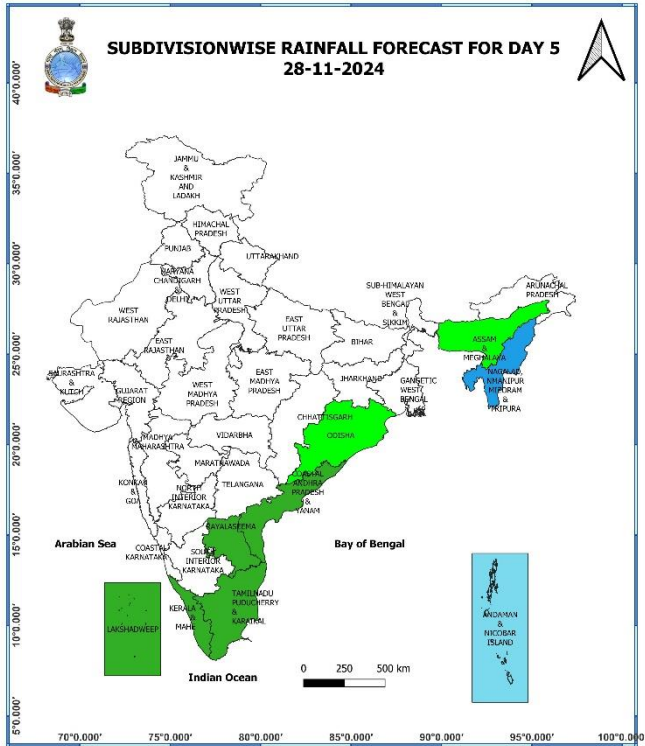
26 November (Day 3):

- ❖ **Heavy to very Heavy rainfall (≥ 12 cm)** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Rayalaseema and Coastal Andhra Pradesh & Yanam.
- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh in night/morning hours.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing along and off south Kerala coast, over Gulf of Mannar and Comorin area, over southwest Bay of Bengal and adjoining parts of southeast and west central Bay of Bengal, along and off Sri Lanka, Tamil Nadu & south Andhra Pradesh coasts. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevailing over most parts of southwest Bay of Bengal and adjoining parts of southeast & westcentral Bay of Bengal along and off Sri Lanka coasts. **Squally weather with wind speed 55 kmph to 65 kmph gusting to 75 kmph** is likely to prevailing over some parts of southwest Bay of Bengal off Sri Lanka coast. Fishermen are advised not to venture into these areas.



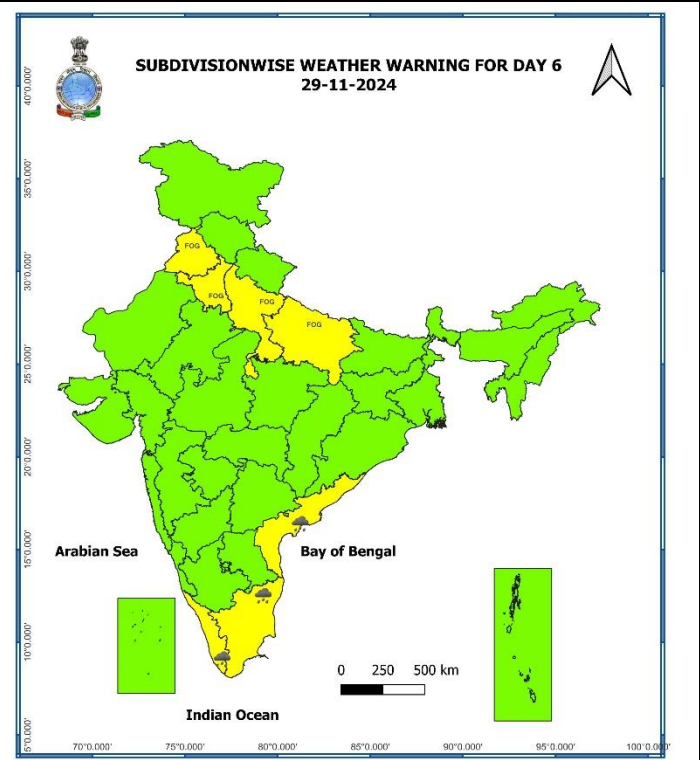
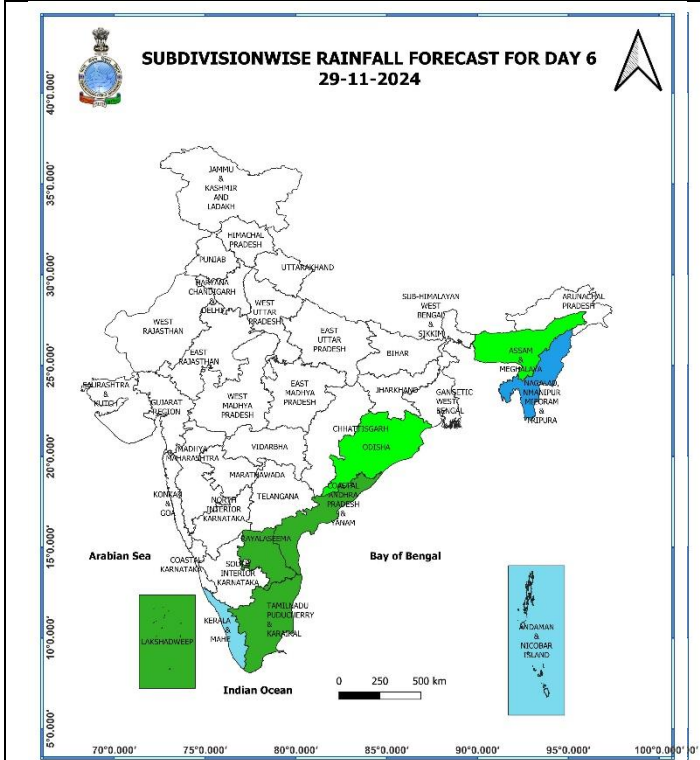
27 November (Day 4):

- ❖ **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, Coastal Andhra Pradesh & Yanam.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Rayalaseema and Coastal Andhra Pradesh & Yanam.
- ❖ **Dense fog** very likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi in night/morning hours.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing along and off south Kerala coast, over Gulf of Mannar and Comorin area, over southwest & westcentral Bay of Bengal & adjoining parts of southeast Bay of Bengal, along and off Sri Lanka, Tamil Nadu & south Andhra Pradesh coasts. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevailing over many parts of southwest and westcentral along and off Sri Lanka, Tamil Nadu & south Andhra Pradesh coasts. **Squally weather with wind speed 55 kmph to 65 kmph gusting to 75 kmph** is likely to prevailing over some parts of southwest and west central Bay of Bengal along and off Sri Lanka, Tamil Nadu & south Andhra Pradesh coasts. Fishermen are advised not to venture into these areas.



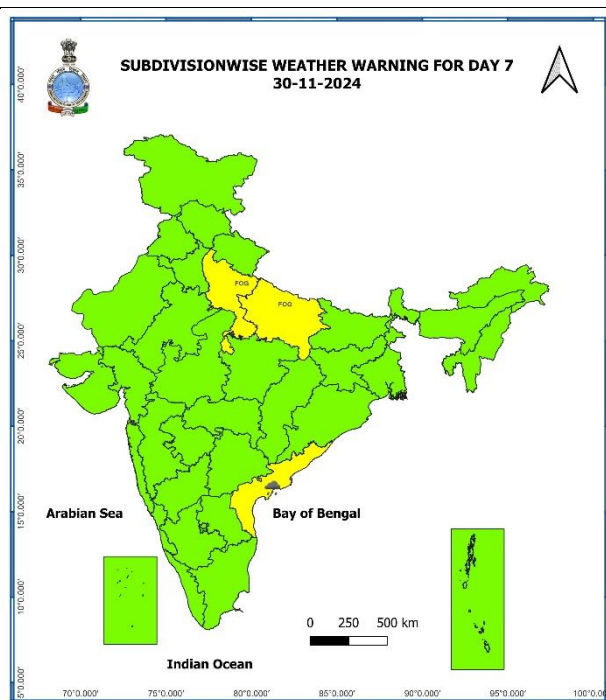
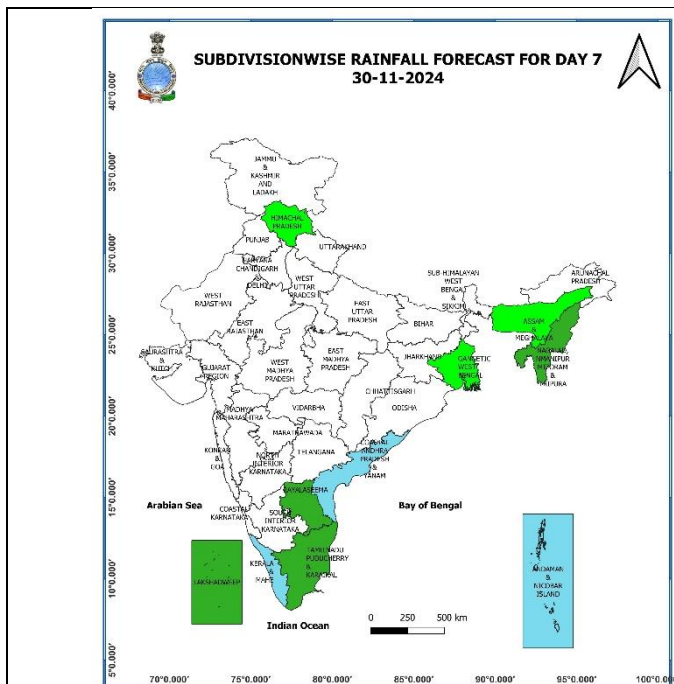
28 November (Day 5):

- ❖ **Heavy rainfall (≥ 7 cm)** at isolated places over Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Rayalaseema and Coastal Andhra Pradesh & Yanam.
- ❖ **Dense fog** likely in isolated pockets of Himachal Pradesh, Punjab, Haryana-Chandigarh-Delhi and Uttar Pradesh in night/morning hours.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevailing along and off south Kerala coast, over Gulf of Mannar and Comorin area, over southwest & westcentral Bay of Bengal & adjoining parts of southeast Bay of Bengal, along and off Sri Lanka, Tamil Nadu & south Andhra Pradesh coasts. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevailing over many parts of southwest and westcentral along and off Sri Lanka, Tamil Nadu & south Andhra Pradesh coasts. **Squally weather with wind speed 55 kmph to 65 kmph gusting to 75 kmph** is likely to prevailing over some parts of southwest and west central Bay of Bengal along and off Sri Lanka, Tamil Nadu & south Andhra Pradesh coasts. Fishermen are advised not to venture into these areas.



29 November (Day 6):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam.
- ❖ **Dense fog** likely in isolated pockets of Punjab, Haryana-Chandigarh-Delhi and Uttar Pradesh in night/morning hours.



30 November (Day 7):

- ❖ Heavy rainfall (≥ 7 cm) likely at isolated places over Coastal Andhra Pradesh & Yanam.
- ❖ Dense fog likely in isolated pockets of Uttar Pradesh in night/morning hours.

Weather Outlook for subsequent 3 days (During 01st December – 03rd 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.

* 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.
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599
(Service to the Nation since 1875)

Impact & Action Suggested due to very heavy rainfall over Tamil Nadu, Puducherry & Karaikal during 25th - 27th November 2024.

A. 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 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
- ❖ Damage to horticulture and standing crops in some areas due to inundation.
- ❖ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC).

B. Action Suggested

- ❖ 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/ very dense fog in the late night /morning hours

- ❖ 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.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

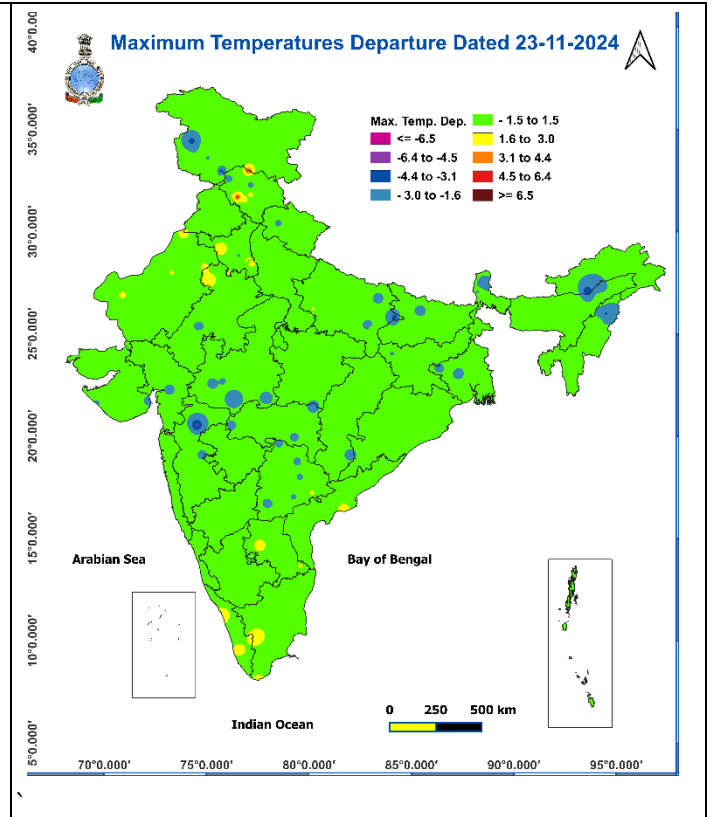
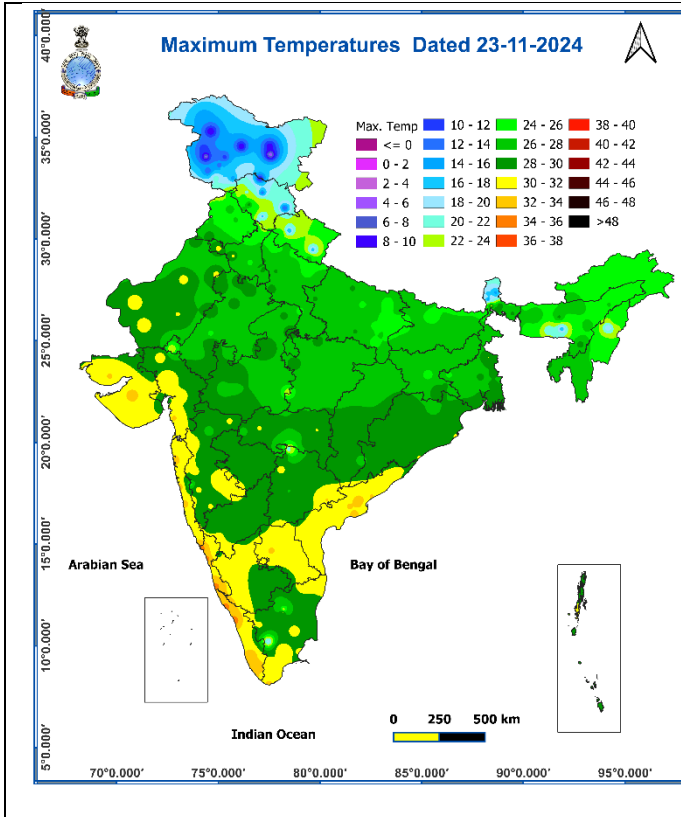


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

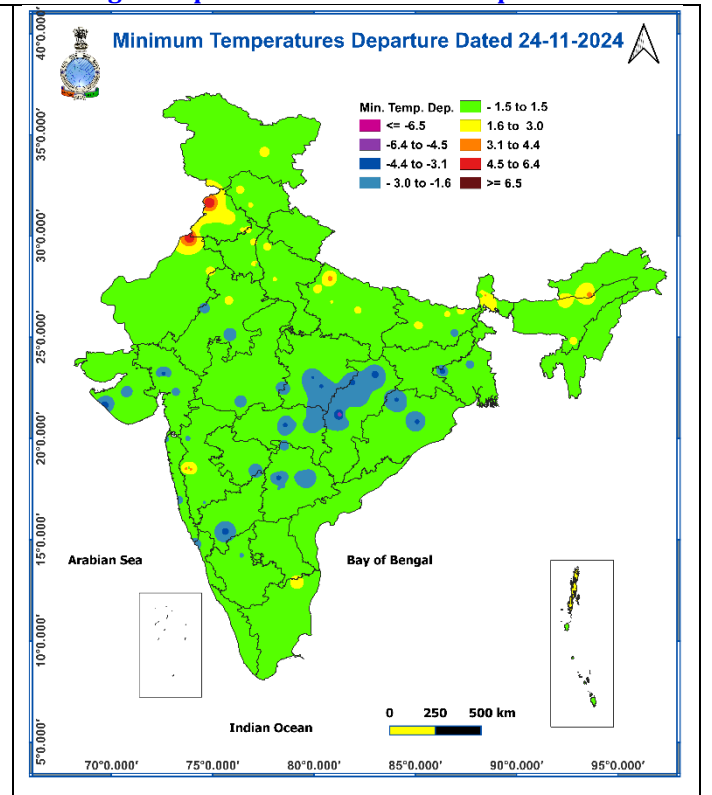
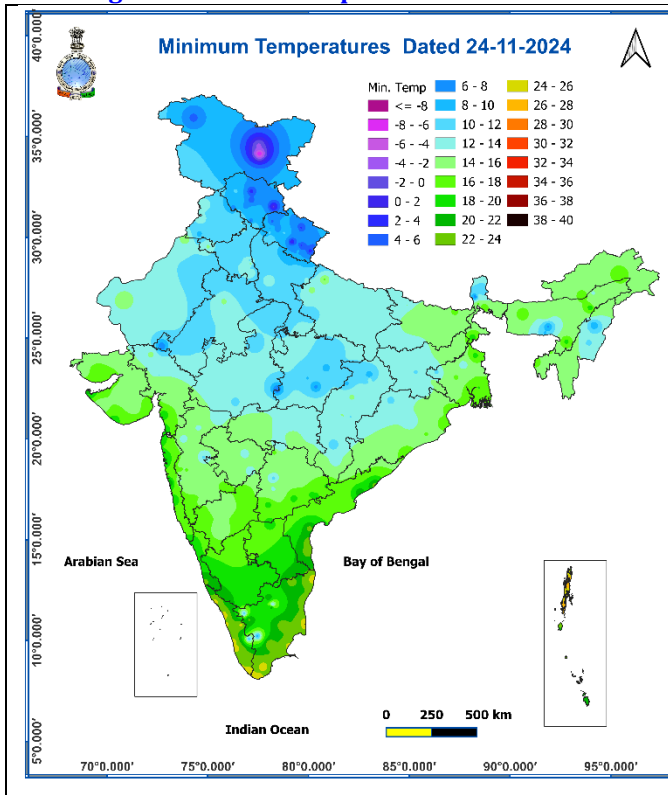
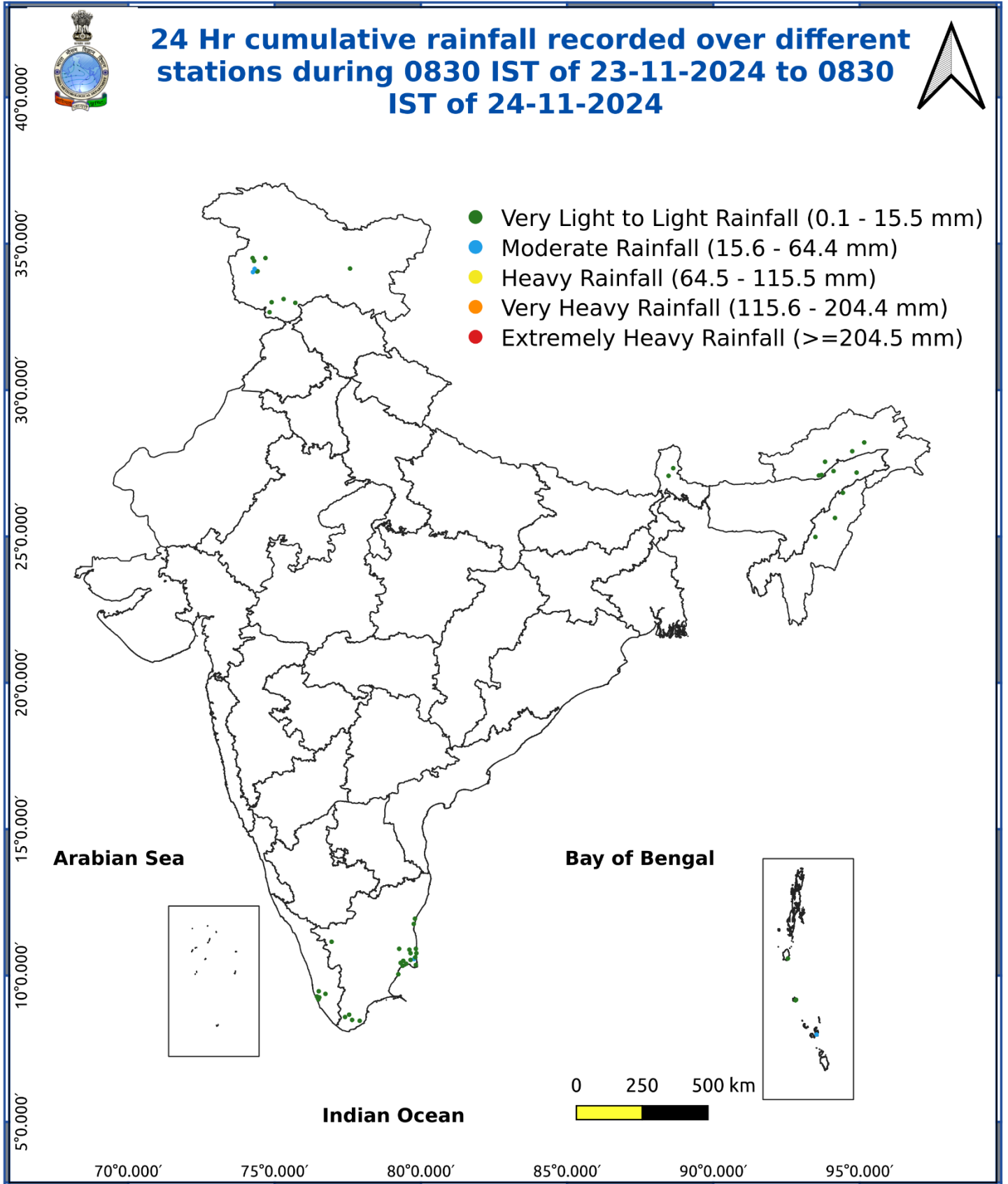


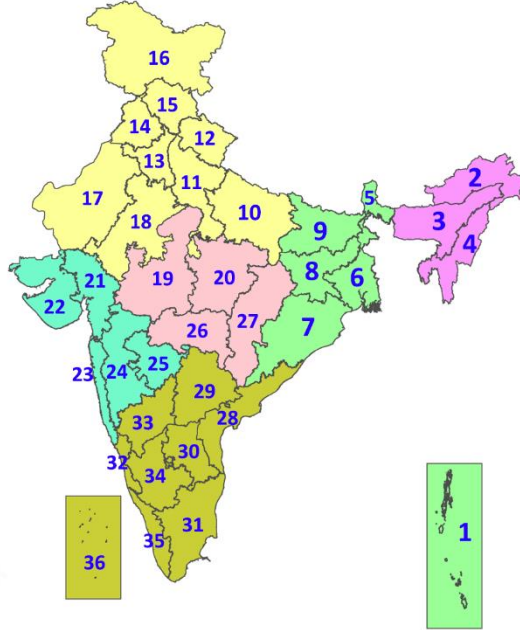
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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)