

Wednesday, October 9, 2024
Time of Issue: 0800 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

On further Withdrawal of Southwest Monsoon:

- ✓ The **line of withdrawal of Southwest Monsoon** continues to pass through 29°N/84°E, Nautanwa, Sultanpur, Panna, Narmada Puram, Khargone, Nandurbar, Navsari and 20°N/70°E.
- ✓ Conditions are favourable for further **withdrawal of Southwest Monsoon** from remaining parts of Gujarat, Madhya Pradesh and some more parts of Maharashtra during next 2-3 days.

Weather Systems:

- ✓ Yesterday's **cyclonic circulation** over south Kerala, lay over Lakshadweep & adjoining southeast Arabian Sea extending upto middle tropospheric levels at 0830 hrs IST of today. A trough runs from this cyclonic circulation to north coastal Tamil Nadu in lower tropospheric levels.
- ✓ Under their influence, a **low pressure area** is likely to form over Lakshadweep and adjoining southeast & eastcentral Arabian Sea around 09th October. It is likely to move northwestwards and intensify further into a **depression** over central Arabian Sea during subsequent 3 days.

Forecast & Warnings (upto 7 days):

South Peninsular India:

- ✓ Fairly widespread to widespread light to moderate rainfall very likely over Lakshadweep, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal; Scattered to fairly widespread light to moderate rainfall very likely over Coastal Karnataka, South Interior Karnataka; Isolated to Scattered light to moderate rainfall very likely over North Interior Karnataka, Rayalaseema, Telangana, Coastal Andhra Pradesh & Yanam during the week.
- ✓ **Isolated heavy rainfall** very likely over Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal during the week; over Rayalaseema, Coastal Karnataka and Lakshadweep on 09th; and over South Interior Karnataka on 11th October.

Northeast India:

- ✓ Scattered to Fairly widespread light to moderate rainfall very likely over North East India during the week.
- ✓ **Isolated heavy rainfall** very likely over Arunachal Pradesh and Assam & Meghalaya during 09th - 11th and over Nagaland, Manipur, Mizoram & Tripura on 09th October.

Northwest, West, East & Central India:

- ✓ No significant rainfall likely over these regions during next one week.

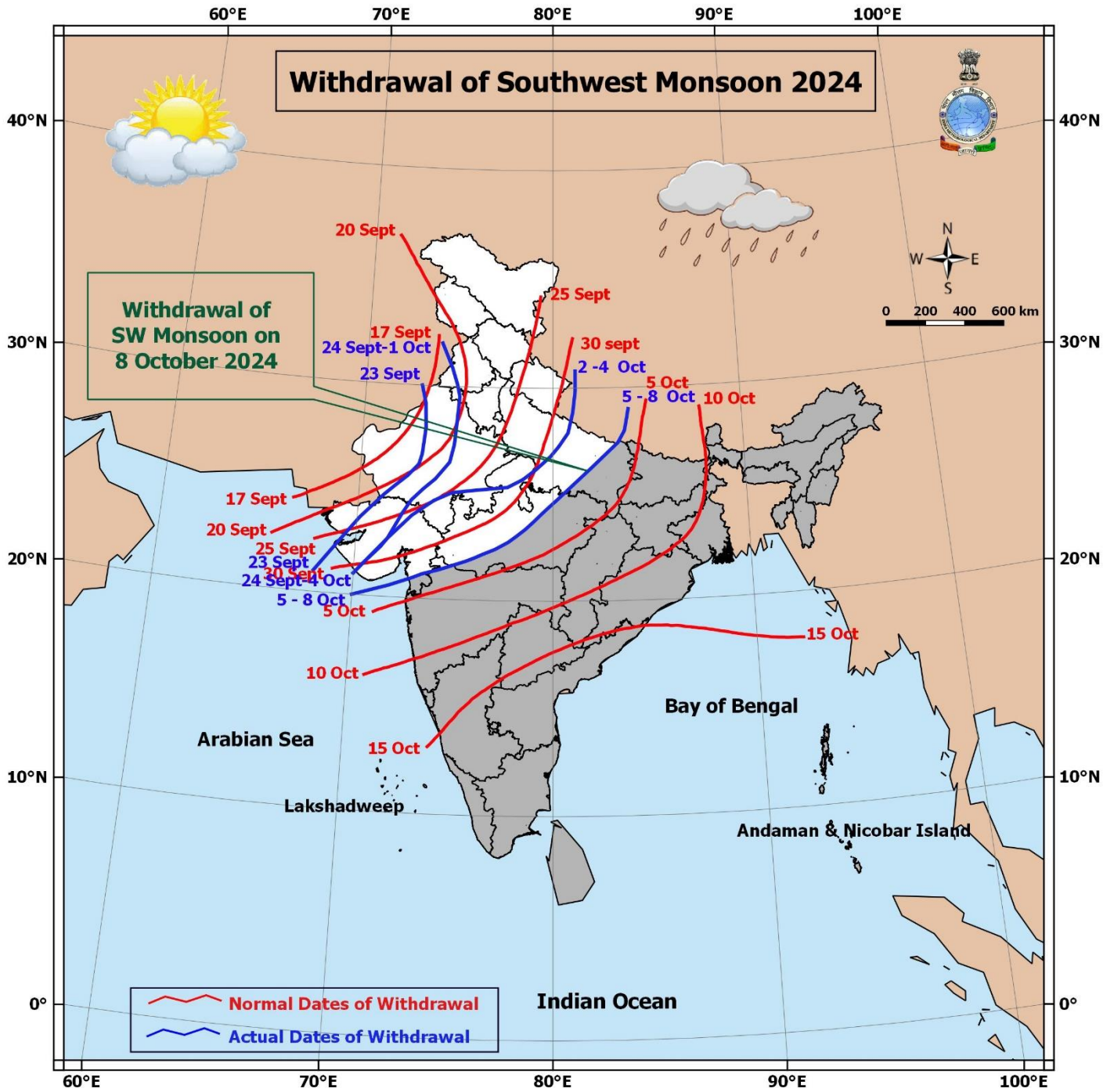
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at a few places** over Andaman & Nicobar Islands, Lakshadweep, Assam & Meghalaya, Jharkhand, Nagaland, Manipur, Mizoram & Tripura, Arunachal Pradesh, Gangetic West Bengal, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam; **at isolated places over** Bihar, West Rajasthan, East Uttar Pradesh, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, Sub-Himalayan West Bengal & Sikkim, Odisha, Chhattisgarh, Telangana, Vidarbha, Madhya Maharashtra, Marathwada, Konkan & Goa and South Interior Karnataka.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Jharkhand:** Ranchi 3; **Vidarbha:** Chandrapur 3; **Tamil Nadu:** Dharmapuri 3, Kodaikanal 2; **Gangetic West Bengal:** Kolkata 2, Haldia 2; **Mizoram:** Lengpui 2; **Lakshadweep:** Agathi 2.
- ❖ **Minimum Temperature Departures (as on 08-10-2024):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at a few places over East Uttar Pradesh; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Uttar Pradesh, Haryana-Chandigarh, Rajasthan, Gujarat state, East Madhya Pradesh and Bihar; **above normal (1.6°C to 3.0°C)** at a few places over Madhya Maharashtra and Vidarbha; at isolated places over Punjab, Himachal Pradesh, West Madhya Pradesh, Konkan & Goa, Chhattisgarh, Odisha, Jharkhand, Gangetic West Bengal, Assam & Meghalaya, Telangana, Coastal Andhra Pradesh & Yanam and Rayalaseema. Yesterday, **the lowest minimum temperature** of **18.3°C** was reported at **Delhi Ridge (New Delhi)** over the plains of the country. (Fig.4)
- ❖ **Maximum Temperature Departures (as on 08-10-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Saurashtra & Kutch; **above normal (1.6°C to 3.0°C)** at a few places over Odisha; at isolated places over Himachal Pradesh, East Uttar Pradesh, East Rajasthan, Gujarat Region, Jharkhand, Gangetic West Bengal and Konkan & Goa. These were **below normal (-1.6°C to -3.0°C)** at isolated places over Telangana and Madhya Pradesh. Yesterday, **the highest Maximum Temperature** of **39.8°C** was reported at **Bhuj (Saurashtra & Kutch)** over the country. (Fig. 2)

Meteorological Analysis (Based on 0530 hours IST)

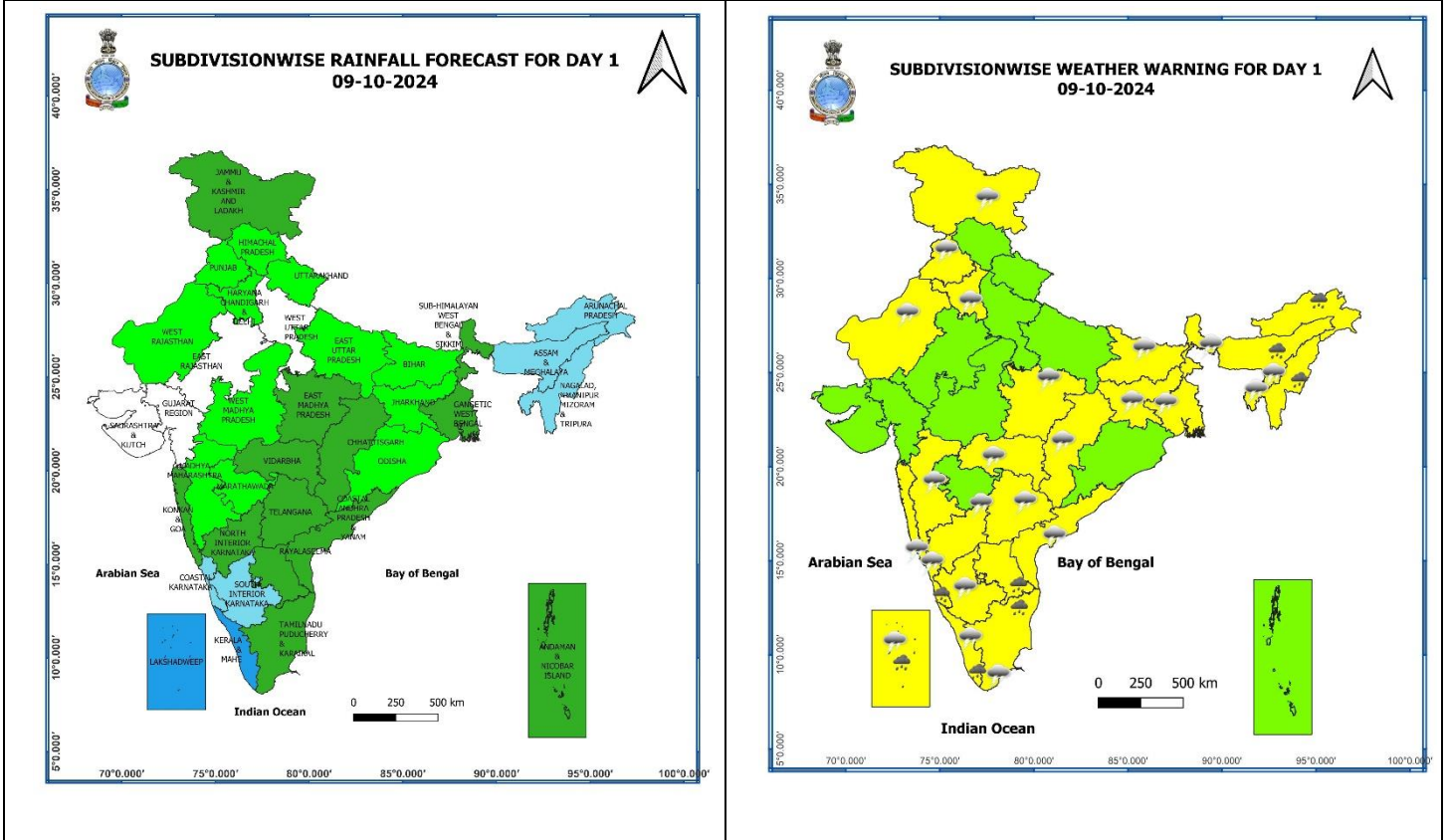
- ❖ The **line of withdrawal of Southwest Monsoon** continues to pass through 29°N/84°E, Nautanwa, Sultanpur, Panna, Narmadapuram, Khargaon, Nandurbar, Navsari and 20°N/70°E.
- ❖ Conditions are favourable for further **withdrawal of Southwest Monsoon** from remaining parts of Gujarat, Madhya Pradesh and some more parts of Maharashtra during next 2-3 days.
- ❖ The **upper-air cyclonic circulation** over Lakshadweep and adjoining southeast Arabian Sea extending up to 5.8 km above mean sea level persists.
- ❖ The **trough** from the cyclonic circulation over Lakshadweep & adjoining southeast Arabian Sea to North coastal Tamil Nadu across Kerala extending upto 1.5 km above mean sea level persists.
- ❖ Under their influence, a **low pressure area** is likely to form over Lakshadweep and adjoining Southeast & eastcentral Arabian Sea around during the next 24 hours. It is likely to move northwestwards and intensify further into a **depression** over central Arabian Sea during subsequent 3 days.
- ❖ The **Western Disturbance** as a **cyclonic circulation** over west Afghanistan & neighbourhood between 1.5 and 7.6 km above mean sea level persists.

Withdrawal of Southwest Monsoon 2024



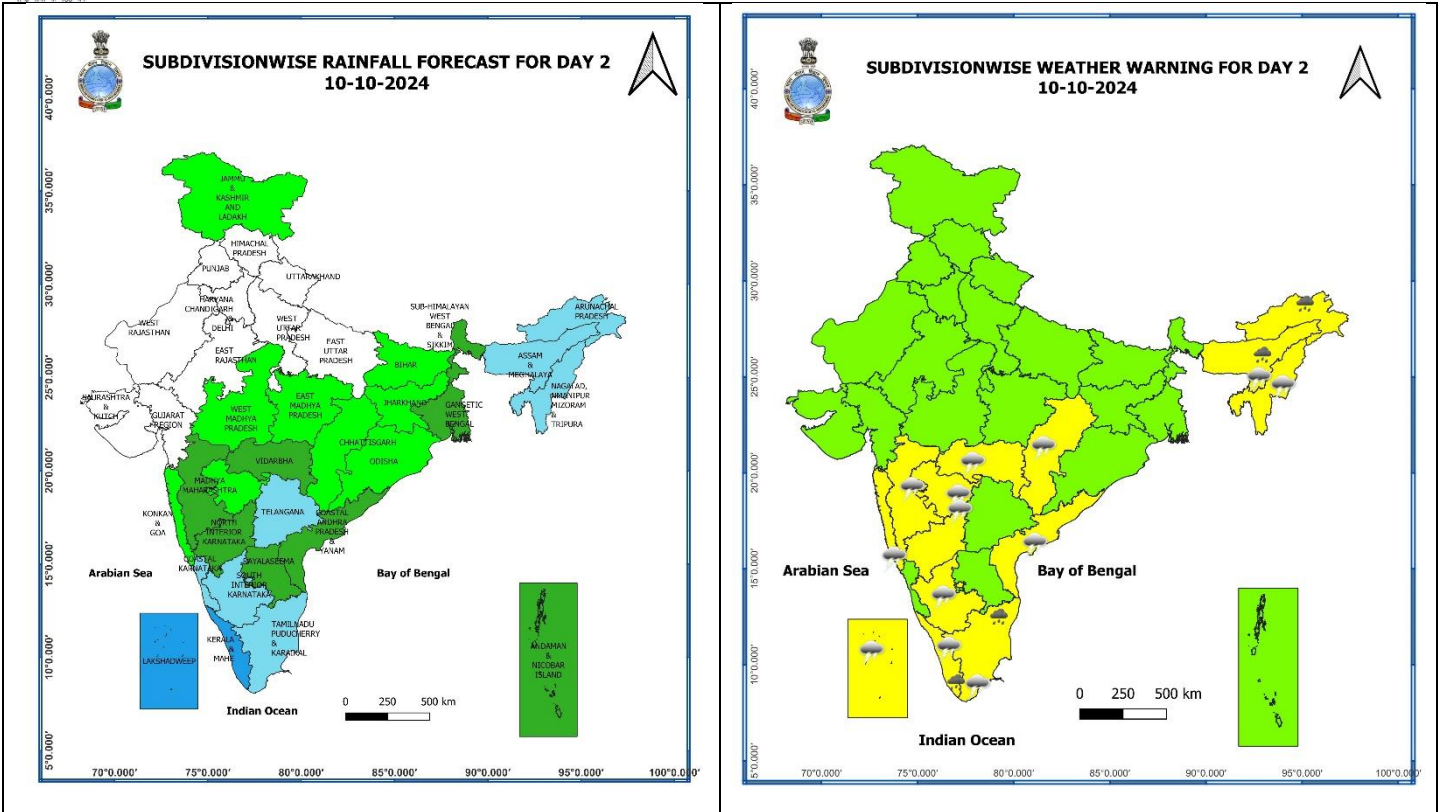
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Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 16th October, 2024)



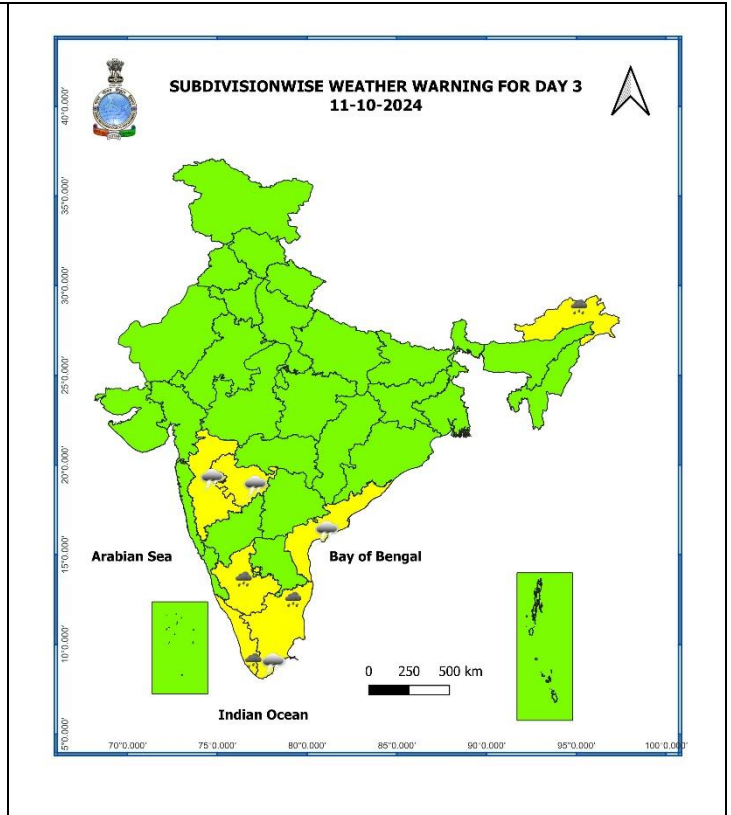
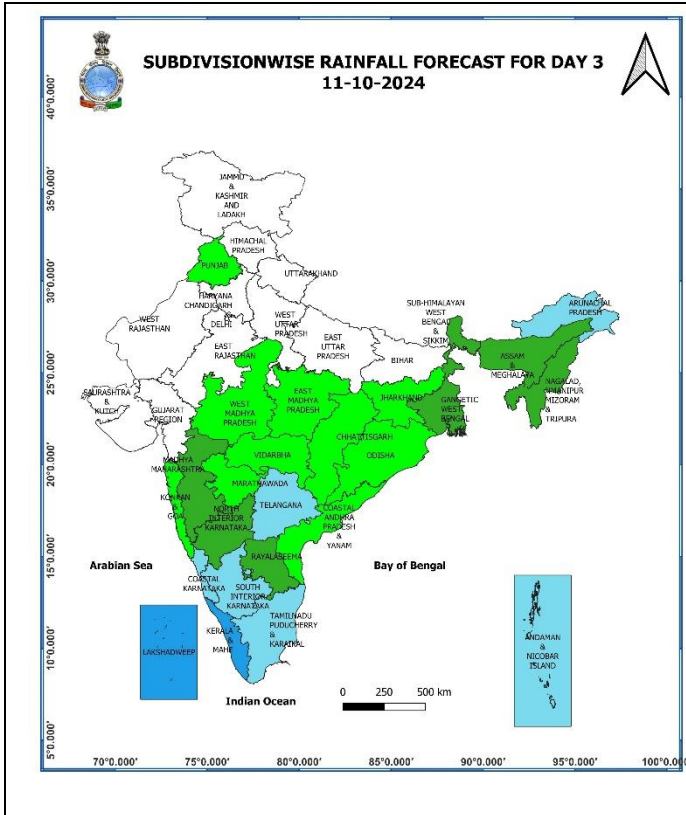
09 October (Day 1):

- ❖ **Heavy rainfall ($\geq 7\text{cm}$)** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Lakshadweep, Rayalaseema and Coastal Karnataka.
- ❖ **Thunderstorm with lightning** very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Haryana-Chandigarh-Delhi, West Rajasthan, East Madhya Pradesh, Vidarbha, Chhattisgarh, West Bengal & Sikkim, Bihar, Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Lakshadweep, Coastal Andhra Pradesh & Yanam, Telangana and Karnataka.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is very likely to prevail over Maldives, Lakshadweep Comorin areas, many parts of southeast Arabian sea, along & off Kerala, Karnataka coasts, gulf of Mannar. Fishermen are advised not to venture into these areas.



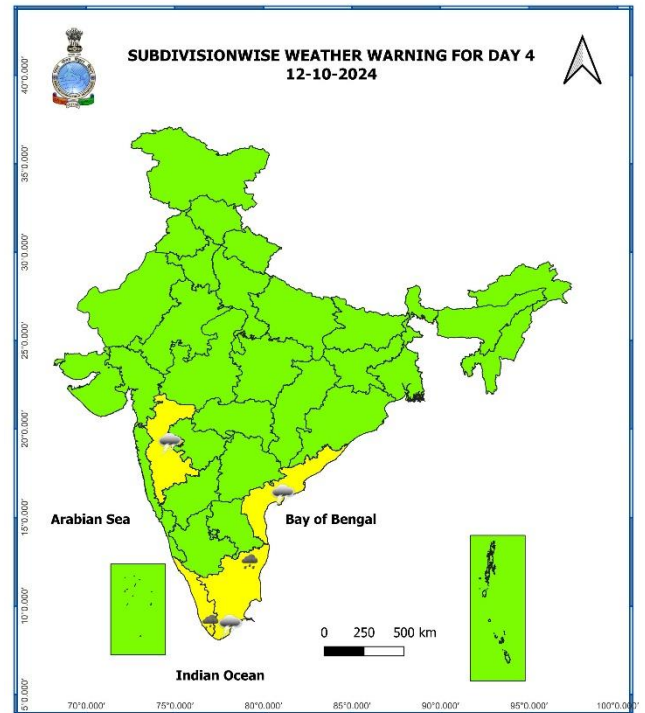
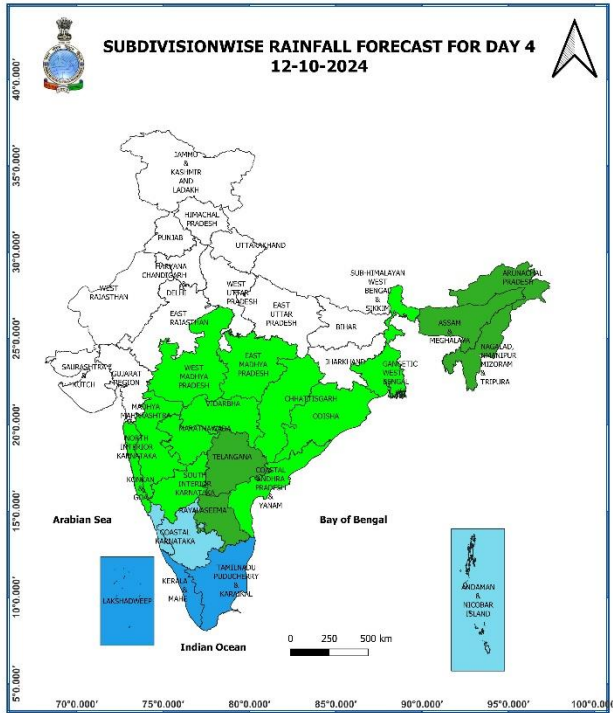
10 October (Day 2):

- ❖ **Heavy rainfall ($\geq 7\text{cm}$)** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Thunderstorm with lightning** very likely at isolated places over Vidarbha, Chhattisgarh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Lakshadweep, Coastal Andhra Pradesh & Yanam, Telangana and Interior Karnataka.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is very likely to prevail over Maldives, Lakshadweep, Comorin areas, southeast Arabian sea & adjoining southwest Arabian sea, parts of eastcentral Arabian sea, along & off Kerala, Karnataka coasts, gulf of Mannar. Fishermen are advised not to venture into these areas.



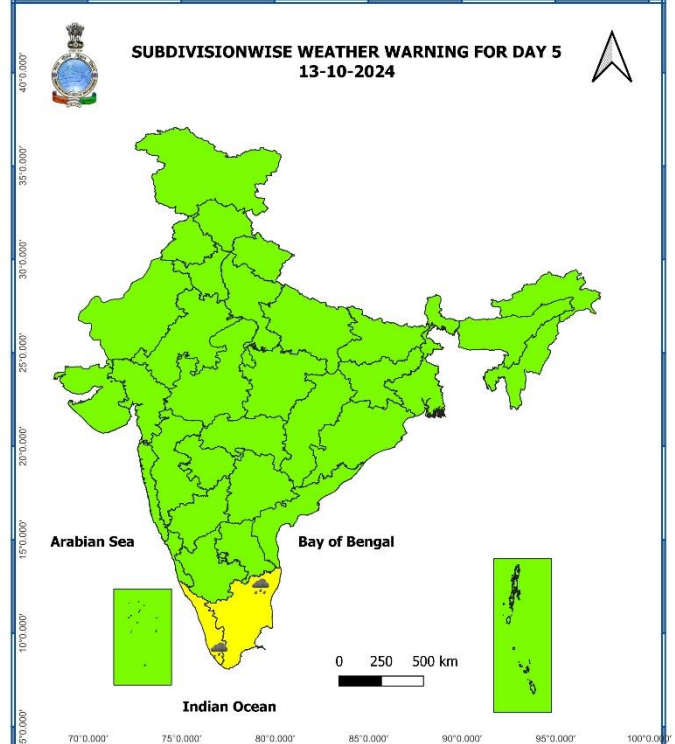
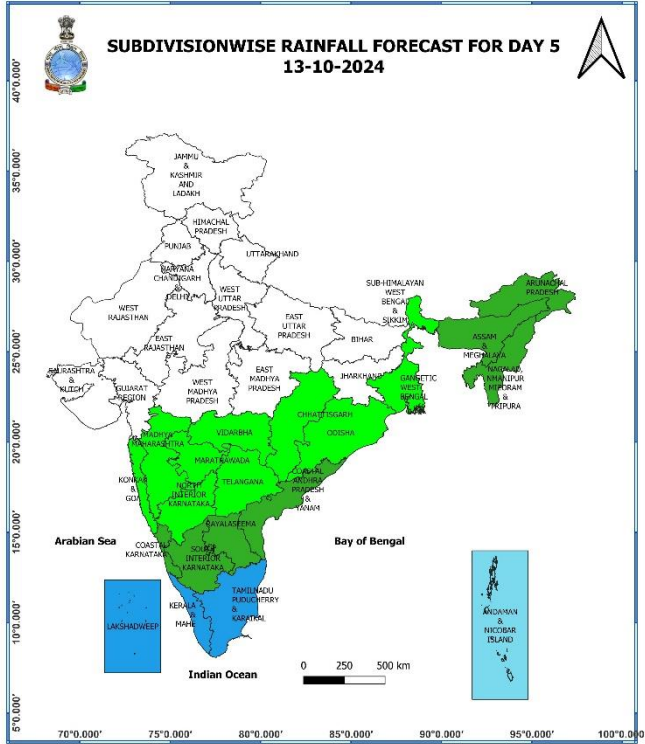
11 October (Day 3):

- ❖ **Heavy rainfall ($\geq 7\text{cm}$)** very likely at isolated places over Arunachal Pradesh, Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal and South Interior Karnataka.
- ❖ **Thunderstorm with lightning** very likely at isolated places over Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal and Coastal Andhra Pradesh & Yanam.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is very likely to prevail over Maldives, Lakshadweep, Comorin areas, southeast Arabian sea & adjoining southwest Arabian sea, parts of eastcentral Arabian sea, along & off Kerala, Karnataka coasts, gulf of Mannar. Fishermen are advised not to venture into these areas.



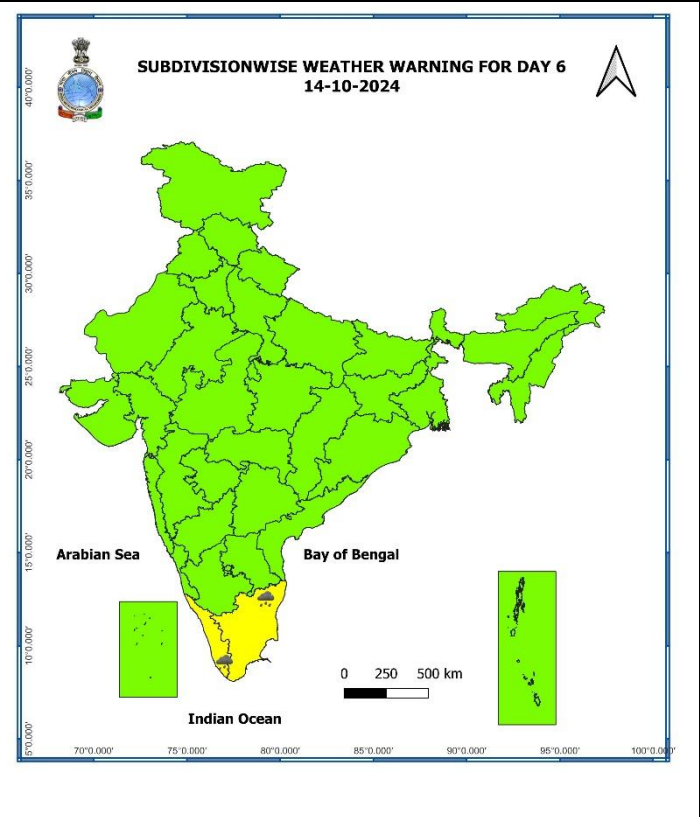
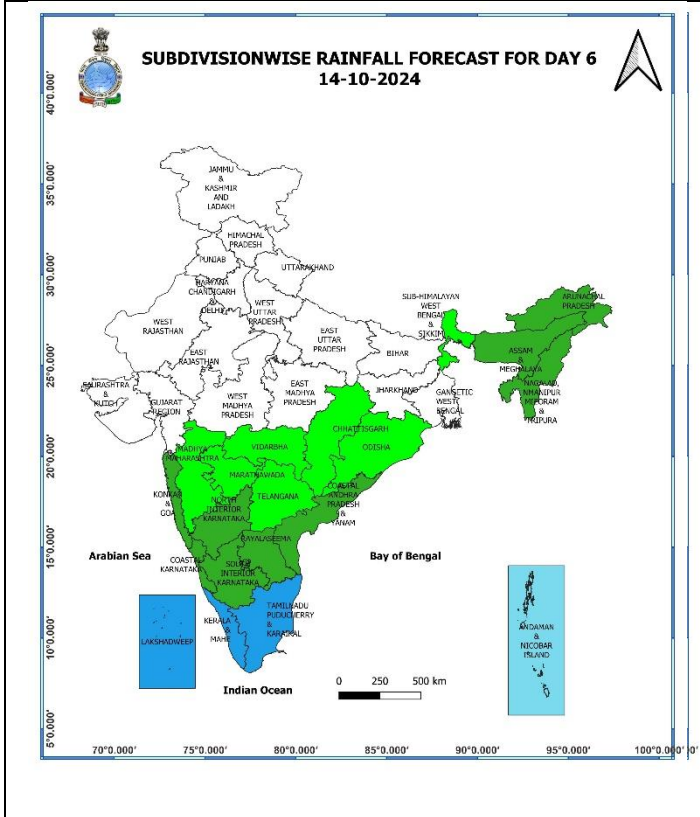
12 October (Day 4):

- ❖ **Heavy rainfall ($\geq 7\text{cm}$)** likely at isolated places over Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Thunderstorm with lightning** likely at isolated places over Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal and Coastal Andhra Pradesh & Yanam.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail over Maldives, Lakshadweep, Comorin areas & adjoining southeast Arabian sea, along & off Kerala, coast, gulf of Mannar. Fishermen are advised not to venture into these areas.



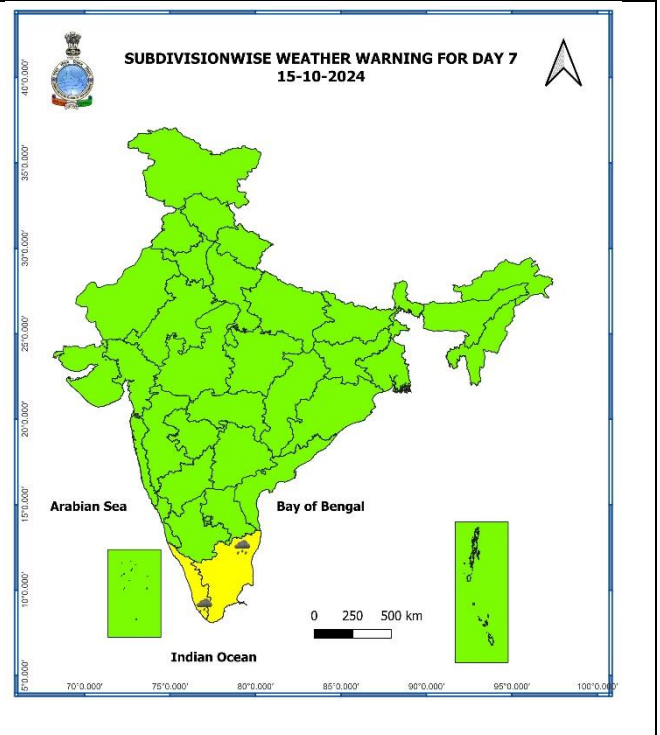
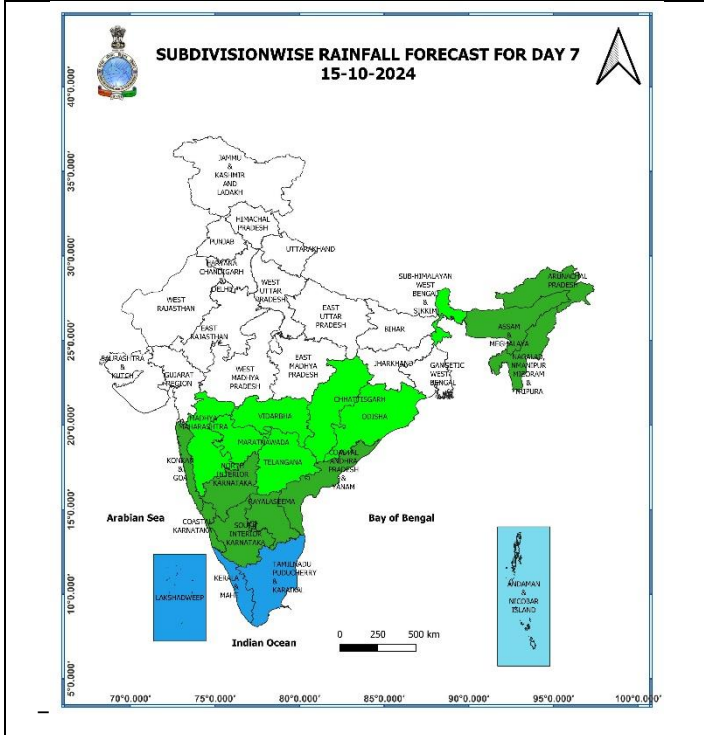
13 October (Day 5):

- ❖ **Heavy rainfall ($\geq 7\text{cm}$)** likely at isolated places over Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal.



14 October (Day 6):

- ❖ Heavy rainfall ($\geq 7\text{cm}$) likely at isolated places over Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal.



15 October (Day 7):

- ❖ Heavy rainfall ($\geq 7\text{cm}$) likely at isolated places over Kerala & Mahe and Tamil Nadu, Puducherry & Karaikal.

Weather Outlook for subsequent 3 days (During 16th October- 18th October, 2024)

- ❖ Fairly widespread to widespread rainfall likely over Peninsular and adjoining Central India and Islands.
- ❖ Scattered to fairly widespread rainfall over East and Northeast 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.

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

- ✓ In **Tamil Nadu**, drain out excess water from rice nurseries and recently transplanted rice fields; postpone harvesting of matured millet crops.
- ✓ In **Kerala**, postpone harvesting of *virippu* paddy; provide mechanical support to banana.
- ✓ Make necessary arrangements for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Kerala, Coastal and South Interior Karnataka, Rayalaseema and North Eastern States.
- ✓ Keep the harvested produce at safer places.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

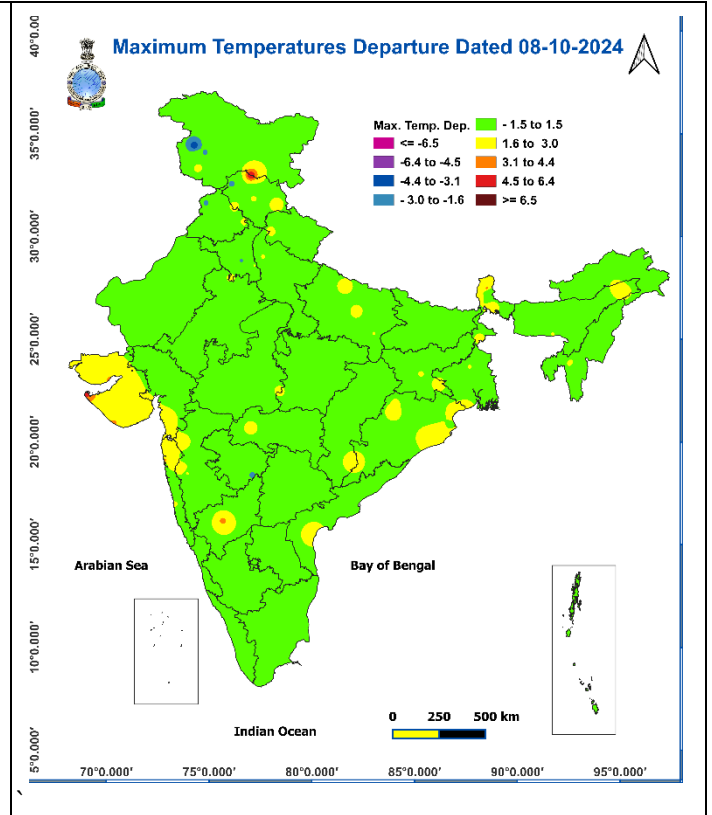
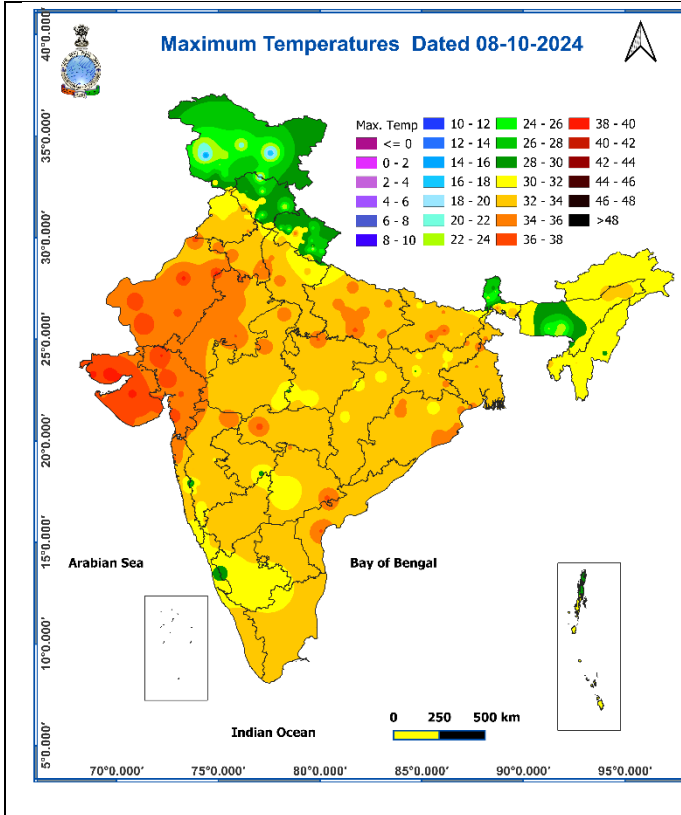


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

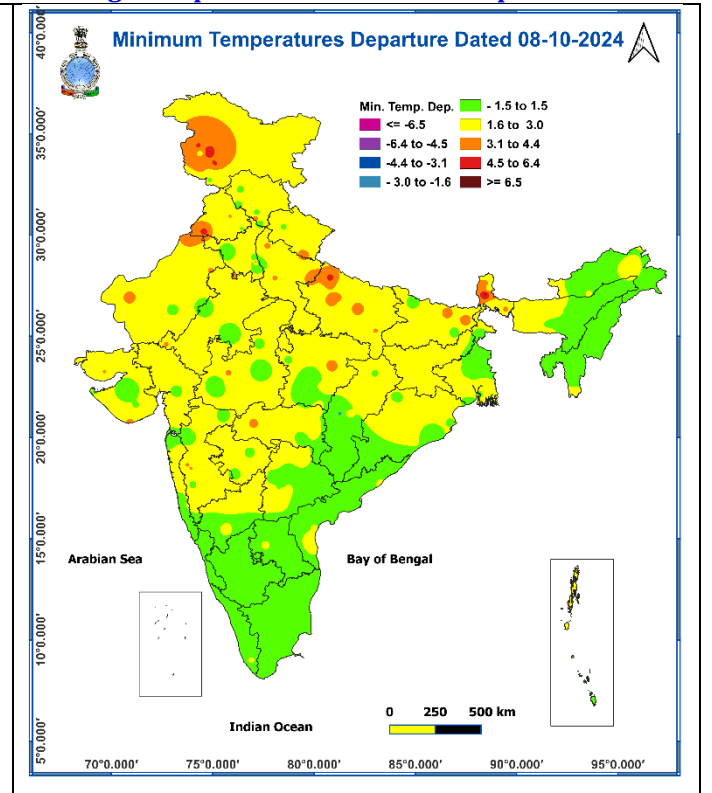
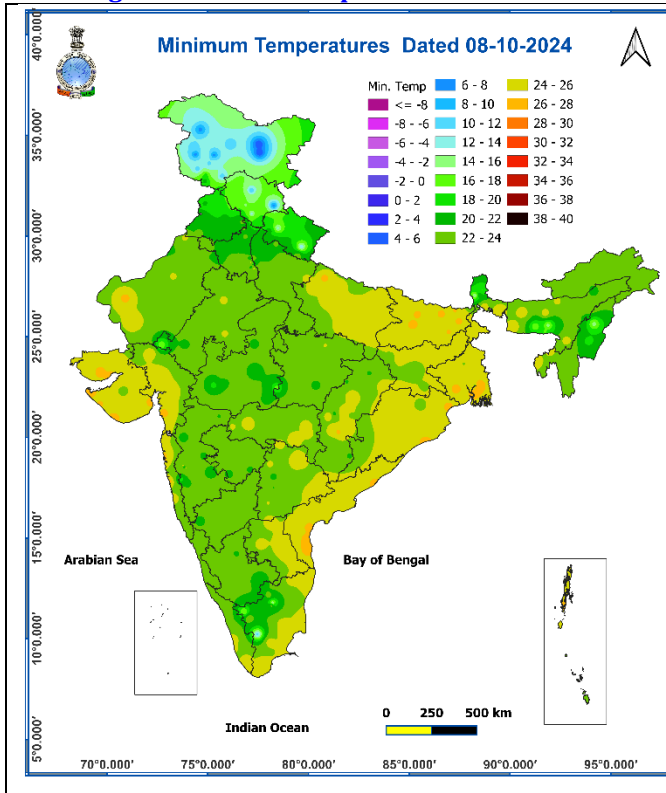
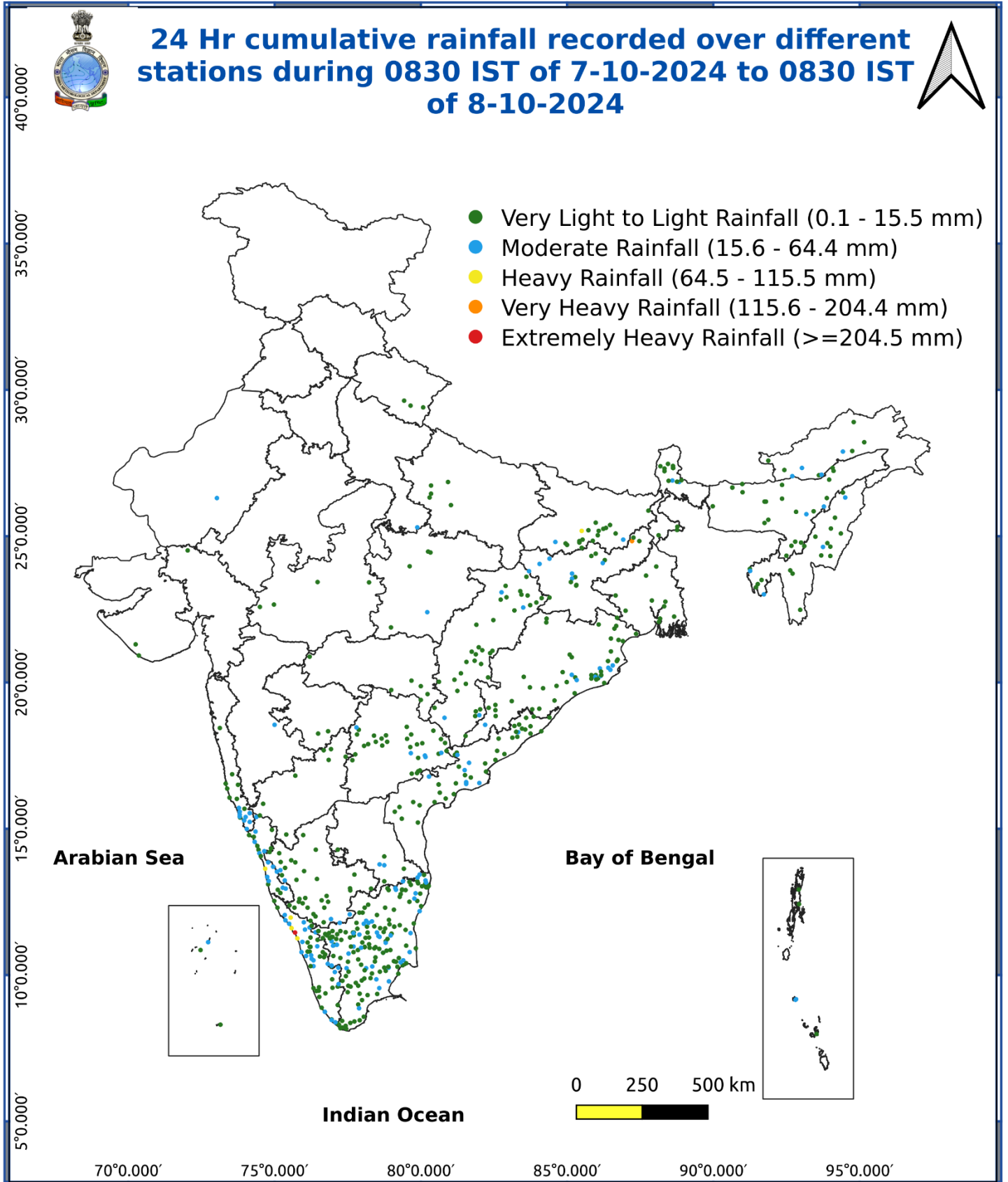


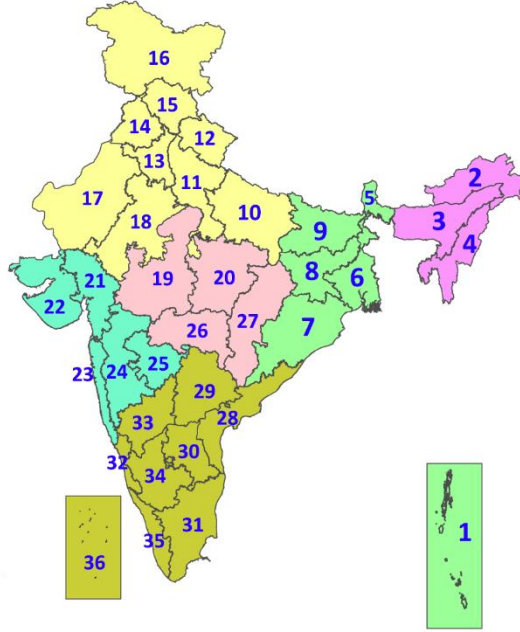
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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)



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)