

Tuesday, October 15, 2024
Time of Issue: 0845 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

On further Withdrawal of Southwest Monsoon and Onset of Northeast Monsoon

- ❖ **Southwest Monsoon** has further withdrawn from remaining parts of Assam, Meghalaya, entire Arunachal Pradesh, Nagaland, Manipur, Mizoram and Tripura, most parts of north Bay of Bengal. The **line of withdrawal of Southwest Monsoon** now passes through 18.5°N/92.0°E, 18.5°N/90.0°E, Gopalpur, Raipur, 22.5°N/79.5°E, Khargone, Nandurbar, Navsari and 20°N/70°E.
- ❖ Conditions are favourable for further withdrawal of Southwest Monsoon from remaining parts of the country during next 24 days. Simultaneously with the setting in of easterly & northeasterly winds over southern peninsular India, south & adjoining central Bay of Bengal, the Northeast Monsoon rainfall activity is likely to commence over south east peninsular region during the same period.

Weather Systems:

- ❖ The low pressure area over southeast Bay of Bengal moved west-northwestwards and lay as a well marked low pressure area over the central part of south Bay of Bengal at 0530 hours IST of today, the 15th October 2024. It is likely to intensify into a depression and continue to move west-northwestwards towards north Tamil Nadu, Puducherry and adjoining south Andhra Pradesh coasts during next 2 days.
- ❖ The Depression over westcentral Arabian Sea off Oman coast moved westwards with a speed of 8 kmph during past 6 hours, and lay centred at 0530 hours IST of today, the 15th October, 2024 over the same region near latitude 16.1°N and longitude 61.0°E, about 550 km south-southeast of Masirah (Oman), 750 km east of Salalah (Oman) and 950 km east of Al Ghaidah (Yemen). It is likely to move nearly westwards towards Oman coast and weaken gradually into a well-marked low pressure area during next 06 hours.
- ❖ A cyclonic circulation lies westcentral Bay of Bengal off south coastal Andhra Pradesh lay over Southwest Bay of Bengal and adjoining Tamil Nadu coast and extends upto middle tropospheric levels tilting southwestwards with height.

Forecast & Warnings (upto 7 days):

South Peninsular India:

- ✓ Fairly widespread to widespread light to moderate rainfall very likely over Kerala & Mahe, Lakshadweep, Puducherry & Karaikal, Kerala & Mahe, Coastal Karnataka, Rayalaseema during the week; Tamil Nadu, Puducherry & Karaikal during 3 days; North Interior Karnataka during 4 days ; Coastal Andhra Pradesh & Yanam during 4 days; South Interior Karnataka during 4 days; Scattered to Fairly widespread light to moderate rainfall over Tamil Nadu, Puducherry & Karaikal during next 4 days; North Interior Karnataka during next 3 days; South Interior Karnataka during next 3 days. Isolated to Scattered light to moderate rainfall over Telangana over the week.
- ✓ **Isolated extremely heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal and south Coastal Andhra Pradesh & Yanam on 16th and over South Interior Karnataka on 17th October.
- ✓ **Isolated very heavy rainfall** very likely over Coastal Andhra Pradesh & Yanam on 16th; Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, South Interior Karnataka and Rayalaseema during 15th-17th; Coastal Karnataka on 17th October.
- ✓ **Isolated heavy rainfall** very likely over Kerala & Mahe on 18th, Coastal Andhra Pradesh & Yanam, Coastal Karnataka and South Interior Karnataka during 15th -17th ; North Interior Karnataka on 16th -17th October and Lakshadweep on 17th & 18th October.

West & Central India:

- ✓ Scattered to Fairly widespread light to moderate rainfall very likely over Konkan & Goa, Gujarat State during 2 days; Isolated to Scattered light to moderate rainfall over same region during subsequent 5 days; Isolated to Scattered light to moderate rainfall over, Madhya Maharashtra, Marathwada, Madhya Pradesh, Vidarbha, Chhattisgarh during the week.
- ✓ **Isolated heavy rainfall** very likely Konkan & Goa, Madhya Maharashtra on 15th October.

Northeast, Northwest India & East India:

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

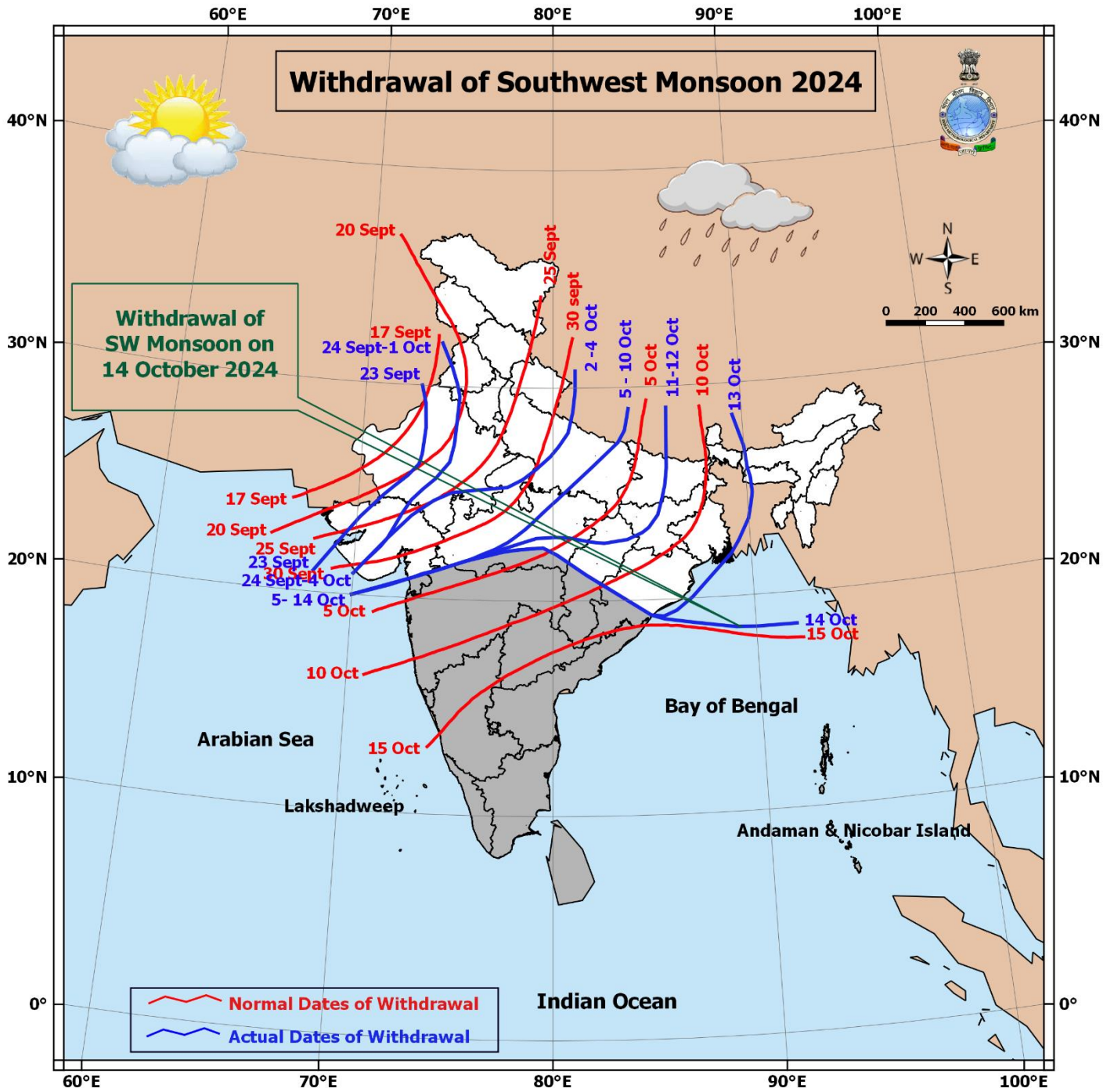
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at most places** over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam; **at many places** over Kerala & Mahe; **at a few places** over Madhya Pradesh, Rayalaseema; **at isolated places** over Saurashtra & Kutch, Coastal Karnataka, Madhya Maharashtra, Telangana, Chhattisgarh, Jharkhand, West Bengal & Sikkim, Coastal Karnataka & North Interior Karnataka.
- ❖ **Heavy rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday): **Heavy to very Heavy rainfall** at isolated places over Coastal Andhra Pradesh & Yanam.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Coastal Andhra Pradesh & Yanam:** Kavali 12, Nellore 5, Sri_Potti_Sriramulu_Nellore (Podalukur), Machilipatnam & Ongole 4 each, Bapatla 3; **Saurashtra & Kutch:** Dwarka 6, Amreli 5; **East Madhya Pradesh:** Katni Pipraundh kvk 6, Sagar 2; **West Madhya Pradesh:** Betul 4; **Tamil Nadu, Puducherry & Karaikal:** Karaikal, Nagapattinam & Cuddalore 2 each.
- ❖ **Minimum Temperature Departures (as on 14-10-2024):** 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 Rajasthan, Gujarat Region, Madhya Maharashtra, Madhya Pradesh, Vidarbha, Chhattisgarh, West Uttar Pradesh, Bihar; **above normal (1.6°C to 3.0°C)** at most places over North Interior Karnataka, Odisha, Jharkhand, Telangana, Marathwada, Punjab; at many places over Coastal Andhra Pradesh & Yanam, Konkan & Goa, Saurashtra & Kutch; at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, Gangetic West Bengal; at isolated places over South Interior Karnataka, Rayalaseema, Sub-Himalayan West Bengal & Sikkim, Haryana. These were **below normal (-1.6°C to -3.0°C)** at isolated places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura. Yesterday, **the lowest minimum temperature of 16.4°C** was reported at **Hissar (Haryana)** over the plains of the country. **(Fig.4)**
- ❖ **Maximum Temperature Departures (as on 14-10-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; **above normal (1.6°C to 3.0°C)** at a few places over Himachal Pradesh; at isolated places over Uttarakhand, Punjab, West Rajasthan, Chhattisgarh, Odisha, Gangetic West Bengal, Vidarbha, Madhya Maharashtra, Marathwada, Nagaland, Manipur, Mizoram & Tripura. These were **markedly below normal (-5.1°C or less)** at isolated places over Tamil Nadu, Puducherry & Karaikal; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over East Rajasthan, West Madhya Pradesh, Rayalaseema, Telangana; **below normal (-1.6°C to -3.0°C)** at isolated places over Gujarat state, East Uttar Pradesh, Bihar, Sub-Himalayan West Bengal & Sikkim, South Interior Karnataka, Kerala & Mahe, Coastal Andhra Pradesh & Yanam. Yesterday, **the highest Maximum Temperature of 38.0°C** was reported at **Sri Ganganagar (West Rajasthan)** over the country. **(Fig. 2)**

Meteorological Analysis (Based on 0530 hours IST)

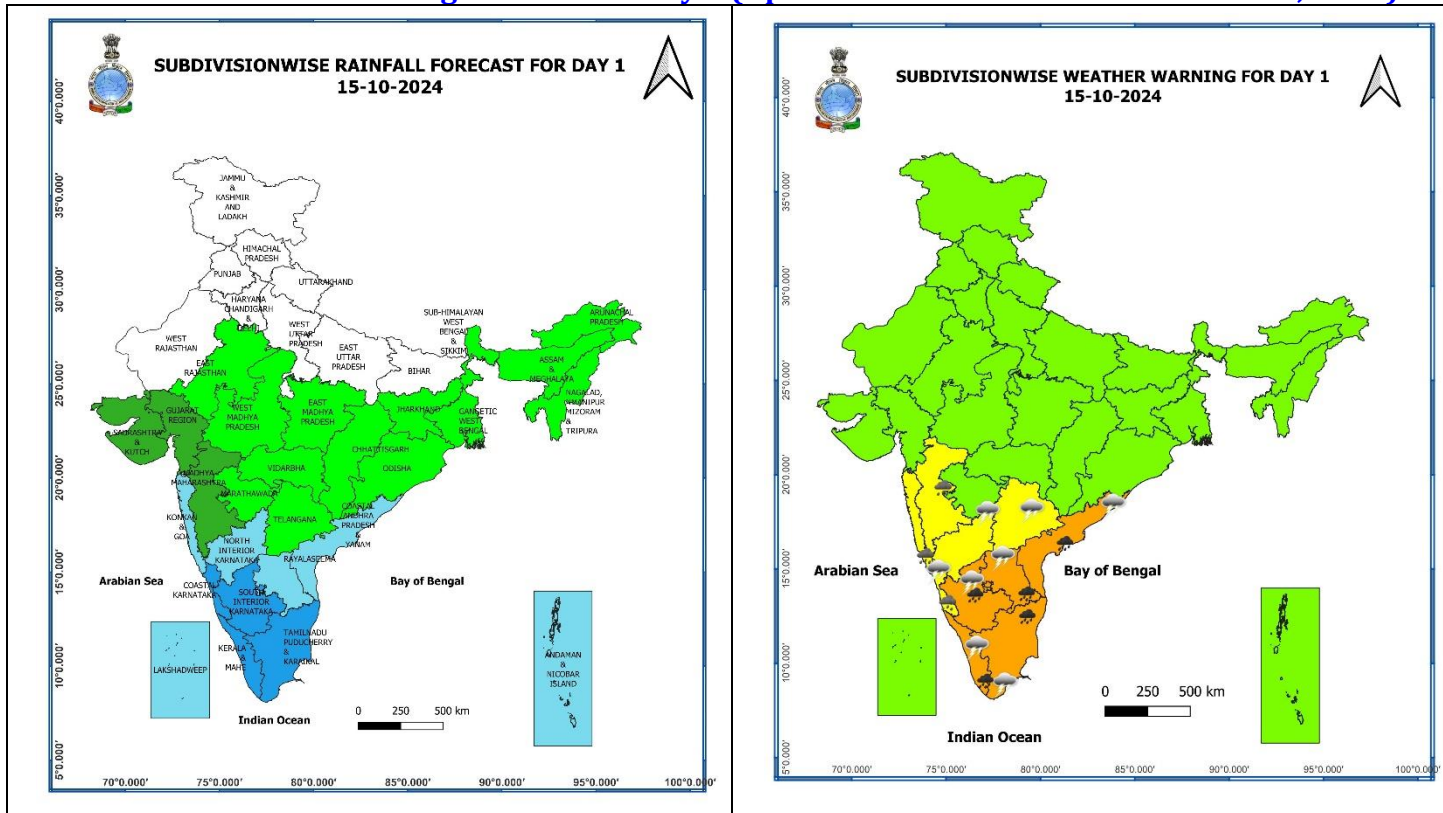
- ❖ The **line of withdrawal of Southwest Monsoon** continues to pass through 18.5°N/92.0°E, 18.5°N/90.0°E, Gopalpur, Raipur, 22.5°N/79.5°E, Khargone, Nandurbar, Navsari and 20°N/70°E.
- ❖ Conditions are favourable for further **withdrawal of Southwest Monsoon** from remaining parts of the country during next 24 days. Simultaneously with the setting in of easterly & northeasterly winds over southern peninsular India, south & adjoining central Bay of Bengal, the **Northeast Monsoon** rainfall activity is likely to commence over south east peninsular region during the same period.
- ❖ The **low pressure area** over southeast Bay of Bengal moved west-northwestwards and lay as a well marked low pressure area over the central part of south Bay of Bengal at 0530 hours IST of today, the 15th October 2024. It is likely to intensify into a depression and continue to move west-northwestwards towards north Tamil Nadu, Puducherry and adjoining south Andhra Pradesh coasts during next 2 days.
- ❖ The **cyclonic circulation** over westcentral Bay of Bengal off south coastal Andhra Pradesh lay over Southwest Bay of Bengal and adjoining Tamil Nadu coast and extends upto 5.8 km above mean sea level tilting southwestwards with height.
- ❖ The **Depression** over westcentral Arabian Sea off Oman coast moved westwards with a speed of 8 kmph during past 6 hours, and lay centred at 0530 hours IST of today, the 15th October, 2024 over the same region near latitude 16.1°N and longitude 61.0°E, about 550 km south-southeast of Masirah (Oman), 750 km east of Salalah (Oman) and 950 km east of Al Ghaidah (Yemen). It is likely to move nearly westwards towards Oman coast and weaken gradually into a well-marked low pressure area during next 06 hours.
- ❖ The **trough now runs** from centre of the **Depression** over westcentral Arabian Sea off Oman coast to Comorin area across south Kerala between 3.1 km & 5.8 km above mean sea level.
- ❖ The upper air **cyclonic circulation** over south Assam between 1.5 and 3.1 km above mean sea level persists.

Withdrawal of Southwest Monsoon 2024



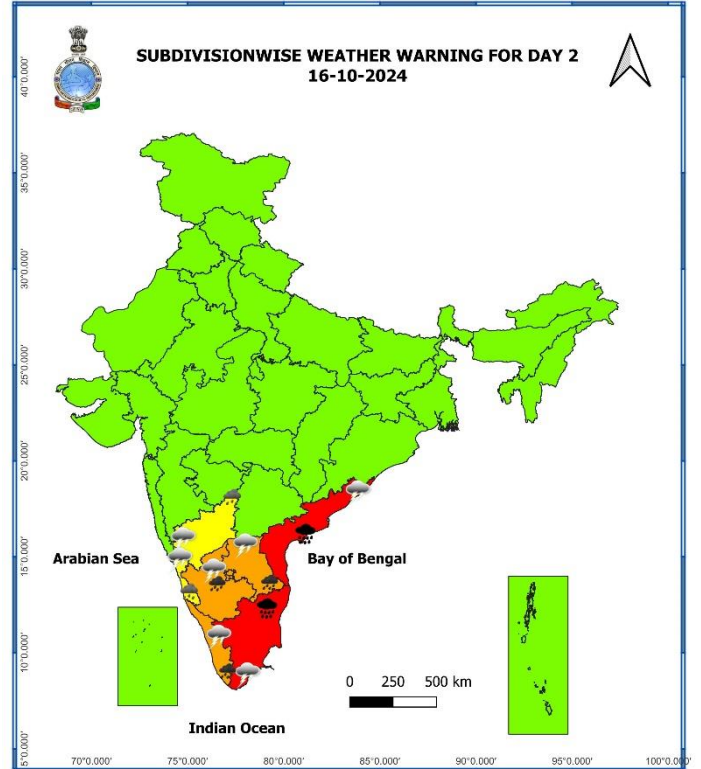
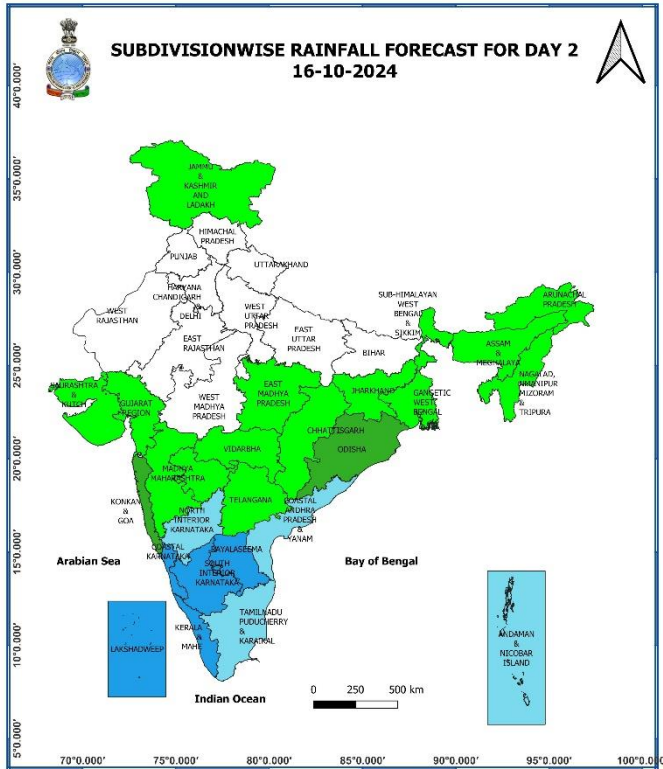
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Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 22nd October, 2024)



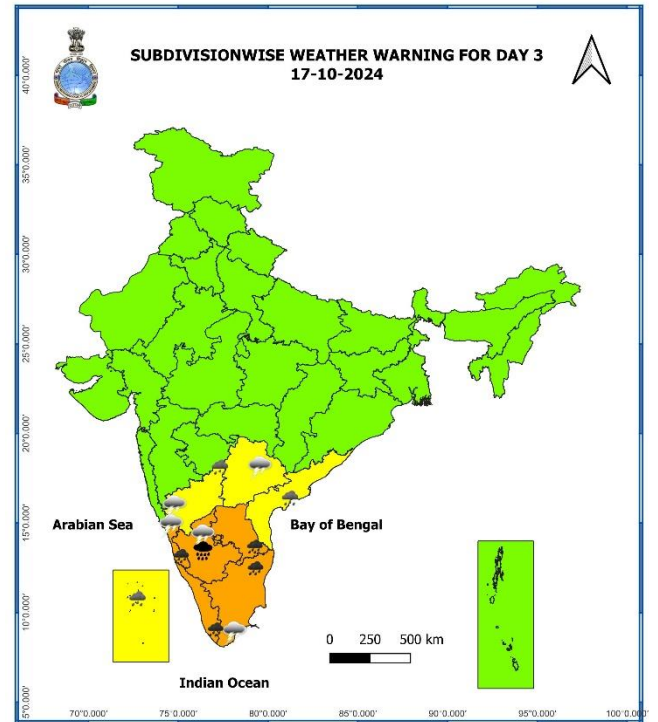
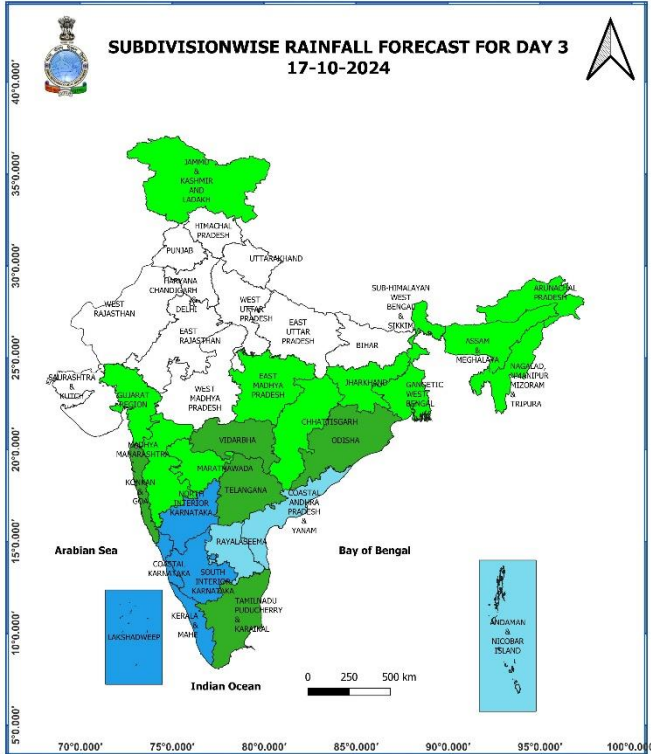
15 October (Day 1):

- ❖ **Heavy to very Heavy rainfall (≥ 12 cm)** likely at isolated places over Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Rayalaseema, South Interior Karnataka; **Heavy rainfall (≥ 7 cm)** at isolated places over Konkan & Goa, Madhya Maharashtra, Coastal Karnataka.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana, Karnataka.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over Gulf of Mannar, along and off Sri Lanka coast, along and off Tamil Nadu, south Andhra Pradesh coasts, southwest Bay of Bengal and many parts of southeast Bay of Bengal, many parts of westcentral Bay of Bengal, few parts of eastcentral Bay of Bengal. Fishermen are advised not to venture into these areas.



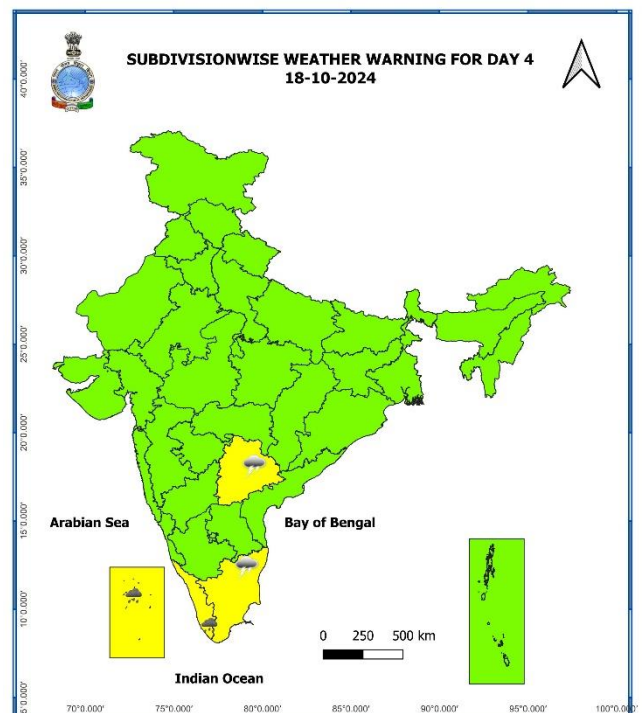
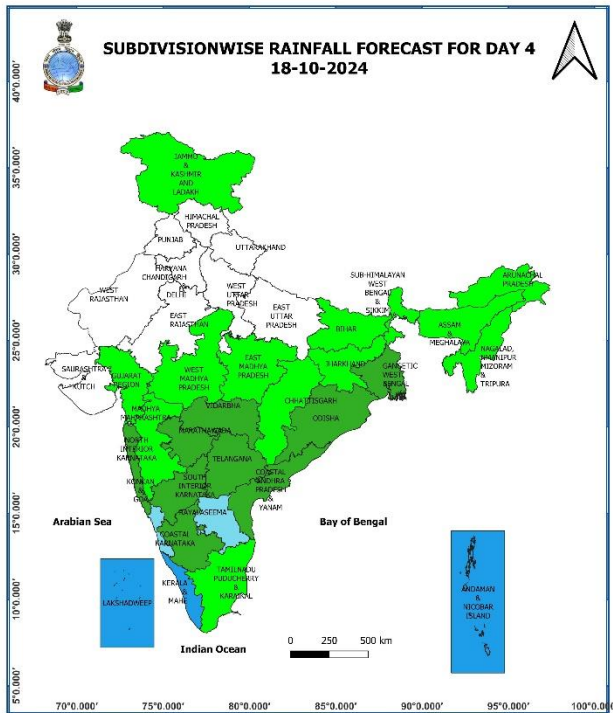
16 October (Day 2):

- ❖ **Heavy to very heavy rainfall with extremely heavy falls (> 20 cm)** very likely at isolated places over Coastal Andhra Pradesh & Yanam and Tamil Nadu, Puducherry & Karaikal; **Heavy to very Heavy rainfall (≥ 12 cm)** likely at isolated places over Kerala & Mahe, Rayalaseema, South Interior Karnataka; **Heavy rainfall (≥ 7 cm)** likely at isolated places over Coastal & North Interior Karnataka.
- ❖ **Thunderstorm accompanied with lightning** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Karnataka.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over along and off Kerala, Karnataka coasts and adjoining Lakshadweep area, over Comorin area, Gulf of Mannar, along and off Sri Lanka coast, along and off Tamil Nadu, Andhra Pradesh coasts, southwest Bay of Bengal adjoining southeast Bay of Bengal, many parts of westcentral Bay of Bengal. **Squally weather with wind speed 40 kmph to 50 kmph gusting to 60 kmph** is likely to prevail over northern parts of southwest Bay of Bengal, southern parts of westcentral Bay of Bengal, along and off north Sri Lanka coast, north Tamil Nadu and adjoining south Andhra Pradesh. Fishermen are advised not to venture into these areas.



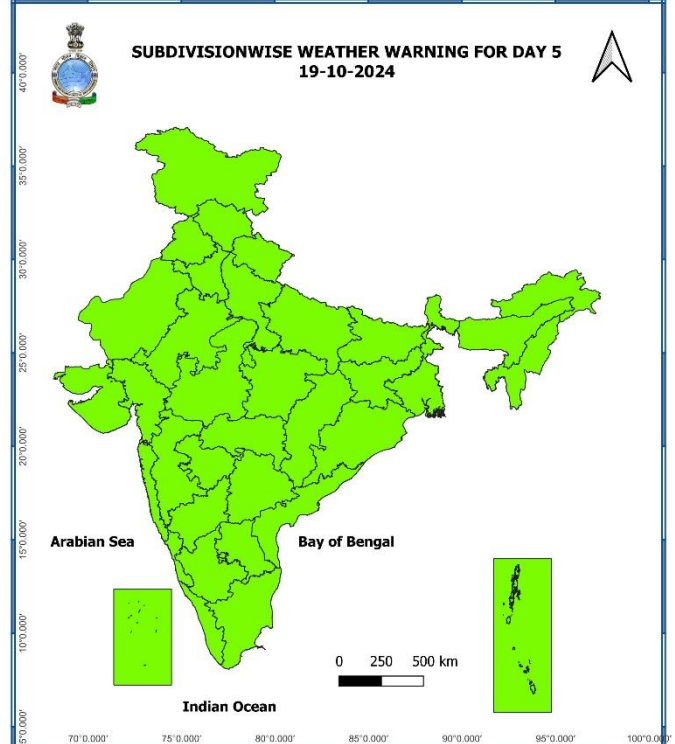
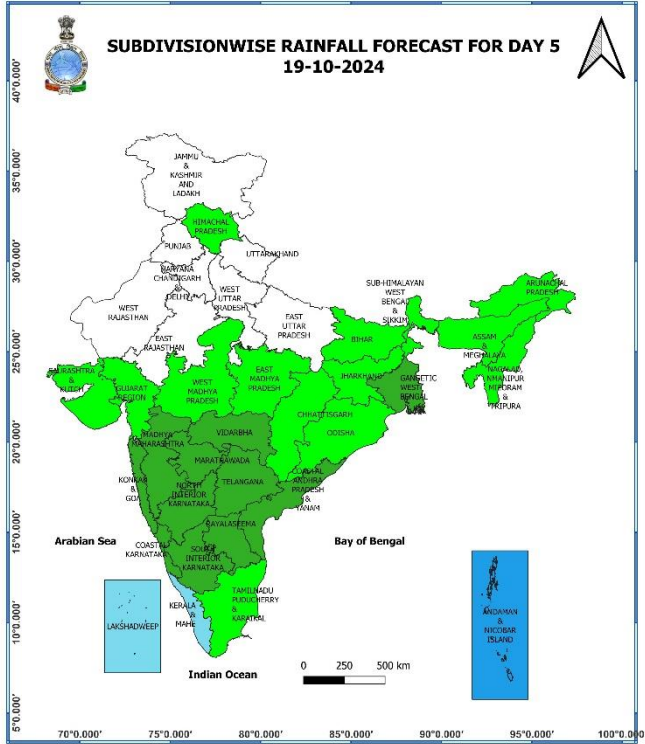
17 October (Day 3):

- ❖ **Heavy to very heavy rainfall with extremely heavy falls (> 20 cm)** likely at isolated places over South Interior Karnataka; **Heavy to very Heavy rainfall (≥12 cm)** at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Rayalaseema, Coastal Karnataka; **Heavy rainfall (≥7cm)** at isolated places over Lakshadweep, Coastal Andhra Pradesh & Yanam, North Interior Karnataka.
- ❖ **Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph)** likely at isolated places over Telangana; **with lightning** at isolated places over Tamil Nadu, Puducherry & Karaikal, Karnataka.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over along and off Kerala, Karnataka coasts and adjoining Lakshadweep area, over Comorin area, Gulf of Mannar, along and off Sri Lanka coast, along and off Tamil Nadu, Andhra Pradesh coasts, southwest Bay of Bengal adjoining southeast Bay of Bengal, many parts of westcentral Bay of Bengal. **Squally weather with wind speed 40 kmph to 50 kmph gusting to 60 kmph** is likely to prevail over northern parts of southwest Bay of Bengal, southern parts of westcentral Bay of Bengal, north Tamil Nadu and adjoining south Andhra Pradesh coasts. Fishermen are advised not to venture into these areas.



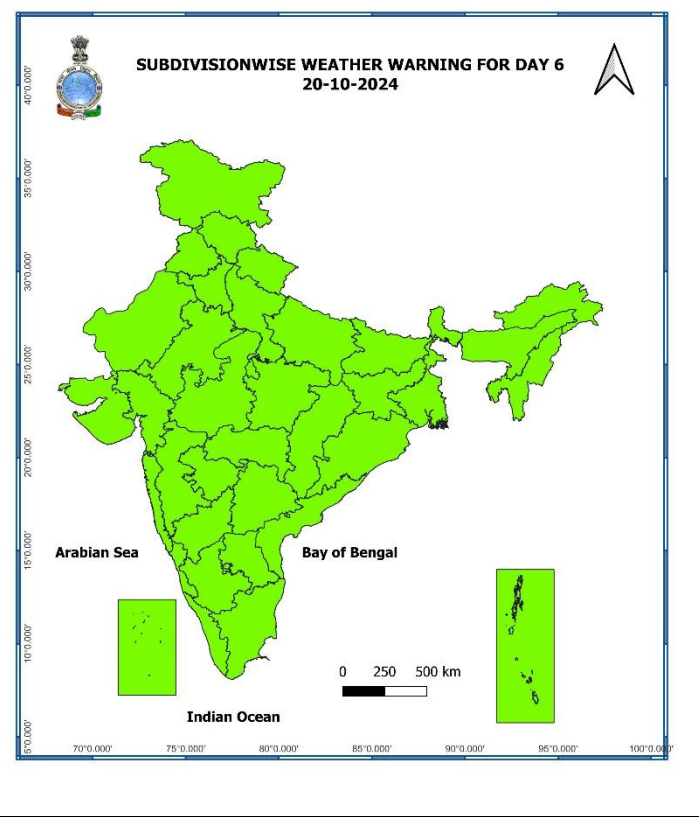
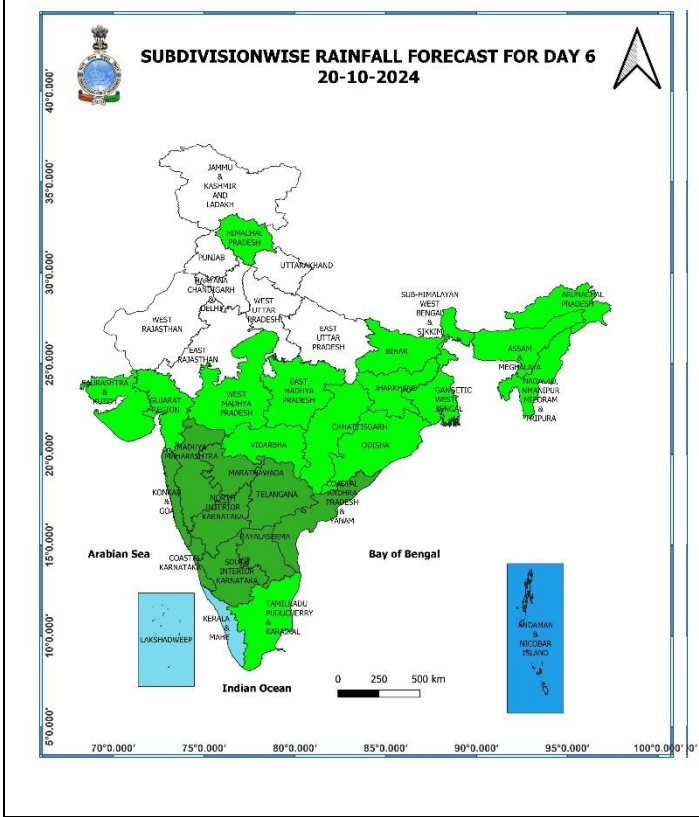
18 October (Day 4):

- ❖ **Heavy rainfall ($\geq 7\text{cm}$)** likely at isolated places over Kerala & Mahe, Lakshadweep.
- ❖ **Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph)** likely at isolated places over Telangana; **with lightning** at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over along and off Kerala, Karnataka coasts and adjoining Lakshadweep area, over Comorin area, Gulf of Mannar, along and off Sri Lanka coast, along and off Tamil Nadu, Andhra Pradesh coasts, over southwest Bay of Bengal, few parts of westcentral Bay of Bengal. **Squally weather with wind speed 40 kmph to 50 kmph gusting to 60 kmph** is likely to prevail over along and off north Tamil Nadu and adjoining south Andhra Pradesh coasts and adjoining sea area. Fishermen are advised not to venture into these areas.



19 October (Day 5):

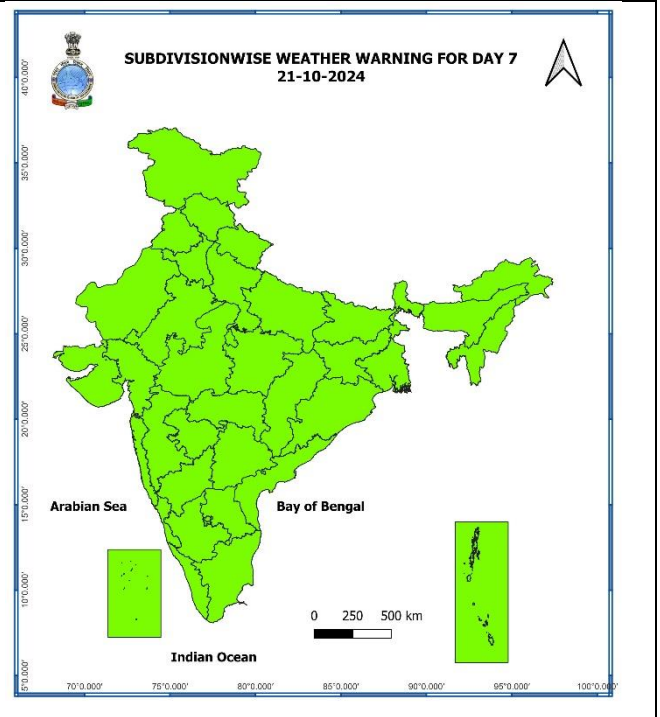
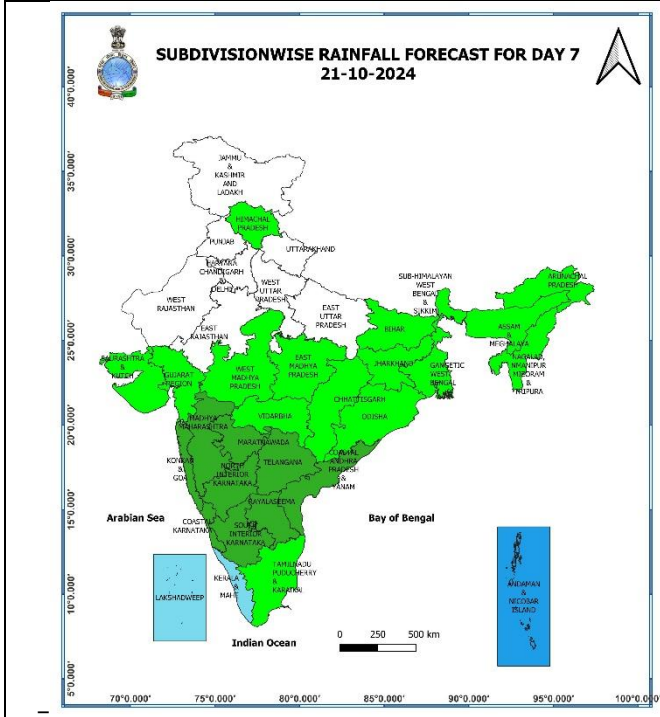
❖ **No weather warning.**



20 October (Day 6):

❖ **No weather warning.**

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21 October (Day 7):

- ❖ No weather warning.

Weather Outlook for subsequent 3 days (During 22nd October- 24th October, 2024)

- ❖ Fairly widespread to widespread rainfall likely over Peninsular and adjoining Central India and Islands.
- ❖ Isolated to Scattered rainfall likely over some parts of 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.

Impact due to

- ✓ **Isolated extremely heavy rainfall** very likely over Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal on 16th October.
- ✓ **Isolated very heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal on 15th & 17th; Kerala & Mahe, South Interior Karnataka and Rayalaseema during 15th-17th; Coastal Andhra Pradesh & Yanam on 15th; Coastal Karnataka on 17th October.

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

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

- ✓ In **Tamil Nadu**, drain out excess water from rice nurseries and fields of rice, maize, pepper and newly planted turmeric. Provide support to banana plantations.
- ✓ Make necessary arrangements for draining out excess water from standing crop fields and fruit orchards to avoid water stagnation in Madhya Maharashtra, Vidarbha, Goa, Gujarat, Kerala, Coastal and South Interior Karnataka and Andhra Pradesh.
- ✓ 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

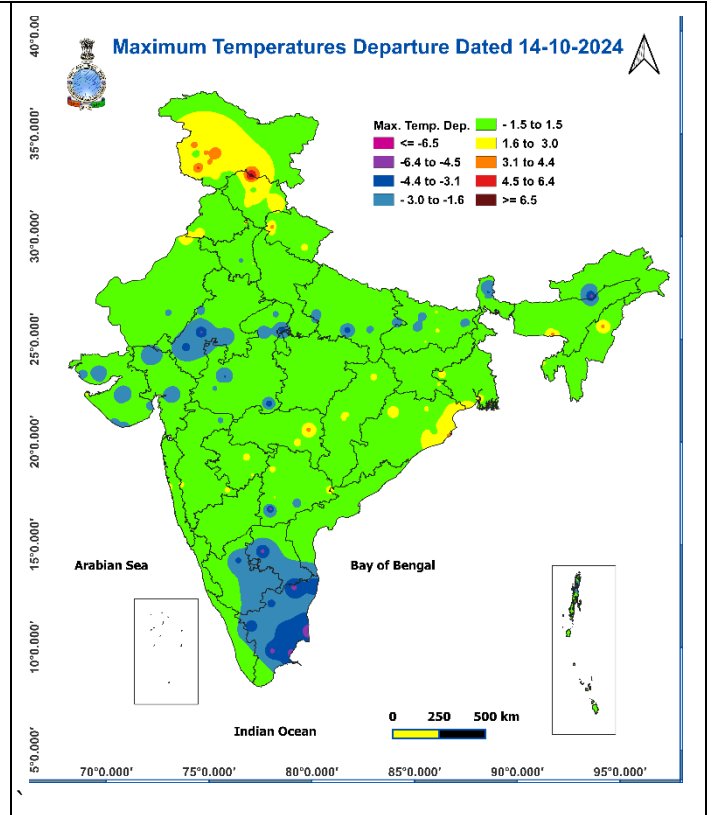
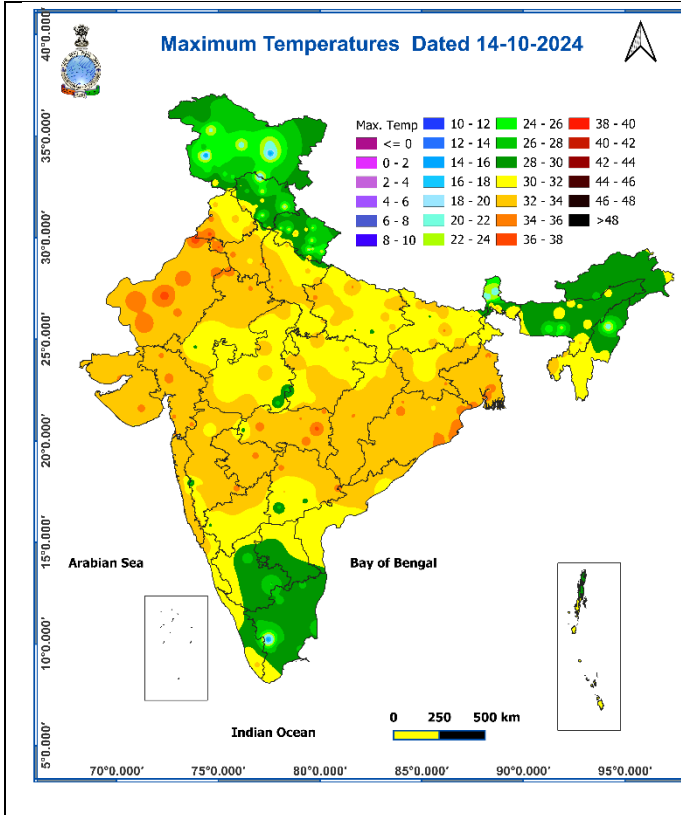


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

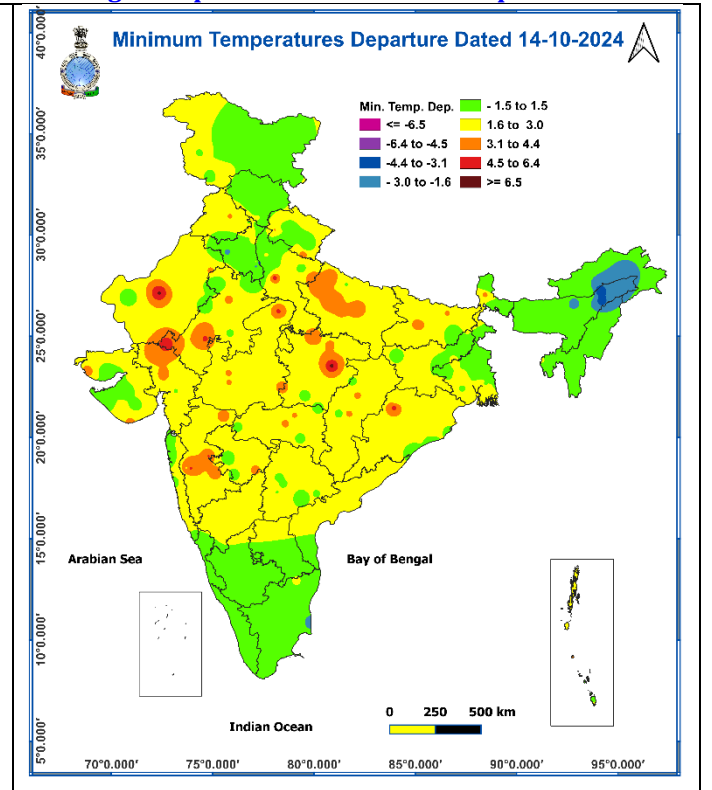
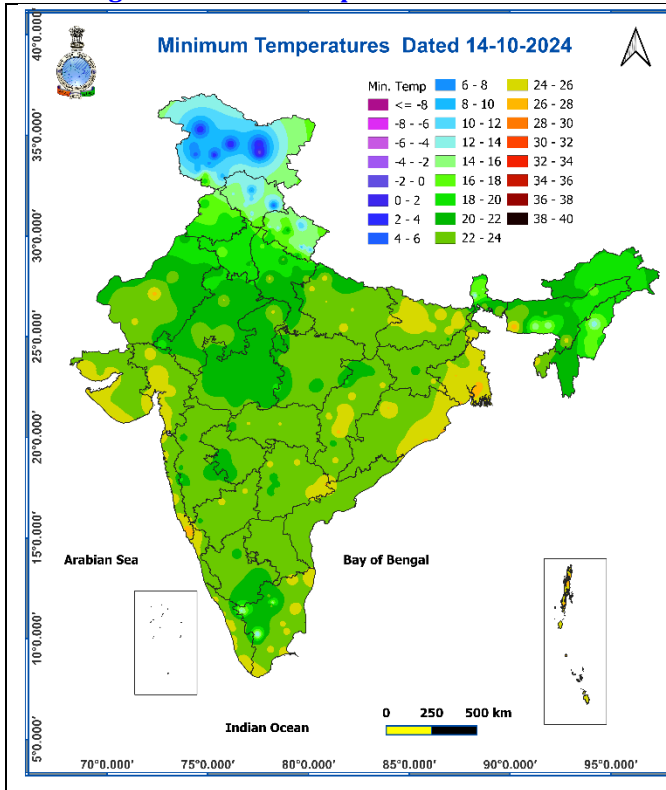
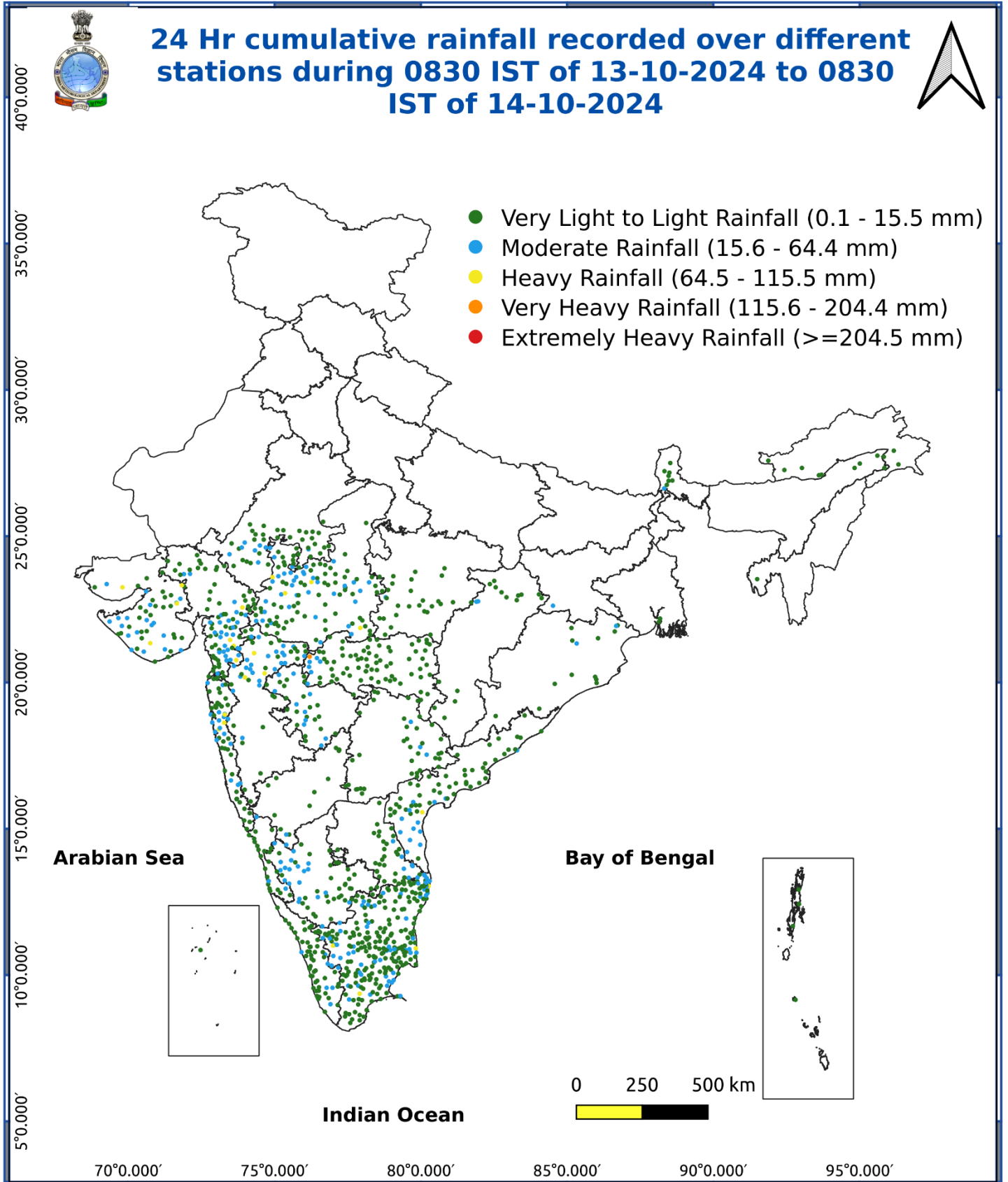


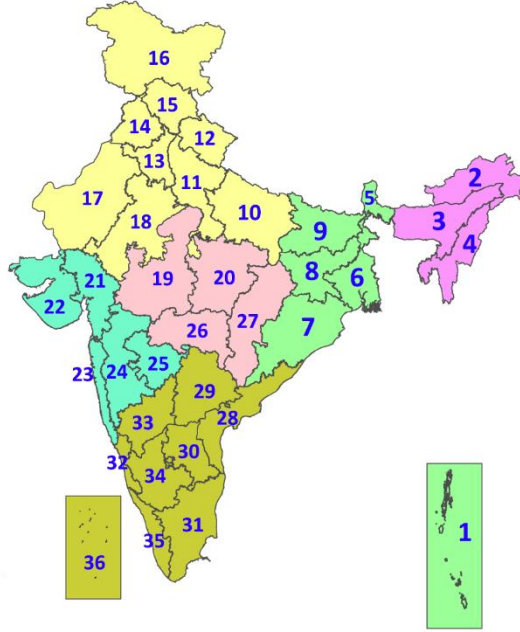
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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)

- | | | |
|----------------------|----------------------|--------------|
| 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 *	<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>