

Wednesday, October 23, 2024
Time of Issue: 0845 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems:

- ❖ Yesterday's **deep depression** over eastcentral Bay of Bengal moved west-northwestwards with a speed of 18 kmph during past 6 hours intensified into a **cyclonic storm "DANA" (pronounced as Dana)**, and lay centred at 0530 hrs IST of today, the 23rd October, over the same region near latitude 16.3° N and longitude 89.9°E, about 560 km southeast of Paradip (Odisha), 630 km south-southeast of Sagar Island (West Bengal) and 630 km south-southeast of Khepupara (Bangladesh). It is very likely to move northwestwards and intensify into a severe cyclonic storm over northwest Bay of Bengal by early morning of 24th and cross north Odisha and West Bengal coasts between Puri and Sagar Island during night of 24th to morning of 25th October, 2024 as a **severe Cyclonic Storm** with a wind speed of 100-110 kmph gusting 120 kmph.
- ❖ An **upper air cyclonic circulation** lies over eastcentral Arabian sea in lower and middle tropospheric levels.

Forecast & Warnings (upto 7 days):

East India:

- ✓ Light to moderate rainfall at most places with **heavy rainfall** at isolated places very likely over Odisha on 23rd & 26th; **heavy to very heavy rainfall** at a few places with **extremely heavy rainfall at** isolated places on 24th & 25th October.
- ✓ **Light to moderate rainfall at most places with heavy rainfall** at isolated places very likely over Gangetic West Bengal on 23rd & 26th **heavy to very heavy rainfall** at a few places with **extremely heavy rainfall at** isolated places on 24th & 25th October.
- ✓ Light to moderate rainfall at a few places with **heavy rainfall** at isolated places very likely over Jharkhand on 24th; **heavy to very heavy rainfall** at isolated places on 25th October.

South Peninsular India:

- ✓ Light to moderate rainfall at many places accompanied with isolated thunderstorm and lightning very likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal & South Interior Karnataka during next 3 days and light rainfall at isolated places is likely to prevail subsequent 4 days; light to moderate rainfall at isolated places very likely over rest of the region during the week.
- ✓ **Isolated heavy rainfall** very likely over Tamil Nadu, Puducherry & Karaikal and Karnataka, Kerala & Mahe on 23rd, Coastal Andhra Pradesh & Yanam on 25th October.

West India:

- ✓ Light to moderate rainfall at a few places accompanied with isolated thunderstorm and lightning very likely over Konkan & Goa and Madhya Maharashtra during next 3 days and dry weather is likely to prevail subsequent 4 days; light to moderate rainfall at Isolated places very likely over rest of the region during next 2 days and dry weather is likely to prevail subsequent 5 days.

Northeast India:

- ✓ Light to moderate rainfall at many places accompanied with isolated thunderstorm and lightning very likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 4 days and light rainfall at isolated places is likely to prevail subsequent 3 days; light to moderate rainfall at Isolated places very likely over Arunachal Pradesh during next 7days.
- ✓ **Isolated heavy rainfall** very likely over Arunachal Pradesh on 23rd, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 23rd & 24th October.

Central & Northwest India:

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

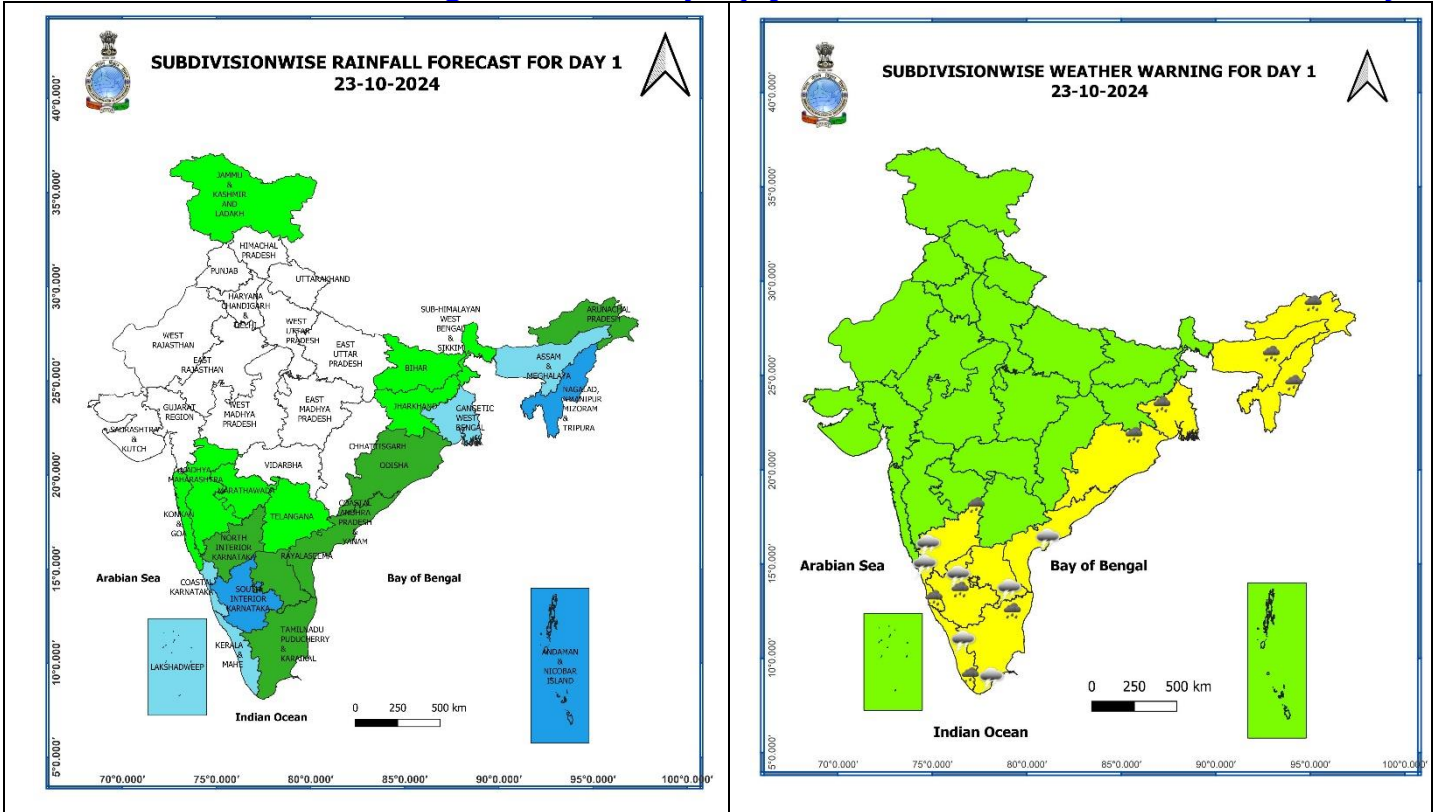
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at most places over** Tamil Nadu, Puducherry & Karaikal, Andaman & Nicobar Islands; **at few places over** Kerala & Mahe, Madhya Maharashtra; **at isolated places over** Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Saurashtra & Kutch, West Madhya Pradesh, Assam & Meghalaya, Mizoram, Konkan & Goa, Interior Karnataka, Coastal Andhra Pradesh & Yanam, Telangana, Lakshadweep.
- ❖ **Heavy rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday): **Nil**
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Andaman & Nicobar Islands:** Port Blair 6, Long Island 2; **West Madhya Pradesh:** Khandwa 4; **Kerala & Mahe:** Lower_Sholayar (Thrissur dist) 4, Urumi (Kozhikode dist) 3, Thenmala (Kollam dist), Laha (Pathanamthitta dist) & Vellathooval (Idukki Dist) 2 each; **Jammu & Kashmir:** Baderwah 3; **Tamil Nadu, Puducherry & Karaikal:** Salem 3, K. Paramathy 2; **Madhya Maharashtra:** Kolhapur 2; **South Interior Karnataka:** Bangalore Hindustan Airport 2; **Mizoram:** Lengpui 2.
- ❖ **Minimum Temperature Departures (as on 22-10-2024):** Minimum temperatures were **markedly above normal (5.1°C or more)** at isolated places over Madhya Maharashtra; **appreciably above normal (3.1°C to 5.0°C)** at a few places over Vidarbha; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Rajasthan, Uttar Pradesh, Gujarat state, Madhya Maharashtra, Konkan & Goa; **above normal (1.6°C to 3.0°C)** at most places over West Uttar Pradesh; a few places over Bihar, Telangana, North Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal. These were **below normal (-3.0°C to -1.6°C)** at isolated places over Assam & Meghalaya. Yesterday, **the lowest minimum temperature of 16.9°C** was reported at **Ridge (Delhi)** over the plains of the country. **(Fig.4)**
- ❖ **Maximum Temperature Departures (as on 22-10-2024):** Maximum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Bihar, Assam & Meghalaya; **above normal (1.6°C to 3.0°C)** at many places over Kerala & Mahe; at a few place over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura; at isolated places over Himachal Pradesh, Uttarakhand, East Uttar Pradesh, Jharkhand, Gangetic West Bengal, East Madhya Pradesh, Chhattisgarh, Vidarbha, Telangana, Coastal Andhra Pradesh & Yanam, Rayalaseema, Tamil Nadu, Puducherry & Karaikal. These were **below normal (-3.0°C to -1.6°C)** at isolated places over East Rajasthan, Gujarat state, Madhya Maharashtra. Yesterday, **the highest Maximum Temperature of 37.2°C** was reported at **Pokharan IAF (West Rajasthan)** over the country. **(Fig. 2)**

Meteorological Analysis (Based on 0530 hours IST)

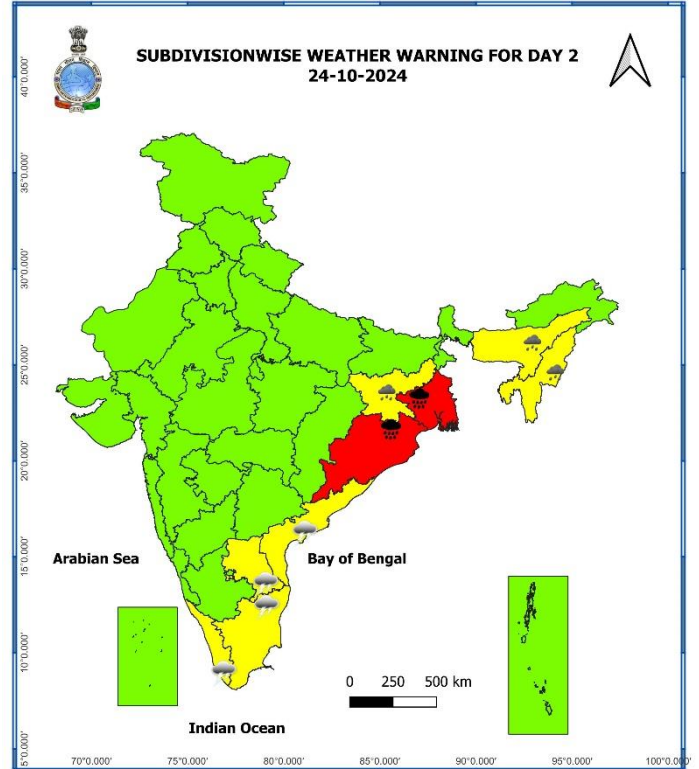
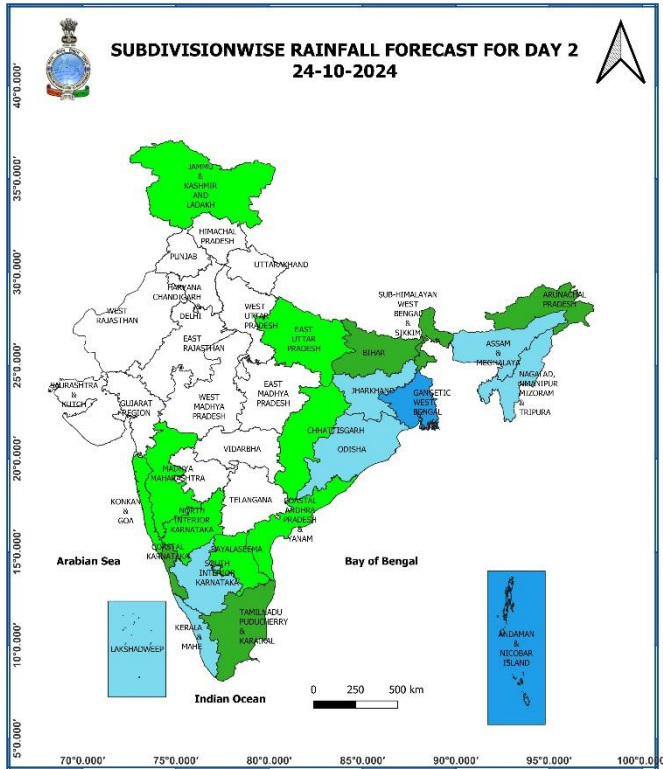
- ❖ Yesterday's **deep depression** over eastcentral Bay of Bengal moved west-northwestwards with a speed of 18 kmph during past 6 hours intensified into a **cyclonic storm "DANA" (pronounced as Dana)**, and lay centred at 0530 hrs IST of today, the 23rd October, over the same region near latitude 16.3° N and longitude 89.9°E, about 560 km southeast of Paradip (Odisha), 630 km south-southeast of Sagar Island (West Bengal) and 630 km south-southeast of Khepupara (Bangladesh). It is very likely to move northwestwards and intensify into a severe cyclonic storm over northwest Bay of Bengal by early morning of 24th and cross north Odisha and West Bengal coasts between Puri and Sagar Island during night of 24th to morning of 25th October, 2024 as a **severe Cyclonic Storm** with a wind speed of 100-110 kmph gusting 120 kmph.
- ❖ The **upper air cyclonic circulation** over Eastcentral Arabian Sea off Karnataka coast now lies over Eastcentral Arabian Sea extending between 1.5 km and 5.8 km above mean sea level.
- ❖ The **trough** from the centre of **deep depression** over Eastcentral Bay of Bengal to south Tamil Nadu coast extending upto 1.5 km above mean sea level has become less marked.
- ❖ The **Low Pressure Area** over Westcentral Arabian Sea with the associated cyclonic circulation extending upto 3.1 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 30th October, 2024)



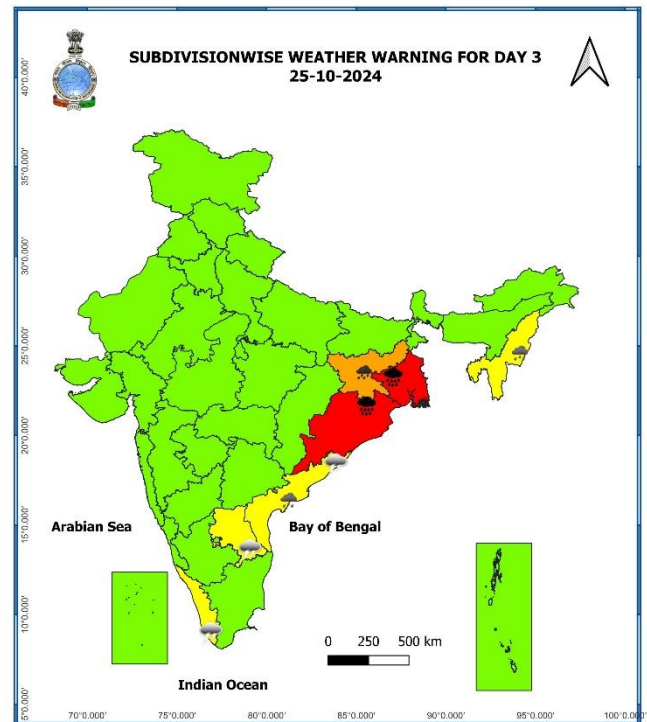
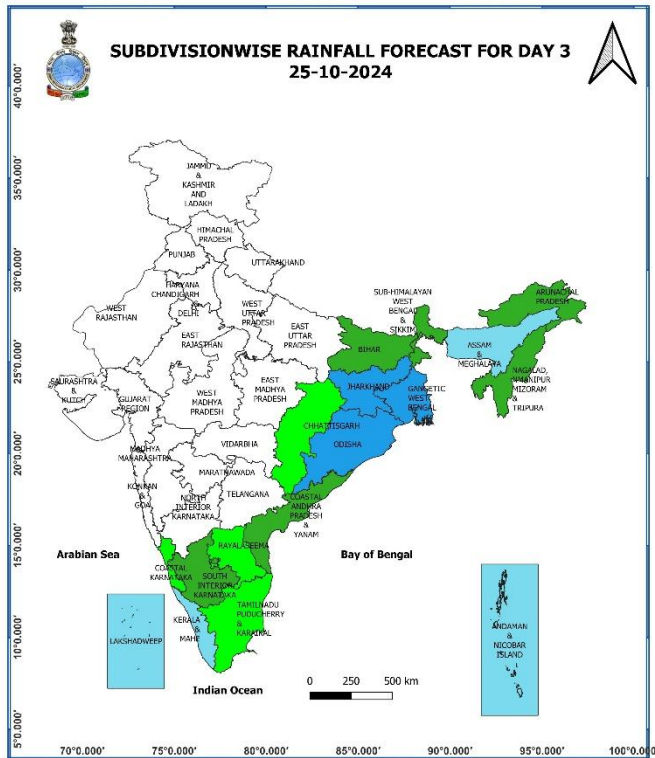
23 October (Day 1):

- ❖ **Heavy rainfall ($\geq 7\text{cm}$)** very likely at isolated places over Gangetic West Bengal, Odisha, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Karnataka.
- ❖ **Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph)** very likely at isolated places over Gangetic West Bengal, Odisha, Kerala & Mahe; **with lightning** likely at isolated places over Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, 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 Central and North Bay of Bengal along and off North Andhra Pradesh, Odisha & west Bengal coasts. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevail over parts of central & north Bay of Bengal. **Strong winds with speed 50 kmph to 60 kmph gusting to 70 kmph** is likely to prevail over many parts of central adjoining north Bay of Bengal. **gale winds with speed 60 kmph to 90 kmph gusting to 100 kmph** is likely to prevail over many parts of eastcentral & adjoining Westcentral Bay of Bengal. Fishermen are advised not to venture into these areas.



24 October (Day 2):

- ❖ **Heavy to very heavy rainfall with extremely heavy falls (≥ 20 cm)** very likely at isolated places over Odisha and Gangetic West Bengal; **Heavy rainfall (≥ 7 cm)** likely at isolated places over Jharkhand, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph)** very likely at isolated places Bihar and Jharkhand; **with lightning** likely at isolated places over Chhattisgarh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, Sub-Himalayan West Bengal & Sikkim.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over many parts of central and North Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevail over many parts of Westcentral & North Bay of Bengal and adjoining parts of Eastcentral, along and off Bangladesh coasts. **Strong winds with speed 50 kmph to 60 kmph gusting to 70 kmph** is likely to prevail over many parts of Westcentral and adjoining Eastcentral and North Bay of Bengal. **Gale winds with speed 60 kmph to 90 kmph gusting to 110 kmph** is likely to prevail over many parts of Westcentral & Northwest Bay of Bengal along and off Odisha, West Bengal coasts. **Gale winds with speed 90 kmph to 110 kmph gusting to 120 kmph** is likely to prevail over many parts of Westcentral & Northwest Bay of Bengal along and off Odisha, West Bengal coasts. Fishermen are advised not to venture into these areas.



25 October (Day 3):

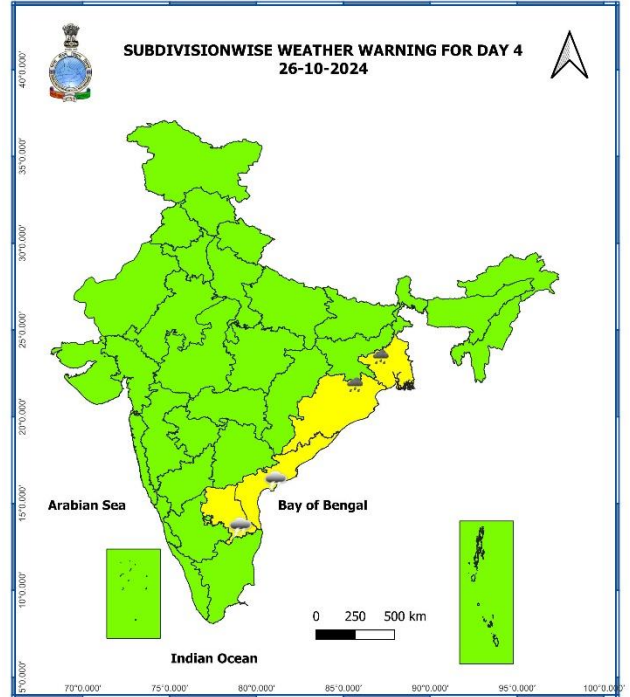
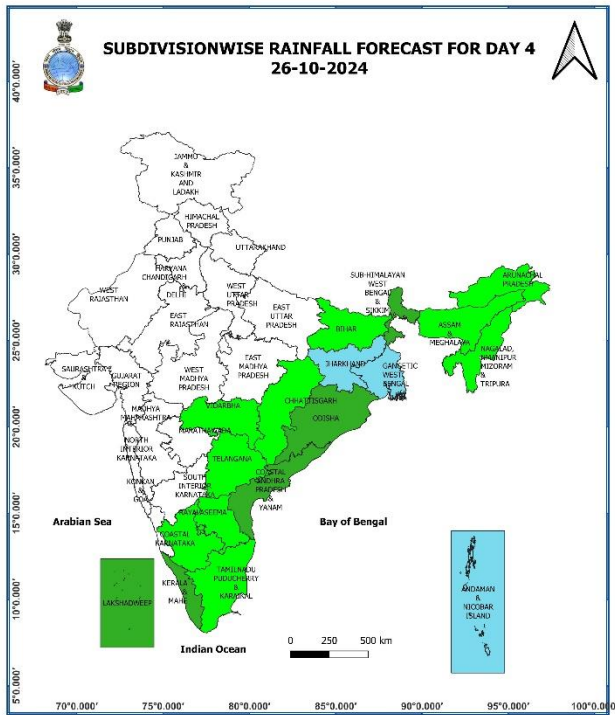
- ❖ **Heavy to very heavy rainfall with extremely heavy falls (≥ 20 cm)** very likely at isolated places over Odisha, Gangetic West Bengal; **Heavy to very heavy rainfall (≥ 12 cm)** likely at isolated places over Jharkhand; **Heavy rainfall (≥ 7 cm)** likely at isolated places over Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam.
- ❖ **Thunderstorm accompanied gusty winds (speed reaching 30-40 kmph)** very likely at isolated places Jharkhand **with lightning** likely at isolated places over Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over many parts of central, Northeast Bay of Bengal, along and off North Andhra Pradesh. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** is likely to prevail over many parts of central and Northeast Bay of Bengal along and off few parts of North Andhra Pradesh. **Strong winds with speed 50 kmph to 60 kmph gusting to 70 kmph** is likely to prevail over many parts of Westcentral and adjoining Eastcentral and Northeast Bay of Bengal. and Bangladesh coasts **Gale winds with speed 60 kmph to 90 kmph gusting to 110 kmph** is likely to prevail over many parts of Northwest Bay of Bengal and adjoining parts of Westcentral Bay of Bengal, along and off Odisha, West Bengal coasts. **Gale winds with speed 90 kmph to 110 kmph gusting to 120 kmph** is likely to prevail over Northwest along and off Odisha, West Bengal coasts. Fishermen are advised not to venture into these areas.

* 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.

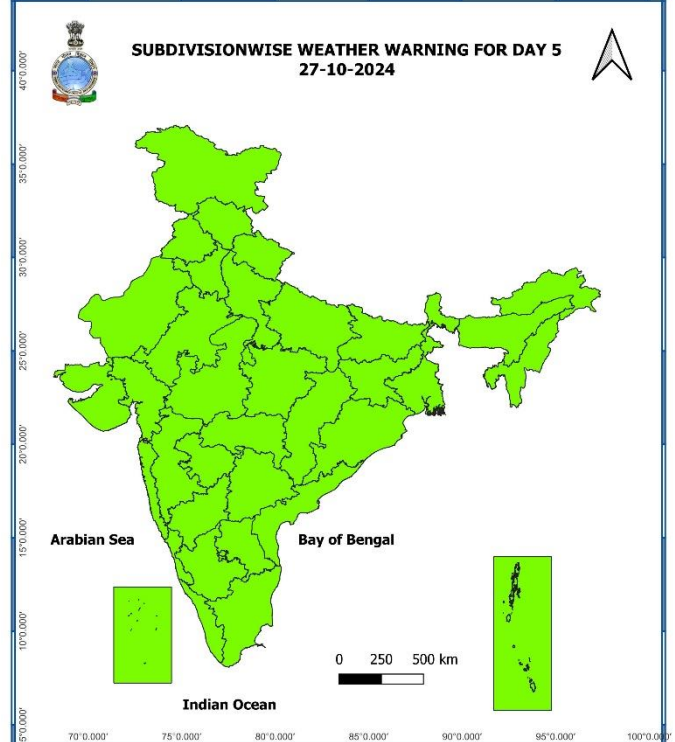
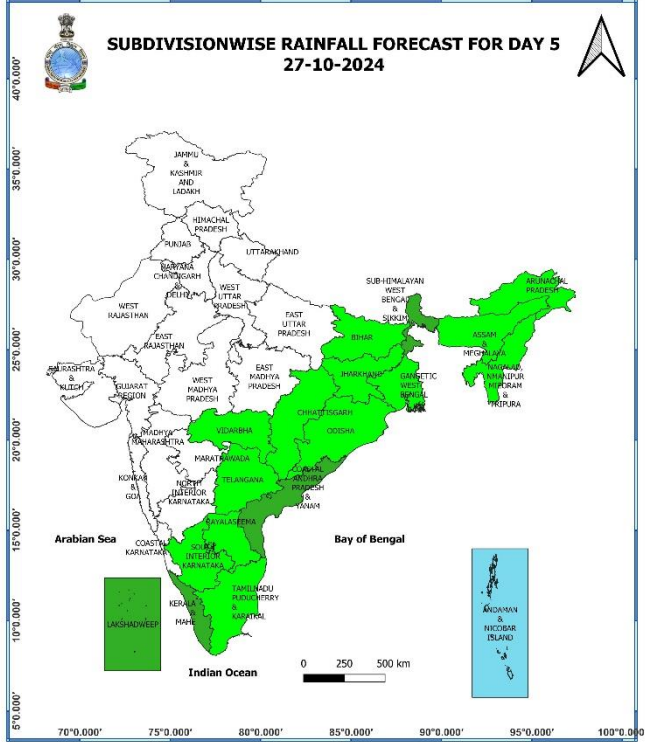
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599

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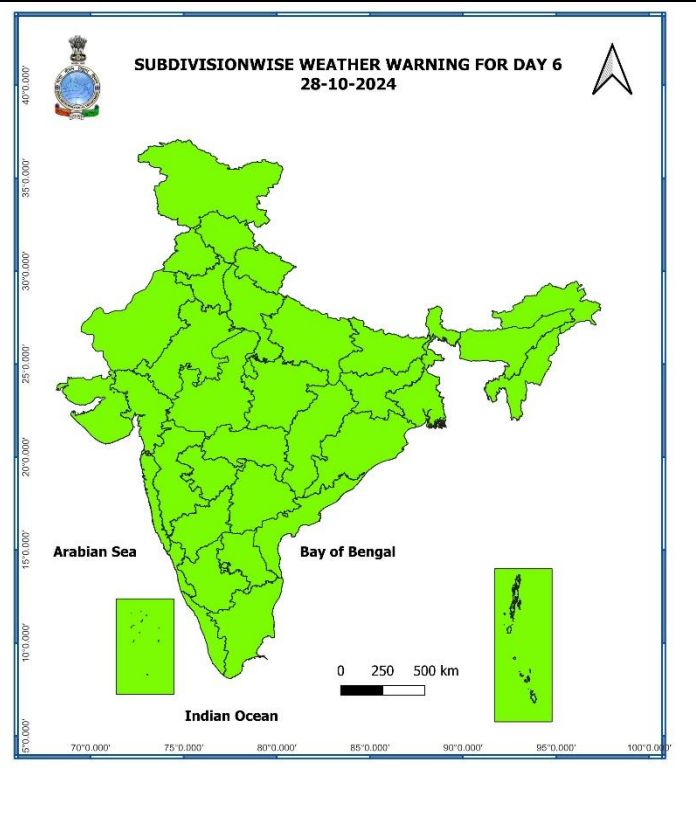
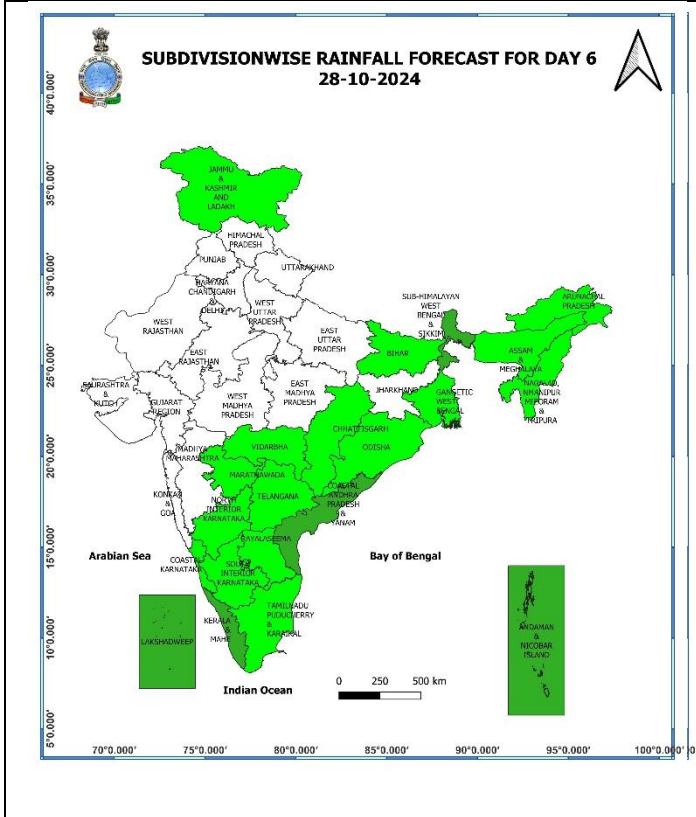
26 October (Day 4):

- ❖ **Heavy rainfall ($\geq 12\text{cm}$)** likely at isolated places over Odisha and Gangetic West Bengal.
- ❖ **Thunderstorm accompanied with lightning** likely at isolated places over Rayalaseema, Coastal Andhra Pradesh & Yanam, Chhattisgarh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over along and off few parts North Andhra Pradesh, Odisha, West Bengal. Fishermen are advised not to venture into these areas.



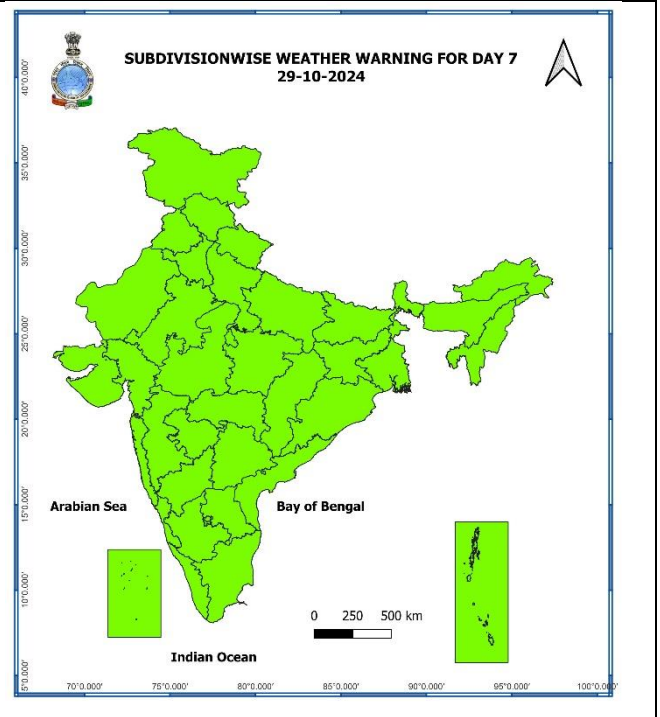
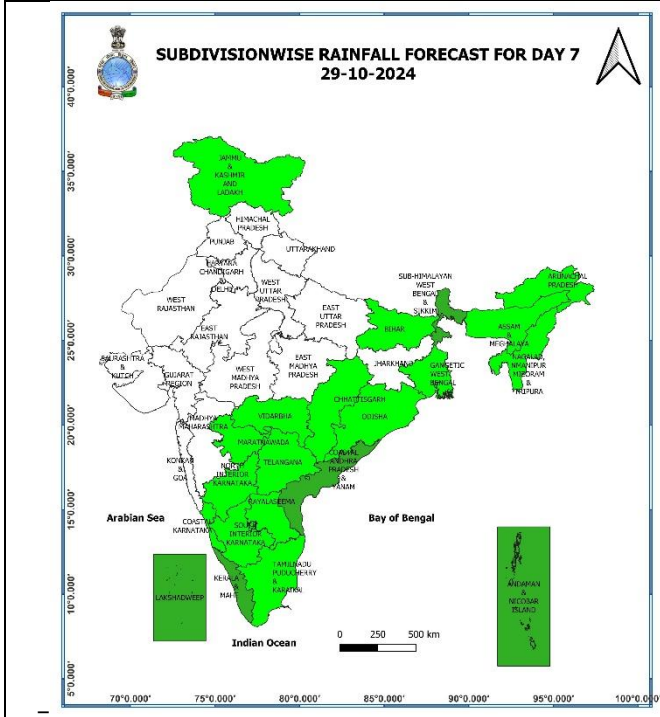
27 October (Day 5):

❖ **No weather warning.**



28 October (Day 6):

❖ **No weather warning.**



29 October (Day 7):

❖ **No weather warning.**

Weather Outlook for subsequent 3 days (During 30th October – 01st November, 2024)

- ❖ Isolated to Scattered light rainfall likely over some parts of Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe 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 Odisha, Gangetic West Bengal on 24th & 25th October.
- ✓ **Isolated heavy to very heavy rainfall** very likely over Jharkhand on 25th October.

Impact Expected

- ✓ Major damage to thatched houses/ huts. Roof tops may blow off. Unattached metal sheets may fly.
- ✓ Minor damage to power and communication lines.
- ✓ Major damage to Kutcha and some damage to Pucca roads. Flooding of escape routes.
- ✓ Possibilities of damage to vulnerable structure. Breaking of tree branches and uprooting of trees.
- ✓ Moderate damage to banana and papaya trees. Large dead limbs blown from trees.
- ✓ Damage to horticulture and standing crops in some areas due to inundation and wind.
- ✓ Damage to embankments/ salt pans.
- ✓ 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 and poor visibility due to heavy rain leading to increased travel time and incidents
- ✓ Localized Landslides/Mudslides/landslips/mud slips/land sinks/mud sinks.
- ✓ Likely disruption of marine and inland water transportation like small boats and trawlers.
- ✓ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Webpage of Central Water Commission)

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. Undertake detrashing and propping of more than five-month-old sugarcane to avoid lodging. Provide support to banana plantations.
- ✓ Make necessary arrangements to drain out excess water from standing crop fields and fruit orchards to avoid water stagnation in Andaman and Nicobar Islands, Kerala, Karnataka and Rayalaseema.
- ✓ Keep the harvested produce at safer places.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables.
- ✓ In **Odisha**, undertake harvesting of rice crop if 85% of grains are matured in a panicle. Immediately harvest matured maize, black gram, green gram, groundnut, vegetables and fruits. Withhold sowing of pre-rabi pulses and winter vegetables. Provide propping in sugarcane by tying leaves from four to five plants together to prevent their lodging.
- ✓ In **Gangetic West Bengal**, drain out excess water from *Aman* rice, groundnut, pulses and vegetables. Complete harvesting of *kharif* rice, vegetables, and fruits as soon as possible.
- ✓ Shift the harvested produce to safer places at the earliest.
- ✓ Make arrangements for adequate drainage to avoid water logging in crop fields.
- ✓ Provide mechanical support to young fruit plants and staking in vegetables to prevent their lodging.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

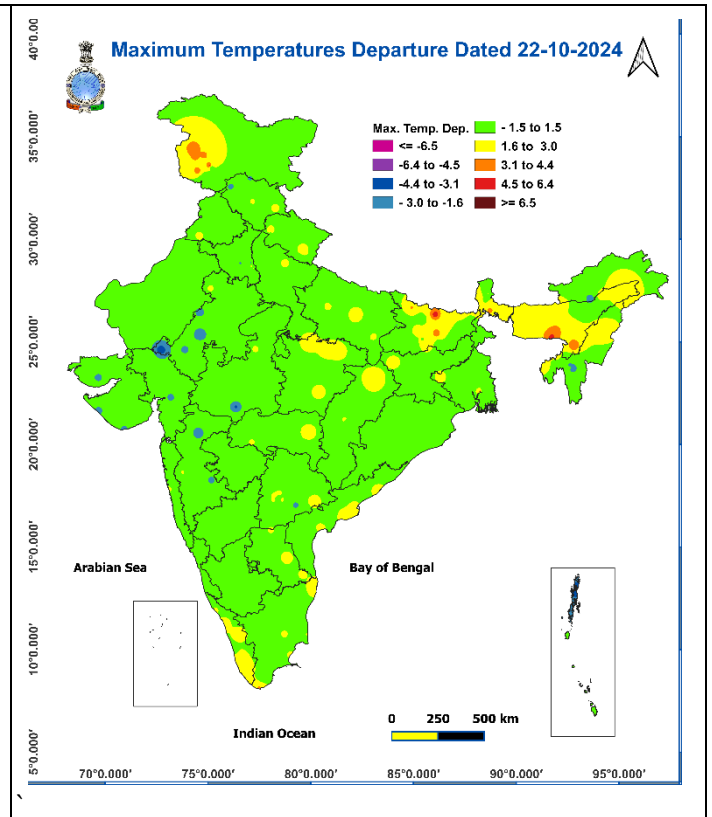
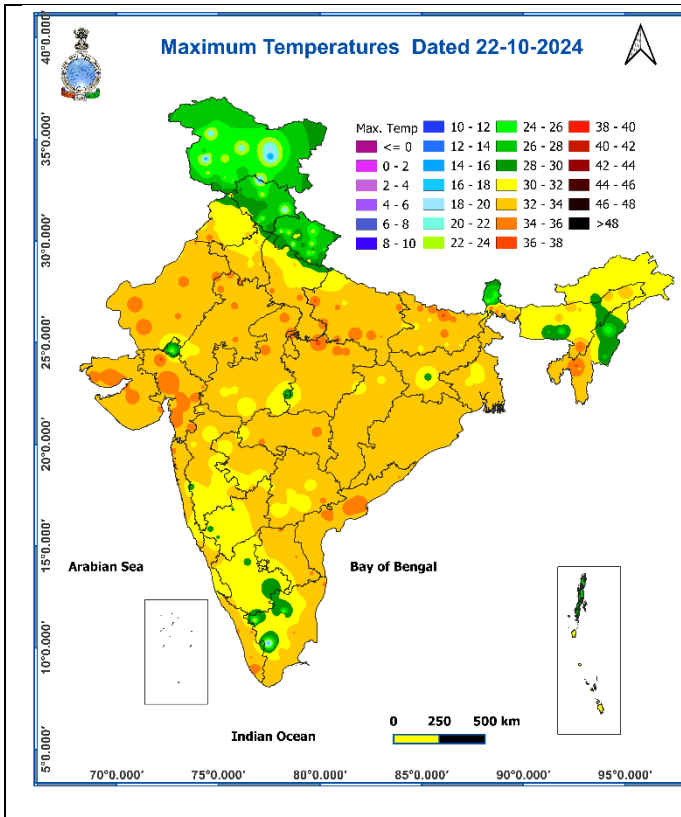


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

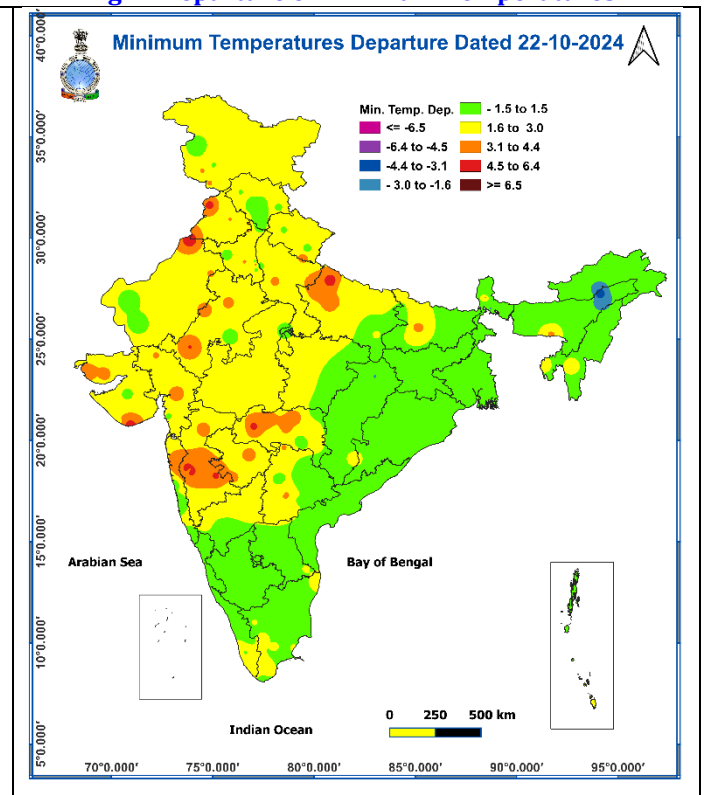
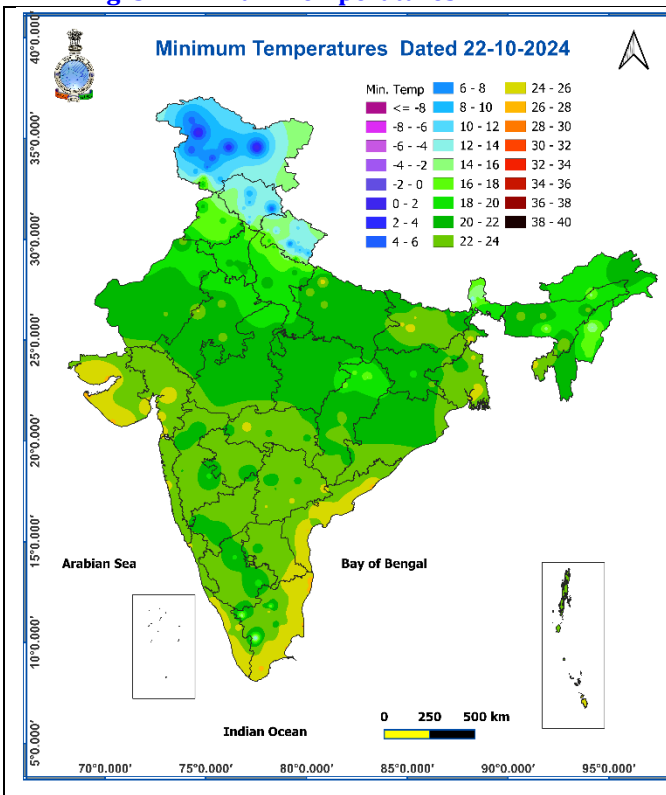
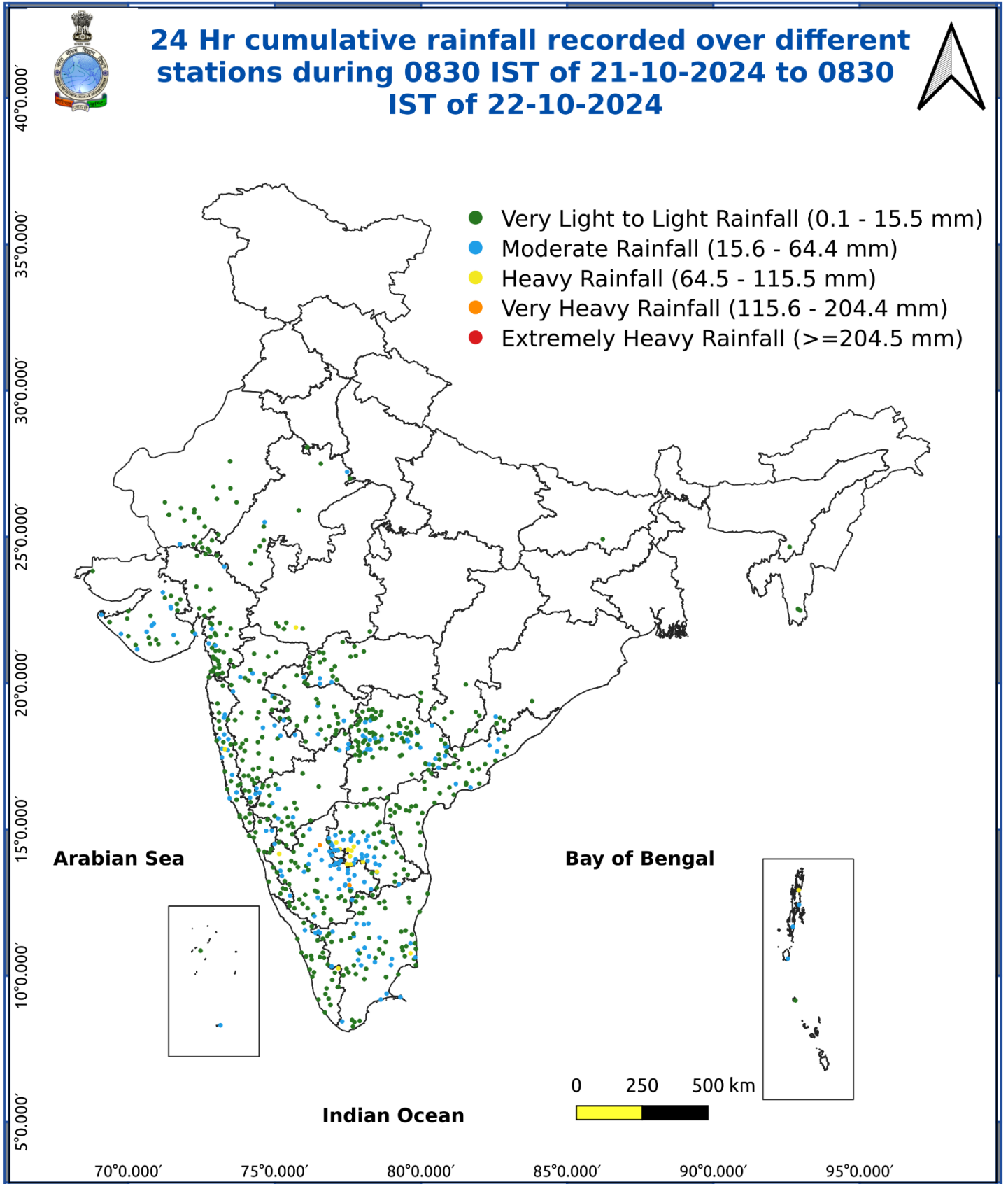
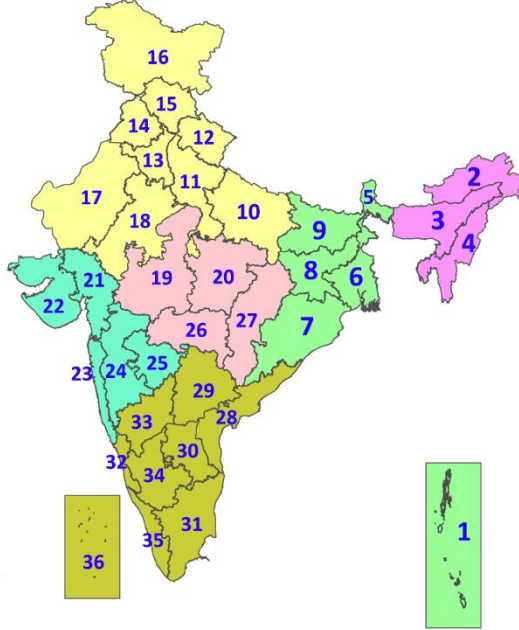


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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)