

Friday, April 4, 2025
Time of Issue: 1345 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Weather Systems, Forecast and Warnings:

- ❖ An upper air Cyclonic Circulation lies over southwest Rajasthan and another over West Madhya Pradesh in lower tropospheric level.
- ❖ An upper air cyclonic circulation lies over south Tamil Nadu & neighbourhood and another over south Andaman & neighbourhood in lower tropospheric level.
- ❖ Under the influence of these systems and confluence of moist winds from Arabian sea and Bay of Bengal in lower tropospheric levels;
 - ✓ **Isolated to Scattered** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 40-50 kmph)** likely over South Peninsular India, Andaman & Nicobar Islands, Odisha, Northeast India during 04th-06th; Maharashtra on 04th & 05th; West Bengal & Sikkim, Jharkhand and central India on 04th April.
 - ✓ **Isolated Hailstorm** likely over Jharkhand on 04th; Assam & Meghalaya on 05th and Nagaland, Manipur, Mizoram & Tripura on 06th April.
 - ✓ **Heavy rainfall** very likely at isolated places over Kerala & Mahe during 04th-06th; Tamil Nadu, South Interior Karnataka on 04th & 05th; Assam & Meghalaya on 05th & 06th; Nagaland, Manipur, Mizoram & Tripura on 06th; Arunachal Pradesh on 05th April; Andaman & Nicobar Islands on 04th & 06th April.

Temperature Forecast:

- ❖ Gradual rise in maximum temperatures by 2-4°C likely over many parts of Northwest India during next 6 days.
- ❖ Gradual rise in maximum temperatures by 2-4°C likely over many parts of central India during next 7 days.
- ❖ Gradual rise in maximum temperatures by 3-4°C likely over Maharashtra during next 7 days.
- ❖ No significant change in maximum temperatures likely over Gujarat during next 24 hours and rise by 2-3°C for subsequent 4 days.
- ❖ No significant change in maximum temperatures likely over south peninsular India during next 2 days and rise by 2-4°C during subsequent 3 days.
- ❖ No significant change in maximum temperatures likely over rest parts of the country during next 7 days.

Heat wave and Hot & Humid weather warning:

- ❖ **Heat Wave conditions very likely to continue to prevail at isolated pockets of Saurashtra & Kutch, south Haryana, Delhi during 04th-09th; West Uttar Pradesh during 05th-09th; Himachal Pradesh during 05th-07th; Punjab, Gujarat Region during 06th-09th; West Rajasthan during 05th-10th; Gujarat Region during 06th-08th; East Rajasthan, during 06th-10th; West Madhya Pradesh during 07th-10th April.**
- ❖ **Hot & humid weather is likely over Gujarat state during 04th-10th and over Konkan & Goa during 05th-09th April, 2025.**

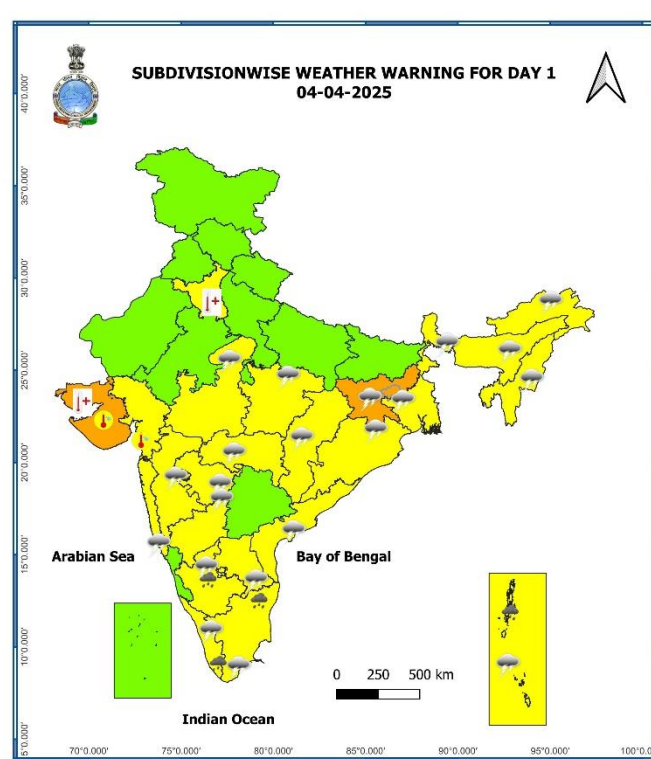
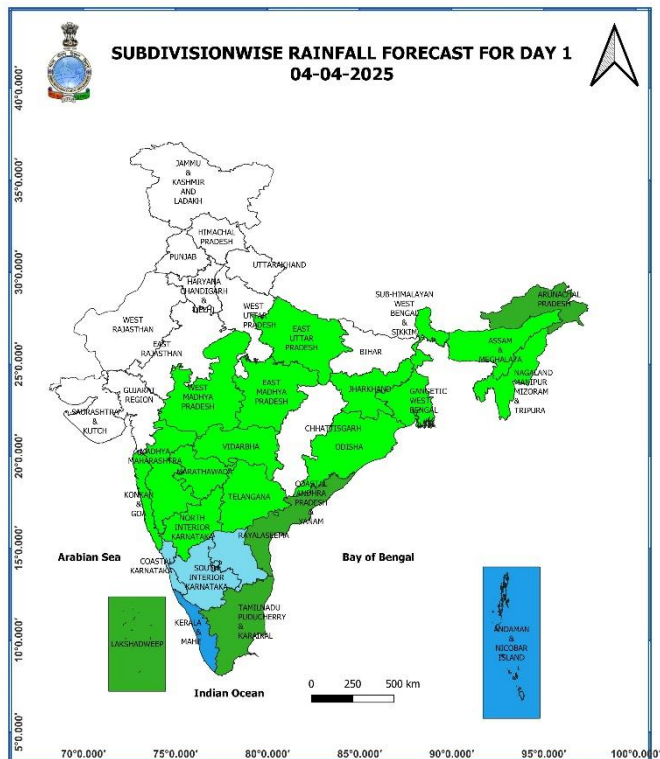
Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): at most places over Andaman & Nicobar Islands, South Interior Karnataka; at many places over north Interior Karnataka; at few places over Vidarbha, Chhattisgarh, Odisha, Coastal Karnataka; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Haryana, Uttar Pradesh, West Rajasthan, Madhya Pradesh, West Bengal & Sikkim, Jharkhand, Arunachal Pradesh, Assam & Meghalaya, Konkan & Goa, Marathwada, Madhya Maharashtra.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Telangana:** Tekulapalle (dist B. Kothagudem) 17, Bayyaram (dist Mahabubabad) 11, Yellandu(dist B. Kothagudem) 10, Saroornagar (dist Rangareddy) 9, Palawancha (dist B. Kothagudem)9, Shekpet (dist Hyderabad) 8, Himayatnagar (dist Hyderabad) 8, Mulakalapalle (dist B.Kothagudem) 8, Domakonda (dist Kamareddy) 7, Charminar (dist Hyderabad) 7, Amberpet (distHyderabad) 7; **Tamil Nadu Puducherry & Karaikal:** PWD Makkinampatti (dist Coimbatore), Kayalpattinam (dist Thoothukudi) 10 each,Thangachimadam (dist Ramanathapuram), Alangudi (dist Pudukkottai), Moolaikaraipatti (distTirunelveli), Kalugumalai (dist Thoothukudi) 8 each,Ottapadiram (dist Thoothukudi), Vadakuthu (dist Cuddalore), Kayathar (dist Thoothukudi),Sendurai (dist Ariyalur) 7 each; **South Interior Karnataka:** N R Pura (dist Chikkamagaluru) 9, Koppa (dist Chikkamagaluru) 6, Chitradurga Obsy(dist Chitradurga) 6; **Coastal Andhra Pradesh & Yanam:** Yerragondapalem (dist Prakasam) 7, Amaravati (dist Guntur) 5; **Royalaseema:** Singanamala (dist Anantapuramu) 7, Nallamada (dist Sri Sathyasai District) 6, Porumamilla (dist Ysr District) 6; **Kerala & Mahe:** Piravam (Ernakulam district) Mannarkkad (Palakkad district) 6 each, Kottayam, Palakkad, Ottappalam (Palakkad district), Quilandi (Kozhikode **district**), Mannarkkad (Palakkad district), Cheruvanchery (Kannur district) ; Konni (Pathanamthitta district) 5 each.
- ❖ **Squally/Gusty winds** prevailed at isolated locations over Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Coastal Andhra Pradesh & Yanam, Royalaseema, Telangana, Interior Karnataka, Tamilnadu.
- ❖ **Heavy to very heavy rainfall** occurred at isolated places over Telangana; **heavy rainfall** at isolated places over South Interior Karnataka, Coastal Andhra Pradesh, Royalaseema and Tamil Nadu.
- ❖ **Hailstorm** occurred at isolated places over Madhya Pradesh, Madhya Maharashtra, Marathwada and Telangana.
- ❖ **Heatwave** prevailed at isolated pockets over Saurashtra & Kutch.
- ❖ **Minimum Temperature Departures (as on 04-04-2025):** Minimum temperatures are **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Nagaland, Manipur, Mizoram & Tripura, Bihar; **above normal (1.6°C to 3.0°C)** at most places over West Bengal & Sikkim; at many places over Jharkhand; at a few places over Assam & Meghalaya; at isolated places over Arunachal Pradesh, Gujarat state, Punjab. These are **below normal (-3.0°C to -1.6°C)** at a few places over Tamil Nadu, Puducherry & Karaikal, Royalaseema; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Vidarbha, East Madhya Pradesh, North Interior Karnataka, Kerala & Mahe and near normal over rest parts of the country (**Fig. 4**). Today, the **lowest minimum temperature of 13.7°C** is reported at **Amritsar (Punjab)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 03-04-2025):** Maximum Temperatures were **markedly above normal (5.1°C or more)** at isolated places over Haryana-Delhi; **appreciably above normal (3.1°C to 5.0°C)** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Uttar Pradesh, Himachal Pradesh; at isolated places over Punjab, West Rajasthan, Saurashtra & Kutch, Assam & Meghalaya, Sub-Himalayan West Bengal; **above normal (1.6°C to 3.0°C)** at most places over Uttarakhand; at many places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura; at a few places over Gangetic West Bengal, Gujarat Region; at isolated places over East Rajasthan. These were **markedly below normal (-5.1°C or less)** at isolated places over East Madhya Pradesh, Vidarbha; **appreciably above normal (3.1°C to 5.0°C)** at isolated places over Tamil Nadu, Puducherry & Karaikal, Telangana; **below normal (-3.0°C to -1.6°C)** at most places over Royalaseema, North Interior Karnataka; at many places over South Interior Karnataka; at a few places over Madhya Maharashtra, Marathwada, Chhattisgarh; at isolated places over West Madhya Pradesh, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and near normal over rest parts of the country (**Fig. 2**). Yesterday, the highest **maximum temperature of 43.0°C** was reported at **Surendranagar (Saurashtra & Kutch)** over the country.

Meteorological Analysis (Based on 0830 hours IST)

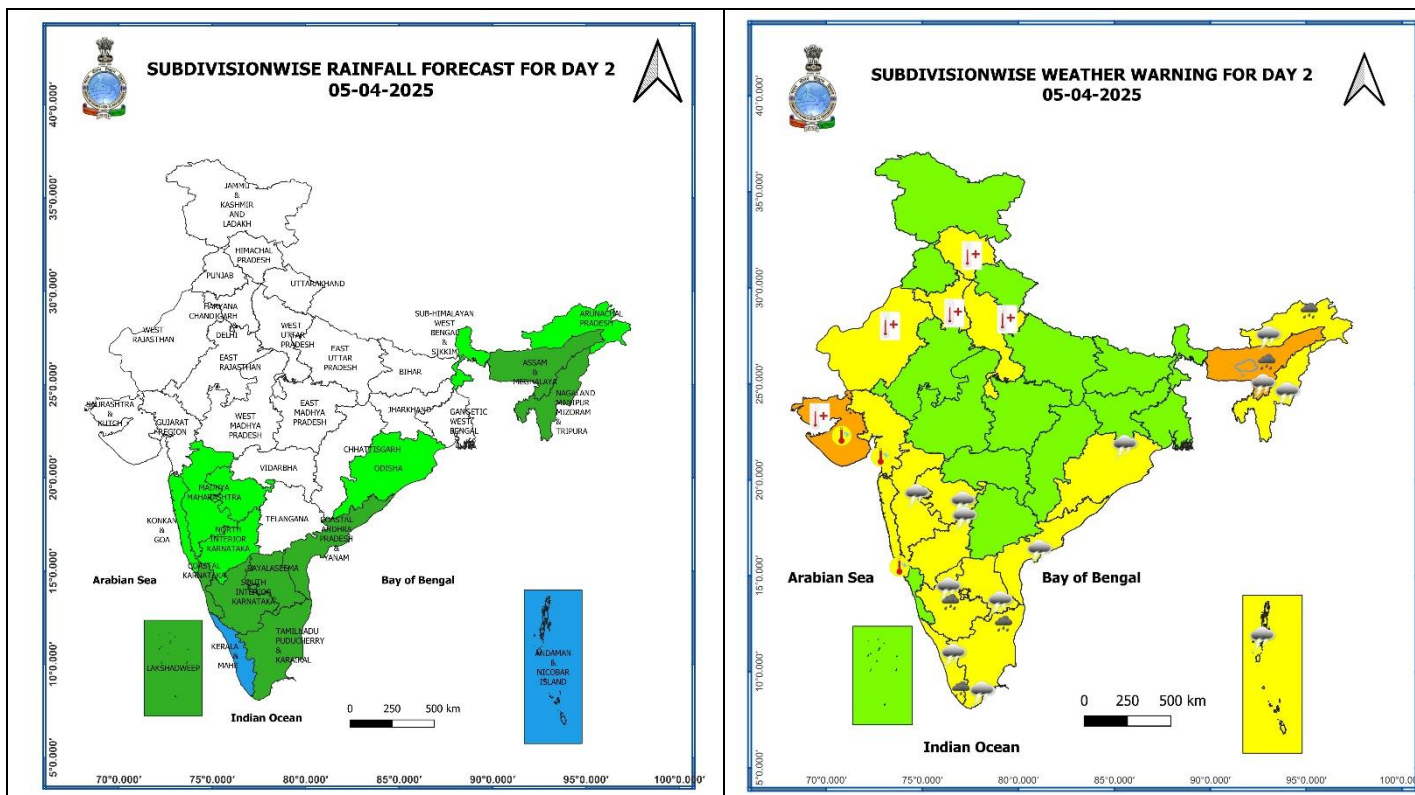
- ❖ The **Western Disturbance** as a cyclonic circulation over Jammu & neighbourhood at 5.8 km above mean sea level now seen as a trough in westerlies with its axis at 5.8 km above mean sea level roughly along Long. 75°E to the north of Lat. 32°N.
- ❖ The upper air **Cyclonic Circulation** over northeast Assam & neighbourhood persists and now extends upto 3.1 km above mean sea level.
- ❖ A fresh **Western Disturbance** is likely to affect Western Himalayan region from 08th April, 2025.
- ❖ A **cyclonic circulation** lies over southwest Rajasthan & neighbourhood at 0.9 km above mean sea level.
- ❖ A **cyclonic circulation** lies over West Madhya Pradesh & neighbourhood at 0.9 km above mean sea level.
- ❖ A **cyclonic circulation** lies over Tamil Nadu & neighbourhood and extends upto 1.5 km above mean sea level.
- ❖ A **cyclonic circulation** lies over south Andaman & neighbourhood and extends upto 3.1 km above mean sea level.
- ❖ The upper air **Cyclonic Circulation** over Sub-Himalayan West Bengal and adjoining Bangladesh extending upto 0.9 km above mean sea level has become less marked.
- ❖ The upper air **cyclonic circulation** over Marathwada and adjoining Madhya Maharashtra at 0.9 km above mean sea level has become less marked.
- ❖ The **trough** in easterlies from South Interior Karnataka to southwest Madhya Pradesh across the above cyclonic circulation over Marathwada at 0.9 km above mean sea level has become less marked.
- ❖ The upper air **cyclonic circulation** over north coastal Andhra Pradesh & adjoining south Odisha at 0.9 km above mean sea level has become less marked.
- ❖ The upper air **cyclonic circulation** over southeast Arabian Sea & neighborhood at 3.1 km above mean sea level has become less marked.
- ❖ The **trough** from the above cyclonic circulation over southeast Arabian Sea to south Kerala at 3.1 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 11th April, 2025)



04th April (Day 1):

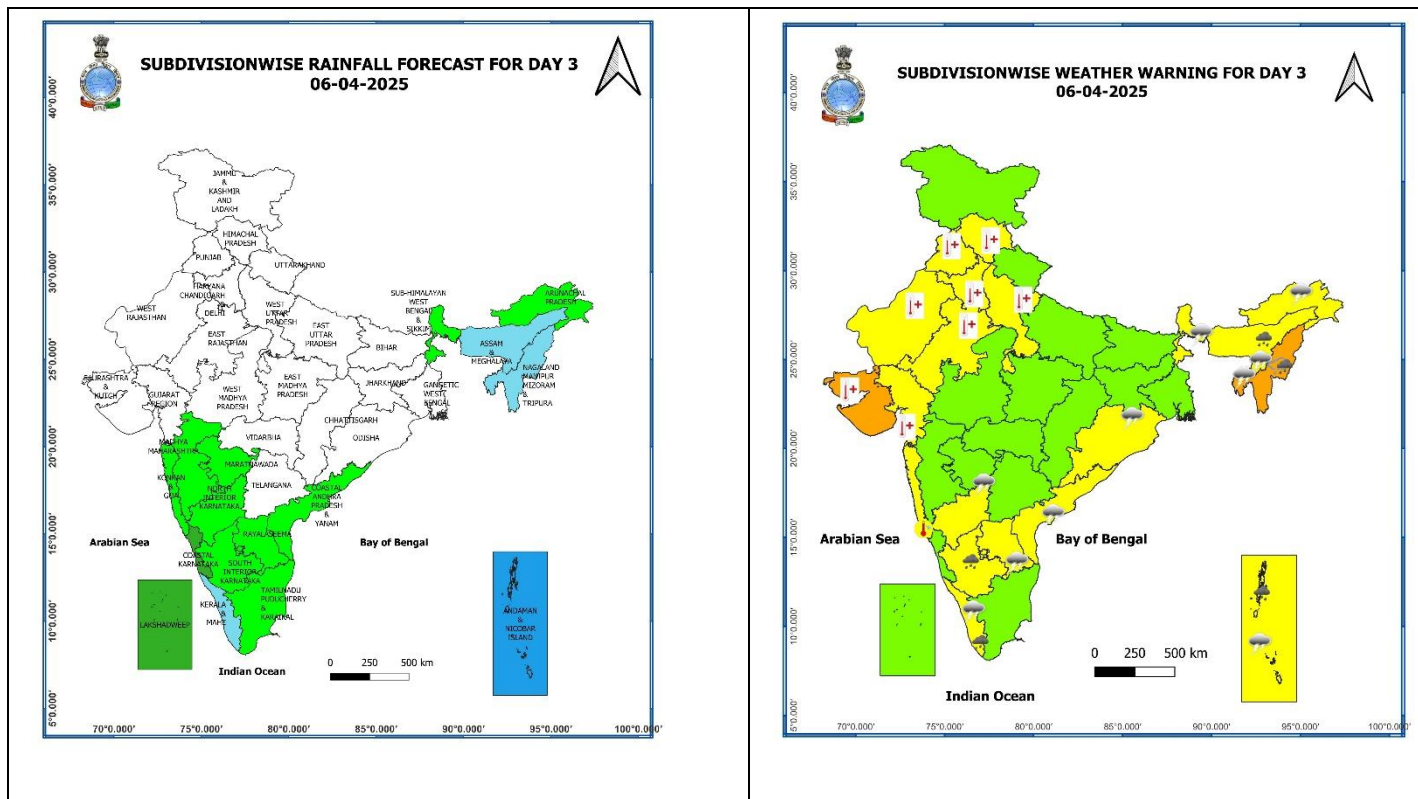
- ❖ **Heavy rainfall** very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, South Interior Karnataka and Andaman & Nicobar Islands.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 40 - 50 kmph) & hail** very likely at isolated places over Jharkhand; **with lightning & gusty winds (speed reaching 40-50 kmph)** at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema, North Interior Karnataka, South Interior Karnataka; **with lightning & gusty winds (speed reaching 30 - 40 kmph)** at isolated places over Vidarbha, Chhattisgarh, Andaman & Nicobar Islands, Gangetic West Bengal, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Konkan & Goa, Madhya Maharashtra, Marathwada; **with lightning** at isolated places over Madhya Pradesh, and Arunachal Pradesh
- ❖ **Heat wave conditions** very likely at isolated places over Saurashtra & Kutch, Haryana-Chandigarh-Delhi.
- ❖ **Hot and humid conditions** very likely at isolated places over Gujarat state.



05th April (Day 2):

- ❖ **Heavy rainfall** very likely at isolated places over Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, South Interior Karnataka, Arunachal Pradesh, Assam & Meghalaya.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 40 - 50 kmph) & hail** very likely at isolated places over Assam & Meghalaya; **with lightning & gusty winds (speed reaching 40 - 50 kmph)** at isolated places over Nagaland, Manipur, Mizoram & Tripura, North Interior Karnataka, South Interior Karnataka; **with lightning & gusty winds (speed reaching 30 - 40 kmph)** at isolated places over Andaman & Nicobar Islands, Odisha, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema
- ❖ **Heat wave conditions** very likely at isolated places over West Rajasthan, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Himachal Pradesh and Saurashtra & Kutch.
- ❖ **Hot and humid conditions** very likely at isolated places over Gujarat state, Konkan & Goa.

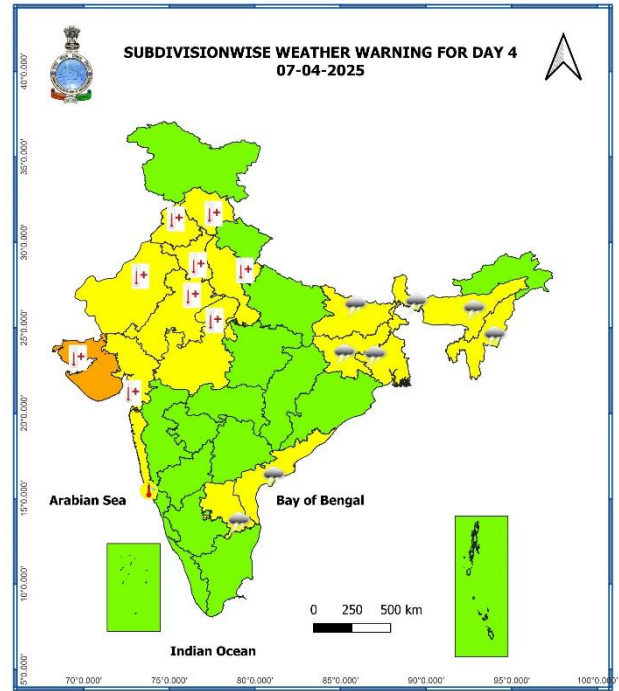
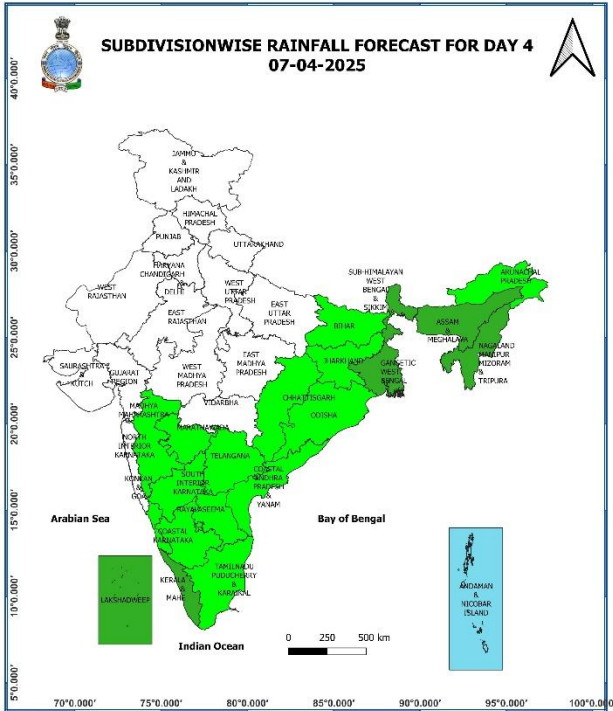
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06th April (Day 3):

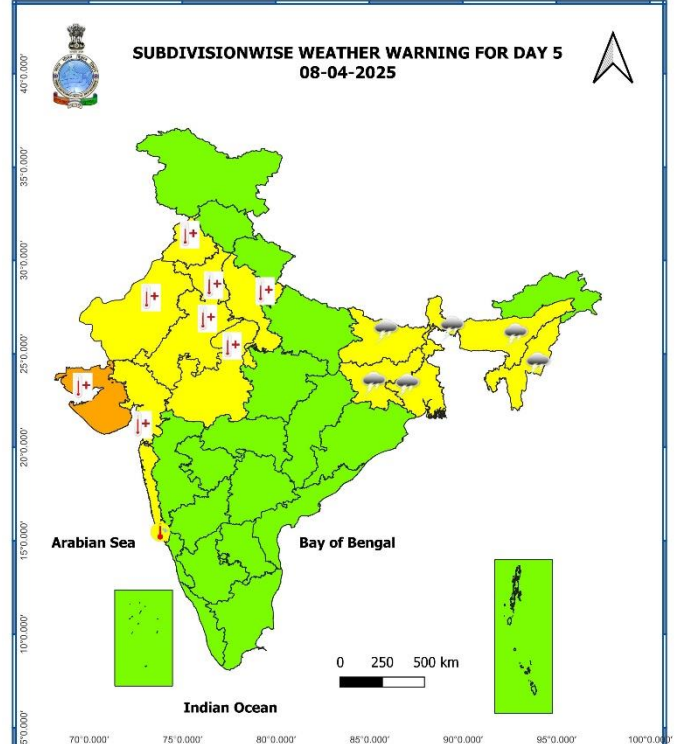
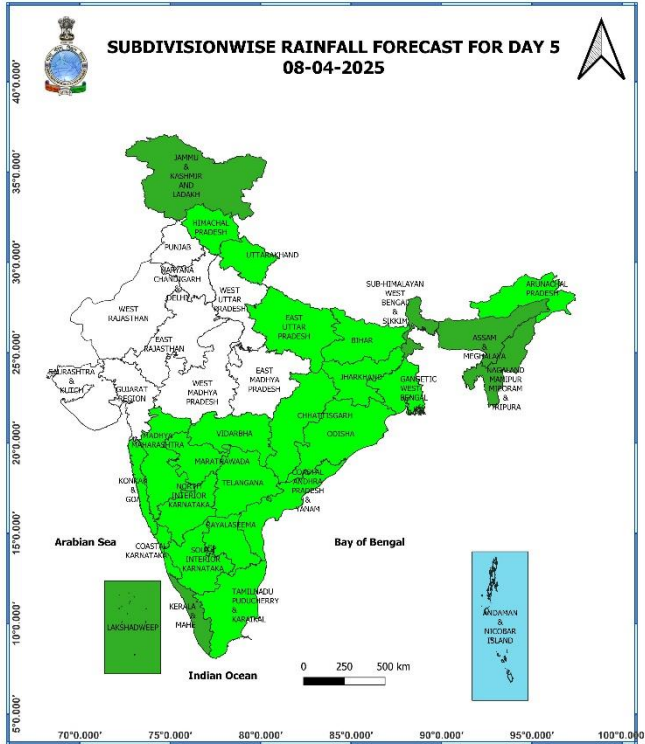
- ❖ **Heavy rainfall** likely at isolated places over Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, South Interior Karnataka.
- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 40 - 50 kmph) & hail** very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura; **with lightning & gusty winds (speed reaching 40 - 50 kmph)** at isolated places over Assam & Meghalaya, Coastal Andhra Pradesh & Yanam , Rayalaseema, Sub-Himalayan West Bengal & Sikkim; **with lightning & gusty winds (speed reaching 30 - 40 kmph)** at isolated places over Andaman & Nicobar Islands, North Interior Karnataka, South Interior Karnataka; **with lightning** at isolated places over Odisha.
- ❖ **Heat wave conditions** likely at isolated places over Haryana-Chandigarh-Delhi, West Uttar Pradesh, Rajasthan, Himachal Pradesh, Punjab.
- ❖ **Hot and humid conditions** likely at isolated places over Konkan & Goa.

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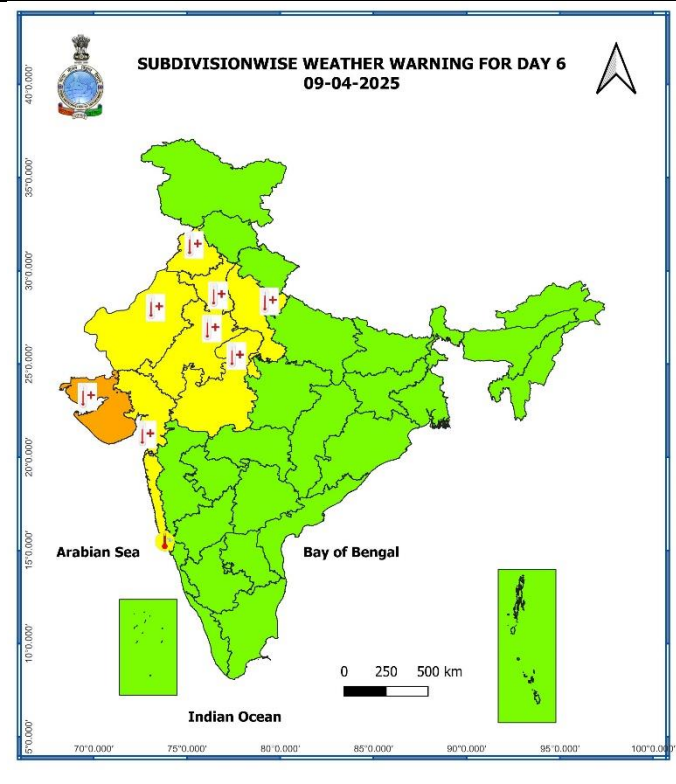
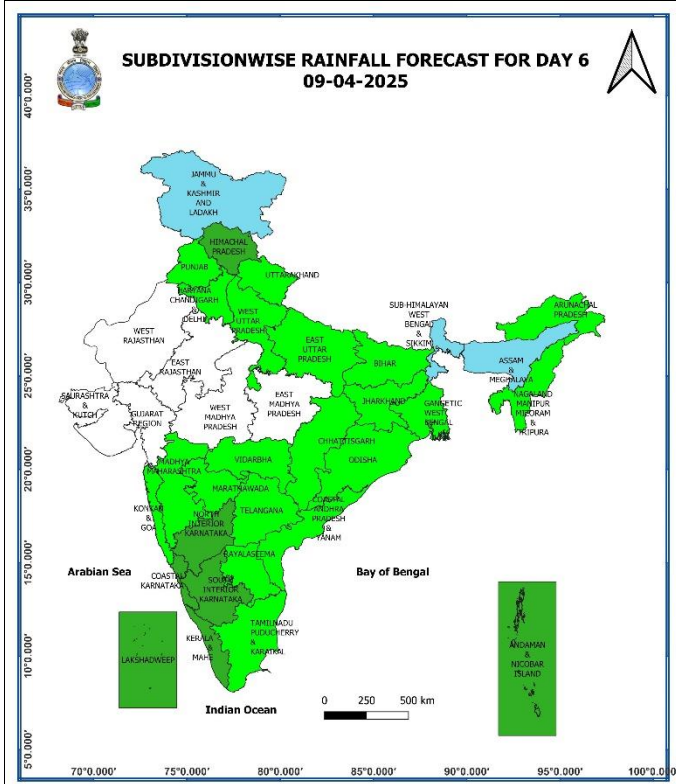
07th April (Day 4):

- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 40 - 50 kmph)** likely at isolated places over Gangetic West Bengal, Bihar; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Jharkhand, Sub-Himalayan West Bengal & Sikkim; **with lightning** at isolated places over Rayalaseema, Telangana.
- ❖ **Heat wave conditions** likely at isolated places over Gujarat state, Rajasthan, West Uttar Pradesh, Punjab, Himachal Pradesh, West Madhya Pradesh.
- ❖ **Hot and humid conditions** likely at isolated places over Konkan & Goa.



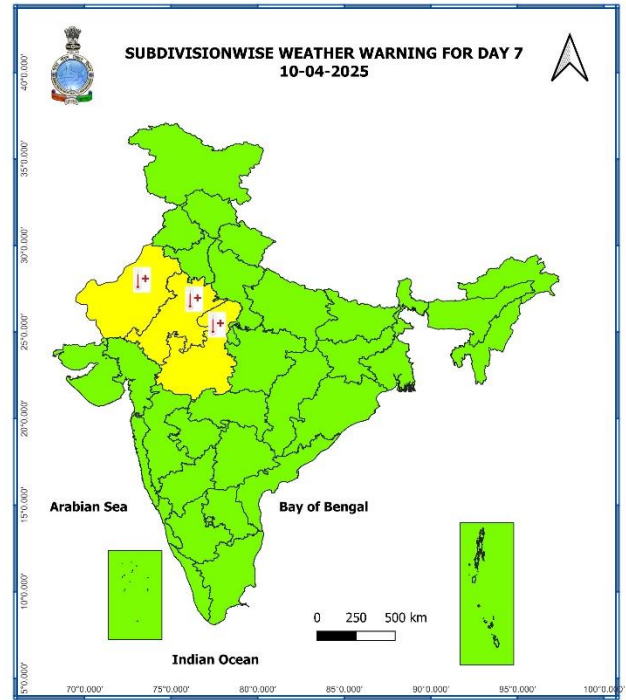
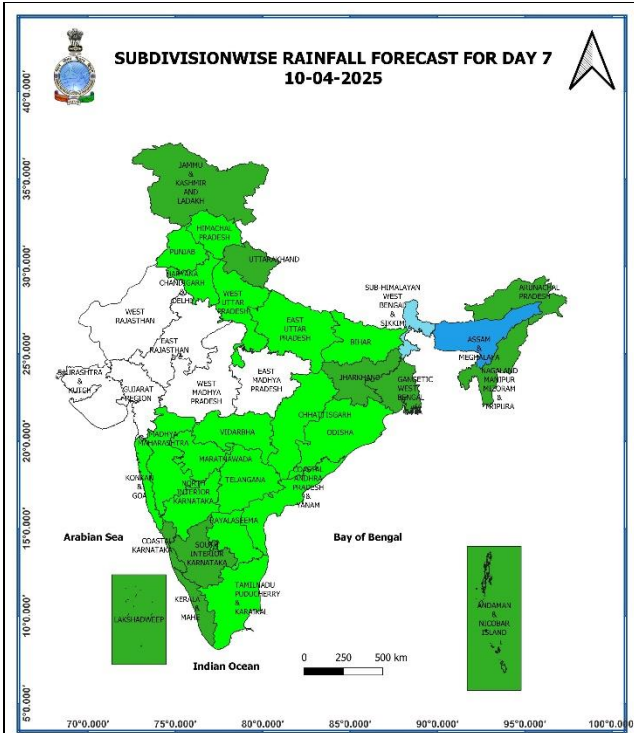
08th April (Day 5):

- ❖ **Thunderstorm accompanied with lightning & gusty winds (speed reaching 40 - 50 kmph)** likely at isolated places over West Bengal & Sikkim, Bihar, Jharkhand; **with lightning** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura.
- ❖ **Heat wave conditions** likely at isolated places over Rajasthan, West Uttar Pradesh, Punjab, Gujarat state, West Madhya Pradesh.
- ❖ **Hot and humid conditions** likely at isolated places over Konkan & Goa.



09th April (Day 6):

- ❖ **Heat wave conditions** likely at isolated places over Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Rajasthan, Gujarat state, West Madhya Pradesh.
- ❖ **Hot and humid conditions** likely at isolated places over Konkan & Goa.



10th April (Day 7):

- ❖ **Heat wave conditions** likely at isolated places over Rajasthan and West Madhya Pradesh.

Weather Outlook for subsequent 3 days (During 11th April- 13th April, 2025)

- ❖ **Isolated to scattered rainfall** likely over Western Himalayan Region and Northeast India, Chhattisgarh, Odisha, Vidarbha & Maharashtra and south peninsular India.

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.

Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

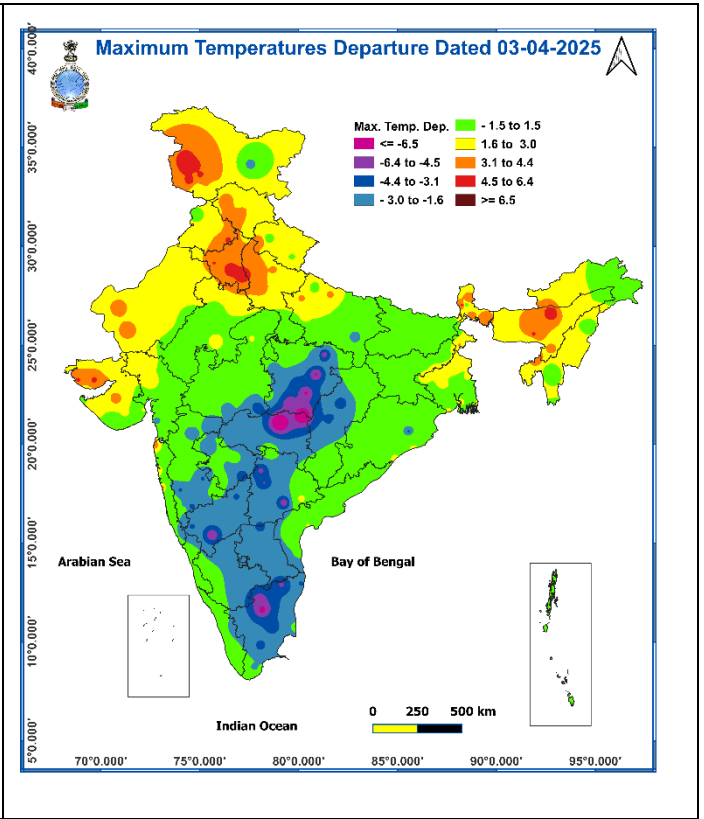
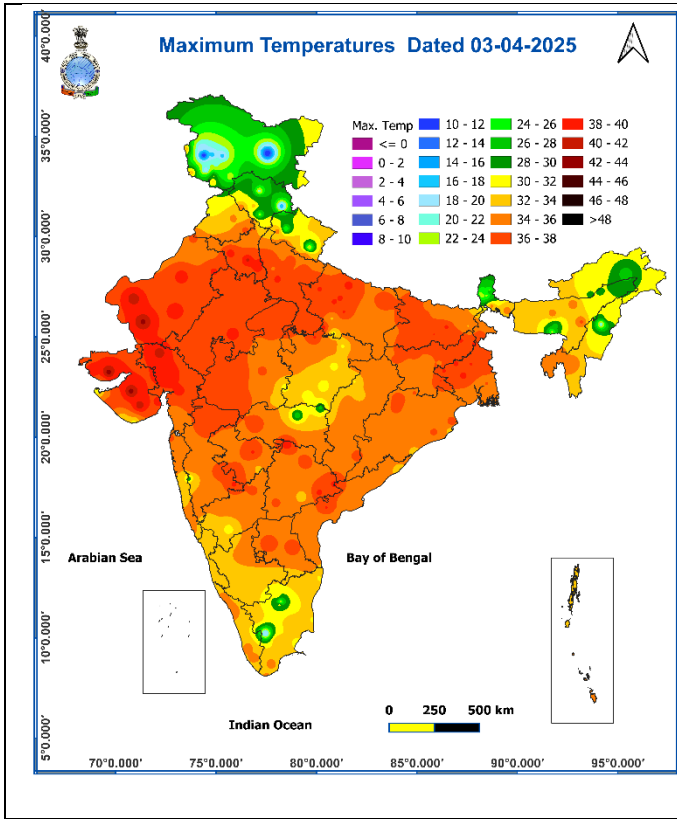
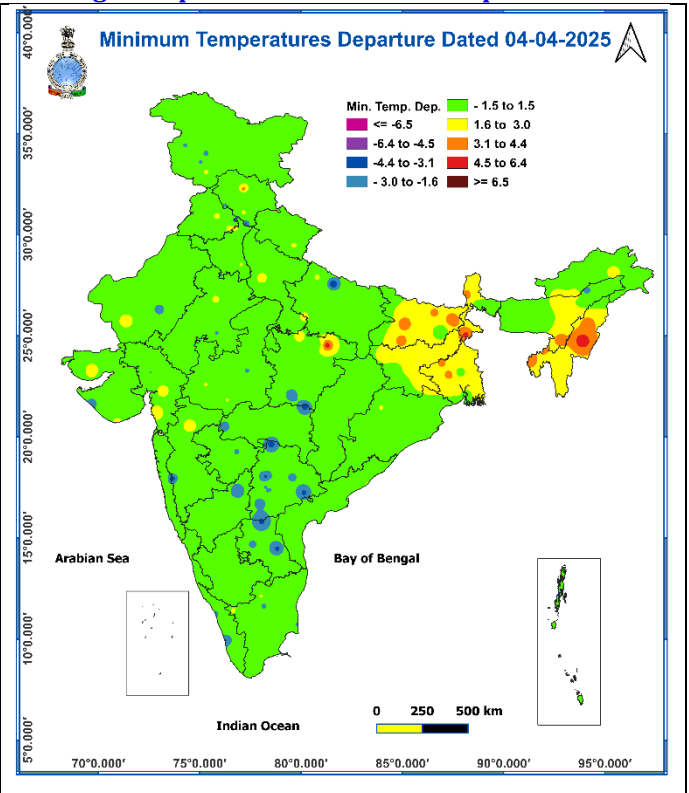
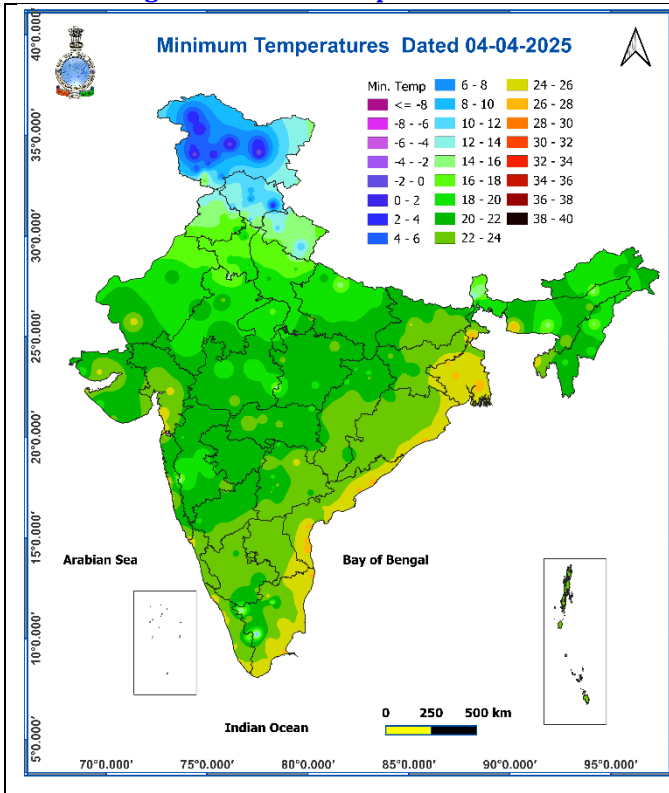


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures



Impact expected and action suggested due Heat Wave conditions at isolated/some pockets of Saurashtra & Kutch, south Haryana, Delhi during 04th-09th; West Uttar Pradesh during 05th-09th; Himachal Pradesh during 05th-07th; Punjab, Gujarat Region during 06th-09th; West Rajasthan during 05th-10th; Gujarat Region during 06th-08th; East Rajasthan, during 06th-10th; West Madhya Pradesh during 07th-10th April.

Orange alert Areas

- High temperature & increased likelihood of heat illness symptoms in people who are either exposed to sun for a prolonged period or doing heavy work.
- High health concern for vulnerable people e.g. infants, elderly, people with chronic diseases.
- Avoid heat exposure– keep cool. Avoid dehydration.
- Drink sufficient water- even if not thirsty.
- Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated.

Yellow alert Areas

- Moderate temperature & heat is tolerable for general public but moderate health concern likely for vulnerable people e.g. infants, elderly, people with chronic diseases.
- Avoid heat exposure.
- Wear lightweight, light colour, loose, cotton clothes.
- Cover your head, use a cloth, hat or umbrella.

Impact expected and action suggested due to isolated thunderstorm with lightning/gusty winds & Hailstorm over Jharkhand on 04th; Assam & Meghalaya on 05th and Nagaland, Manipur, Mizoram & Tripura on 06th April.

Impact expected:

- Strong wind/hail may damage plantation, horticulture and standing crops.
- Hail may injure people and cattle at open places.
- Partial damage to vulnerable structures due to strong winds.
- Minor damage to kutcha houses/walls and huts.
- Loose objects may fly.

Action suggested:

- Stay indoors, close windows & doors and avoid travel if possible.
- Take safe shelters; do not take shelter under trees.
- Do not lie on concrete floors and do not lean against concrete walls.
- Unplug electrical/ electronic appliances.
- Immediately get out of water bodies.
- Keep away from all the objects that conduct electricity.

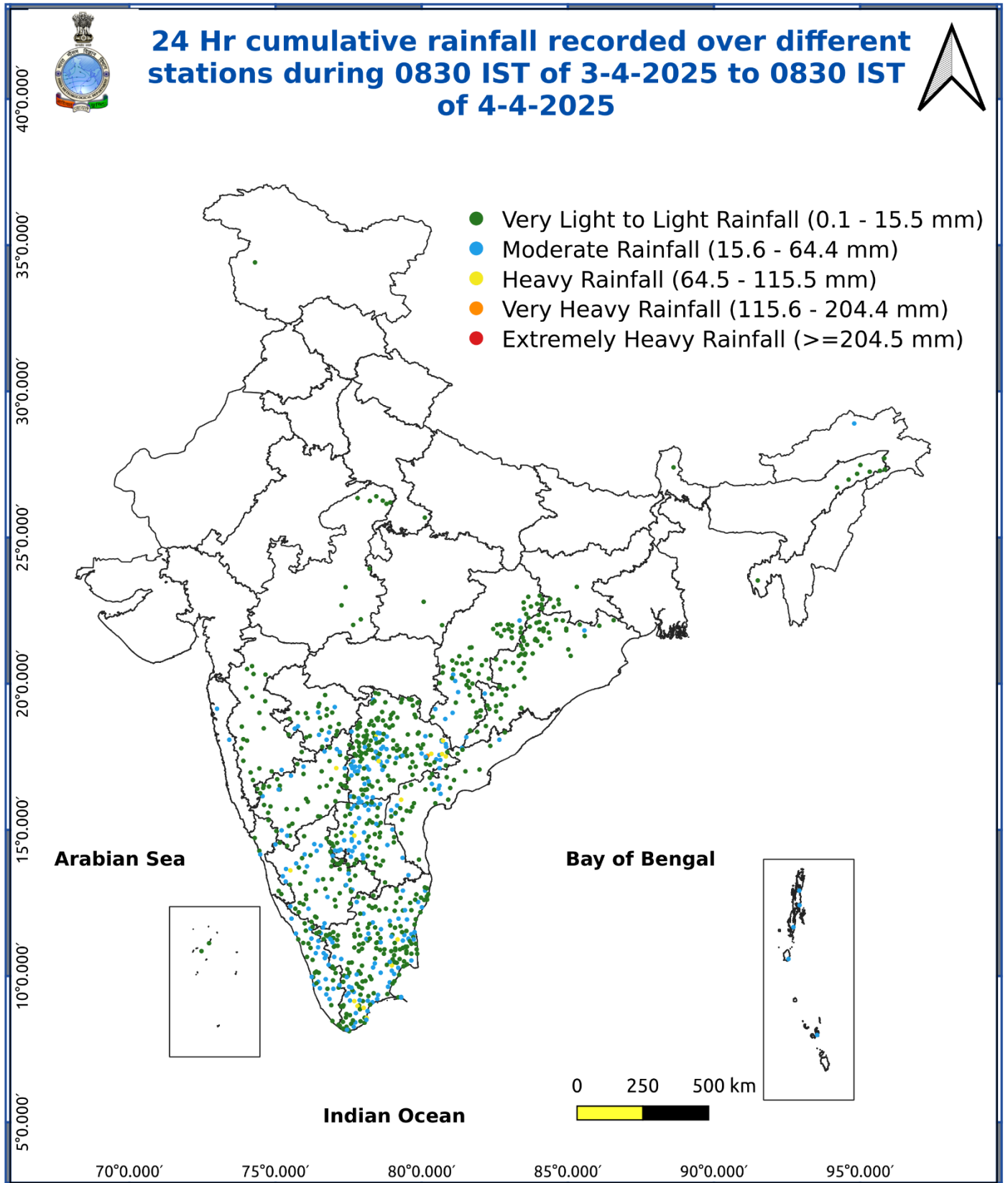
Agromet advisories for likely impact of Hailstorm / Heavy Rainfall / Gusty Winds / Heatwave

- In **Jharkhand, East Rajasthan, Madhya Pradesh, Vidarbha, North Interior Karnataka** and **Telangana**, immediately harvest the matured crops, fruits and vegetables and shift the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields to avoid the adverse impact of likely hailstorm. Use hail net and hail caps to prevent mechanical damage in orchards due to hailstorms.
- In **Andaman & Nicobar Islands, Karnataka** and **North Eastern states**, immediately harvest the matured crops, fruits and vegetables and shift the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields. Also make provision to drain out excess water from standing crop and vegetable fields.
- In **Tamilnadu** and **Kerala**, drain out excess water from standing crop and vegetable fields.
- In **Saurashtra & Kutch**, apply light and frequent irrigation to standing crops in the evening to protect them from heat waves.
- Provide mechanical support to horticultural crops and staking to vegetables to avoid lodging.

Livestock / Poultry / Fishery

- Keep the animals inside the shed during heavy rainfall/hailstorm and provide them balanced feed.
- Store feed and fodder in a safe place to prevent spoilage.
- To reduce the effect of heat wave/high temperature, cover the roof of poultry sheds with grass. Also provide clean, hygienic and plenty of drinking water to animals.
- Construct an outlet with proper netting around the ponds to drain out excess water, thereby preventing fish from escaping in case of overflow.

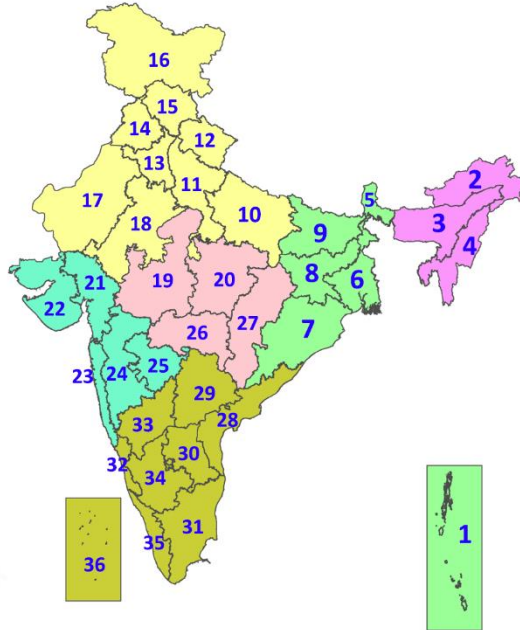
Fig. 5: Accumulated Rainfall (mm) during past 24 hours



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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)

Hot and Humid: When maximum temperatures remains 3°C above normal along with the above normal relative humidity.