

Thursday, March 13, 2025
Time of Issue: 1345 hours IST
(MID-DAY)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Forecast for Holi:

- ❖ Generally cloudy sky with possibility of isolated light rain over plains of Northwest India on 14th March. Fairly widespread to widespread light to moderate rainfall/snowfall with isolated heavy falls over Jammu-Kashmir-Ladakh and Arunachal Pradesh; scattered to fairly widespread to widespread light/ moderate rainfall/snowfall over Himachal Pradesh and Uttarakhand; and scattered to fairly widespread to widespread light/ moderate rainfall over remaining parts of Northeast India and over Sub-Himalayan West Bengal & Sikkim on 14th March and dry weather mainly over remaining parts of the country.

Weather Systems, Forecast and Warnings

- ❖ A **Western Disturbance** seen as a cyclonic circulation over Afghanistan in lower & middle tropospheric levels. A cyclonic circulation lies over southwest Rajasthan at lower tropospheric levels. Under the influence of these systems;
 - ✓ **Fairly widespread to widespread light/moderate rainfall/snowfall accompanied with thunderstorm & lightning** likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh during 13th-16th; **Scattered to fairly widespread light/moderate rainfall/snowfall accompanied with thunderstorm & lightning** likely over Uttarakhand during 13th-16th March and decrease in intensity thereafter.
 - ✓ **Isolated light/moderate rainfall accompanied with thunderstorm & lightning** likely over Punjab, Haryana, West Uttar Pradesh and Rajasthan during 13th-16th; East Uttar Pradesh on 15th & 16th March.
 - ✓ **Isolated heavy rainfall/snowfall** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 14th & 15th; Himachal Pradesh 15th & 16th and Uttarakhand on 16th March
- ❖ A **Cyclonic Circulation** lies over East Bangladesh and a trough in westerly runs roughly along Long. 88°E to the north of Lat. 21°N in lower tropospheric levels. Under the influence of these systems;
 - ✓ **Fairly widespread to widespread light/moderate rainfall/snowfall** accompanied with **thunderstorm & lightning** likely over Arunachal Pradesh and **Scattered to fairly widespread light/moderate rainfall/snowfall accompanied with thunderstorm, lightning & gusty winds (speed 40-50 kmph)** likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 13th-17th March.
 - ✓ **Isolated heavy rainfall/snowfall** very likely over Arunachal Pradesh during 13th-14th, 16th -17th and over northeast & central Assam on 13th March.
 - ✓ Isolated hailstorms also likely over northeast & central Assam and Nagaland, Manipur, Mizoram & Tripura on 14th March.

Temperature Forecast:

Maximum temperature:

- ❖ No significant change in maximum temperatures likely over plains of Northwest India during next 24 hours and fall by 2-3°C thereafter.
- ❖ No significant change in maximum temperatures likely over central India during next 48 hours and fall by 2-3°C thereafter.
- ❖ Gradual fall in maximum temperatures by 2-4°C likely over many parts of West India during next 4-5 days.
- ❖ Gradual rise in maximum temperatures by about 2-3°C likely over East India during next 3 days and no significant change thereafter.
- ❖ Gradual rise in maximum temperatures by about 2-4°C likely over many parts of south peninsular India during next 4-5 days.

Heat wave, Warm Night and Hot & Humid weather warning:

- ❖ **Heat wave conditions** likely at isolated places over Gujarat State and southwest Rajasthan on 13th; Vidarbha, Chhattisgarh on 13th & 14th; Odisha during 13th-17th; Jharkhand during 14th-17th and Gangetic West Bengal on 15-17th March, 2025.
- ❖ **Warm night conditions** very likely to prevail in isolated pockets over Odisha on 15th & 16th March.

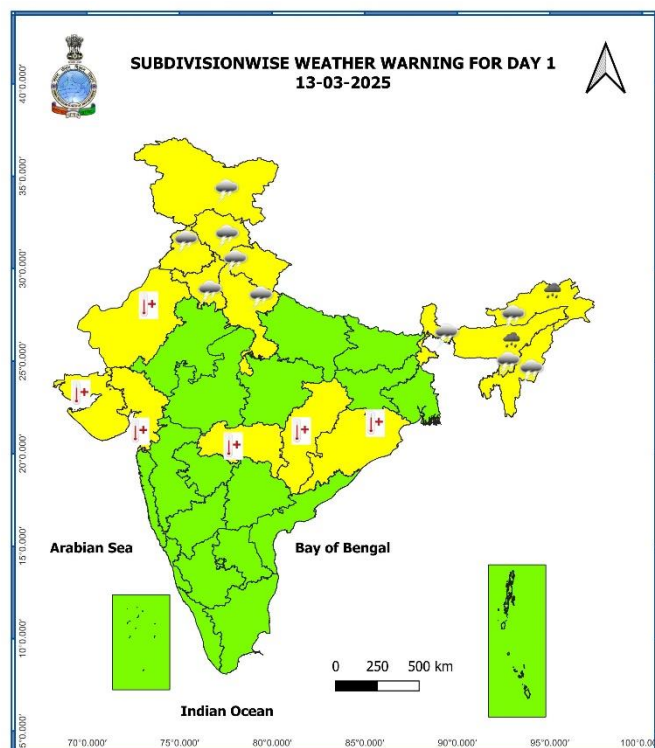
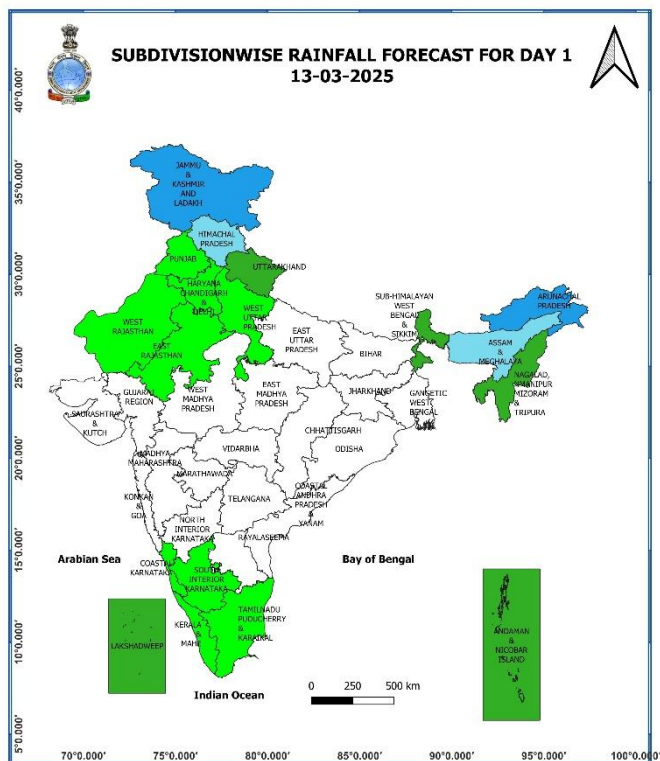
Main Weather Observations:

- ❖ **Rainfall/snowfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Kerala & Mahe and Lakshadweep; **at many places** over Arunachal Pradesh, Assam & Meghalaya and Tamil Nadu, Puducherry & Karaikal; **at isolated places** over Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, West Rajasthan, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Nagaland, Manipur, Mizoram & Tripura, Coastal Karnataka and South Interior Karnataka.
- ❖ **Significant amount of rainfall** (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): **Tamilnadu Puducherry & Karaikal:** Kallakurichi (dist Kallakurichi) 9, DSCL Thiyagadurgam (dist Kallakurichi) 7; **Assam & Meghalaya:** Bokajan AEGCL (dist Bokajan) 4; **Kerala & Mahe:** Ambalavayal (Wayanad district) 7, Quilandi (Kozhikode district) & Chimoni (Thrissur district) 6 each, Kannur, Thalassery (Kannur district) & Karapuzha (Wayanad district) 4 each, Vythiri (Wayanad district), Mahe (Puducherry UT), Kovilkadavu (Idukki district), Cheruvanchery & Kannur (both in Kannur district) & Neryamangalam (Ernakulam district) 3 each;
- ❖ **Thunderstorm with lightning reported** at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Sub-Himalayan West Bengal & Sikkim and Punjab.
- ❖ **Gusty wind reported** at isolated places over Kerala & Mahe.
- ❖ **Hailstorms reported** at isolated locations over coastal Karnataka.
- ❖ **Heat wave to Severe heat wave conditions** prevailed at a few places over Saurashtra & Kutch and **Heat wave conditions** at isolated places over Southwest Rajasthan, Konkan and Gujarat Region.
- ❖ **Minimum Temperature Departures (as on 13-03-2025):** Minimum temperatures are **markedly above normal (5.1°C or more)** at isolated places over West Rajasthan; **appreciably above normal (3.1°C to 5.0°C)** at a few places over Delhi, Uttar Pradesh, West Madhya Pradesh, Gujarat state and Konkan & Goa; at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Bihar, Marathwada and Haryana; **above normal (1.6°C to 3.0°C)** at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, East Rajasthan, Vidarbha, Odisha and Andaman & Nicobar Islands; at isolated places over Jharkhand, Madhya Maharashtra, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura. These are **below normal (-3.0°C to -1.6°C)** at isolated places over Lakshadweep and Tamil Nadu, Puducherry & Karaikal and near normal over rest parts of the country (**Fig. 4**). Today, the **lowest minimum temperature** of 12.9°C is reported at **Adampur (Punjab)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 12-03-2025):** Maximum temperatures were **markedly above normal (5.1°C or more)** at many places over Saurashtra & Kutch; at a few places over Madhya Pradesh and Konkan & Goa; at isolated places over Gujarat Region and Uttarakhand; **appreciably above normal (3.1°C to 5.0°C)** at many places Delhi and Vidarbha; at a few places over East Uttar Pradesh, Rayalaseema, Odisha and Gangetic West Bengal; at isolated places over West Uttar Pradesh, Punjab, Chhattisgarh, Madhya Maharashtra and Marathwada; **above normal (1.6°C to 3.0°C)** at a few places over Bihar, North Interior Karnataka, Coastal Andhra Pradesh & Yanam and Telangana. These were **markedly below normal (5.1°C or less)** at isolated places over Assam & Meghalaya and Tamil Nadu, Puducherry & Karaikal; **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Kerala & Mahe; **below normal (-3.0°C to -1.6°C)** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and near normal over rest parts of the country. (**Fig. 2**). Yesterday, the highest **maximum temperature** of 42.1°C was reported at **Rajkot (Saurashtra & Kutch)** over the country.

Meteorological Analysis (Based on 0830 hours IST)

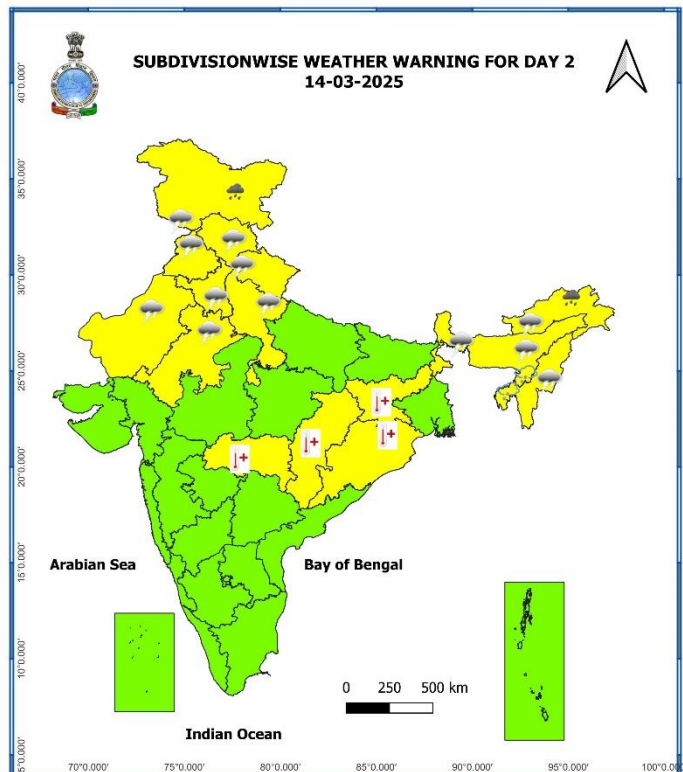
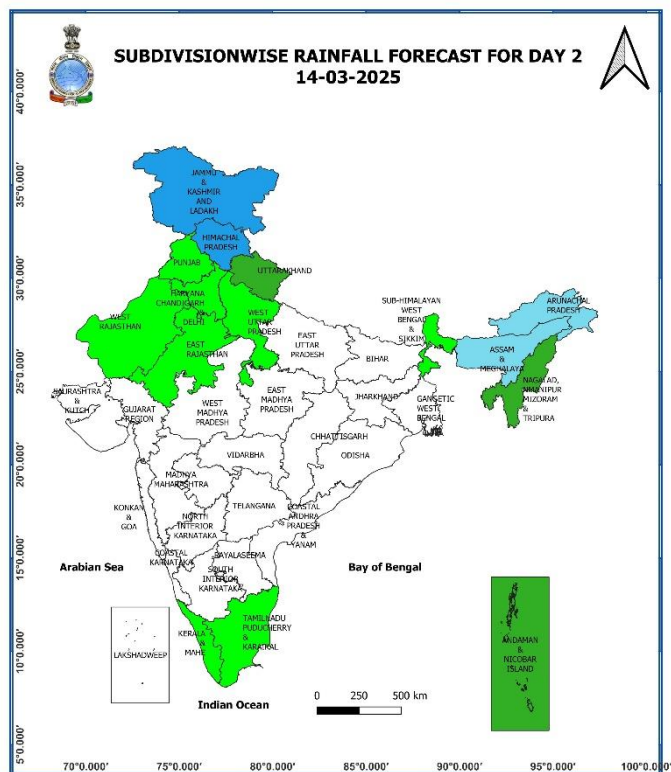
- ❖ The **Western disturbance** as a cyclonic circulation now lies over Afghanistan between 3.1 & 7.6 km above mean sea level.
- ❖ The **Cyclonic Circulation** over southwest Rajasthan & neighbourhood extending upto 1.5 km above mean sea level persists.
- ❖ The **Cyclonic Circulation** over East Bangladesh & neighbourhood at 0.9 km above mean sea level persists.
- ❖ The **Cyclonic Circulation** over West Equatorial Indian Ocean & adjoining Maldives area extending upto 5.8 km above mean sea level persists.
- ❖ The **trough** in easterlies from **Cyclonic Circulation** over West Equatorial Indian Ocean & adjoining Maldives area to Southwest Bay of Bengal off Tamil Nadu Coast now runs from **cyclonic circulation** over West Equatorial Indian Ocean & adjoining Maldives to south Kerala at 0.9 km above mean sea level.
- ❖ A **trough** in westerlies runs roughly along Long. 88°E to the north of Lat. 21°N at 1.5 km above mean sea level.
- ❖ The **Cyclonic Circulation** over East Assam & neighbourhood at 3.1 km above mean sea level with a trough aloft roughly along Long. 93°E to the north of Lat. 25°N at 5.8 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 20th March, 2025)



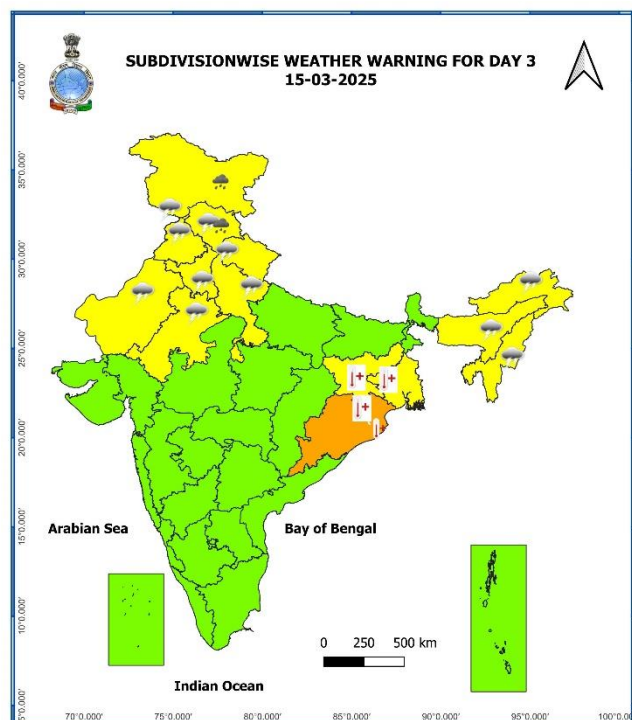
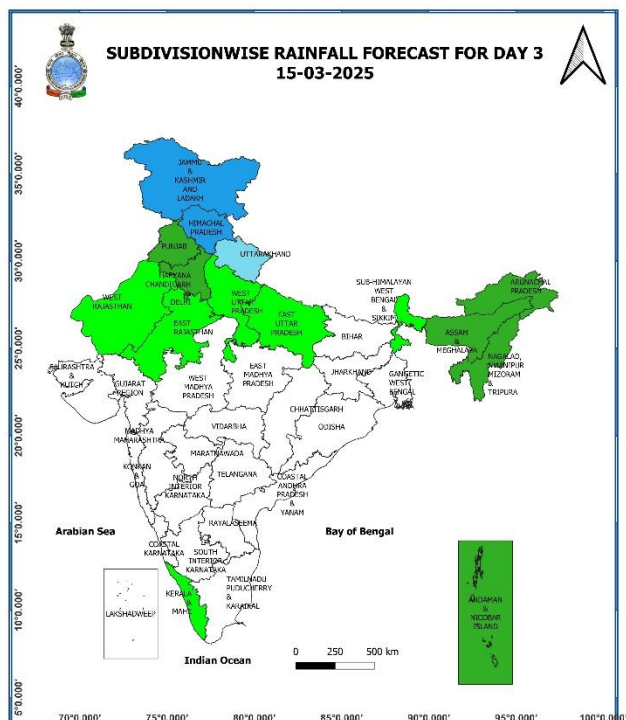
13th March (Day 1):

- ❖ **Heavy rainfall (≥ 7 cm)** at isolated places over east Arunachal Pradesh and northeast & central Assam & Meghalaya.
- ❖ **Thunderstorm accompanied with gusty winds (speed reaching 40-50 kmph) & lightning** at isolated places over central & south Assam & Meghalaya & adjoining north Tripura; **with gusty winds (speed reaching 30-40 kmph) & lightning** at isolated places over Nagaland, Manipur; **with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh and Arunachal Pradesh.
- ❖ **Heat Wave Conditions** very likely at a few places over Vidarbha and at isolated places over Chhattisgarh, Odisha, West Rajasthan and Gujarat state.



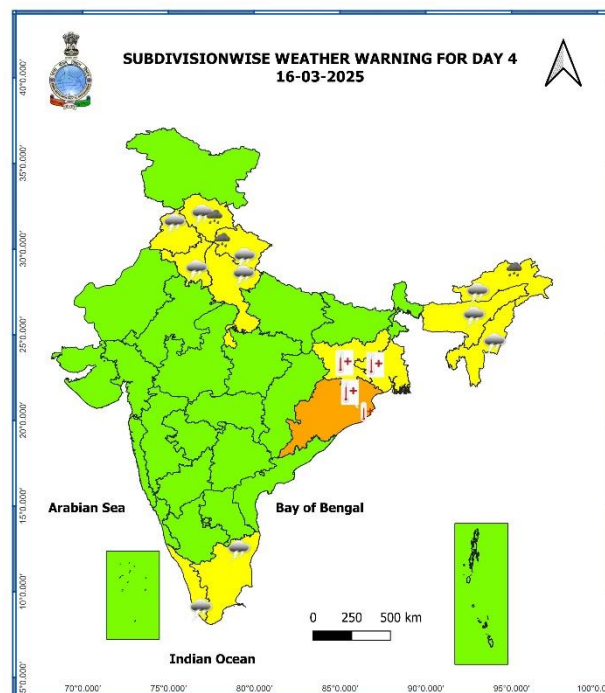
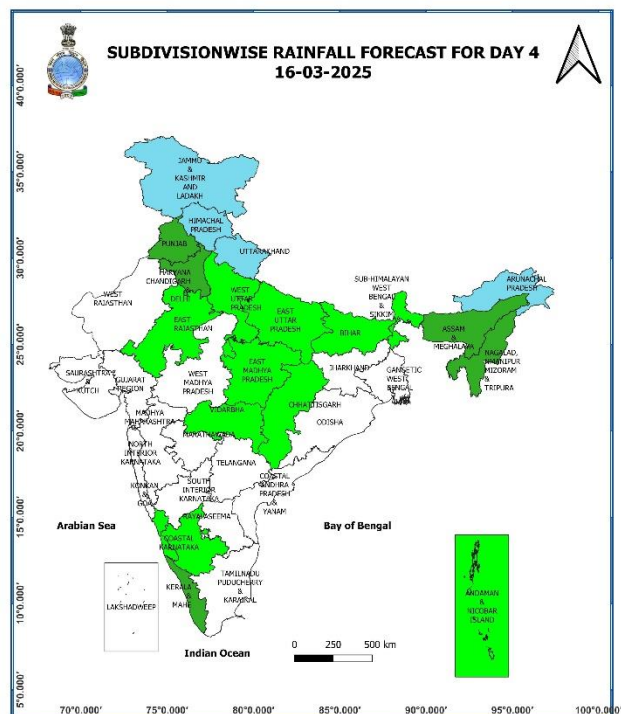
14th March (Day 2):

- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Arunachal Pradesh.
- ❖ **Thunderstorm accompanied with gusty winds (speed reaching 40-50 kmph) & lightning** at isolated places over Assam & Meghalaya; **Thunderstorm accompanied with gusty winds (speed reaching 30-40 kmph) & lightning** very likely at isolated places over Punjab, Haryana-Chandigarh-Delhi, Rajasthan and Nagaland, Manipur, Mizoram & Tripura; **with lightning** at isolated places over Arunachal Pradesh, Sub-Himalayan West Bengal & Sikkim, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand and West Uttar Pradesh .
- ❖ **Heat Wave Conditions** very likely at isolated places over Vidarbha, Chhattisgarh, Jharkhand and Odisha.
- ❖ **Hailstorm** very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.



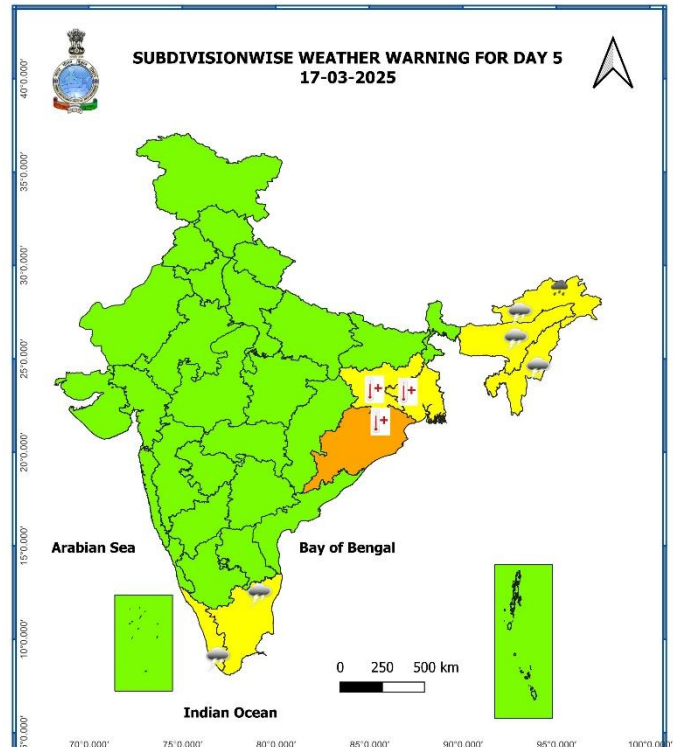
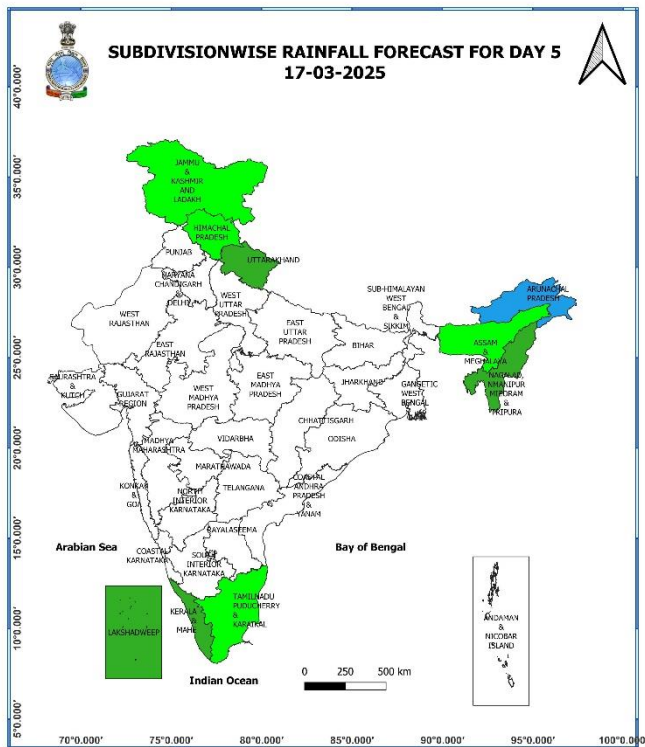
15th March (Day 3):

- ❖ **Heavy rainfall (≥ 7 cm)** very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh.
- ❖ **Thunderstorm accompanied with gusty winds (speed reaching 30-40 kmph) & lightning** very likely at isolated places over Punjab, Haryana-Chandigarh-Delhi, Rajasthan Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura; **with lightning** at isolated places over Arunachal Pradesh, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand and West Uttar Pradesh.
- ❖ **Heat Wave Conditions** likely at isolated places over Gangetic West Bengal, Jharkhand and Odisha.
- ❖ **Warm Night Conditions** likely at isolated places over Odisha.



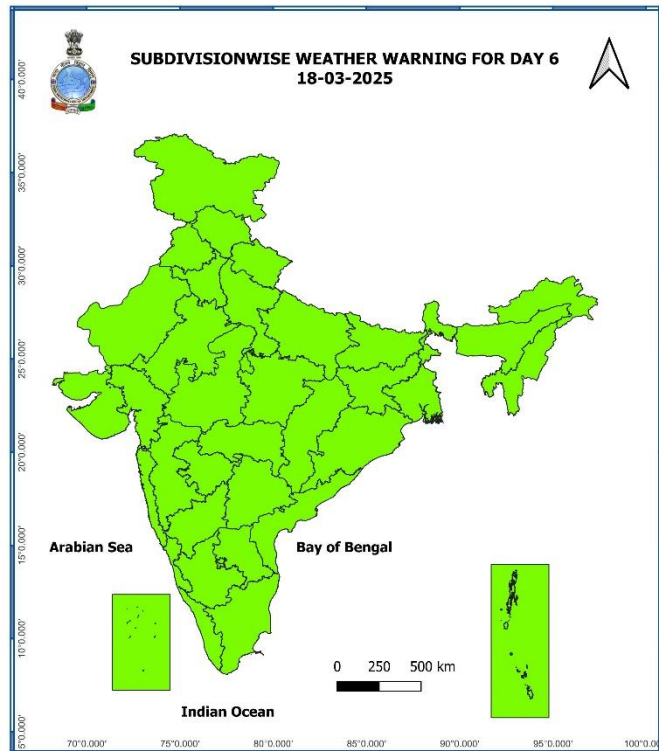
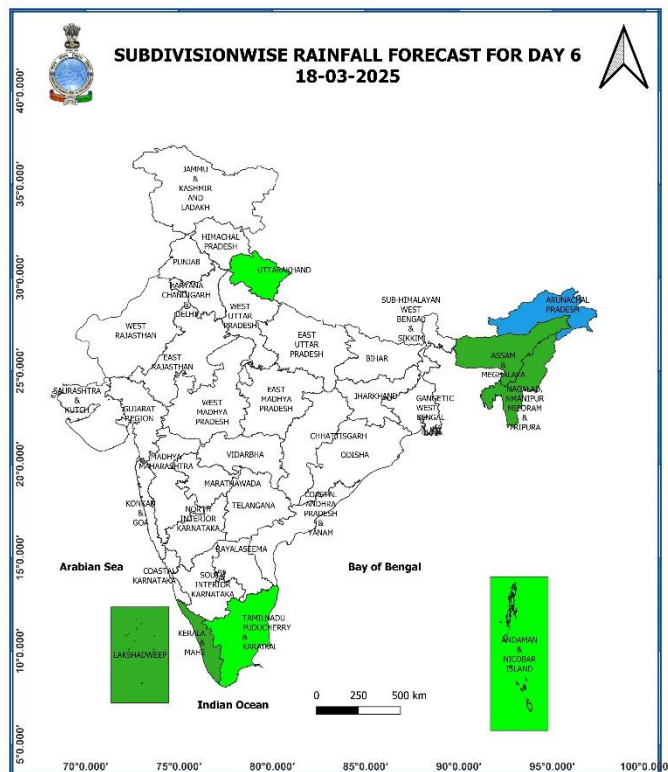
16th March (Day 4):

- ❖ **Heavy rainfall (≥ 7 cm)** likely at isolated places over Himachal Pradesh, Uttarakhand and Arunachal Pradesh.
- ❖ **Thunderstorm accompanied with gusty winds (speed reaching 30-40 kmph) & lightning** very likely at isolated places over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura; **with lightning** at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, West Uttar Pradesh, Arunachal Pradesh, south Tamil Nadu, Puducherry & Karaikal and north Kerala & Mahe.
- ❖ **Heat Wave Conditions** likely at isolated places over Gangetic West Bengal, Jharkhand and Odisha.
- ❖ **Warm Night Conditions** likely at isolated places over Odisha.



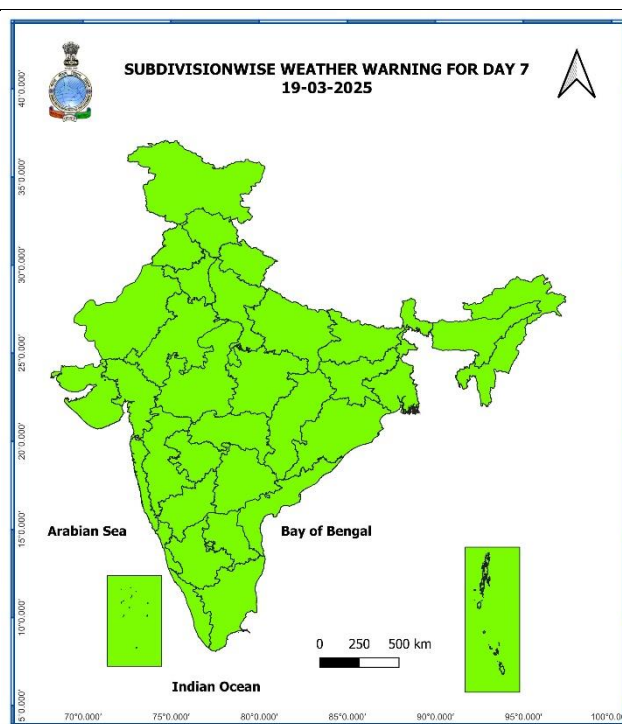
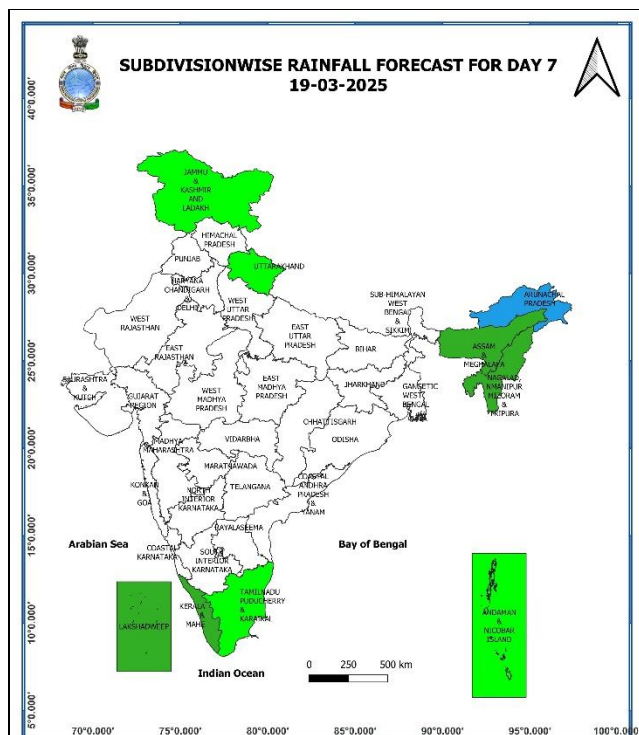
17th March (Day 5):

- ❖ **Heavy rainfall (≥ 7 cm)** at isolated places over Arunachal Pradesh.
- ❖ **Thunderstorm accompanied with gusty winds (speed reaching 30-40 kmph) & lightning** very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura; **with lightning** at isolated places over Arunachal Pradesh, Assam & Meghalaya, south Tamil Nadu, Puducherry & Karaikal and north Kerala & Mahe.
- ❖ **Heat Wave Conditions** likely at isolated places over Gangetic West Bengal, Jharkhand and Odisha



18th March (Day 6):

❖ **No Weather Warning.**



19th March (Day 7):

❖ **No Weather Warning.**

Weather Outlook for subsequent 3 days (During 20th March- 22th March, 2025)

❖ **Isolated to scattered rainfall** likely over Western Himalayan region, Northeast, East & adjoining Central India, 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

* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599
(Service to the Nation since 1875)

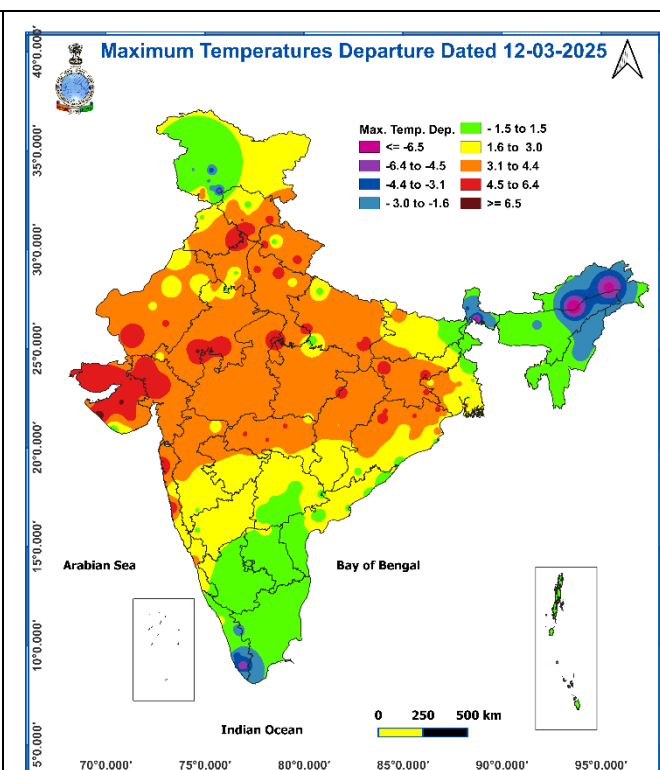
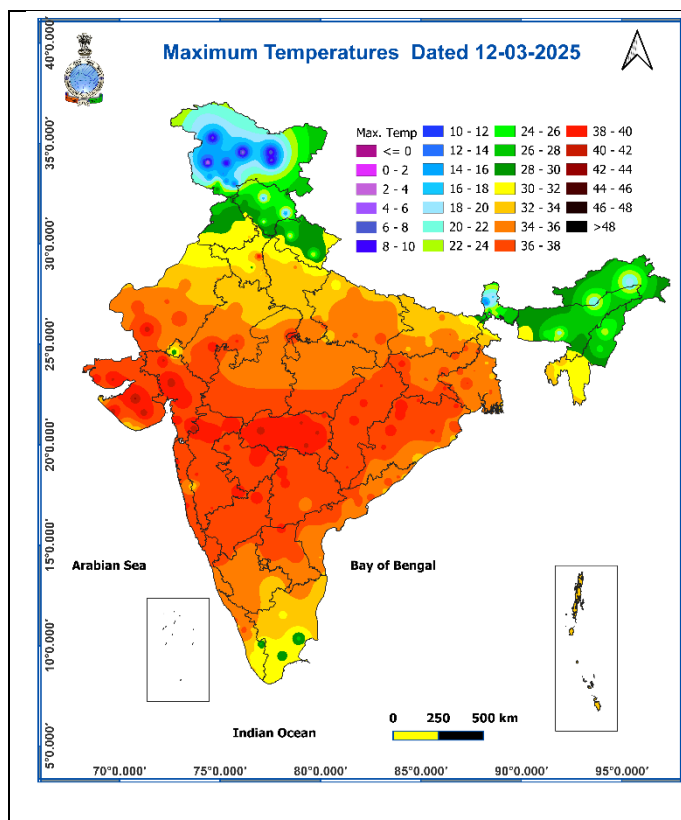


Fig. 3: Minimum Temperatures

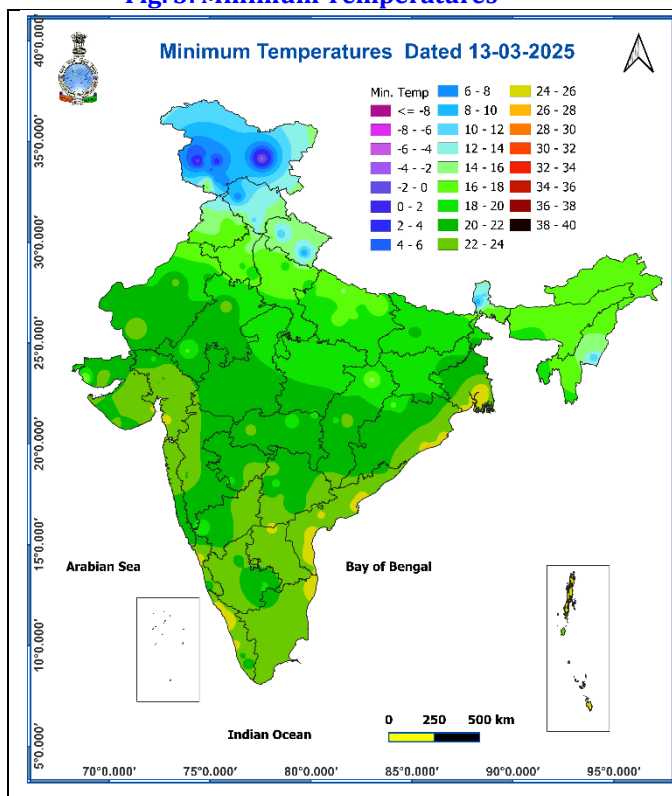
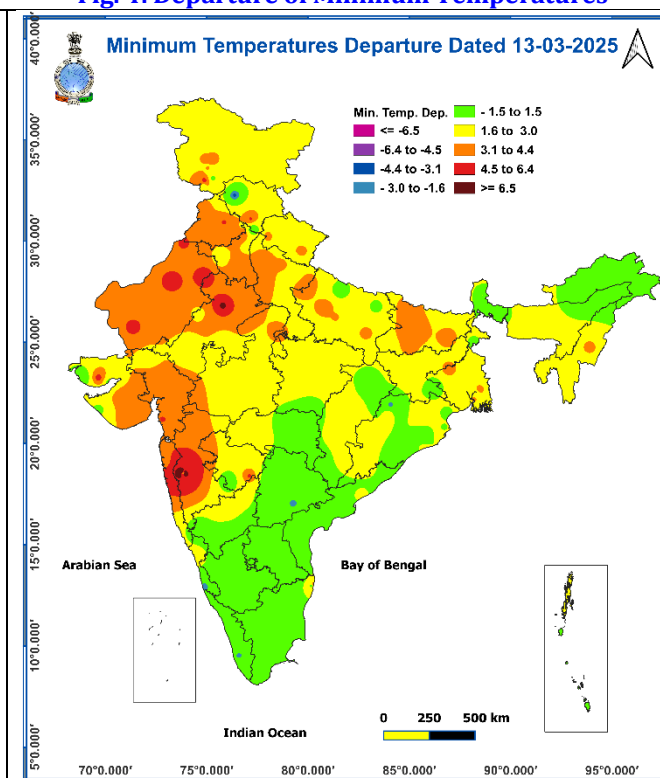


Fig. 4: Departure of Minimum Temperatures



Impact expected and action suggested due to thunderstorm accompanied with lightning/gusty winds over Northeast India and Northwest India during next 5 days

❖ **Impact expected:**

- ❖ Strong wind may damage plantation, horticulture and standing crops.
- ❖ 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.

Impact & Action Suggested due to heavy rainfall/ snowfall over;

- (i) **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 14th & 15th; Himachal Pradesh 15th & 16th and Uttarakhand on 16th March**
- (ii) **Arunachal Pradesh during 13th-14th, 16th -17th and over northeast & central Assam on 13th March.**

A. Impact Expected

- ❖ Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- ❖ Occasional reduction in visibility due to heavy rainfall.
- ❖ Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
- ❖ Minor damage to kutcha roads.
- ❖ Possibilities of damage to vulnerable structure.
- ❖ Localized Landslides/Mudslides
- ❖ Damage to horticulture and standing crops in some areas due to inundation.
- ❖ It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC).

B. Action Suggested

- ❖ Check for traffic congestion on your route before leaving for your destination.
- ❖ Follow any traffic advisories that are issued in this regard.
- ❖ Avoid going to areas that face the water logging problems often.
- ❖ Avoid staying in vulnerable structure.

Impact expected and action suggested due to Heat wave conditions likely at isolated places over Gujarat State and southwest Rajasthan on 13th; Vidarbha, Chhattisgarh on 13th & 14th; Odisha during 13th-17th; Jharkhand during 14th-17th and Gangetic West Bengal on 15-17th March, 2025.

Orange alert Areas (Odisha during 15-17th March)

- ❖ 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.

*** Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".**
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.
For more details, kindly visit <https://mausam.imd.gov.in> or contact: 011-2434-4599
(Service to the Nation since 1875)

- ❖ 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.

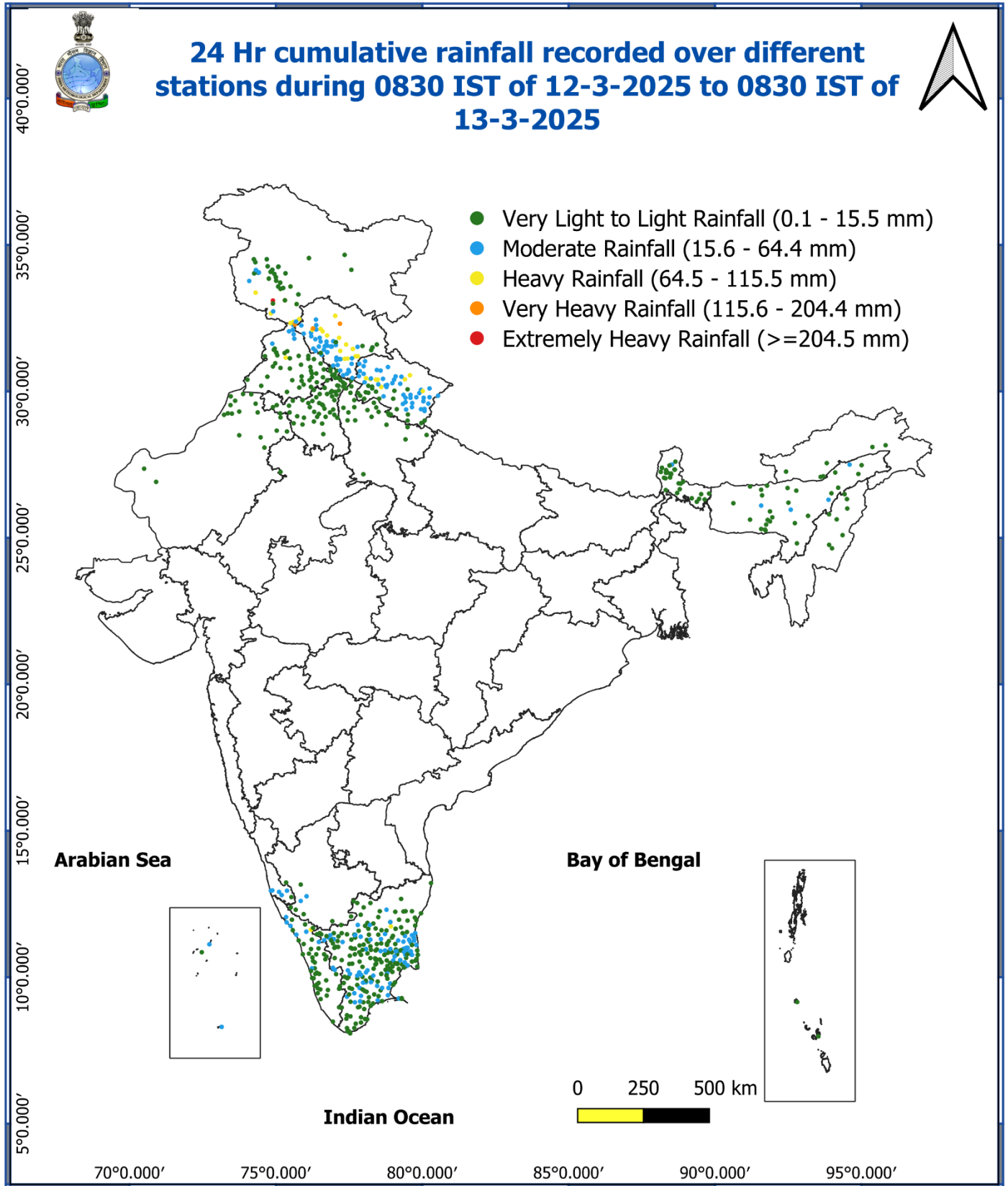
Agromet advisories for likely impact of Heavy Rainfall / Hailstorm / Heat Wave

- Drain out excess water from standing crop and vegetable fields in **South Tamil Nadu, Kerala, Assam and Arunachal Pradesh**; make arrangements to drain out water in **Jammu & Kashmir**.
- In **Assam, Nagaland and Manipur**, immediately harvest matured crops to avoid damage due to hailstorm. Use hail net and hail caps to protect orchards.
- In **South West Rajasthan, Gujarat, Vidarbha, Chhattisgarh, Odisha and Jharkhand**, apply light and frequent irrigation to the standing crops, vegetables and orchards in the evening to protect them from heat wave.
- Keep the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields.
- Provide mechanical support to horticultural crops and staking to vegetables to avoid lodging.

Livestock and Fishery

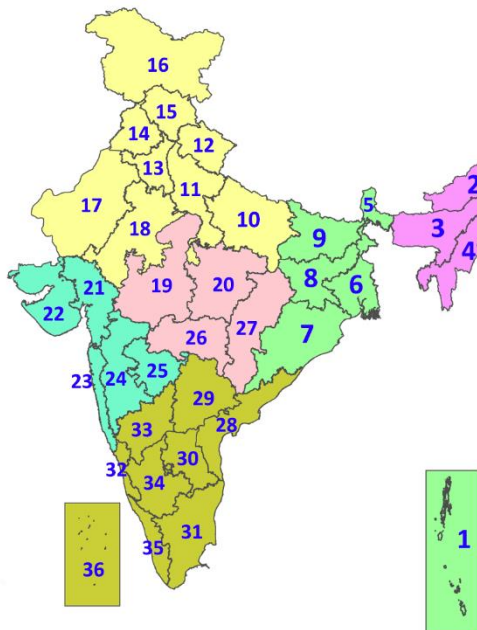
- Keep the animals inside the shed during heavy rainfall/hailstorm and provide them balanced feed.
- Store feed and fodder in a safe place to prevent spoilage.
- Construct an outlet with proper netting around the ponds to drain out excess water, thereby preventing fish from escaping in case of overflow.
- 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.

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)



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

* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".

Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.

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

(Service to the Nation since 1875)

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)