

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Temperature:

- ❖ Yesterday, Maximum Temperatures were in the **range of 36-40°C** over interior Maharashtra, Telangana, Rayalaseema, North interior Karnataka, Gujarat, interior Odisha, and **32-36°C** over coastal Andhra Pradesh, Tamil Nadu, Kerala, coastal and south interior Karnataka, Lakshadweep, Andaman & Nicobar Islands, Konkan & Goa, Rajasthan, southwest and east Uttar Pradesh, south Haryana, Madhya Pradesh, Bihar, coastal Odisha, Gangetic west Bengal, south & west Jharkhand, west Assam, Mizoram, Tripura and **20-32°C** over rest parts of the country.

Weather Systems, Forecast and Warnings:

- ❖ An upper air **cyclonic circulation** lies over Madhya Pradesh and there is wind confluence over east & adjoining central India due to the above trough and anticyclonic circulation over Bay of Bengal at lower tropospheric levels. Under the influence of these systems:
 - ✓ **Scattered to Fairly widespread** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 50-60 kmph)** likely over Gangetic West Bengal, Jharkhand, Odisha during 21st-22nd March.
 - ✓ **Isolated to Scattered** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 40-50 kmph)** likely over West Madhya Pradesh on 21st; East Madhya Pradesh, Vidarbha, Chhattisgarh on 21st-22nd March and abate thereafter.
 - ✓ **Isolated to Scattered** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 30-40 kmph)** likely over likely over Sub-Himalayan West Bengal & Sikkim, Bihar on 21st-22nd March and abate thereafter.
 - ✓ **Isolated hailstorms also likely over East Madhya Pradesh, Vidarbha, Chhattisgarh, Jharkhand, Odisha during 21st-22nd; Sub-Himalayan West Bengal & Sikkim on 22nd; Gangetic West Bengal on 21st; Bihar on 21st & 22nd March.**
- ❖ A **Cyclonic Circulation** lies over northeast Assam and neighbourhood in lower tropospheric levels. Under its influence:
 - ✓ **Scattered to Fairly widespread light/moderate rainfall/snowfall** accompanied with **thunderstorm, lightning** over Arunachal Pradesh during 21st-23rd March with **Isolated heavy rainfall/snowfall** on 21st & 22nd March.
 - ✓ **Scattered to Fairly widespread** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 30-50 kmph)** likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during next 5 days.
 - ✓ **Isolated hailstorms also likely over south Assam on 21st March.**
- ❖ The trough/wind discontinuity runs from the cyclonic circulation over Chhattisgarh to North Interior Karnataka in lower tropospheric levels. Under its influence:
 - ✓ **Isolated to Scattered** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 30-50 kmph)** likely over Tamilnadu Puducherry & Karaikal, Coastal Karnataka, North Interior Karnataka, Coastal Andhra Pradesh & Yanam, Rayalaseema during 22nd-24th, Kerala & Mahe, South Interior Karnataka, Telangana during next 5 days.
 - ✓ **Isolated hailstorms also likely over Telangana on 21st & 22nd March.**
- ❖ The **Western Disturbance** as a trough in lower & middle tropospheric levels runs roughly along Longitude 74° E and north of latitude 32° N and a upper air cyclonic circulation lies over southwest Rajasthan in lower tropospheric levels, Under the influence of these systems;
 - ✓ **Isolated** light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (speed 30-40 kmph)** likely over Uttar Pradesh during 21st-22nd March.

Temperature Forecast:

Maximum temperature:

- ❖ No significant change in maximum temperatures likely over Northwest India during next 3 days and rise by 2-3°C during subsequent 2 days.
- ❖ Gradual fall in maximum temperatures by 2-3°C likely over Central India during next 2-3 days and no significant change thereafter.
- ❖ No significant change in maximum temperatures likely over East India during next 24 hours and gradual fall by about 4-6°C for subsequent 3-4 days.
- ❖ No significant change in maximum temperatures likely over West India during next 2 days and rise by 2-3°C during subsequent 3 days.

Heat wave and Hot & Humid weather warning:

- ❖ **No heat wave likely over any parts of country during next 4-5 days.**
- ❖ **Hot & humid conditions** very likely to prevail in isolated pockets over coastal areas of Gujarat State during 22nd-24th; Tamilnadu Puducherry & Karaikal on 21st March.

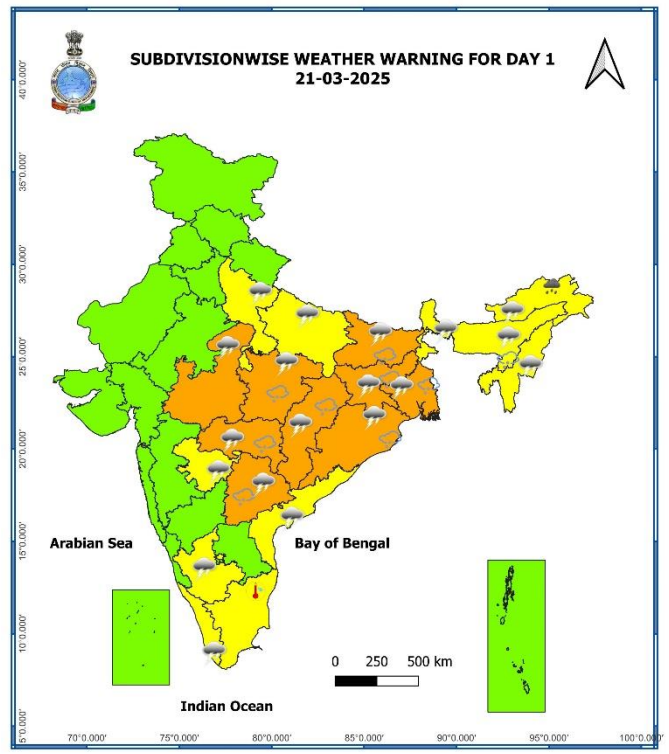
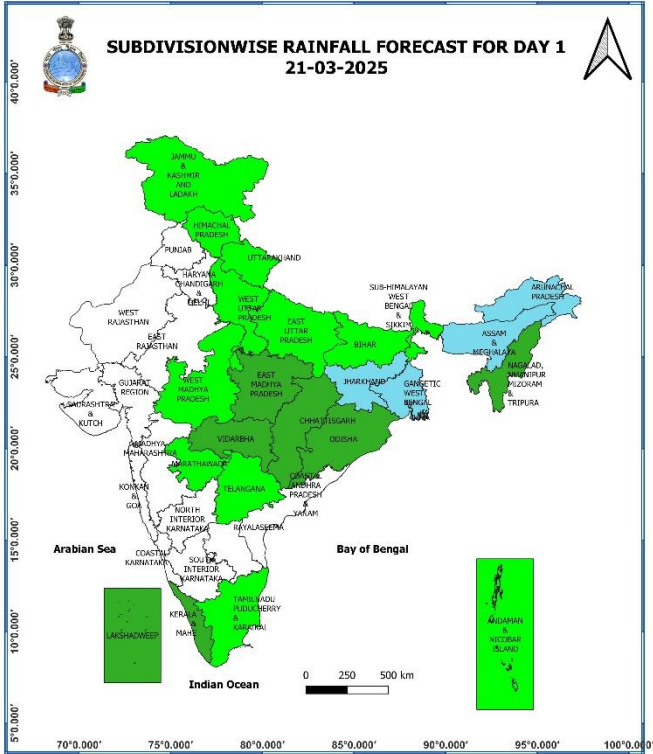
Main Weather Observations:

- ❖ **Rainfall/Snowfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **Rainfall/Snowfall at isolated places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; **Rainfall at isolated places** over East Uttar Pradesh, East Madhya Pradesh, Gangetic West Bengal, Bihar, Jharkhand, Assam, Nagaland and Andaman & Nicobar Islands.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): Gangetic West Bengal: Berhampore- 1; Assam & Meghalaya: Silchar- 1.
- ❖ **Minimum Temperature Departures (as on 20-03-2025):** Minimum temperatures were **markedly above normal (5.1°C or more)** at isolated places over Odisha; **appreciably above normal (3.1°C to 5.0°C)** at many places over Marathwada and Jharkhand; at a few places over West Rajasthan, East Madhya Pradesh; Vidarbha; at isolated places over East Rajasthan, West Madhya Pradesh, Madhya Maharashtra, Bihar, Gangetic West Bengal and Tamil Nadu, Puducherry & Karaikal; **above normal (1.6°C to 3.0°C)** at many places over Coastal Karnataka; at a few places over Gujarat Region, Interior Karnataka, Rayalaseema, Coastal Andhra Pradesh & Yanam, Kerala & Mahe, Lakshadweep and Andaman & Nicobar Islands; at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Chhattisgarh. These were **appreciably below normal (-3.1°C to -5.0°C)** at isolated places over Uttarakhand; **below normal (-3.0°C to -1.6°C)** at many places over Haryana-Chandigarh-Delhi; at a few places over Punjab and Himachal Pradesh; at isolated places over Assam & Meghalaya and Telangana and near normal over rest parts of the country (**Fig. 4**). Yesterday, the **lowest minimum temperature of 12.1°C** was reported at **Karnal (Haryana)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 20-03-2025):** Maximum Temperatures were **below normal by 2-5°C** over some places over south Bihar, North Jharkhand, Gangetic West Bengal, southeast Uttar Pradesh and northeast Madhya Pradesh and **above normal by 2-4°C** over Jammu division, east Punjab, West & central Uttar Pradesh, Vidarbha and near normal over rest parts of the country. (**Fig. 2**). Yesterday, the highest **maximum temperature of 41.1°C** was reported at **Anantapur (Rayalaseema)** over the country.

Meteorological Analysis (Based on 0530 hours IST)

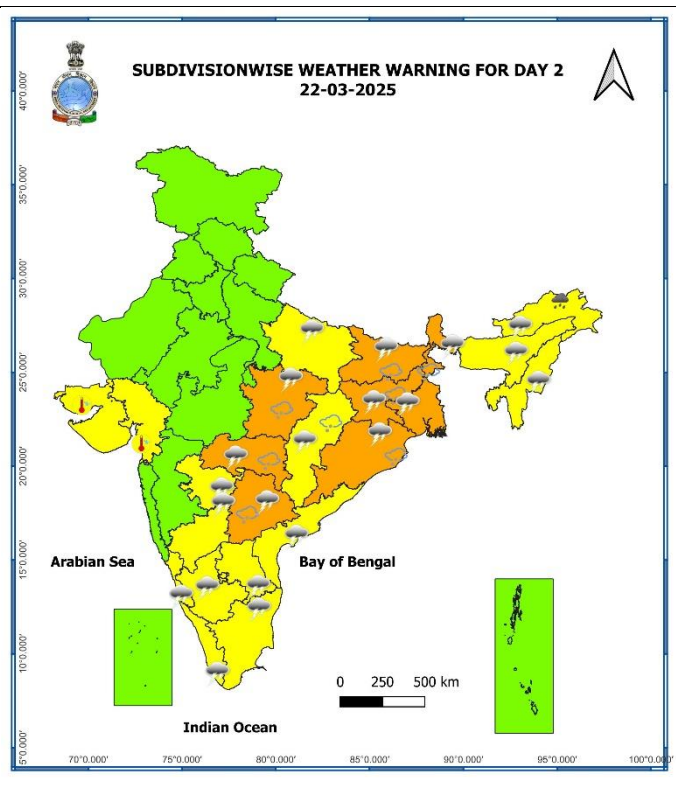
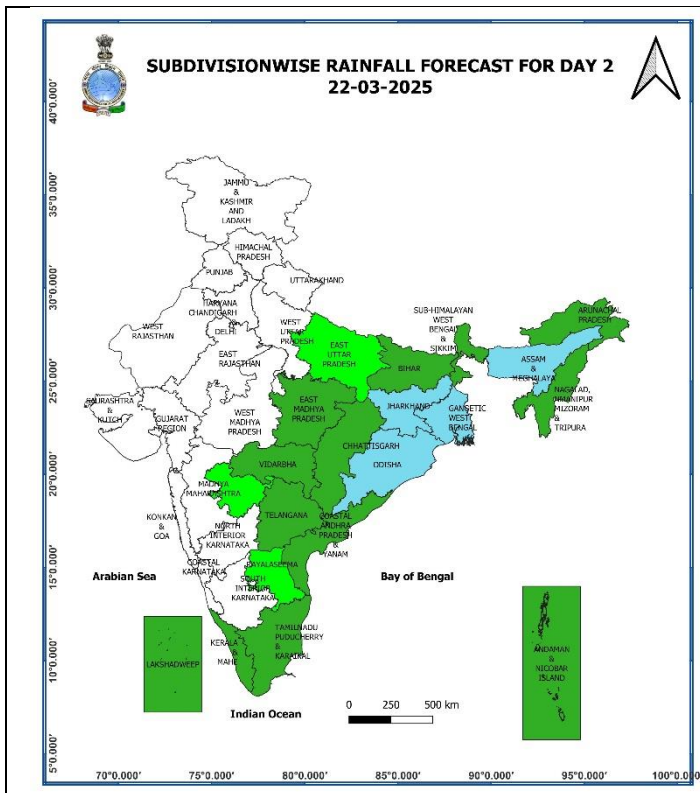
- ❖ The **Western Disturbance** as a trough in middle tropospheric levels with its axis at 5.8 km above means sea level now runs roughly along Long. 74°E to the north of Lat. 32°N.
- ❖ The upper air **cyclonic circulation** over southwest Madhya Pradesh & neighbourhood now lies over Madhya Pradesh extending upto 1.5 km above mean sea level.
- ❖ The **trough/wind discontinuity** from the **cyclonic circulation** over southwest Madhya Pradesh & neighbourhood to North Interior Karnataka now runs from Chhattisgarh to North Interior Karnataka across Maharashtra and extends upto 1.5 km above mean sea level persists.
- ❖ The upper air **Cyclonic Circulation** over northeast Assam & neighbourhood extending upto 1.5 km above mean sea level persists.
- ❖ A fresh **Western Disturbance** is likely to affect Western Himalayan Region from the night of 24th March, 2025.
- ❖ The upper air **cyclonic circulation** over Southwest Rajasthan & neighbourhood extending upto 3.1 Km above mean sea level has become less marked.
- ❖ The **trough** from the above **cyclonic circulation** over southwest Madhya Pradesh & neighbourhood to North Odisha across Chhattisgarh now lies over at 0.9 km above mean sea level has become less marked.

Weather Forecast & Warnings for next 7 days (Upto 0830 hours IST of 28th March, 2025)



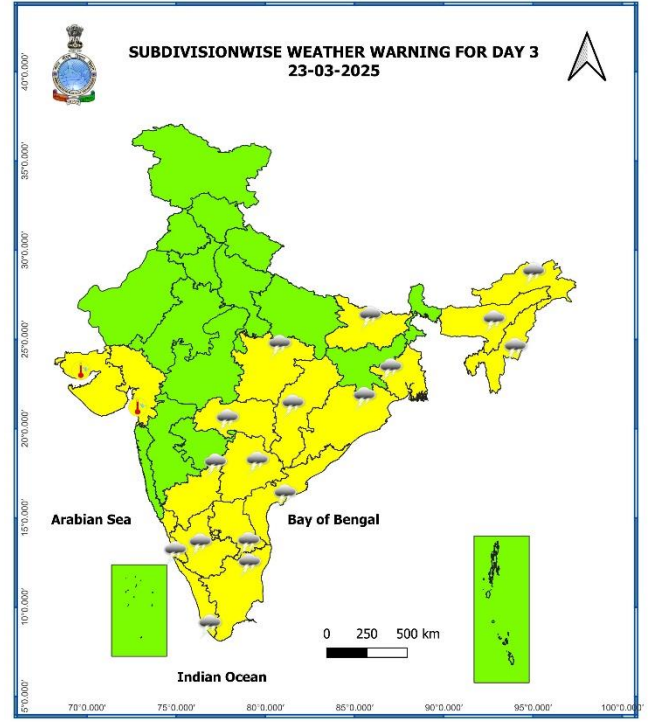
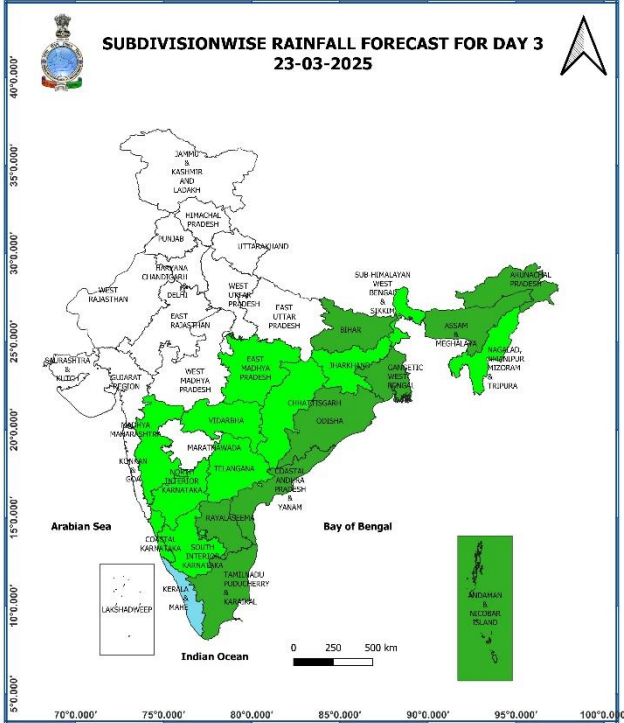
21st March (Day 1):

- ❖ **Heavy rainfall** very likely at isolated places over Arunachal Pradesh.
- ❖ **Thunderstorm accompanied with squally winds (speed reaching 50-60 kmph), Hailstorm & lightning** likely at isolated places over East Madhya Pradesh, Chhattisgarh, Gangetic West Bengal, Jharkhand and Odisha; **with squally winds (speed reaching 40-50 kmph), Hailstorm & lightning** at isolated places over Vidarbha, Assam & Meghalaya and Telangana; **with squally winds (speed reaching 30-40 kmph), Hailstorm & lightning** at isolated places over Bihar; **with gusty winds (speed reaching 50-60 kmph) & lightning** likely at isolated places over West Madhya Pradesh; **with gusty winds (speed reaching 40 - 50 kmph) lightning** at isolated places over East Uttar Pradesh, Marathwada and Nagaland, Manipur, Mizoram & Tripura; **with gusty winds (speed reaching 30 - 40 kmph) lightning** at isolated places over West Uttar Pradesh, Sub-Himalayan West Bengal & Sikkim, and South Interior Karnataka; **with lightning** at isolated places over Arunachal Pradesh, Coastal Andhra Pradesh & Yanam and Kerala & Mahe.
- ❖ **Hot and Humid Conditions** likely at isolated places over Tamil Nadu, Puducherry & Karaikal.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** is likely to prevail along and off west Bengal coast and north Odisha coast. Fishermen are advised not to venture into these areas.



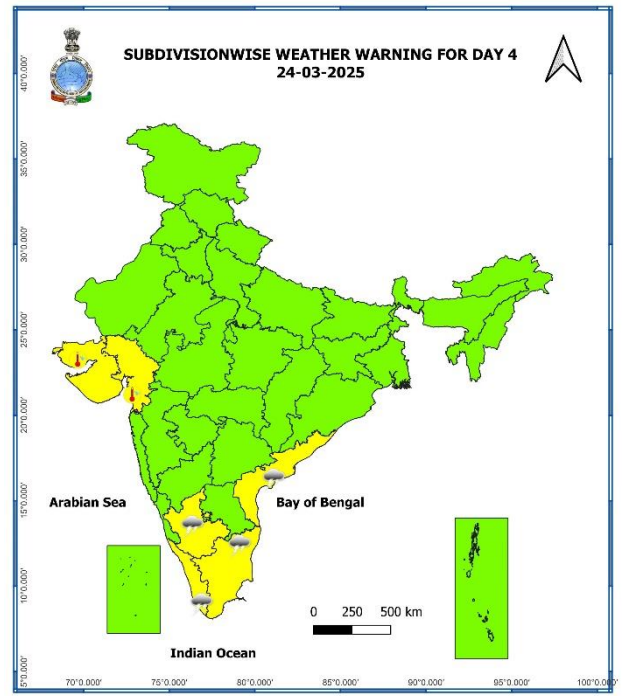
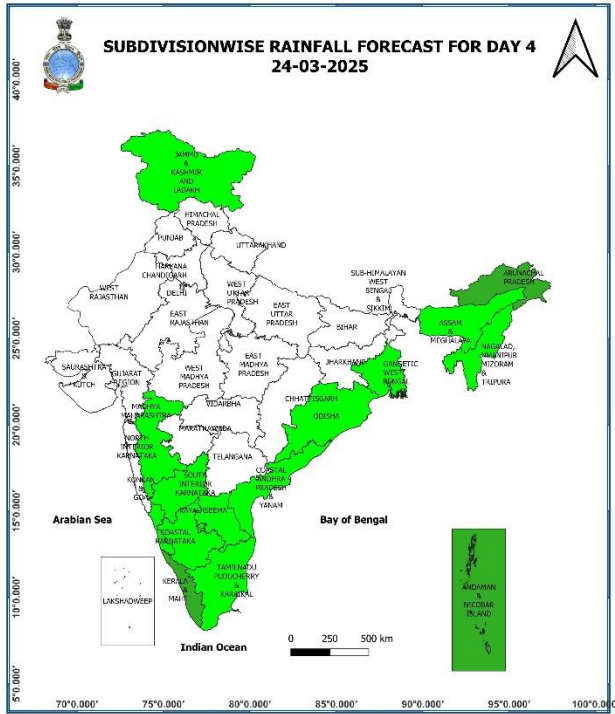
22nd March (Day 2):

- ❖ **Heavy rainfall** very likely at isolated places over Arunachal Pradesh.
- ❖ **Thunderstorm accompanied with winds (speed reaching 50-60 kmph) Hailstorm & lightning** likely at isolated places over Odisha; **with gusty winds (speed reaching 40 - 50 kmph) Hailstorm & lightning** likely at isolated places over East Madhya Pradesh, Vidarbha, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Jharkhand and Telangana; **with gusty winds (speed reaching 30 - 40 kmph), Hailstorm & lightning** likely at isolated places over Bihar; **with gusty winds (speed reaching 40 - 50 kmph) lightning** likely at isolated places over East Uttar Pradesh, Gangetic West Bengal, Marathwada, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema and Karnataka; **with gusty winds (speed reaching 30 - 40 kmph) & lightning** likely at isolated places over Assam & Meghalaya; **with lightning** at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Hot and Humid Conditions** very likely at isolated places over coastal Gujarat



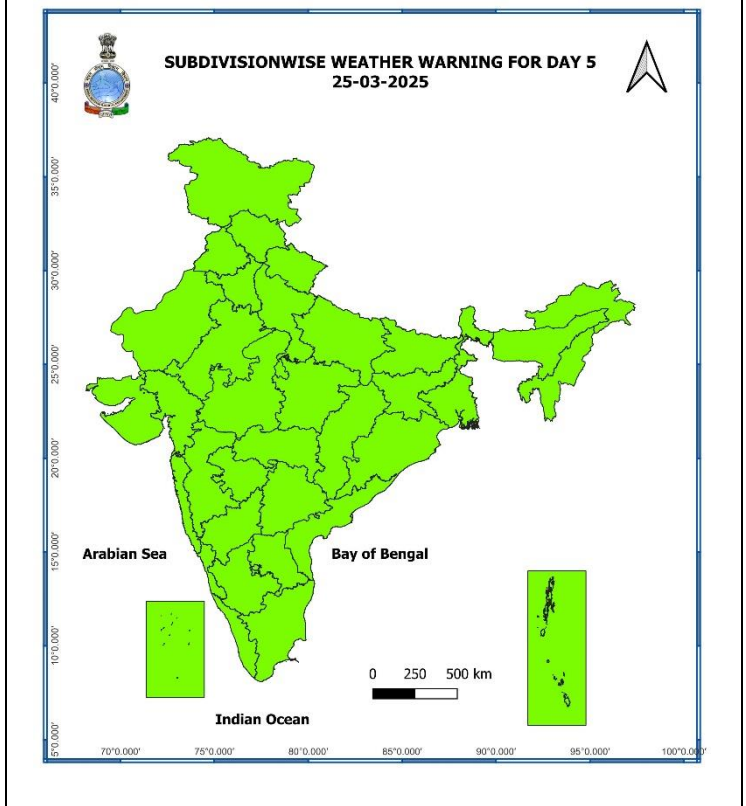
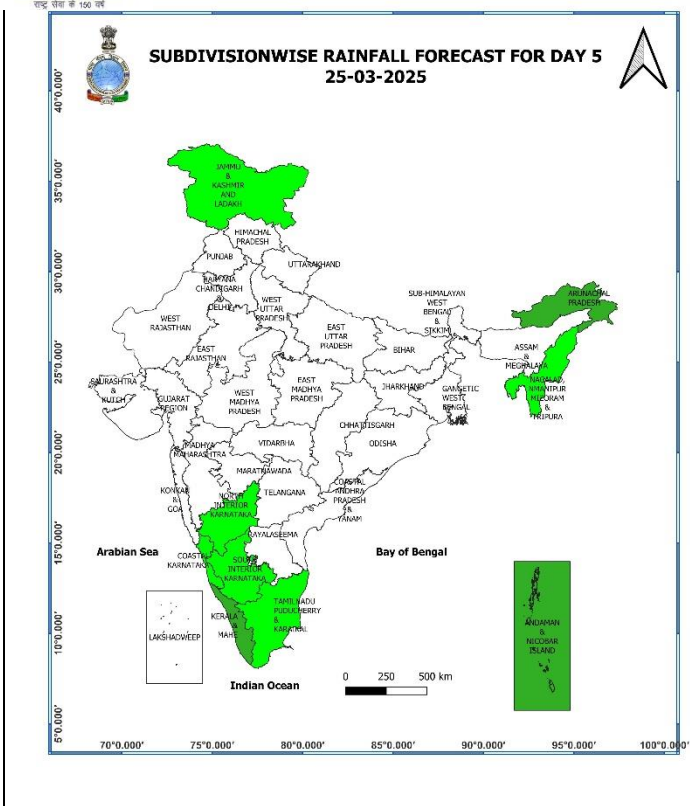
23rd March (Day 3):

- ❖ **Thunderstorm accompanied with gusty winds (speed reaching 40 - 50 kmph) & lightning** likely at isolated places over Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema and Karnataka; **with gusty winds (speed reaching 30 - 40 kmph) & lightning** likely at isolated places over East Madhya Pradesh, Vidarbha and Assam & Meghalaya; **with lightning** at isolated places over Chhattisgarh, Gangetic West Bengal, Bihar, Odisha, Arunachal Pradesh, Telangana, Nagaland, Manipur, Mizoram & Tripura and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Hot and Humid Conditions** likely at isolated places over coastal Gujarat.



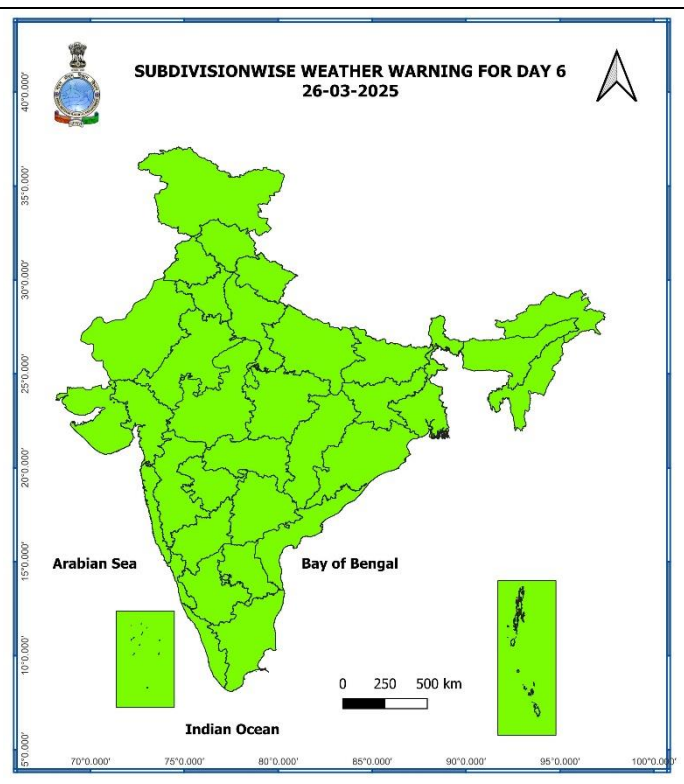
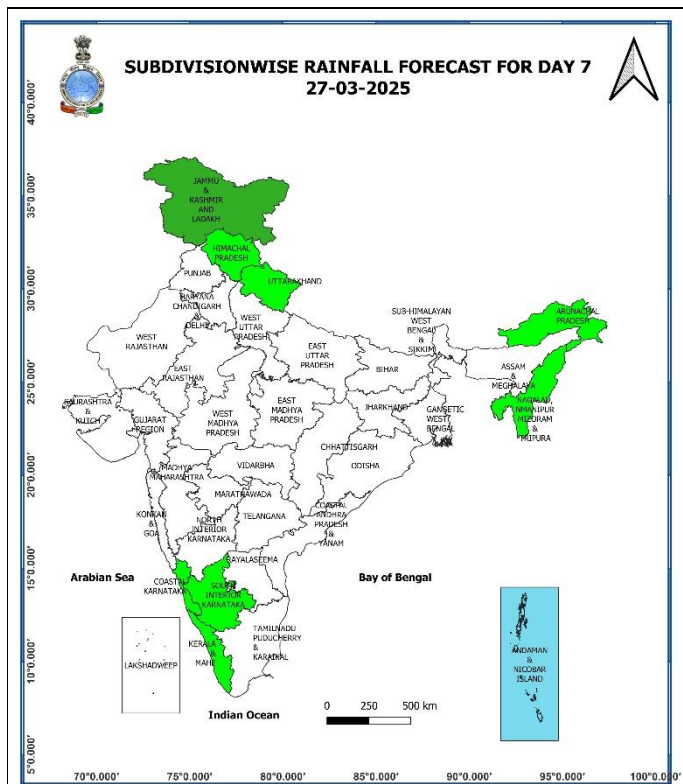
24th March (Day 4):

- ❖ **Thunderstorm accompanied with gusty winds (speed reaching 30 - 40 kmph) & lightning** likely at isolated places over Coastal Andhra Pradesh & Yanam; **with lightning** at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and South Interior Karnataka.
- ❖ **Hot and Humid Conditions** likely at isolated places over coastal Gujarat.



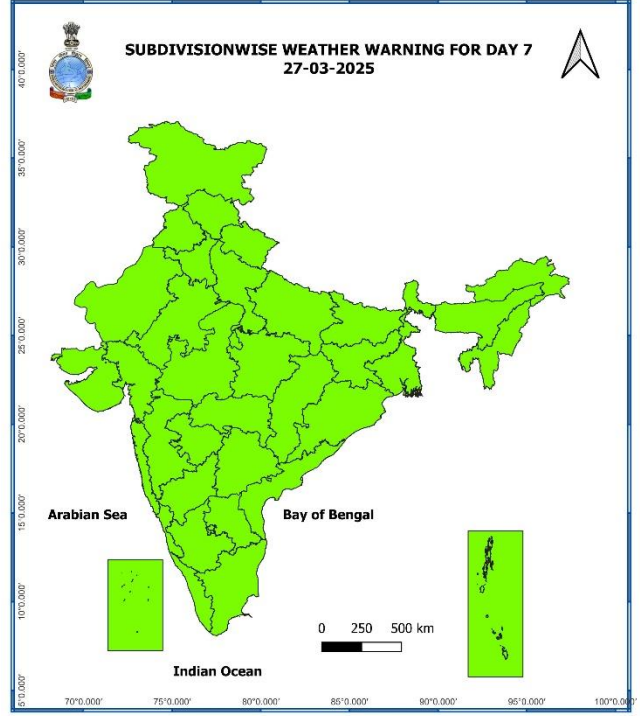
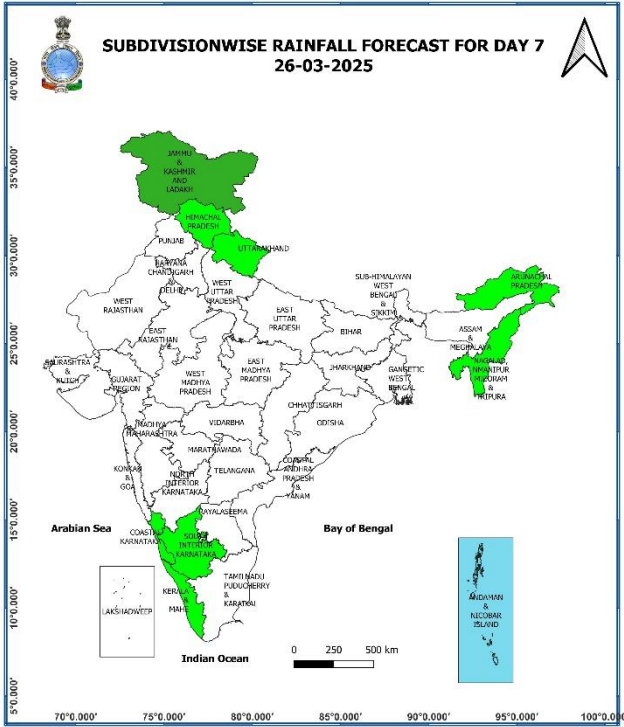
25th March (Day 5):

❖ **No Weather Warning.**



26th March (Day 6):

❖ **No Weather Warning.**



27th March (Day 7):

❖ **No Weather Warning.**

Weather Outlook for subsequent 3 days (During 28th March-30th March, 2025)

❖ **Isolated to scattered rainfall** likely over Jammu & Kashmir, 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

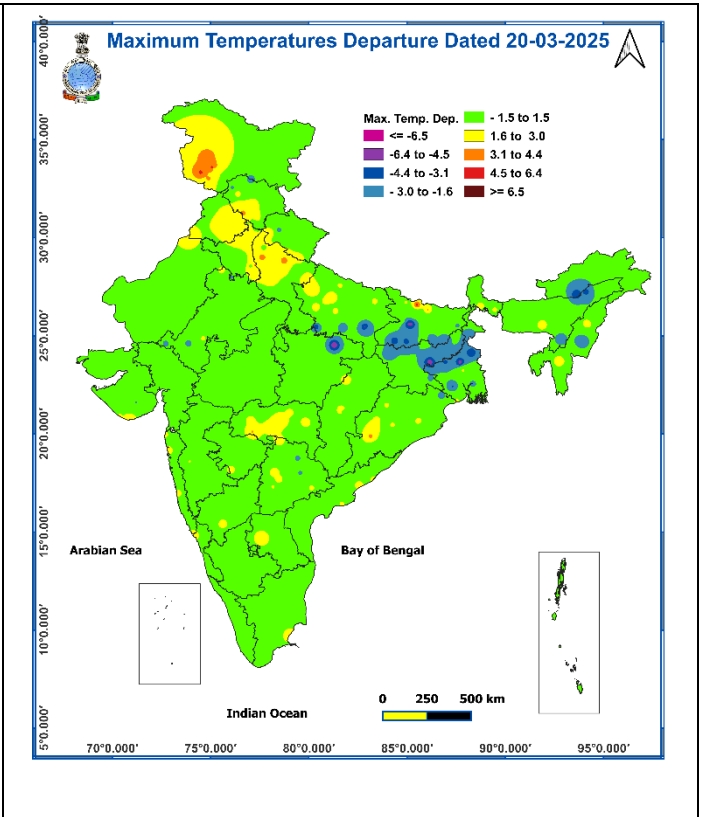
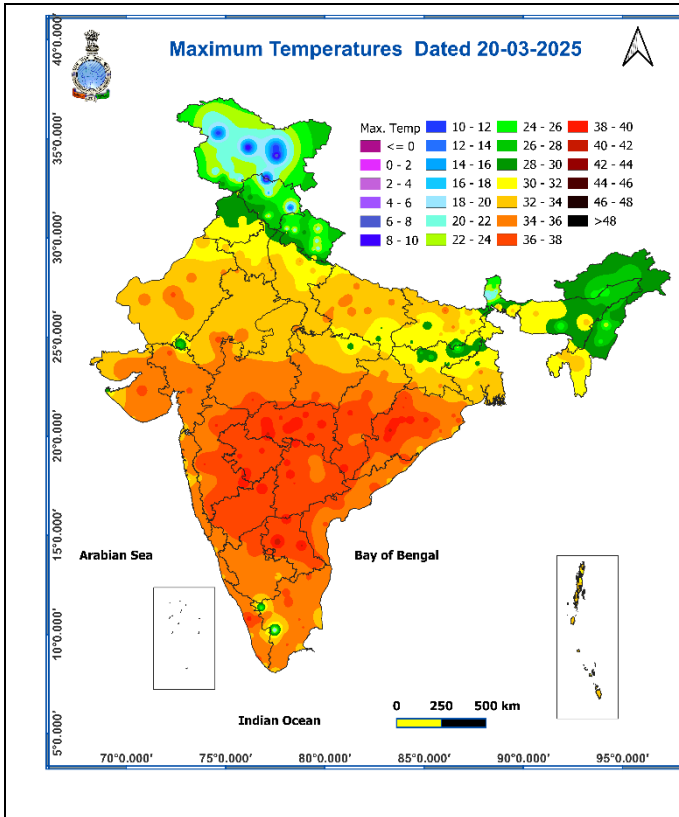
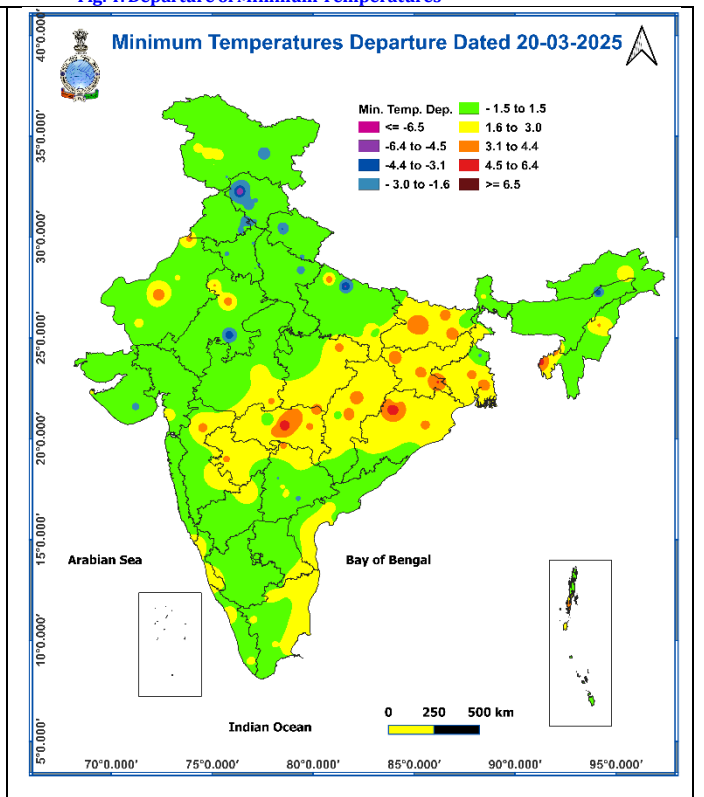
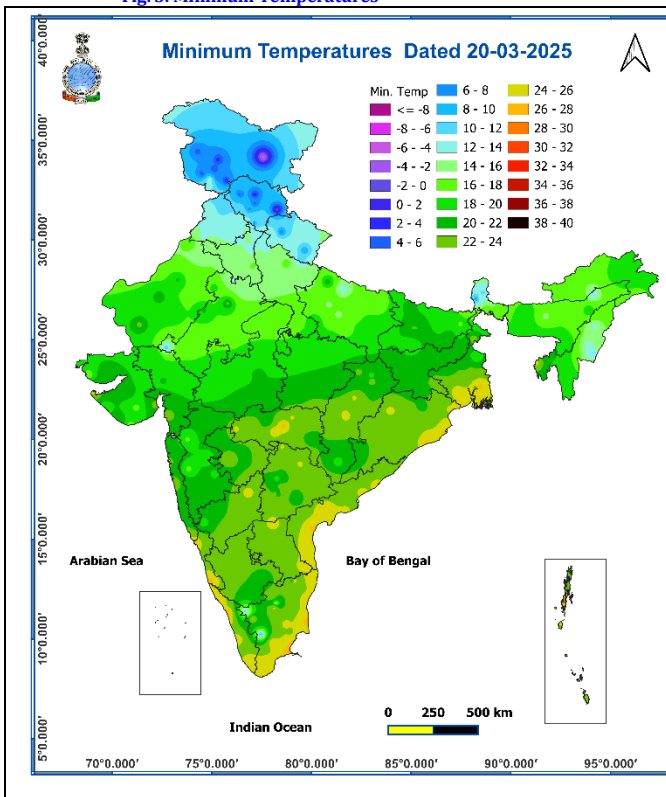


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures



Impact expected and action suggested due to thunderstorm accompanied with lightning/gusty winds over Northeast, Central & East India during next 4 days; Kerala & Mahe & South Interior Karnataka 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.

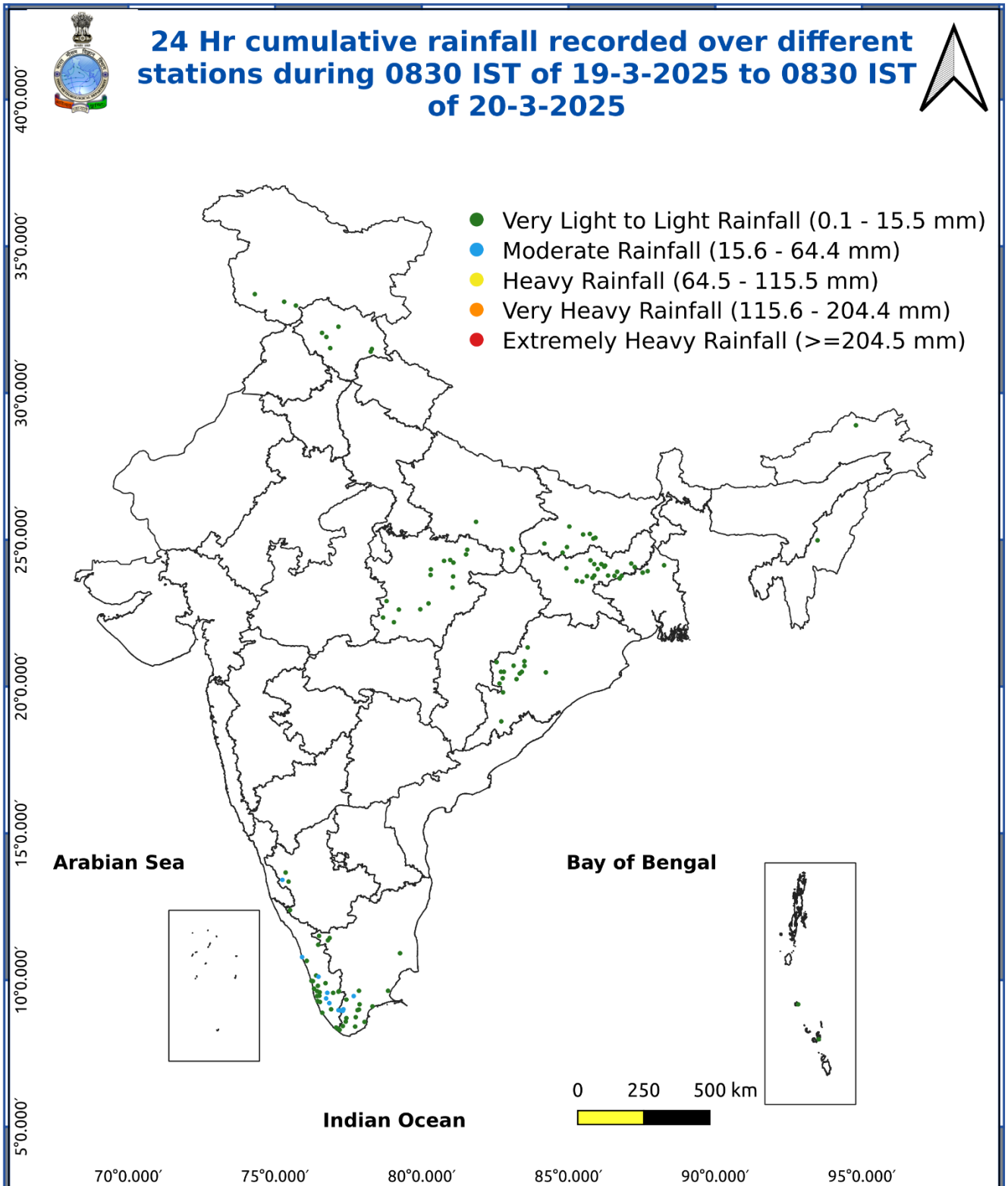
Agromet advisories for likely impact of Heavy Rainfall / Hailstorm

- ✓ In **Odisha**, apply light and frequent irrigation to the standing crops, vegetables and orchards in the evening to protect them from adverse impacts of high temperatures.
- ✓ To avoid the adverse impact of likely hailstorm, harvest the matured standing crops, vegetables and fruits and shift 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

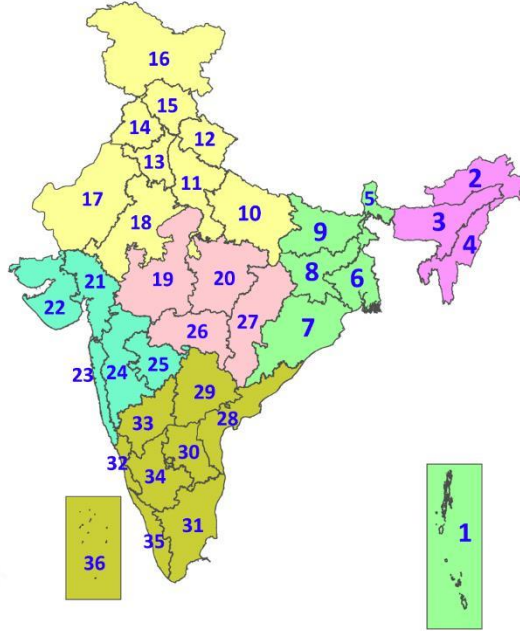
- ✓ Store feed and fodder in a safe place to prevent spoilage.
- ✓ To reduce the effect of heat wave/high temperature, cover the roof of poultry sheds with grass. Also provide clean, hygienic and plenty of drinking water to animals.

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

COLOUR CODED WARNING

No Warning (No Action)

Watch (Be Aware)

Alert (Be Prepared To Take Action)

Warning (Take Action)



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

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 at least 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 Storm: Wind speed > 220 kmph (> 119 knots)