



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release.

Date: 27th April, 2024

Time of Issue: 1330 hours IST

Subject:

- i. **Heat wave to severe heat wave conditions likely to continue over East and south Peninsular India during next 5 days.**
- ii. **Rainfall accompanied with thunderstorms/lightning and gusty winds likely to continue over Western Himalayan Region during 27th-30th and over plains of Northwest India during 27th-29th April, 2024.**
- iii. **Heavy rainfall spell accompanied with isolated thunderstorms/lightning very likely over Northeast India during 28th April-01st May, 2024.**

Realised weather during past 24 hours till 0830 hours IST of today:

- ❖ **Heat Wave conditions in many places with severe heat wave in isolated pockets** prevailed over Gangetic West Bengal and **heat wave conditions** in isolated pockets over Sub-Himalayan West Bengal, Bihar, Jharkhand, Odisha, Rayalaseema, Interior Karnataka and Kerala & Mahe. **Heat wave conditions have been prevailing over Odisha since 15th and Gangetic West Bengal since 17th April.**
- ❖ **Light to moderate rainfall** accompanied with isolated thunderstorm & lightning observed at many places over Himachal Pradesh; at a few places over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Haryana-Chandigarh-Delhi, Punjab, Vidarbha and at isolated places over Uttarakhand, West Uttar Pradesh, Rajasthan, Madhya Pradesh, Odisha, Gujarat Region, Madhya Maharashtra, Marathwada, Chhattisgarh, Coastal Andhra Pradesh & Yanam, North Interior Karnataka, Kerala & Mahe.
- ❖ **Thunderstorm & lightning with gusty wind** (wind speed 50-60 kmph) prevailed over Punjab, Haryana, northeast Rajasthan and West Uttar Pradesh. **Hailstorm** also observed at isolated places over Haryana (Charkhi Dadri, Hissar, Narnaul).
- ❖ **Significant rainfall: Assam & Meghalaya:** Karimganj_(dist Karimganj) 7, Matijuri (dist Hailakandi) 4, Matijuri (dist Hailakandi) 4, Badarpur (dist Karimganj) 3, B P Ghat (dist Karimganj) 3, Lala (dist Hailakandi) 3, Tezpur (dist Shonitpur) 2; **Nagaland, Manipur, Mizoram & Tripura:** Kailashahar (dist Unakoti) 5, Kailashahar (dist Unakoti) 3; **Coastal Andhra Pradesh & Yanam:** Araku Valley (dist Alluri Sitharamaraju) 3; **Himachal Pradesh:** Kothi (dist. Kullu) 3, Tissa (dist. Chamba) 2, Manali (dist. Kullu) 2; **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Nowgam (dist Kupwara) 3.

Weather Systems and Forecast & Warnings: (Annexure I)

- ❖ A Western Disturbance as a cyclonic circulation lies over central Afghanistan with a trough along 64°E to the north of 25°N in middle & upper tropospheric levels. An induced cyclonic circulation lies over north Haryana in lower tropospheric levels. Under their influence:
 - ✓ Fairly widespread to widespread light to moderate rainfall/snowfall accompanied with **thunderstorm, lightning** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and isolated rainfall over Uttarakhand during 27th-30th April, 2024 with possibility of **hailstorm over Himachal Pradesh and Uttarakhand during 27th-29th April, 2024.**

- ✓ Isolated **Heavy rainfall** also likely over Jammu-Kashmir-Gilgit-Baltistan-Muzaffarabad during 27th-29th April and over Himachal Pradesh on 27th & 29th April, 2024.
- ✓ Isolated to scattered rainfall accompanied with **thunderstorm, lightning & gusty winds (40-50 kmph)** very likely over Punjab, Haryana-Chandigarh-Delhi during 27th-29th and over northwest Uttar Pradesh on 27th April, 2024.
- ✓ Isolated **Hailstorm** very likely over Punjab on 27th & 28th and over Haryana on 27th April, 2024.
- ✓ **Strong surface winds (25-35 kmph)** very likely to prevail over East Uttar Pradesh, West Rajasthan on 27th & 28th April.
- ❖ A trough/wind discontinuity runs from Marathwada to north Tamil Nadu in lower tropospheric levels. Under their influence:
 - ✓ Isolated light rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Madhya Maharashtra, Marathwada, Madhya Pradesh, Vidarbha, Chhattisgarh on 27th & 28th April, 2024.
 - ✓ Isolated **Hailstorm** very likely over West Madhya Pradesh on 27th and over East Madhya Pradesh on 27th & 28th April, 2024.
 - ✓ Isolated light to moderate rainfall accompanied with isolated **thunderstorm & lightning** very likely over Kerala & Mahe on 27th, 28th & 30th and over Coastal Andhra Pradesh & Yanam and Telangana on 28th & 29th April, 2024.
- ❖ A cyclonic circulation lies over northeast Assam in lower tropospheric levels. Under its influence:
 - ✓ Fairly widespread to widespread light to moderate rainfall/snowfall accompanied with isolated **thunderstorm & lightning & gusty winds (40-50 kmph)** very likely over Arunachal Pradesh and scattered to fairly widespread rainfall over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 27th April-01st May, 2024.
 - ✓ Isolated light to moderate rainfall accompanied with **thunderstorm & lightning** very likely over Sikkim on 29th April-01st May, 2024.
 - ✓ **Isolated heavy rainfall** very likely over Arunachal Pradesh and Assam & Meghalaya during 28th April-01st May with isolated very heavy rainfall over Arunachal Pradesh on 30th April & 01st May, 2024.

Maximum temperature observation and forecast for next 5 days:

- ❖ Yesterday, **maximum temperatures** were in the range of **42-44°C** over many parts of Odisha, Gangetic West Bengal, Rayalaseema; in some parts of Jharkhand, Bihar, Telangana, Chhattisgarh and in isolated pockets over Vidarbha, East Uttar Pradesh; **40-42°C** over many parts of West Uttar Pradesh, Haryana-Delhi; in some parts of North Interior Karnataka in isolated pockets of East Madhya Pradesh, Saurashtra & Kutch, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal. These were **above normal by 4-6°C** over in many parts of Gangetic West Bengal in some parts of Bihar, Odisha; in isolated pockets of East Uttar Pradesh, Jharkhand and **above normal by 2-4°C** over many parts of West Uttar Pradesh, Haryana-Chandigarh-Delhi; in some parts of Punjab and in isolated pockets over Madhya Maharashtra, South Interior Karnataka, Coastal Andhra Pradesh & Yanam, Chhattisgarh.
- ❖ No significant change in maximum temperatures very likely over Central India during next 2 days and rise by 2-3°C thereafter.
- ❖ Rise in maximum temperatures by about 2 °C very likely over East India during next 3 days and no significant change thereafter.
- ❖ Rise in maximum temperatures by 2-3°C very likely over Maharashtra and many parts of south peninsular India during next 3 days.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

Heat Wave, Warm Night and Hot & Humid weather warning for next 5 days (Annexure I):

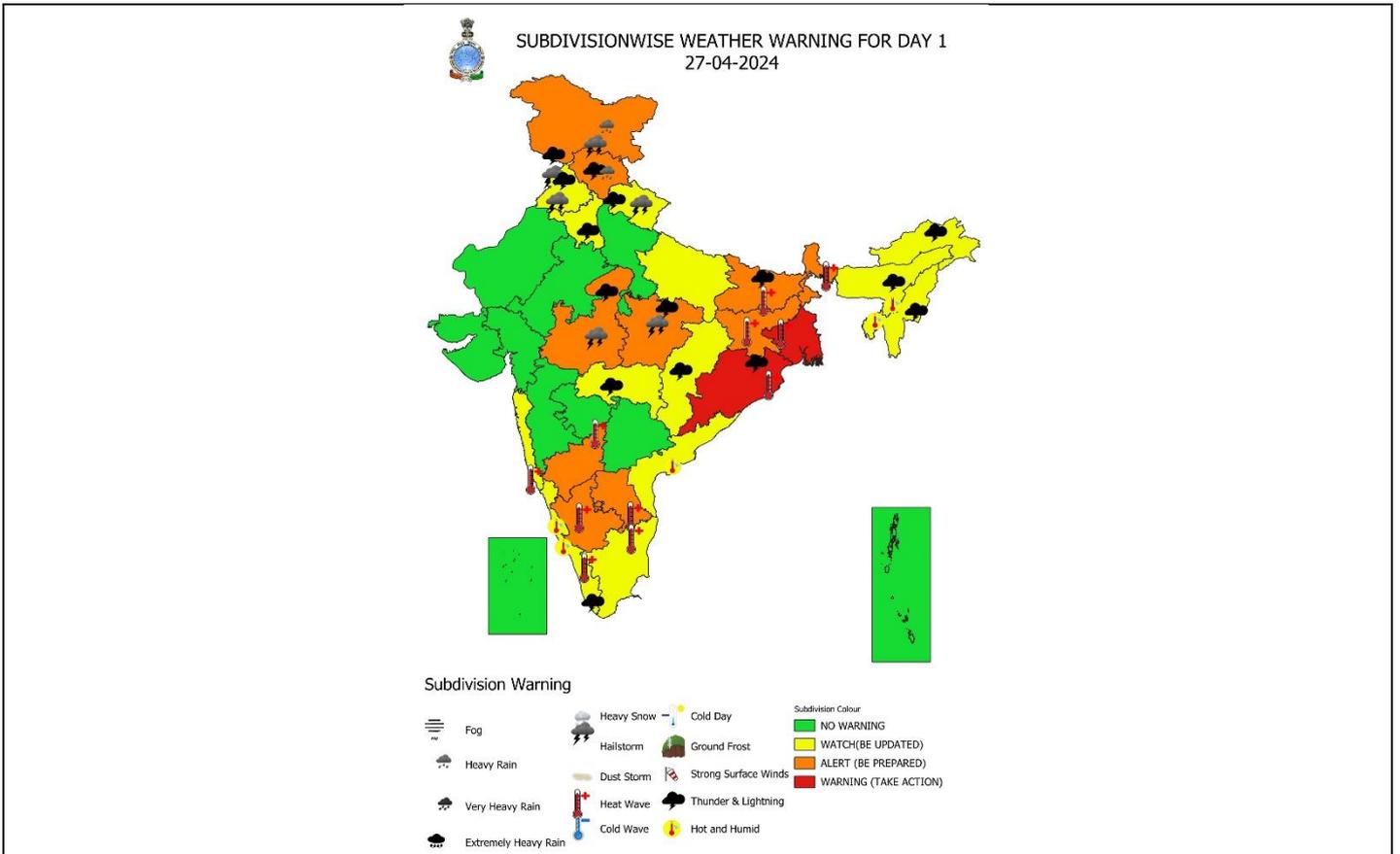
- ❖ **Heat Wave to severe heat wave conditions** very likely to prevail in many places over Gangetic West Bengal, in some parts over Odisha and in isolated pockets over Sub-Himalayan West Bengal during next 5 days. **Heat wave conditions** in isolated pockets over Bihar, Jharkhand, Rayalaseema, Interior Karnataka,

Tamil Nadu, during next 5 days; Kerala & Mahe during 27th-28th; Konkan during 27th-29th and Uttar Pradesh during 28th-30th, Coastal Andhra Pradesh & Yanam during 30th April-01st May, 2024.

- ❖ **Hot and humid weather** very likely to prevail over West Assam & Meghalaya, Tripura during 27th-29th; Kerala & Mahe, Coastal Karnataka, Coastal Andhra Pradesh & Yanam, Konkan & Goa during 27th April-01st May 2024.
- ❖ **Warm night conditions very likely over** East Uttar Pradesh 27th & 28th April and Bihar on 27th April, 2024.

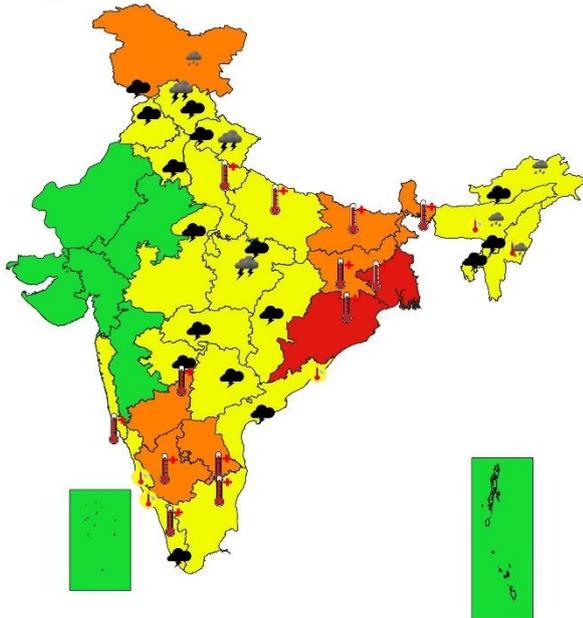
For more details, kindly refer: https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php

ANNEXURE I





SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
28-04-2024

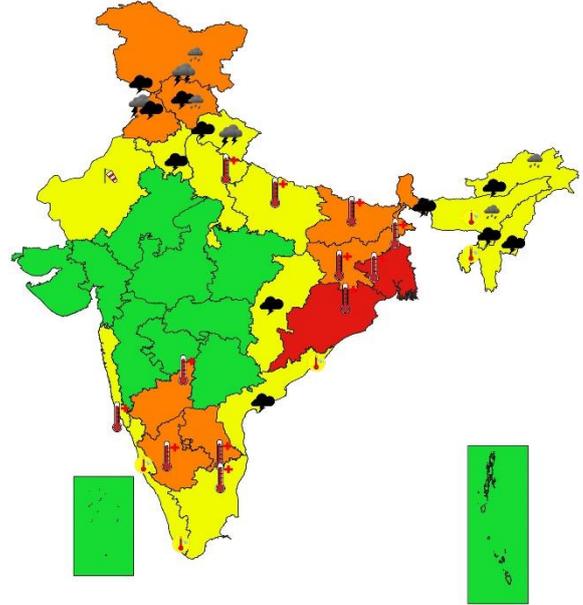


Subdivision Warning

- | | | | |
|----------------------|------------|----------------------|---------------------------|
| Fog | Heavy Snow | Cold Day | Subdivision Colour |
| Heavy Rain | Hailstorm | Ground Frost | NO WARNING |
| Very Heavy Rain | Dust Storm | Strong Surface Winds | WATCH(BE UPDATED) |
| Extremely Heavy Rain | Heat Wave | Thunder & Lightning | ALERT (BE PREPARED) |
| | Cold Wave | Hot and Humid | WARNING (TAKE ACTION) |



SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
29-04-2024

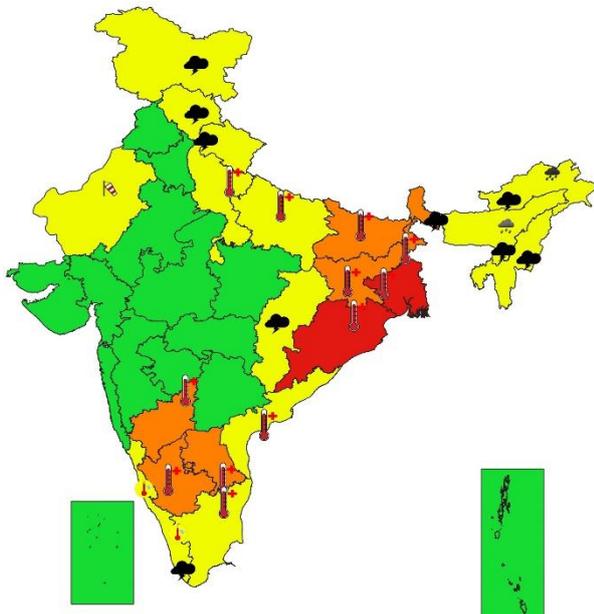


Subdivision Warning

- | | | | |
|----------------------|------------|----------------------|---------------------------|
| Fog | Heavy Snow | Cold Day | Subdivision Colour |
| Heavy Rain | Hailstorm | Ground Frost | NO WARNING |
| Very Heavy Rain | Dust Storm | Strong Surface Winds | WATCH(BE UPDATED) |
| Extremely Heavy Rain | Heat Wave | Thunder & Lightning | ALERT (BE PREPARED) |
| | Cold Wave | Hot and Humid | WARNING (TAKE ACTION) |



SUBDIVISIONWISE WEATHER WARNING FOR DAY 4
30-04-2024

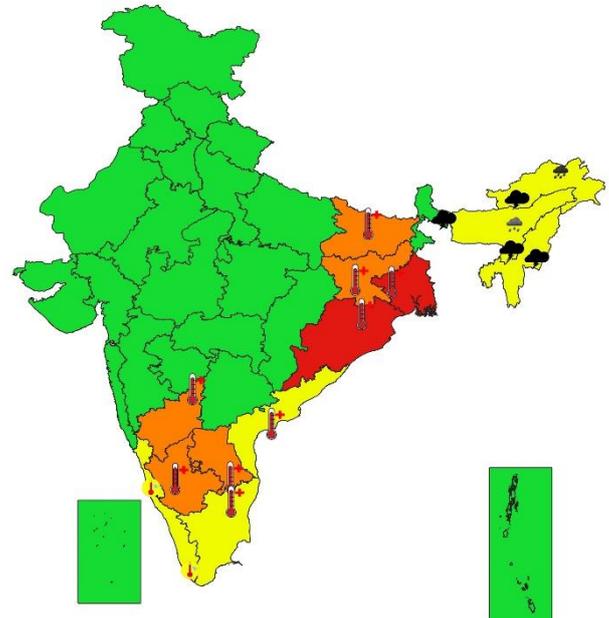


Subdivision Warning

- | | | | |
|----------------------|------------|----------------------|---------------------------|
| Fog | Heavy Snow | Cold Day | Subdivision Colour |
| Heavy Rain | Hailstorm | Ground Frost | NO WARNING |
| Very Heavy Rain | Dust Storm | Strong Surface Winds | WATCH(BE UPDATED) |
| Extremely Heavy Rain | Heat Wave | Thunder & Lightning | ALERT (BE PREPARED) |
| | Cold Wave | Hot and Humid | WARNING (TAKE ACTION) |



SUBDIVISIONWISE WEATHER WARNING FOR DAY 5
01-05-2024



Subdivision Warning

- | | | | |
|----------------------|------------|----------------------|---------------------------|
| Fog | Heavy Snow | Cold Day | Subdivision Colour |
| Heavy Rain | Hailstorm | Ground Frost | NO WARNING |
| Very Heavy Rain | Dust Storm | Strong Surface Winds | WATCH(BE UPDATED) |
| Extremely Heavy Rain | Heat Wave | Thunder & Lightning | ALERT (BE PREPARED) |
| | Cold Wave | Hot and Humid | WARNING (TAKE ACTION) |

Impact expected and action suggested due to thunderstorm accompanied with lightning/gusty winds & Hailstorm over Himachal Pradesh & Uttarakhand during 27th-29th; Punjab on 27th & 28th; Haryana on 27th; West Madhya Pradesh on 27th; East Madhya Pradesh on 27th & 28th April, 2024.

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.

Impact & Action Suggested due to heavy rainfall over Jammu-Kashmir-Gilgit-Baltistan-Muzaffarabad during 27th-29th April and over Himachal Pradesh on 27th & 29th Arunachal Pradesh and Assam & Meghalaya during 28th April-01st May with isolated very heavy rainfall over Arunachal Pradesh on 30th April & 01st May, 2024.

Impacts Expected for Rainfall/Snowfall over above regions:

- Disruption of Electricity.
- Landslide, rock fall and mudslides, Blocking/washout of roads/highways/bridges Nallahs.
- Disruption of traffic flow.
- Damage to Kuccha and unsecured structures.

Suggested Actions

- Avoid roadway underpasses, drainage ditches, low lying areas and areas where water collects – they can unexpectedly flood or overflow.
- Stay away from power lines or electrical wires.
- Don't stay in kuchcha houses during heavy rainfall as it may collapse anytime soon.
- Drive carefully.

IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:

Red alert Areas (Gangetic West Bengal & Odisha)

- ❖ Very high likelihood of developing heat illness and heat stroke in all ages.
- ❖ Extreme care needed for vulnerable people.

Orange alert Areas (Sub-Himalayan West Bengal, Bihar)

- ❖ 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 (Uttar Pradesh, Jharkhand, Konkan, Coastal Andhra Pradesh & Yanam, Interior Karnataka, Rayalaseema, Tamil Nadu and Kerala & Mahe)

- ❖ 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 Heavy Rainfall, Hailstorm, Gusty Winds and Heat Wave likely over various parts of the country:

- Use hail nets or hail caps in fruit orchards to prevent mechanical damage and provide mechanical support to horticultural crops & staking to vegetables in Himachal Pradesh, Uttarakhand, Punjab, Haryana and Madhya Pradesh. Keep the harvested produce at safer places or cover the heaps of harvested produce in the fields with tarpaulin sheets.
- In Jammu & Kashmir, withhold harvesting of wheat; shift already harvested produce of wheat, mustard chickpea and pea from crop fields to safer places or cover the harvested produce with polythene sheet or tarpaulin; postpone sowing of vegetables, turmeric and transplanting of cucurbits.
- In Arunachal Pradesh, postpone sowing of maize, *jhum* upland rice and vegetables.
- Make necessary arrangements for draining out excess water from crop fields to avoid water stagnation in Jammu & Kashmir, Himachal Pradesh, Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in West Bengal, Odisha, Bihar, Jharkhand, Uttar Pradesh, North Konkan, Tamil Nadu, North Kerala, Interior Karnataka, Rayalaseema and Telangana.
- Provide mechanical support to horticultural crops & staking to vegetables to prevent damage from gusty winds.

Legends & abbreviations:

- ❖ **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office.
- ❖ **Region wise classification of meteorological Sub-Divisions:**
 - **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
 - **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
 - **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
 - **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
 - **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathawada.
 - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and 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)



Probabilistic Forecast	
Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75

LEGENDS

WARNING

WARNING (TAKE ACTION)
ALERT (BE PREPARED)
WATCH (BE UPDATED)
NO WARNING (NO ACTION)

Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



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)