Government of India
Ministry of Earth Sciences
India Meteorological Department

Press Release
Date: 23rd April, 2024
Time of Issue: 1345 hours IST

Subject:

i. **Heat wave to severe heat wave conditions likely to continue over East India and heat wave likely over parts of south Peninsular India during next five days.**
ii. **Heavy rainfall accompanied with thunderstorms/lightning and gusty winds likely at isolated places over Northeast India on 23rd & 24th April.**

Realised weather during past 24 hours till 0830 hours IST of today: (details in Annexure I)

- **Light to moderate rainfall/snowfall** accompanied with isolated thunderstorm & lightning observed at many places over Arunachal Pradesh; at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; **Light rainfall/snowfall** at isolated places over Himachal Pradesh and Uttarakhand.
- **Light to moderate rainfall** accompanied with thunderstorm & lightning observed at a few places over Assam & Meghalaya, Kerala & Mahe and at isolated places over Punjab, West Uttar Pradesh, Madhya Maharashtra, Marathwada, Chhattisgarh, West Bengal & Sikkim, Bihar, Jharkhand, Odisha Madhya Pradesh, Vidarbha, Coastal Andhra Pradesh & Yanam, Telangana, Karnataka, Tamil Nadu, Puducherry & Karaikal.
- **Hailstorm** observed at isolated places over Jammu & Kashmir, West Madhya Pradesh, Telangana and Vidarbha.
- **Heat Wave to severe heat wave conditions** in some parts over Gangetic West Bengal; **Heat Wave conditions** in isolated places over Odisha, Sub Himalayan West Bengal, Karnataka and Tamil Nadu. ***Heat wave conditions are prevailing over Odisha since 15th and over Gangetic West Bengal since 17th April.***
- **Gusty winds** prevailed over Interior Karnataka, Telangana, Jharkhand, Bihar, Madhya Pradesh, Vidarbha.

Weather Systems and Forecast & Warnings: (Annexure II)

- A cyclonic circulation lies over Sub-Himalayan West Bengal and a trough runs from this cyclonic circulation to north Bay of Bengal in lower tropospheric levels. Another cyclonic circulation lies over northeast Assam in lower tropospheric levels. Under their influence:
  - ✓ Fairly widespread to widespread light to moderate rainfall/snowfall accompanied with isolated **thunderstorm & lightning & gusty winds (30-40 kmph)** very likely over Arunachal Pradesh, and isolated to scattered rainfall over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 23rd -29th April, 2024.
  - ✓ Isolated light to moderate rainfall accompanied with isolated **thunderstorm & lightning & gusty winds (30-40 kmph)** very likely over Sub-Himalayan West Bengal & Sikkim during 23rd-26th; Odisha on 23rd & 24th, Gangetic West Bengal and Jharkhand on 23th April, 2024.
  - ✓ **Isolated heavy rainfall** very likely over Arunachal Pradesh on 23nd, 24th & 27th April, 2024. **Isolated very heavy rainfall also very likely over Arunachal Pradesh on 23rd April, 2024.**
- A Western Disturbance as a cyclonic circulation lies over north Pakistan in lower & middle tropospheric levels. A cyclonic circulation lies over northeast Rajasthan in lower tropospheric levels. A fresh Western Disturbance is likely to affect northwest India from 26th April, 2024. Under their influence:
  - ✓ Isolated to scattered light to moderate rainfall/snowfall accompanied with **thunderstorm, lightning** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad; Himachal Pradesh, Uttarakhand on 23rd and Scattered to fairly widespread light to moderate rainfall/snowfall accompanied with **thunderstorm, lightning** very likely over the same region during 26th-28th April, 2024 with possibility of **hailstorm over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 26th, Himachal Pradesh & Uttarakhand on 27thApril, 2024.**
  - ✓ Isolated Heavy rainfall likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 27th April, 2024.

- ✓ Isolated rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Punjab and Haryana-Chandigarh-Delhi on 23rd, 26 & 27th; East Rajasthan on 26th; Uttar Pradesh on 23rd April, 2024.
- ✓ Isolated Hailstorm very likely over **Punjab & Haryana on 26th & 27th April, 2024.**

❖ A trough/wind discontinuity runs from Madhya Maharashtra to Kerala across Karnataka in lower tropospheric levels. Under its influence:

- ✓ Isolated light rainfall accompanied with **thunderstorm, lightning & gusty winds (30-50 kmph)** very likely over Madhya Maharashtra and Marathwada during 23nd-25th April, 2024.
- ✓ Isolated to scattered light to moderate rainfall accompanied with isolated **thunderstorm & lightning** very likely over Kerala & Mahe during 23nd-27th; Interior Karnataka, Telangana and Tamil Nadu on 23rd & 24th April, 2024.

Maximum temperature observation and forecast for next 5 days:

- ❖ Yesterday, maximum temperatures were in the range of 40-43°C over many parts of north Tamil Nadu, Andhra Pradesh and Telangana; some parts of north Odisha, Gangetic West Bengal, Rayalaseema, East Uttar Pradesh, Marathwada; at isolated parts of Madhya Maharashtra, North Interior Karnataka, East Madhya Pradesh, Jharkhand and Chhattisgarh. These were in the range of 38-40°C at some parts of Saurashtra & Kutch, West Rajasthan and Bihar: at isolated parts of West Madhya Pradesh. These were above normal by 4-6°C over many parts of Gangetic West Bengal and in isolated pockets over Bihar, Jharkhand & Odisha; above normal by 2-4°C over many parts of Sub-Himalayan West Bengal & Sikkim, Coastal Andhra Pradesh & Yanam, Rayalaseema and Tamil Nadu, Puducherry & Karaikal and in isolated pockets of Chhattisgarh, south Madhya Pradesh, Vidarbha and Telangana.
- ❖ No significant change in maximum temperatures very likely over Northwest and East India during next 24 hours and rise gradually by 2-4°C thereafter.
- ❖ Rise by 3-4°C in maximum temperatures very likely over Maharashtra during next 4-5 days.
- ❖ Rise by 4-6°C in maximum temperatures very likely over central India during next 24 hours and no significant change thereafter.
- ❖ No significant change in maximum temperatures very likely over Gujarat state during next 3 days and rise by 2-4°C thereafter.
- ❖ 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:

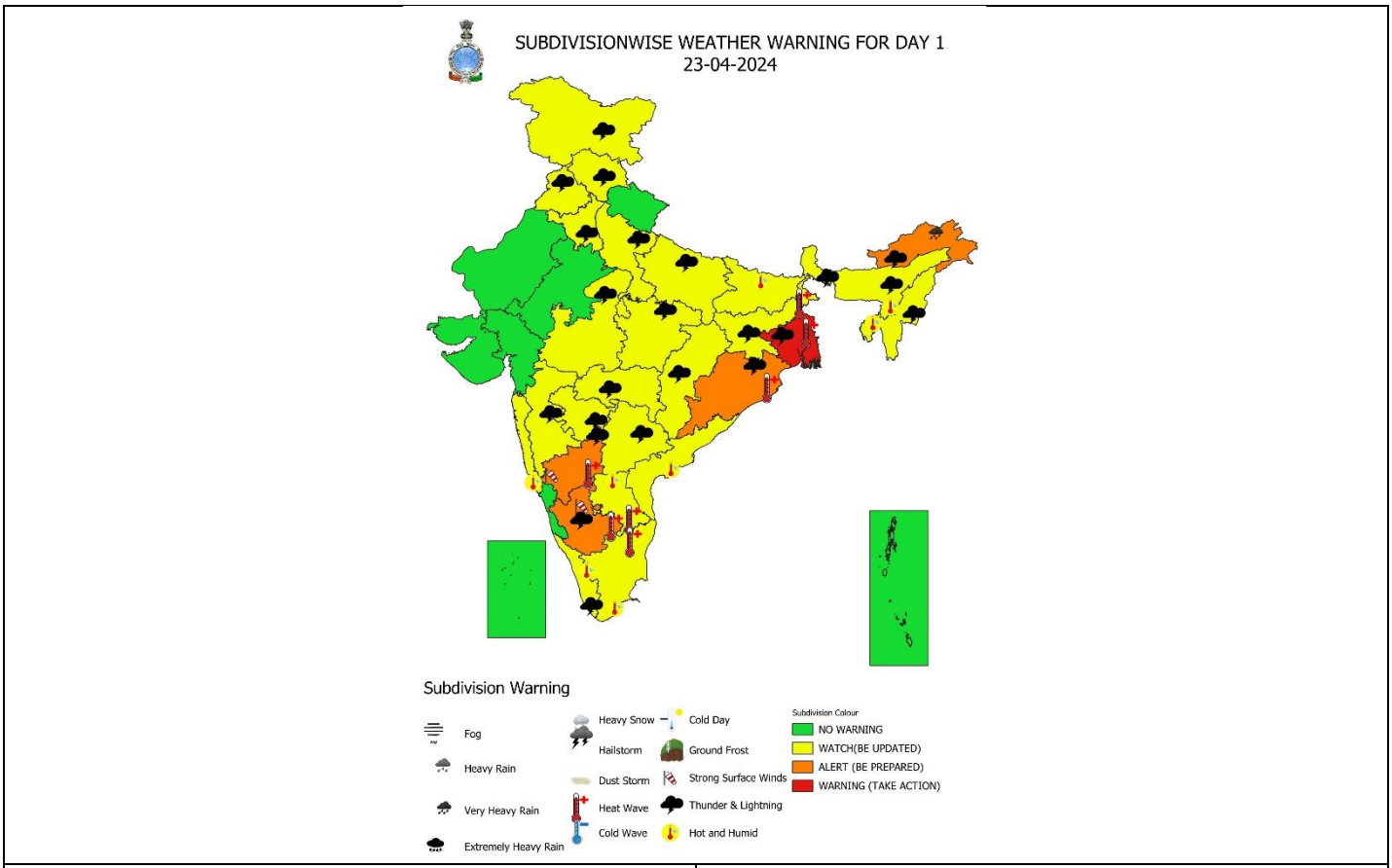
- ❖ **Heat Wave to severe heat wave conditions** very likely to prevail in some pockets over Gangetic West Bengal & in isolated pockets over Odisha during next 5 days. **Heat wave conditions** in isolated pockets over Interior Karnataka, Rayalaseema, Sub-Himalayan West Bengal & Sikkim during next 5 days; Tamil Nadu on 23rd & 24th; Jharkhand, Bihar, Telangana, East Uttar Pradesh during 24th - 27th and West Uttar Pradesh, Coastal Andhra Pradesh & Yanam during 25th-27th; Konkan on 27th April.
- ❖ **Hot and humid weather** very likely to prevail over Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Coastal Karnataka during 23rd-27th; Konkan & Goa, Assam & Meghalaya, Tripura during 23rd-26th; Coastal Andhra Pradesh & Yanam and Rayalaseema on 23rd & 24th and Bihar on 23rd April, 2024.
- ❖ **Warm night conditions** with day maximum temperature exceeding 40°C very likely to prevail over Odisha during 25th-27th April, 2024.

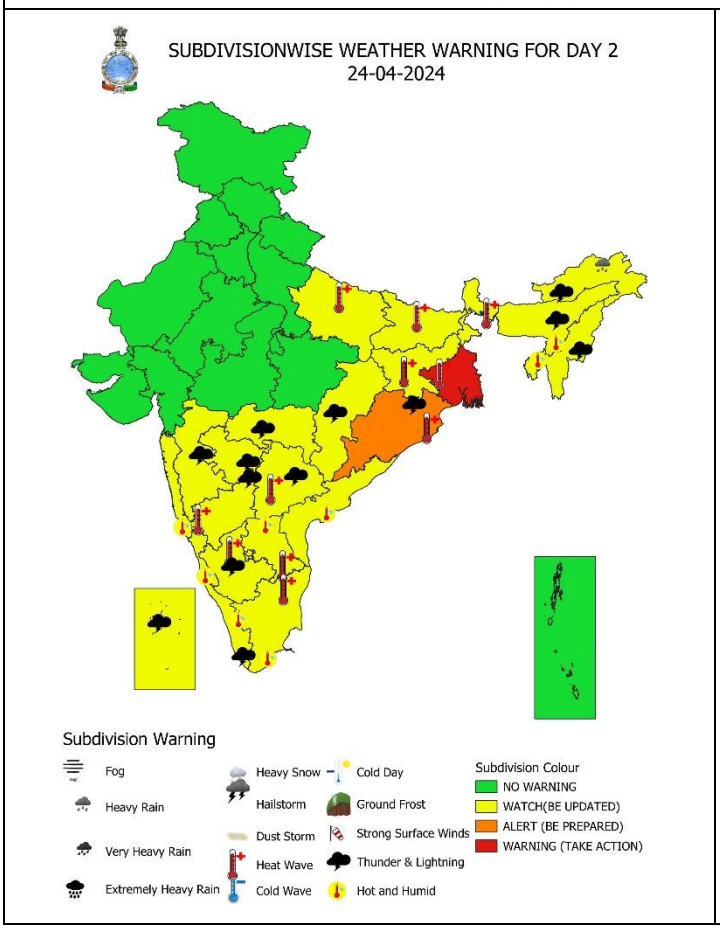
For more details, kindly refer: https://mausam.imd.gov.in/responsive/all_india_forcast_bulletin.php

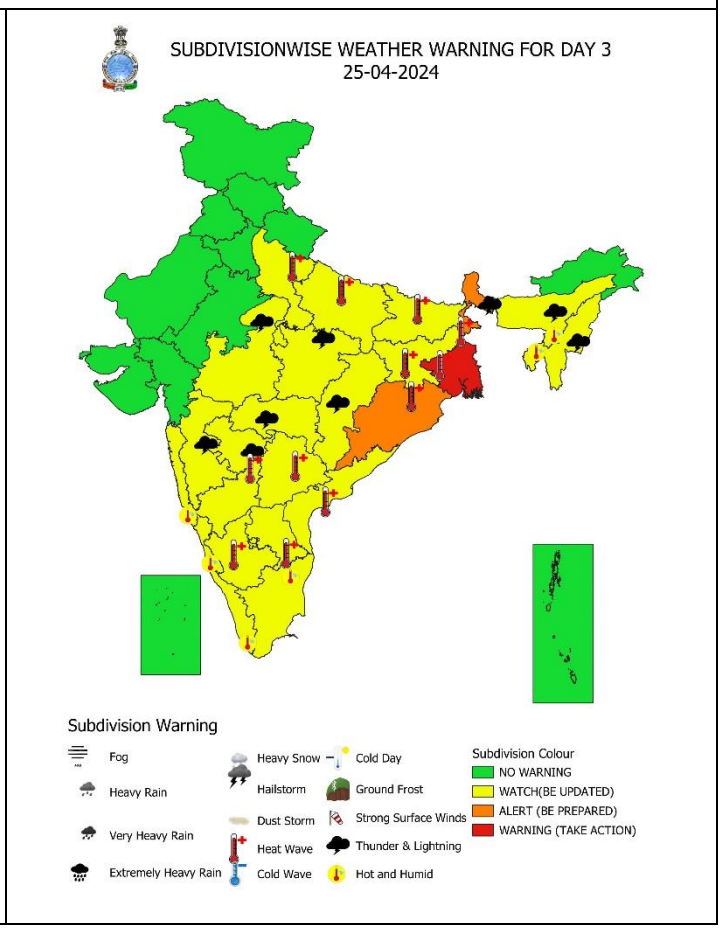
Significant amount of rainfall (in cm):

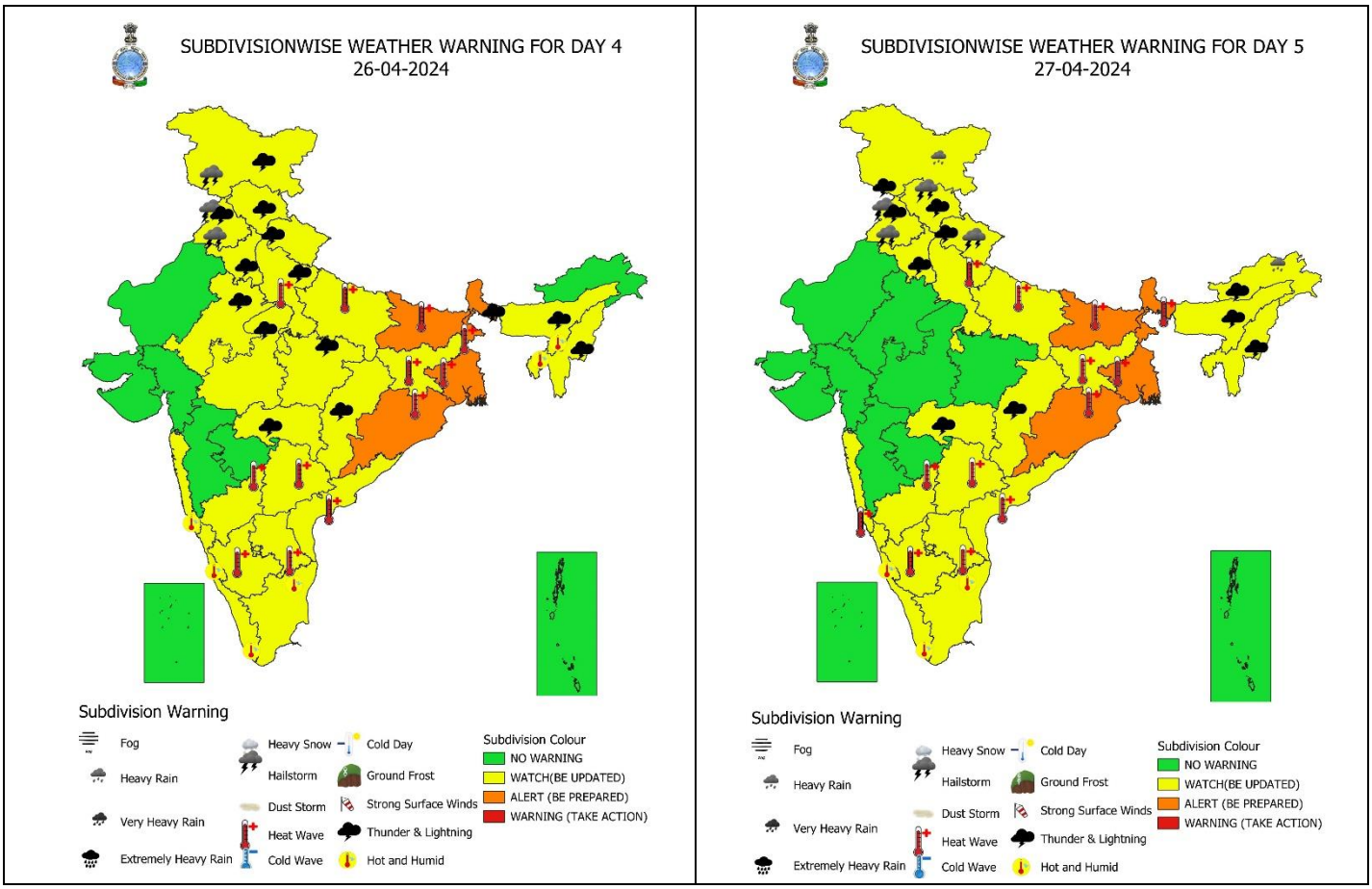
- **Coastal Andhra Pradesh:** Narsipatnam (dist Anakapalli) 2, Chintapalle (dist Alluri Sitharamaraju) 2,
- **Kerala**: Konni (Pathanamthitta district) 3, Kanjirappally (Kottayam district) 2 and Kottayam, Ambalavayal (Wayanad district), Irikkur (Kannur district), Paripalli AWS (Kollam district), Kundala Dam AWS (Idukki district) & Lower Sholayar AWS (Thrissur district) 1 each.
- **East Madhya Pradesh**: Kirnapur (dist Balaghat) 2.

ANNEXURE II


SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
23-04-2024
Subdivision Warning
Fog
Heavy Rain
Very Heavy Rain
Extremely Heavy Rain
Heavy Snow
Hailstorm
Dust Storm
Heat Wave
Cold Wave
Cold Day
Ground Frost
Strong Surface Winds
Thunder & Lightning
Hot and Humid
Subdivision Colour
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)


SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
24-04-2024
Subdivision Warning
Fog
Heavy Rain
Very Heavy Rain
Extremely Heavy Rain
Heavy Snow
Hailstorm
Dust Storm
Heat Wave
Cold Wave
Cold Day
Ground Frost
Strong Surface Winds
Thunder & Lightning
Hot and Humid
Subdivision Colour
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)


SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
25-04-2024
Subdivision Warning
Fog
Heavy Rain
Very Heavy Rain
Extremely Heavy Rain
Heavy Snow
Hailstorm
Dust Storm
Heat Wave
Cold Wave
Cold Day
Ground Frost
Strong Surface Winds
Thunder & Lightning
Hot and Humid
Subdivision Colour
NO WARNING
WATCH(BE UPDATED)
ALERT (BE PREPARED)
WARNING (TAKE ACTION)



Impact expected and action suggested due to thunderstorm accompanied with lightning/gusty winds & Hailstorm over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 26th, Himachal Pradesh & Uttarakhand on 27thApril, 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 very heavy/heavy rainfall over Arunachal Pradesh on 23nd, 24th & 27th April, 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)

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

Orange alert Areas (Odisha)

- 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 (**Interior Karnataka, Rayalaseema, Sub-Himalayan West Bengal, Tamil Nadu, Jharkhand, Bihar, Telangana, East Uttar Pradesh, West Uttar Pradesh, Coastal Andhra Pradesh & Yanam, Konkan**)**
  - 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:

- Postpone sowing of maize and cowpea and drain out excess water from crop fields to avoid water stagnation in Arunachal Pradesh.
- Use hail nets or hail caps in fruit orchards to prevent mechanical damage and provide mechanical support to horticultural crops & staking to vegetables in Jammu & Kashmir.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in West Bengal, Coastal Odisha, Bihar, Jharkhand, Uttar Pradesh, Tamilnadu, Interior Karnataka, Andhra Pradesh and Telangana.
- Provide mechanical support to horticultural crops & staking to vegetables.

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 Widespred (FWS/ Many Places)	1-25	Isolated (ISOL)

Subdivision Warning		Subdivision color
Heavy Rain	Dust Storm	NO WARNING
Heavy Snow	Strong Surface Winds	WATCH(BE UPDATED)
Thunderstorms & Lightning	Heat Wave	ALERT (BE PREPARED)
Hailstorm	Cold wave	WARNING (TAKE ACTION)
	Fog	

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 ≥40° C for plains and ≥30° 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 ≥6.5° C

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature ≥45°C.
Severe Heat Wave: When actual maximum temperature ≥47°C

(c). Criteria for heat wave for coastal stations
When maximum temperature departure is >4.5°C from normal. Heat Wave may be described provided maximum temperature ≥37°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 °C.

Cold Wave

When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °C

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave : When Minimum Temperature is ≤ 4.0 °C
Severe Cold Wave: When Minimum Temperature is ≤ 2.0 °C

(c) For Coastal Stations
When Minimum Temperature departure is ≤-4.5 °C & actual Minimum Temperature is ≤ 15 °C

Cold Day

When minimum temperature of a station ≤10°C for plains and ≤0°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 ≤ -6.5 °C

Fog

Phenomenon of small droplets suspended in air and the horizontal visibility < 1km

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 ≤4°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)