



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 09th May, 2024

Time of Issue: 1345 hours IST

Subject:

- i. **Heat Wave spell likely to continue over west Rajasthan 09th & 10th May and likely to abate thereafter.**
- ii. **Wet spell accompanied with thunderstorms; lightning & gusty winds very likely over Central, East & south Peninsular India till 12th May, 2024.**

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

- ❖ **Yesterday, heat wave conditions** prevailed in some parts of West Rajasthan (exceeding maximum temperatures 45°C)
- ❖ **Isolated heavy rainfall** observed over Tamil Nadu, Telangana and Bihar.
- ❖ **Hailstorm activity** observed at some places over Madhya Pradesh and at isolated places over Himachal Pradesh, Uttarakhand, East Rajasthan, Vidarbha.
- ❖ Yesterday, the **highest maximum temperature** of 45.9°C was reported at **Barmer (West Rajasthan)** over the country.

Weather Systems and Forecast & Warnings: (Annexure II)

- ❖ A cyclonic circulation lies over northeast Assam, another cyclonic circulation over east Bangladesh and a trough runs from east Assam to north Odisha in lower tropospheric levels. Under their influence:
 - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & squally winds (40-50 kmph)** very likely over West Bengal & Sikkim during 09th-12th; scattered to fairly widespread rainfall accompanied with **thunderstorm, lightning & gusty winds (40-50 kmph)** over Bihar, Jharkhand, Odisha during 09th-12th May, 2024.
 - ✓ **Thunderstorm, lightning & gusty winds (50-60 kmph)** very likely over Bihar, Sub-Himalayan West Bengal & Sikkim on 9th; over Gangetic West Bengal on 10th & 11th and Jharkhand on 10th May, 2024
 - ✓ **Isolated heavy rainfall** also very likely over Gangetic West Bengal on 09th & 10th; over Sub-Himalayan West Bengal & Sikkim and Bihar on 09th; over Odisha during 09th-12th May, 2024.
 - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with isolated **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 7 days.
 - ✓ **Isolated heavy rainfall** also very likely over Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura on 10th May, 2024.
- ❖ A cyclonic circulation lies over Madhya Maharashtra and a trough runs from northwest Rajasthan to west Vidarbha in lower tropospheric levels. Under their influence:

- ✓ Isolated to scattered rainfall accompanied with **thunderstorm, lightning & gusty winds (40-50 kmph)** over very likely Vidarbha, Madhya Maharashtra and Chhattisgarh during 09th-13th; over Madhya Pradesh during 09th-11th; over Marathwada on 09th May, 2024.
 - ✓ **Thunderstorm, lightning & gusty winds (50-60 kmph) very likely over East Madhya Pradesh and Vidarbha on 09th May, 2024**
 - ✓ **Hailstorm activity also very likely over Madhya Pradesh and Vidarbha on 09th & 10th; over Madhya Maharashtra and Marathwada on 09th May, 2024.**
 - ✓ Isolated to scattered light to moderate rainfall accompanied with **thunderstorm & lightning & gusty winds (30-40 kmph)** very likely over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana and North Interior Karnataka during 09th-13th; scattered to fairly widespread rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** over Kerala & Mahe, Interior Karnataka and Lakshadweep during 09th-13th May, 2024.
 - ✓ **Isolated heavy rainfall very likely over South Interior Karnataka on 09th, 12th & 13th; over Tamil Nadu, Puducherry & Karaikal on 09th & 12th; Rayalaseema, Telangana on 13th and Kerala & Mahe on 09th, 12th & 13th May, 2024.**
- ❖ A Western Disturbance as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level roughly along Long. 50°E to the north of Lat. 30°N. A cyclonic circulation lies over northeast Rajasthan and another over northwest Rajasthan in lower tropospheric levels. Under its influence:
- ✓ Scattered to fairly widespread rainfall activity accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand during 09th-13th May, 2024.
 - ✓ **Hailstorm activity** very likely at isolated places over Uttarakhand during 09th – 13th May, 2024.
 - ✓ Isolated light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Haryana-Chandigarh and Punjab during 10th-13th; over Uttar Pradesh during 09th-13th; Rajasthan during 10th-12th May, 2024.
 - ✓ **Duststorm/thunderstorm with gusty winds (30-40 kmph)** very likely to prevail East Uttar Pradesh during 09th-13th; Rajasthan during 10th-13th; West Uttar Pradesh during 11th-13th and Haryana-Chandigarh during 10th-13th May, 2024.
 - ✓ **Strong surface winds (30-40 kmph)** very likely to prevail over plains of northwest India during next 3 days.

Maximum temperature observation and forecast for next 5 days:

- ❖ **Areas having maximum temperatures greater than 40°C:-**Yesterday, maximum temperatures were in the range of 43-46°C over many parts of West Rajasthan; in isolated pockets of East Rajasthan and in the range of 40-43°C over many parts of Madhya Pradesh; in some parts of interior parts of Gujarat & north Madhya Maharashtra and in isolated pockets of Punjab, south Haryana, interior Tamil Nadu, North Interior Karnataka, Marathwada and Vidarbha. These were above normal by 2-4°C over Rajasthan and above normal by 1-2°C over rest of the above-mentioned areas.
- ❖ No significant change in maximum temperatures very likely over Northwest India for next 2 days and fall by about 2-3°C thereafter.
- ❖ Fall in maximum temperatures by about 2-3°C very likely over central India during next 24 hours and rise by about 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 conditions** very likely to prevail in isolated pockets over West Rajasthan on 09th & 10th and over Kerala on 09th May, 2024.
- ❖ **Hot and humid weather** very likely to prevail in isolated pockets over coastal areas of Gujarat during next 5 days.

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

Reported maximum wind speed(kmph) during past 24 hours till 0830 hours IST of today:

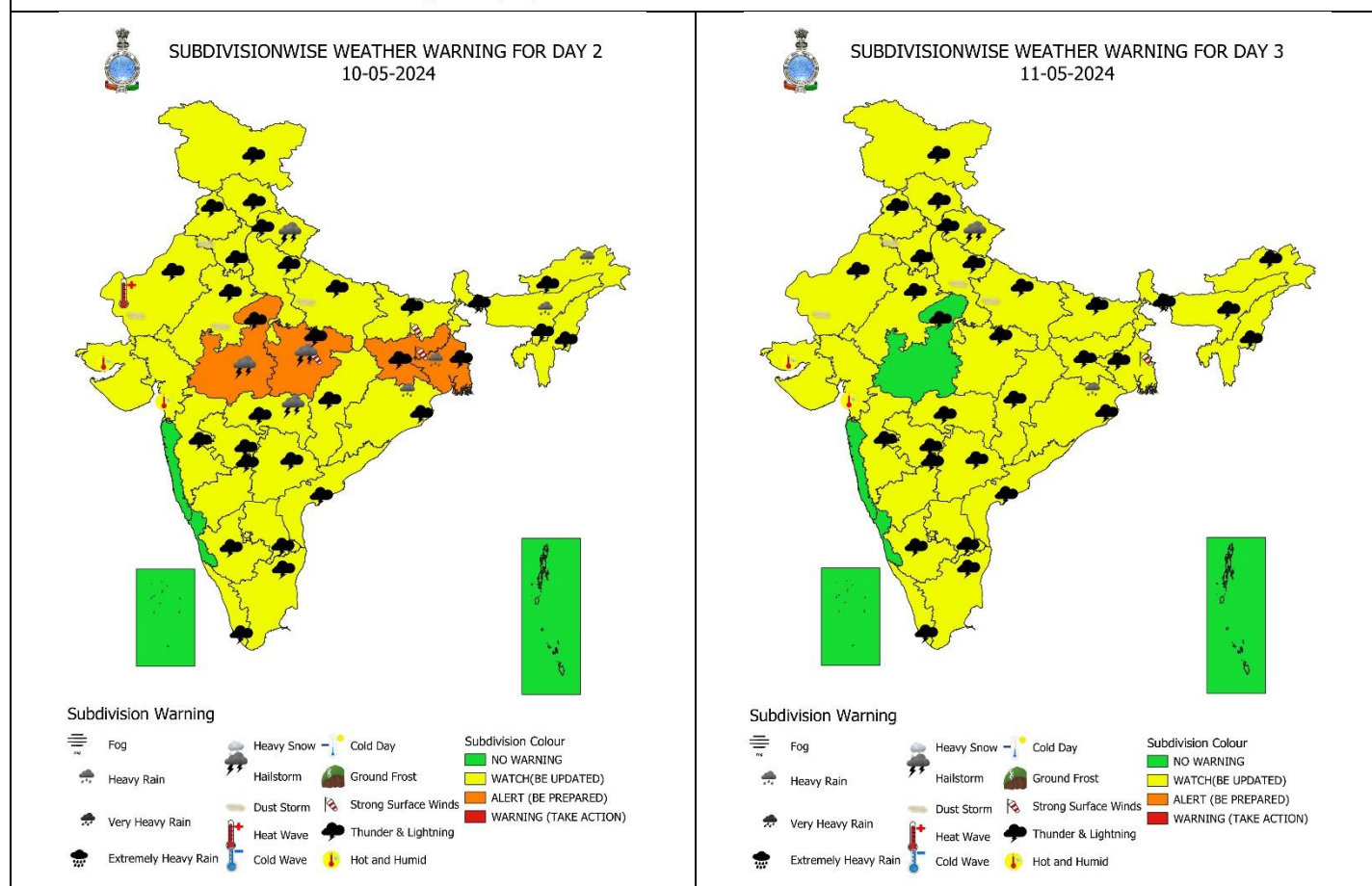
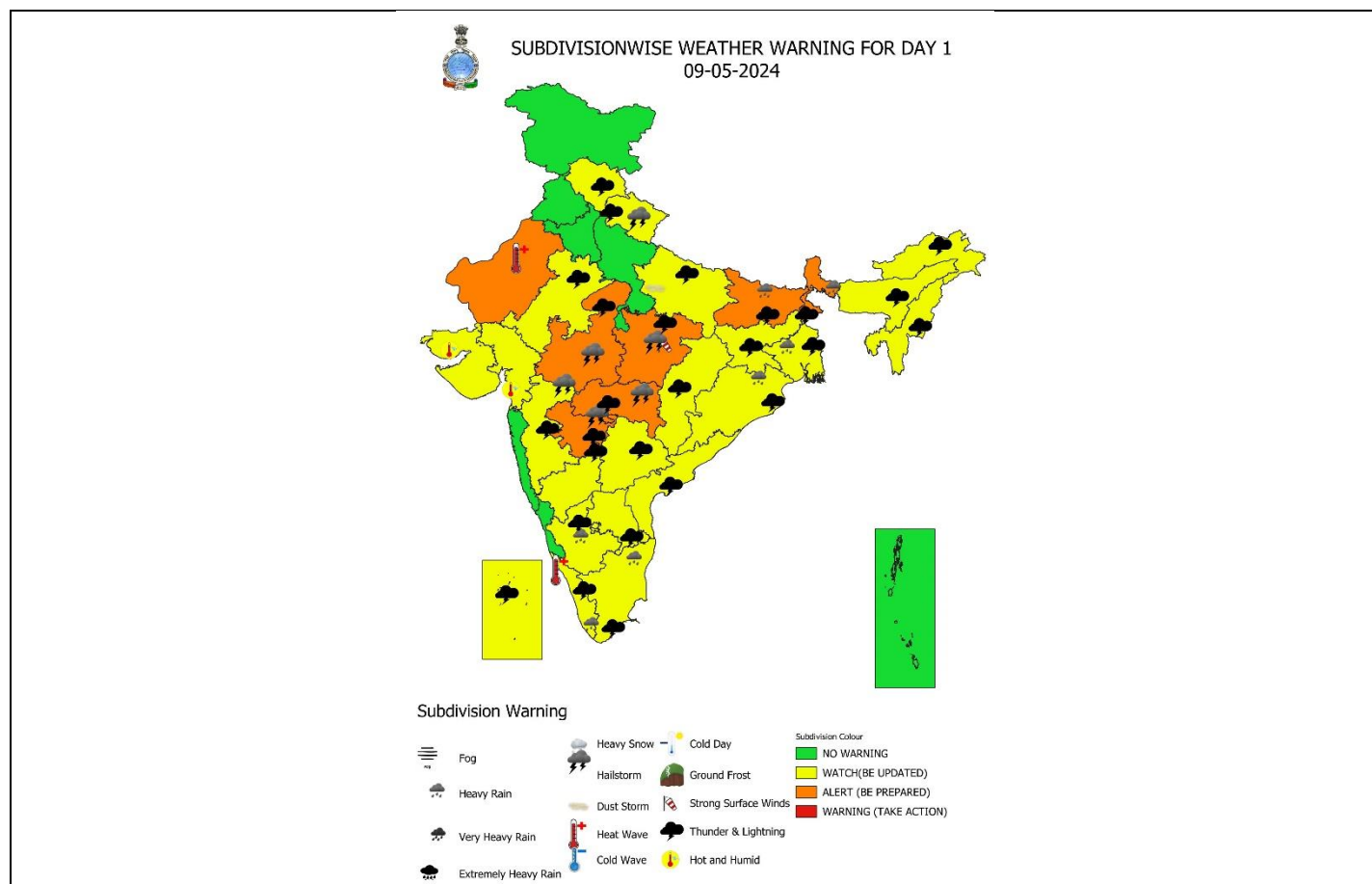
- ❖ **Chhattisgarh:** Koriya 54 kmph, Surajpur 50kmph, Lakhanpur 50 kmph, Mungeli 50 kmph, Rajnandgaon 43 kmph, Balrampur 39 kmph, Durg 37 kmph, Bilaspur 35 kmph, Janjgir 31kmph
- ❖ **West Madhya Pradesh:** Sehore - 68 kmph, Shajapur - 50 kmph, Gwalior - 41 kmph, Ashoknagar - 39 kmph, Neemuch - 35 kmph, Badwani - 35 kmph, Guna - 33 kmph, Rajgarh - 31 kmph
- ❖ **East Madhya Pradesh:** Katni - 74 kmph, Sagar - 52 kmph, Singrauli - 48 kmph, Seoni - 43 kmph, Mandla - 43 kmph, Balaghat - 41 kmph, Jabalpur - 41 kmph, Chhindwara - 39 kmph, Shahdol - 35 kmph, Chhatarpur - 33 kmph, Damoh - 31 kmph.
- ❖ **Karnataka:** Gangavathi-81 kmph, Mandya-78 kmph and Bangalore-85 kmph
- ❖ **Telangana:** Tandur-61 kmph
- ❖ **Odisha:** Cuttack- 80 kmph
- ❖ **Jharkhand:** Hazaribagh-61 kmph
- ❖ **Gangetic West Bengal:** Raidighi-53 kmph:
- ❖ **Bihar:** Ziradei and East Champaran-60 kmph

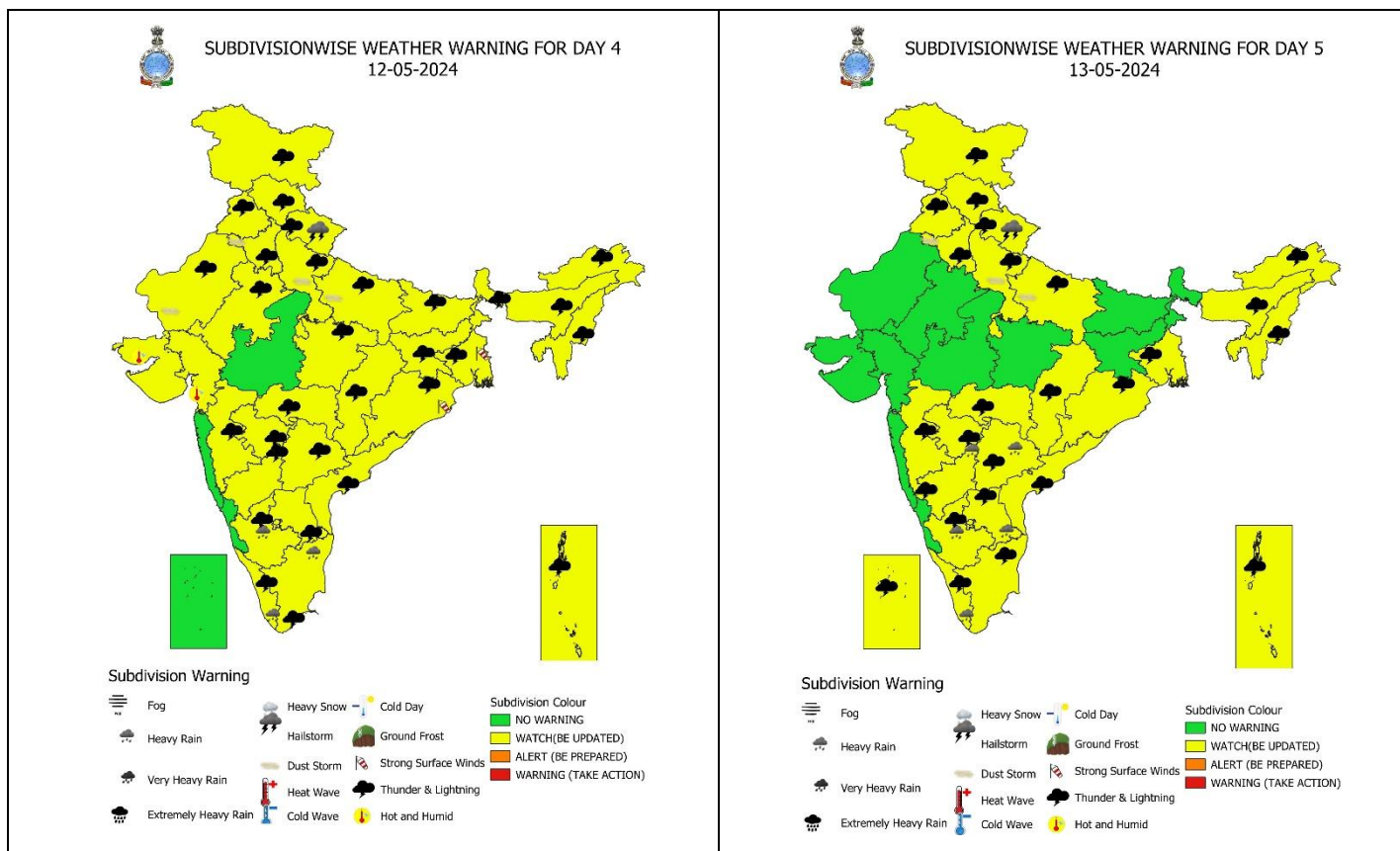
Realised Rainfall during past 24 hours till 0830 hours IST of today:

- ❖ Light to moderate rainfall accompanied with isolated thunderstorm & lightning observed at many places over Kerala & Mahe, Arunachal Pradesh, South Interior Karnataka, Uttarakhand; at a few places over Himachal Pradesh, East Madhya Pradesh, Jharkhand, Assam & Meghalaya, Telangana; at isolated places over Haryana-Chandigarh-Delhi, East Uttar Pradesh, East Rajasthan, Vidarbha, Chhattisgarh, West Madhya Pradesh, West Bengal & Sikkim, Odisha, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Marathwada, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Telangana and North Interior Karnataka.

Significant amount of rainfall (in cm):

- ❖ **Tamil Nadu:** Kollidam (dist Mayiladuthurai) 7, SRC Kudithangi (dist Cuddalore), Sathiar (dist Madurai) 5 each, Azhiyar (dist Coimbatore) 4, Sivalogam (dist Kanniyakumari), Glenmorgan (dist The Nilgiris), Perunchani Dam (dist Kanniyakumari), Peraiyur (dist Madurai), Valparai PTO (dist Coimbatore), Annamalai Nagar (dist Cuddalore), Vanamadevi (dist Cuddalore), Upper Gudalur (dist The Nilgiris), Puthan Dam (dist Kanniyakumari), Naduvattam (dist The Nilgiris), Tozhudur (dist Cuddalore), Upasi_Tea_Research_Foundation (dist Coimbatore) 3 each;
- ❖ **Telangana:** Narva (dist Narayanpet) 7, Bhiknur (dist Kamareddy) 4, Pitlam (dist Kamareddy) 3, Atmakur Wnp (dist Wanaparthy) 3;
- ❖ **Bihar:** Muzaffarpur (Dist. Muzaffarpur) 7, Lalbegiaghat (dist. East Champaran) 6, Kurhani (Dist. Muzaffarpur) 6, Motihari (dist. East Champaran) 5, Sahebganj (dist. Muzaffarpur) 5, Benibad (dist. Darbhanga) 3, Ahirwala (dist. East Champaran) 3;
- ❖ **Kerala & Mahe:** Kozhikode & Perumbavur (Ernakulam district) 5 each, Thodupuzha (Idukki district) & Keerampara (Ernakulam district) 4 each, C.I.A.L. Kochi (Ernakulam district), Idukki, Piravam (Ernakulam district), Thavanur (Malappuram district), Kalpeta & Padinjarathara Dam (both in Wayanad district), Konni (Pathanamthitta district), Thodupuzha (Idukki district) & Neryamangalam (Ernakulam district) 3 each;
- ❖ **North Interior Karnataka:** Sedam (dist Kalaburgi) 6, Bidar (dist Bidar) 4;
- ❖ **South Interior Karnataka:** Napoklu (dist Kodagu) 4, Maddur (dist Mandya) 3, Krishnarajasagara (dist Mandya) 3;





IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:

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 thunderstorm accompanied with lightning/gusty winds & Hailstorm over Madhya Pradesh and Vidarbha on 09th & 10th; over Madhya Maharashtra and Marathwada on 09th; Uttarakhand during 09th – 13th May, 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 *South Interior Karnataka on 09th, 12th & 13th; over Tamil Nadu, Puducherry & Karaikal on 09th & 12th; Rayalaseema, Telangana on 13th and Kerala & Mahe on 09th, 12th & 13th; Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura on 10th; Gangetic West Bengal on 09th & 10th; over Sub-Himalayan West Bengal & Sikkim and Bihar on 09th; over Odisha during 09th-12th 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.

Agromet advisories for Heavy Rainfall, Gusty winds and Heat Wave likely over various parts of the country:

- Make arrangements to drain out excess water from crop fields to avoid water stagnation in Sub-Himalayan West Bengal, Odisha, Tamil Nadu, Kerala, South Interior Karnataka, Andhra Pradesh and Telangana.
- Use hail nets or hail caps in fruit orchards to prevent mechanical damage and provide mechanical support to horticultural crops & staking to vegetables in Uttarakhand, East Madhya Pradesh and Vidarbha.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Saurashtra & Kutch, Rajasthan, and West Madhya Pradesh.
- 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)