



Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 17<sup>th</sup> April, 2024.

Time of Issue: 1345 hours IST

- Subject: i) A fresh spell of rainfall with thunderstorms, lightning and gusty winds over Northwest India during 18<sup>th</sup>-21<sup>st</sup> April, 2024.**  
**ii) Thunderstorms with lightning, gusty winds and heavy rainfall likely at isolated places over Northeast India during 17<sup>th</sup>-21<sup>st</sup> April, 2024.**  
**iii) Severe heat wave spell over East India during next 5 days and heat wave spell over parts of south peninsular India during next 3 days.**

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

- ❖ **Heavy rainfall** occurred at isolated places over Sub-Himalayan West Bengal & Sikkim.
- ❖ **Hailstorm** observed at isolated places over Himachal Pradesh and Vidarbha.
- ❖ **Heat Wave to severe Heat wave** conditions prevailed at isolated pockets over Saurashtra and **Heat Wave** conditions in some pockets over Gangetic West Bengal, Odisha and north Konkan.

**Weather Systems and Forecast & Warnings: (Annexure II)**

- ❖ A fresh Western Disturbance as a cyclonic circulation lies over Iran & neighbourhood in middle and upper tropospheric levels which is likely to affect Northwest India from 18<sup>th</sup> April, 2024. Under its influence:
  - ✓ Fairly widespread to widespread light to moderate rainfall/snowfall with **thunderstorm, lightning & gusty winds (40-50 kmph)** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh during 18<sup>th</sup>-21<sup>st</sup>; over Uttarakhand on 18 & 19<sup>th</sup> April, 2024.
  - ✓ Isolated to scattered rainfall with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Punjab, Haryana-Chandigarh-Delhi during 18<sup>th</sup>-20<sup>th</sup> April; West Uttar Pradesh, East Rajasthan on 19<sup>th</sup> and West Rajasthan on 17<sup>th</sup>-19<sup>th</sup> April, 2024.
  - ✓ **Isolated hailstorm** very likely over Himachal Pradesh 18<sup>th</sup> & 19<sup>th</sup> and Uttarakhand on 19<sup>th</sup> April, 2024.
  - ✓ **Isolated heavy rainfall/snowfall** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 19<sup>th</sup> April, 2024.
  - ✓ **Strong surface winds (25-35 kmph)** very likely to prevail over Haryana-Chandigarh-Delhi and Uttar Pradesh during 17<sup>th</sup>-19<sup>th</sup> April, 2024.
- ❖ A cyclonic circulation lies over northeast Bihar & adjoining Sub-Himalayan West Bengal & Sikkim and another over northeast Assam in lower tropospheric levels. Under its influence:
  - ✓ Fairly widespread to widespread light/moderate rainfall/snowfall with isolated **thunderstorm & lightning & gusty winds (30-40 kmph)** over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura during 17<sup>th</sup>-21<sup>st</sup> April, 2024.

- ✓ Scattered to fairly widespread light/moderate rainfall/snowfall with isolated **thunderstorm & lightning & gusty winds (30-40 kmph)** over Sub-Himalayan West Bengal & Sikkim during 17<sup>th</sup>-21<sup>th</sup> April with possibility of isolated heavy rainfall over Sikkim on 18<sup>th</sup> April, 2024.
- ✓ **Isolated heavy rainfall** over Arunachal Pradesh during 17<sup>th</sup>-21<sup>th</sup>; Assam & Meghalaya on 18<sup>th</sup>-21<sup>st</sup> and Nagaland, Manipur, Mizoram & Tripura on 18<sup>th</sup>, 20<sup>th</sup> & 21<sup>st</sup> April, 2024.
- ❖ A trough runs from south Vidarbha to South Interior Karnataka and another trough runs from Gulf of Mannar to south Telangana in lower tropospheric levels. Under their influence:
  - ✓ Isolated light rainfall with isolated **thunderstorm & lightning** very likely over Madhya Maharashtra and Marathwada during 17<sup>th</sup>-21<sup>st</sup> April, 2024.
  - ✓ Isolated to scattered rainfall with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Madhya Pradesh on 19<sup>th</sup> & 20<sup>th</sup> and over Vidarbha and Chhattisgarh during 19<sup>th</sup>-21<sup>st</sup> April.
  - ✓ Scattered to fairly widespread light/moderate rainfall accompanied with isolated **thunderstorm & lightning** very likely over Kerala & Mahe during 17<sup>th</sup>-21<sup>st</sup> and isolated rainfall with **thunderstorm & lightning & gusty winds (30-40 kmph)** over Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana on 20<sup>th</sup> & 21<sup>st</sup>; over North Interior Karnataka during 18<sup>th</sup>-21<sup>st</sup> April, 2024.
  - ✓ **Isolated heavy rainfall** over Kerala & Mahe on 19<sup>th</sup> April, 2024.

#### Maximum temperature observation and forecast for next 5 days:

- ❖ Yesterday, maximum temperatures were in the range of 41-43°C over at a few places over Odisha, Coastal Andhra Pradesh & Yanam, Saurashtra & Kutch and Rayalaseema and at isolated pockets over West Uttar Pradesh, Jharkhand, Gangetic West Bengal, Gujarat Region, Konkan & Goa, Madhya Maharashtra, Telangana and North Interior Karnataka; 38-40°C over many places over East Uttar Pradesh and Vidarbha; at a few places over Tamil Nadu, Puducherry & Karaikal, Madhya Pradesh, Bihar, Chhattisgarh and Marathwada. These were above normal by 2-3° C at a few places over these areas.
- ❖ Rise in maximum temperatures by 2-3°C very likely over East & parts of south peninsular India during next 3 days and no significant change thereafter.
- ❖ No significant change in maximum temperatures very likely over northwest India during next 2 days and fall by 2-3°C for subsequent 3 days.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

#### Heat Wave and Hot & Humid weather warning for next 5 days:

##### Second Heat wave spell of April likely to continue during next 5 days

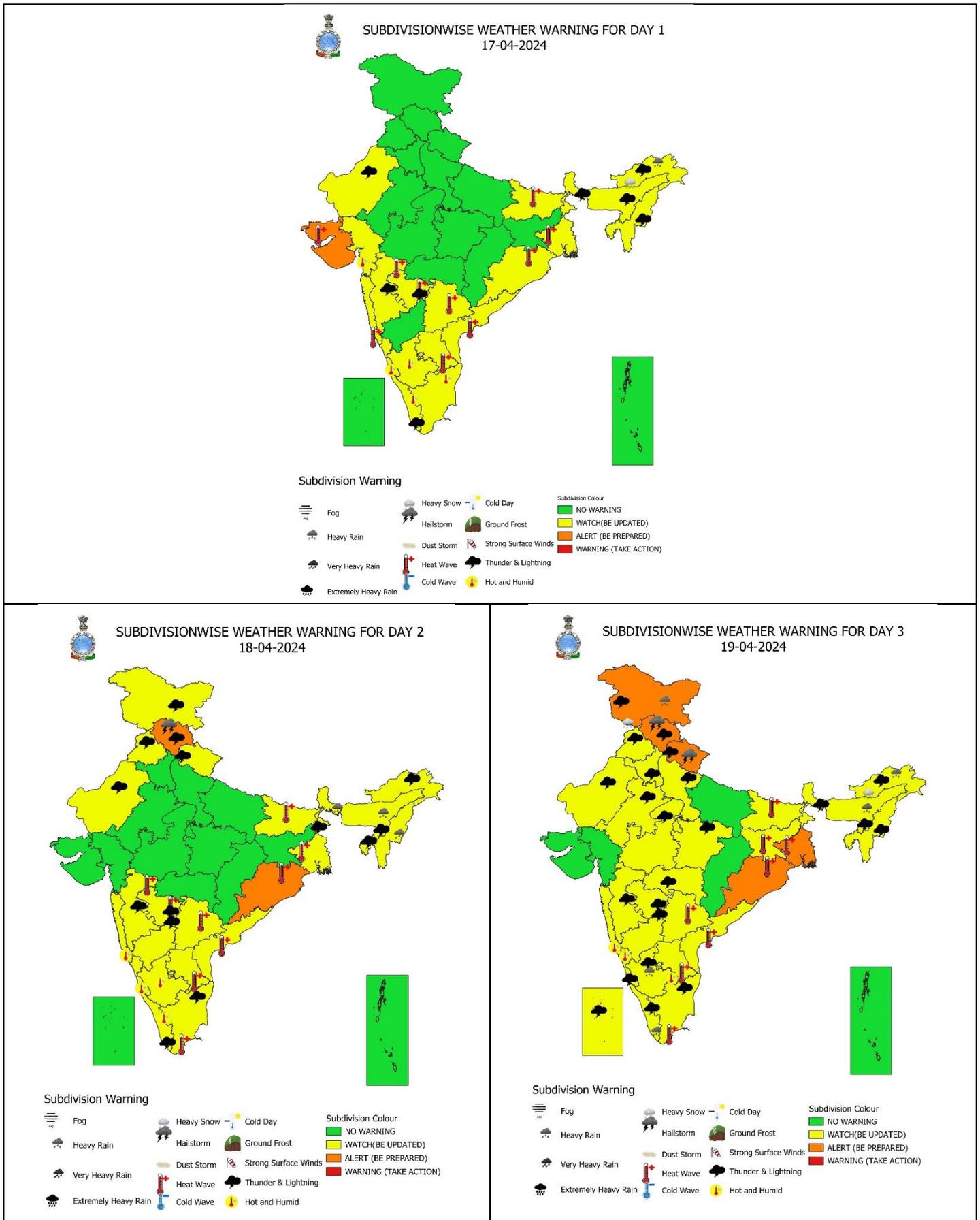
- ❖ **Heat Wave conditions** in some pockets of Odisha, Gangetic West Bengal during 17<sup>th</sup>-21<sup>st</sup>; Jharkhand during 19<sup>th</sup>-21<sup>st</sup>; north Konkan and Saurashtra & Kutch on 17<sup>th</sup>; Madhya Maharashtra and Marathwada on 17<sup>th</sup> & 18<sup>th</sup>; Coastal Andhra Pradesh & Yanam, Rayalaseema and Telangana during 17<sup>th</sup>-19<sup>th</sup>; Tamil Nadu, Puducherry & Karaikal 18<sup>th</sup>-19<sup>th</sup> April, 2024. **Severe Heat Wave conditions also likely in isolated pockets of Saurashtra on 17<sup>th</sup> ; Odisha during 18<sup>th</sup> & 19<sup>th</sup>; Gangetic West Bengal during 19<sup>th</sup>-21<sup>st</sup> April.**
- ❖ **Hot and humid weather** very likely to prevail over Odisha and Gangetic West Bengal during 17<sup>th</sup>-21<sup>st</sup>; Coastal & South Interior Karnataka during 17<sup>th</sup>-19<sup>th</sup> ; Kerala & Mahe on 17<sup>th</sup> & 18<sup>th</sup>; Tamil Nadu, Puducherry & Karaikal on 17<sup>th</sup>; Konkan & Goa on 18<sup>th</sup> & 19<sup>th</sup> and Coastal Andhra Pradesh & Yanam, Rayalaseema and Telangana on 20<sup>th</sup> & 21<sup>st</sup> April, 2024.
- ❖ **Warm night** very likely to prevail over Madhya Maharashtra and Marathwada on 17<sup>th</sup> & 18<sup>th</sup> April, 2024.

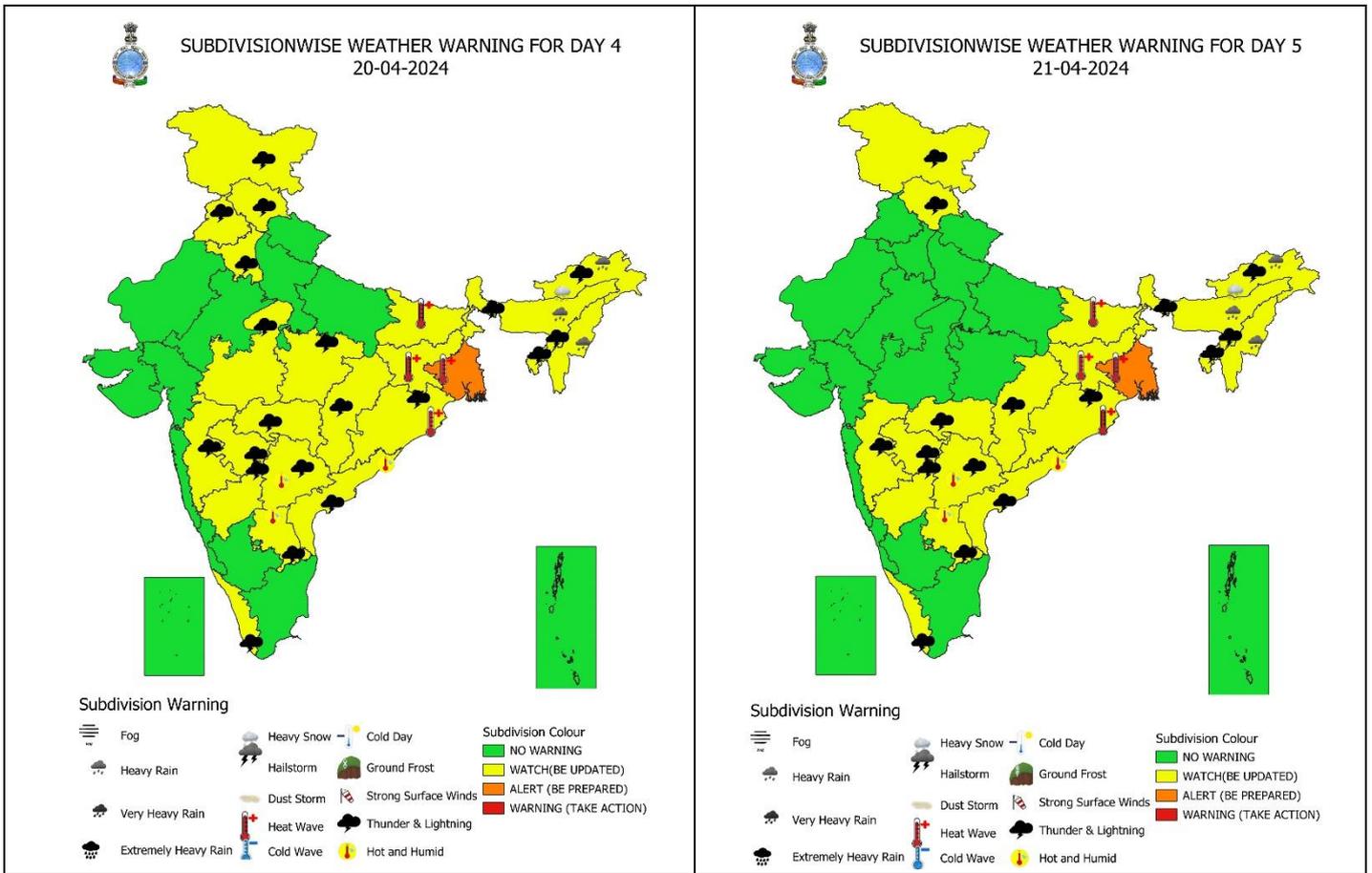
For more details, kindly refer: [https://mausam.imd.gov.in/responsive/all\\_india\\_forecast\\_bulletin.php](https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php)

- ❖ **Light rainfall/snowfall** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand.
- ❖ **Light to moderate rainfall/snowfall** with isolated thunderstorm & lightning observed at most places over Sub-Himalayan West Bengal & Sikkim and Arunachal Pradesh.
- ❖ **Light to moderate rainfall** with thunderstorm & lightning observed at a few places Assam & Meghalaya; at isolated places over Nagaland, Manipur, Mizoram & Tripura
- ❖ **Light rainfall** with thunderstorm & lightning observed at a few places over Lakshadweep; at isolated places over Odisha, Madhya Pradesh, Vidarbha Telangana, Konkan & Goa, Madhya Maharashtra, Marathwada, Chhattisgarh, Coastal Andhra Pradesh, Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe.

#### Significant amount of rainfall (in cm):

- ❖ **Sub-Himalayan West Bengal & Sikkim:** Gangtok (East Sikkim) 8, Ranipool (East Sikkim) 6, Tadong (East Sikkim) 6, Lachung (North Sikkim) 4, Gyalsing (West Sikkim) 3, Mangan (North Sikkim) 2, Singhik (North Sikkim) 2;
- ❖ **Arunachal Pradesh:** Basar (dist West Siang) 6, Basar\_ Aws (dist West Siang) 6, Pasighat\_ Aero (dist East Siang) 5, Tezu (dist Lohit) 4, Tawang\_ Aws (dist Tawang) 3, Tawang Chamgbu Kvk Aws (dist Tawang) 3, Tawang (dist Tawang) 3, Kibithu (dist Anjaw) 2, Kamba Aws (dist West Siang) 2, Daparijo (dist Upper Subansiri) 2, Nachu Arg (dist Upper Subansiri) 2, Hawaii (dist Anjaw) 2;
- ❖ **Assam & Meghalaya:** Bihubar (dist Sibsagar) 5, Numaligarh (dist Golaghat) 4, Rangia (dist Kamrup (rural)) 3, Jorhat (dist Jorhat) 3, Aie Nh Xing (dist Bongaigaon) 3, Neamatighat (dist Jorhat) 3, Beki Mathungari (dist Barpeta) 3, Barpathar (dist Golaghat) 3, Tezpur (dist Shonitpur) 3, Jia Bharali N T Xing (dist Shonitpur) 2, Bijni Arg (dist Chirang) 2, Panbari (dist Chirang) 2, Majbat (dist Udalguri) 2, Golaghat\_ Cwc (dist Golaghat) 2, Dalgaon Arg (dist Darrang) 2, Udalguri\_aws (dist Udalguri) 2, Bhumuraguri (dist Shonitpur) 2, Manikpur Arg (dist Bongaigaon) 2, Dhekiajuli (dist Shonitpur) 2, Beky Rly.bridge (dist Barpeta) 2, Kokrajhar (dist Kokrajhar) 2, Dholla Bazar (dist Tinsukia) 2;
- ❖ **Nagaland, Manipur, Mizoram & Tripura:** Mangkolemba (dist Mokokchung) 4, Wokha Sadar Nsdma\_aws (dist Wokha) 3, Mon Sadar Nsdma\_aws (dist Mon) 3, Zunheboto (dist Zunheboto) 3, Longleng Nsdma\_aws (dist Longleng) 2, Tuli Nsdma\_aws (dist Mokokchung) 2, Zunheboto Nsdma\_aws (dist Zunheboto) 2;
- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Bakore Arg (dist Jammu) 1, Malangpura Aws (dist Pulwama) 1.





**Impact expected and action suggested due to thunderstorm accompanied with lightning/gusty winds & Hailstorm over Himachal Pradesh on 18<sup>th</sup> & 19<sup>th</sup> and Uttarakhand 19<sup>th</sup> 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/snowfall over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 19<sup>th</sup> April, 2024.**

**Impacts Expected for Rain/Snow**

- ❖ 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:**

**Orange alert Areas (Odisha, Saurashtra, Gangetic West Bengal)**

- ❖ 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– 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 (Jharkhand, north Konkan, Madhya Maharashtra, Marathwada, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana, Tamil Nadu, Puducherry & Karaikal)**

- ❖ 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.

## 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.

<b>SPATIAL DISTRIBUTION</b> (% 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	 Dust Storm	Subdivision color
 Heavy Rain	 Strong Surface Winds	 NO WARNING
 Heavy Snow	 Heat Wave	 WATCH(BE UPDATED)
 Thunderstorms & Lightning	 Cold wave	 ALERT (BE PREPARED)
 Hailstorm	 Fog	 WARNING (TAKE ACTION)

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

## LEGENDS

### WARNING

<b>WARNING (TAKE ACTION)</b>
<b>ALERT ( BE PREPARED)</b>
<b>WATCH (BE UPDATED)</b>
<b>NO WARNING ( NO ACTION)</b>

### 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  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
 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  $40^\circ\text{C}$**

Warm Night: When minimum temperature departure  $4.5^\circ\text{C}$  to  $6.4^\circ\text{C}$ .  
 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  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
 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  $-4.5^\circ\text{C}$  to  $-6.4^\circ\text{C}$ .  
 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 Storm: Wind speed  $>220$  kmph ( $>119$  knots)