

Government of India Ministry of Earth Sciences India Meteorological Department



Press Release.

Date: 10th June, 2024.

Time of Issue: 1400 hours IST

Subject:

- i. Heavy to very heavy rainfall likely to continue over Konkan & Goa, Madhya Maharashtra, Marathwada and Coastal & North Interior Karnataka on 10th & 11th June, 2024.
- ii. Heat wave to severe heat wave conditions likely over northwest & East India during next 5 days.

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

- Yesterday, Heat wave to severe conditions prevailed in some pockets of Bihar; in isolated pockets of Gangetic West Bengal; Heat wave conditions in isolated pockets of East Uttar Pradesh and Jharkhand.
- ❖ Yesterday, Maximum temperatures are in the range of 42-45°C in many parts of Uttar Pradesh, Delhi; in some parts of north Madhya Pradesh Haryana, Bihar and Gujarat state. These are above normal by 2-4°C over these areas.
- ❖ Yesterday, **the highest maximum temperature** of **45.9°C** was reported at Prayagraj (East Uttar Pradesh) over the country.
- * Heavy to very heavy rainfall with extremely heavy falls at isolated places recorded over Sub-Himalayan West Bengal & Sikkim; heavy to very heavy rainfall at isolated places over Konkan & Goa, Coastal Karnataka, North Interior Karnataka; heavy rainfall at isolated places over Assam & Meghalaya, Marathwada, Madhya Maharashtra, Kerala & Mahe, Gujarat Region, Tamil Nadu, Puducherry & Karaikal, South Interior Karnataka and Nagaland, Manipur, Mizoram & Tripura.
- **Hailstorm at isolated** places observed over Madhya Pradesh and Chhattisgarh.
- **Gusty winds/squally winds** data reported over the country is attached in **Annexure II**.

Advance of Southwest Monsoon:

- Southwest Monsoon has advanced into some more parts of North Arabian Sea and some more parts of Maharashtra today, the 10th June, 2024.
- ❖ The Northern Limit of Monsoon passes through 20.5°N/60°E, 20.5°N/65°E, Dahanu, Nasik, Chhatrapati Sambhajinagar, Nizamabad, Sukma, Malkangiri, Vizianagaram, 19.5°N/88°E, 21.5°N/89.5°E, 23°N/89.5°E and Islampur.
- Conditions are favourable for further advance of Southwest Monsoon into more parts of north Arabian Sea, Some parts of South Gujarat and some more parts of Maharashtra during next 2 days. (Annexure III)

Weather Systems and Forecast & Warnings: (Annexure IV)

- A cyclonic circulation lies over northeast Assam & neighbourhood in lower & middle tropospheric levels and a trough extending from northwest Bihar to Nagaland in lower tropospheric levels. Strong southwesterly/southerly winds are prevailing from Bay of Bengal to northeastern States in lower tropospheric levels. Under their influence:
 - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm**, **lightning & gusty winds (30-40 kmph)** likely over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Sub-Himalayan West Bengal & Sikkim during next 7 days.

- ✓ Isolated **heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya and Arunachal Pradesh during 10th-14th; Nagaland, Manipur, Mizoram & Tripura on 10th, 13th & 14th June, 2024.
- ✓ Isolated **very heavy rainfall** also likely over Assam & Meghalaya and Sub-Himalayan West Bengal & Sikkim during 11th-14th and Arunachal Pradesh on 13th & 14th June, 2024.
- ✓ Isolated to scattered light to moderate rainfall accompanied with **thunderstorm**, **lightning & gusty winds (30-40 kmph)** very likely over Gangetic West Bengal, Bihar, Odisha during 12th-14th; Madhya Pradesh, Vidarbha, Chhattisgarh during next 5 days.
- ✓ Isolated **hailstorm and squally winds (50-60 kmph)** very likely over south Madhya Pradesh on 10th & 11th June, 2024.
- ✓ Isolated **heavy rainfall** very likely over Andaman & Nicobar Islands om 10th June, 2024.
- ❖ A shear zone runs roughly along 18°N in lower & middle tropospheric levels. A cyclonic circulation lies over Marathwada in lower tropospheric levels. Under their influence:
 - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning & gusty winds (40-50 kmph) likely over Konkan & Goa, Madhya Maharashtra, Marathwada, Karnataka, Telangana, Kerala & Mahe, Lakshadweep; isolated light to moderate rainfall over Coastal Andhra Pradesh & Yanam, Rayalaseema, Tamil Nadu, Puducherry & Karaikal during next 4-5 days.
 - ✓ Isolated **heavy rainfall** very likely over Konkan & Goa, Madhya Maharashtra, Marathwada during 10th-11th; over Kerala & Mahe 10th-12th; Telangana on 10th & 11th; Karnataka during 10th-13th; Coastal Andhra Pradesh & Yanam on 13th; Rayalaseema on 11th June, 2024.
 - ✓ Isolated **very heavy rainfall** also very likely Konkan & Goa on 10th & 11th; Madhya Maharashtra and Marathwada on 10th; Kerala & Mahe on 11th & 12th; Coastal Karnataka during 10th-12th; North Interior Karnataka on 10th & 11th June, 2024.
- ❖ A Western Disturbance seen as a trough in middle tropospheric westerlies roughly along Long. 70°E to the north of Lat. 28°N. A cyclonic circulation lies over north West Uttar Pradesh in lower & middle tropospheric levels. Under their influence:
 - ✓ Isolated light rainfall accompanied with **thunderstorm & lightning** very likely over Uttarakhand and Rajasthan on 10th June, 2024.
 - ✓ **Strong surface** wind (speed reaching 25-35 kmph) likely over Rajasthan, Uttar Pradesh, south Haryana during 11th-14th June, 2024.

Maximum temperature observation and forecast for next 5 days:

- ❖ Gradual rise in maximum temperatures by 2-3°C very likely over Northwest & Central India during next 5 days.
- ❖ No significant change in maximum during next 24 hours and then gradual rise by 2-3°C very likely over Central India thereafter.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

Heat Wave and Warm Night warning for next 5 days:

- ❖ Heat wave conditions very likely in isolated to some pockets of Jammu Division, Punjab, Haryana-Chandigarh-Delhi, Jharkhand, Odisha during next 5 days; Himachal Pradesh during 12th-14th; Uttarakhand during 11th-14th; Rajasthan on 12th & 13th; Madhya Pradesh during 12th-14th June, 2024.
- **❖** Heat wave conditions very likely at many parts of Gangetic West Bengal during 10th-13th with heat wave to severe heat wave conditions in isolated pockets during 10th 12th; heat wave to severe heat wave conditions in some parts of Bihar during 10th-12th and isolated heat wave on 13th & 14th; Heat wave conditions at isolated to some parts of Uttar Pradesh during 10th-14th with heat wave to severe heat wave conditions in some parts during 11th 14th June, 2024.

❖ Warm Night very likely to prevail over isolated pockets of East Madhya Pradesh 10th, 11th & 12th June, 2024.

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

ANNEXURE I

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

Light to moderate rainfall accompanied with thunderstorm & lightning observed at most places over Kerala & Mahe, Coastal Karnataka, Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Konkan & Goa; at many places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Madhya Maharashtra, Interior Karnataka; at a few places over West Madhya Pradesh, Vidarbha, Arunachal Pradesh, Marathwada, Gujarat Region, Lakshadweep, Rayalaseema and at isolated places over Himachal Pradesh, Uttarakhand, Rajasthan, East Madhya Pradesh, Chhattisgarh, Odisha, Telangana, Coastal Andhra Pradesh & Yanam, Tamil Nadu, Puducherry & Karaikal, Saurashtra & Kutch.

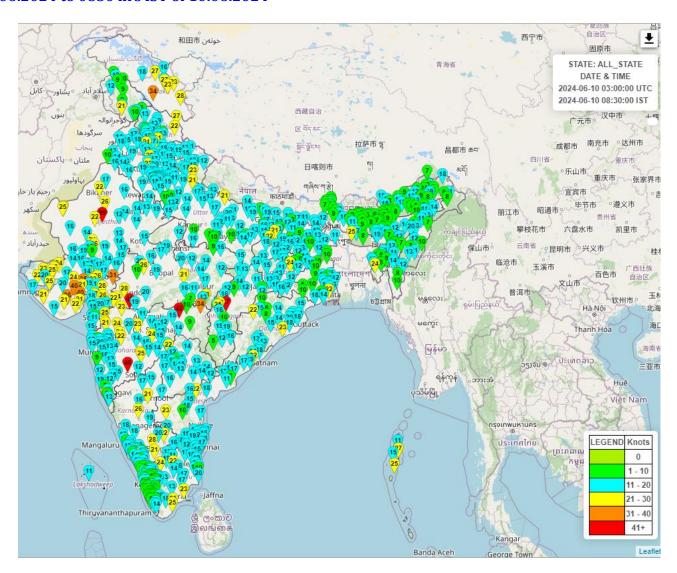
Significant amount of rainfall (in cm):

- ❖ Sub-Himalayan West Bengal & Sikkim: Pundibari (dist Cooch Behar) 25, Alipurduar (dist Alipurduar) 15, Cooch Behar (dist Cooch Behar) 14, Falakata (dist Alipurduar) 12, Barobhisha (dist Alipurduar) 10, Jhallong (dist Kalimpong) 8, Gyalsing (dist Gyalshing) 8, Rongo (dist Kalimpong) 7;
- ❖ Konkan & Goa: Panvel(dist Raigad) 15, Palghar(dist Palghar) 10, Panjim(dist North Goa) 9, Quepem (dist South Goa) 9, Ratnagiri(dist Ratnagiri) 7, Sanguem (dist South Goa) 7, Dodamarg (dist Sindhudurg) 7, Santacruz(dist Mumbai Suburban) 7, Thane (dist Thane) 7, Margao (dist South Goa) 7, Valpoi (dist North Goa) 7;
- Coastal Karnataka: : Karwar (dist Uttara Kannada) 12, Ankola (dist Uttara Kannada) 10, Mangaluru ApObsy (dist Dakshina Kannada) 9, Mangaluru (dist Dakshina Kannada) 8, Kota (dist Udupi) 8, Kundapur (dist Udupi) 7, Udupi (dist Udupi) 7, Kadra (dist Uttara Kannada) 7, Siddapura (distUdupi) 7, Panambur (dist Dakshina Kannada) 7;
- ❖ North Interior Karnataka: : Sindgi (dist Vijayapura) 12, Devarhippargi (dist Vijayapura) 10;
- ❖ Assam & Meghalaya: Dhubri_ Cwc (dist Dhubri) 11, Dhubri_imd (dist Dhubri) 10, Chauldhowaghat (dist Lakhimpur) 9, Kokrajhar (dist Kokrajhar) 8;
- ❖ Marathwada: Dharashiv (dist Dharashiv) 10, Sambhajinagar (dist Chh. Sambhajinagar) 8, Gangapur (dist Chh. Sambhajinagar) 8, Partur (dist Jalna) 7, Tuljapur (dist Dharashiv) 7;
- Madhya Maharashtra: Yaval (dist Jalgaon) 9, Sholapur (dist Sholapur) 8, Nevasa (dist Ahmednagar) 8, Jeur (dist Sholapur) 8, Parner (dist Ahmednagar) 8, Devla (dist Nashik) 7, Pimpalgaonbaswant (dist Nashik) 7;
- ❖ Kerala & Mahe: Irikkur (dist Cannur) 9, Kannur (dist Cannur) 9, Kannur Icar Aws (dist Cannur) 8, Vadakara (dist Kozhikode) 8, Mahe (dist Mahe) 7, Muliyar Aws (dist Kasargod) 7, Panniyoor Arg (dist Cannur) 7, Pilicode Aws (dist Kasargod) 7;
- Gujarat Region: Dolvan (dist Tapi) 9, Madhbun (dist Dadara & D
- **❖ Tamil Nadu:** Taluk Office Pandalur (dist The Nilgiris), Devala (dist The Nilgiris) 8 each, Chinnakalar (dist Coimbatore) 7:
- ❖ South Interior Karnataka: Agumbe Emo (dist Shivamogga) 8;
- ❖ Nagaland, Manipur, Mizoram & Tripura: Kailashahar Aero (dist Unakoti) 8, Dharmanagar/ Panisagar (dist North Tripura) 7.

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

- ❖ Himachal Pradesh: Kinnaur-61, Lahaul and Spiti-52;
- Chhattisgarh: Raipur-87, Durg-48, Rajnandgaon-46
- ❖ Maharashtra: Solapur-85, Jalgaon-80, Wardha-78, Bhandara-63, Osmanabad-46, Nashik-46
- ❖ Gujarat State: Bhavnagar-74, Botad-74, Amreli-67, Ahmedabad-65, Dahod-57, Chhotaudepur-52, Bharuch-50, Panchmahal-48, Kachchh-48
- **❖ Ladakh:** Kargil-63, Leh-52
- ❖ Madhya Pradesh: Balaghat-52, Barwani-52, Shajapur-48, Dindori-46
- Karnataka: Mandya-52, Davanagere-48
- Kerala & Mahe: Wayanad-52
- Himachal Pradesh: Lahaul & Spiti-50, Kinnaur-41, Solan-39
- * Rajasthan: Nagaur-48, Shirohi-48, Jaisalmer-46, Bikaner-41
- * Tamil Nadu: Thoothukudi-46, Tiruppur-44
- Haryana: Karnal, Kaithal-42 each

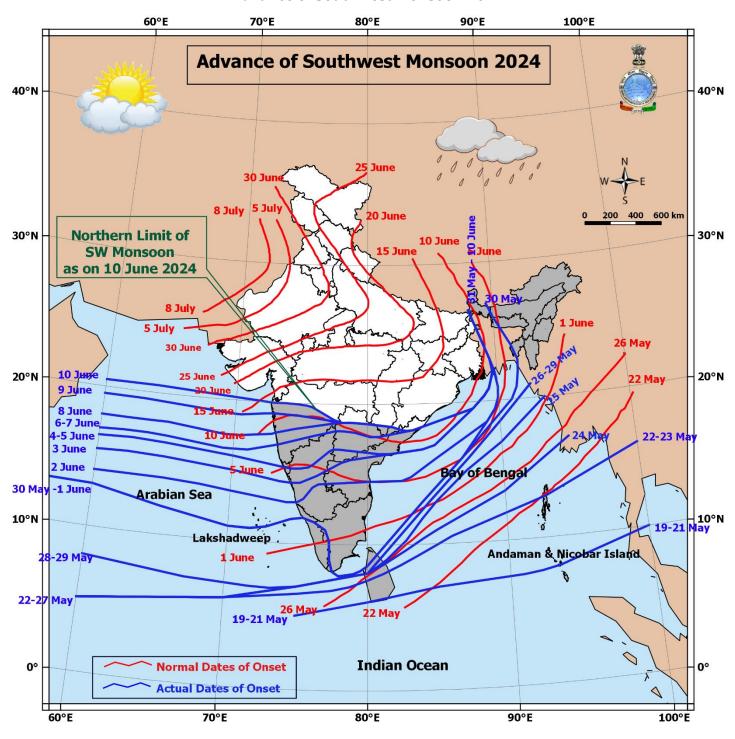
Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 09.06.2024 to 0830 hrs IST of 10.06.2024



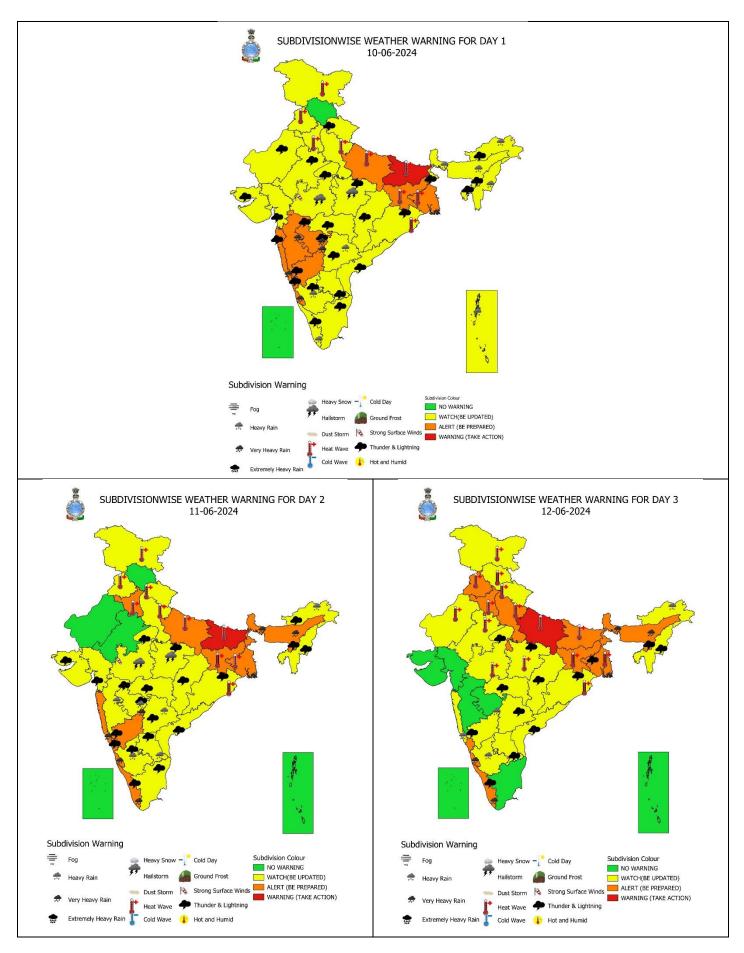
For more details, kindly refer: http://aws.imd.gov.in:8091/

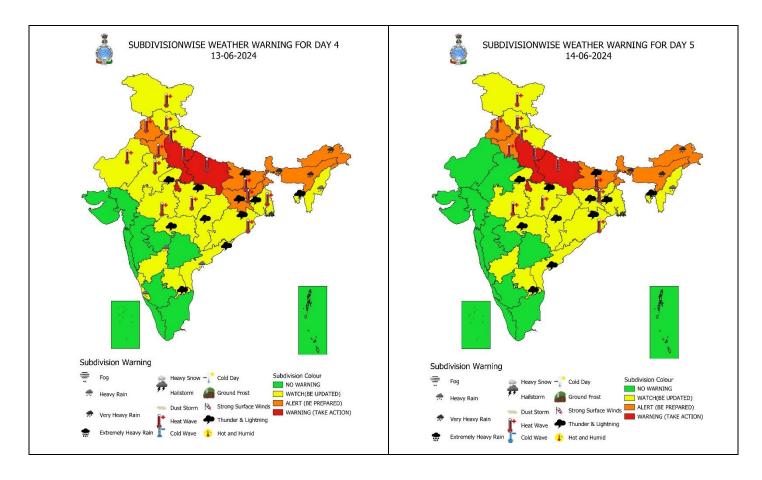
ANNEXURE III

Advance of Southwest Monsoon 2024



ANNEXURE IV





IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:

Red Areas: Bihar during 10th & 11th; East Uttar Pradesh during 12th-14th; West Uttar Pradesh 13th & 14th;

Orange Alert Areas: Bihar during 12th -14th; East Uttar Pradesh 10th & 11th; West Uttar Pradesh 12th; Haryana-Chandigarh-Delhi during 11th-14th; Punjab during 12th-14th; Jharkhand and Gangetic West Bengal during 10th-12th.

Yellow Alert Areas: Jammu-Division 10th-14th; Himachal Pradesh during 12th-14th; Uttarakhand during 11th-14th; Punjab on 10th & 11th; Haryana-Chandigarh-Delhi and West Uttar Pradesh on 10th; north Rajasthan on 12th & 13th; north Madhya Pradesh during 12th-14th June, 2024.

Red alert Areas

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

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 & ACTION SUGGESTED due to very heavy rainfall over Konkan & Goa on 10th & 11th; Madhya Maharashtra and Marathwada; Kerala & Mahe on 11th & 12th; Coastal Karnataka during 10th-12th; North Interior Karnataka on 10th & 11th; Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim during 11th-14th; Arunachal Pradesh on 13th & 14th June, 2024.

Impact Expected

- Localized Flooding of roads, water logging in low lying areas and closure of underpasses mainly in urban areas of the above region.
- Occasional reduction in visibility due to heavy rainfall.
- > Disruption of traffic in major cities due to water logging in roads leading to increased travel time.
- Minor damage to kutcha roads.
- > Possibilities of damage to vulnerable structure.
- Localized Landslides/Mudslides/landslips/mudslips/landsinks/mudsinks.
- > Damage to horticulture and standing crops in some areas due to inundation.
- > It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC)

Action Suggested

- ➤ Check for traffic congestion on your route before leaving for your destination.
- Follow any traffic advisories that are issued in this regard.
- Avoid going to areas that face the water logging problems often.
- Avoid staying in vulnerable structure.

Impact expected and action suggested due to thunderstorms, lightning/squall/gusty winds/Hailstorm over south Madhya Pradesh 10th & 11th June, 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:

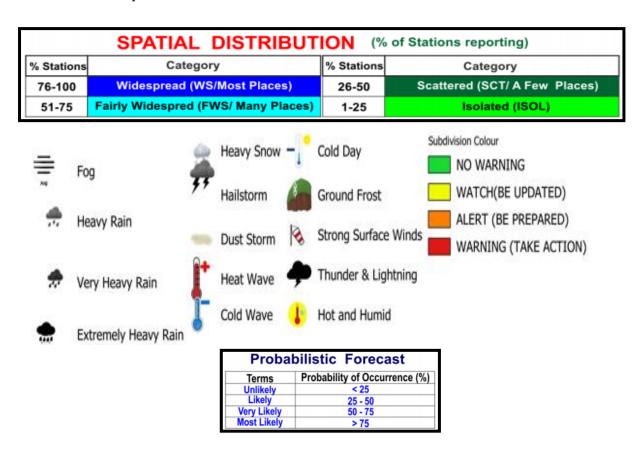
- > Stay indoors, close windows & doors and avoid travel if possible.
- > Take safe shelters; do not take shelter under trees.
- > Do not lie on concrete floors and do not lean against concrete walls.
- Unplug electrical/ electronic appliances.
- > Immediately get out of water bodies.
- ➤ Keep away from all the objects that conduct electricity.

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

- Make provision for draining out excess water from crop fields to avoid water stagnation in Kerala, Karnataka, Konkan, Madhya Maharashtra, Marathwada, Sub Himalayan West Bengal, Arunachal Pradesh, Assam & Meghalaya and Tripura.
- > Postpone sowing of red gram, black gram, cotton, pigeon pea and sorghum in Karnataka.
- > Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Jammu & Kashmir, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand, Odisha and Gangetic West Bengal.
- ➤ Use hail nets or hail caps in fruit orchards to prevent mechanical damage and provide mechanical support to horticultural crops & staking to vegetables in 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.



LEGENDS Probabilistic Forecast WARNING WARNING (TAKE ACTION) Probability of Occurrence (%) Terms ALERT (BE PREPARED) Likely Very Likely 25 - 50 50 - 75 WATCH (BE UPDATED) Most Likely > 75 Heavy: 64.5 to 115.5 mm/cm * Very Heavy: 115.6 to 204.4 mm/cm* Rain/ Snow Extremely Heavy: > 204.4 mm/cm 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 1+ (b), Based on Actual maximum temperature **Heat Wave** 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 When maximum temperature remains 40°C Warm Night Warm Night: When minimum temperature departure 4.5 °C to 6.4 °C. Severe Warm Night: When minimum temperature departure >6.4 °C. 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 1-(b) Based on actual Minimum Temperature (for Plains only) **Cold Wave** 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 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. Cold Day Severe Cold Day: Maximum Temperature Departure from normal ≤ -6.5 °C Phenomenon of small droplets suspended in air and the horizontal visibility < 1km Moderate Fog: When the visibility between 500-200 metres 0 Dense Fog: when the visibility between 50- 200 metres Fog Very Dense Fog: when the visibility < 50 metres 44 Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder) Thunderstorm An ensemble of particles of dust or sand energetically lifted to great heights by a strong and **Dust/Sand** turbulent wind. Storm Ice deposits on ground Air temperature ≤4°C (over Plains) **Frost** A strong wind that rises suddenly, lasts for atleast 1 minute. Moderate: Wind speed 52-61 kmph 4 Severe: Wind speed 62-87 kmph Squall Very Severe: Wind speed >87 kmph 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 Sea State Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots) Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots) 6 Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots) Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots) Cyclone Super Cyclone Strom: Wind speed >220 kmph (>119 knots)