

Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release.

Date: 22<sup>nd</sup> May, 2024

Time of Issue: 1330 hours IST

**Subject:**

- Heat wave to severe heat wave conditions most likely to continue over plains of Northwest India and Heat wave conditions over north Madhya Pradesh & Gujarat State during next 5 days.**
- Isolated heavy to very heavy rainfall very likely over south Peninsular India till 24<sup>th</sup> May with possibility of extremely heavy falls over Kerala on 22<sup>nd</sup> May, 2024.**
- A Low Pressure Area has formed over Southwest & adjoining Westcentral Bay of Bengal. It is very likely to move northeastwards and concentrate into a Depression over central parts of Bay of Bengal by morning of 24<sup>th</sup> May, 2024. It is likely to move northeastwards, intensify further and reach northeast & adjoining northwest Bay of Bengal by 25<sup>th</sup> evening.**

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

- ❖ **Heat wave to severe heat wave conditions** prevailed over most parts of West Rajasthan; over some parts of East Rajasthan and in isolated pockets of Gujarat Region, West Madhya Pradesh. **Heat wave conditions** prevailed in some parts of Haryana; in isolated pockets of West Uttar Pradesh, Punjab and Himachal Pradesh. **Heat wave conditions** have been prevailing over Gujarat region since 15<sup>th</sup>; Saurashtra & Kutch since 16<sup>th</sup> and over Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh and Rajasthan since 17<sup>th</sup> May, 2024.
- ❖ **Warm night conditions** observed in some parts of Rajasthan.
- ❖ Yesterday, the **highest maximum temperature** of **47.8°C** was reported at **Sirsa (Haryana)** over the country.
- ❖ **Heavy to very heavy rainfall** observed at isolated places over Tamil Nadu; **Heavy rainfall** at isolated places over Jharkhand, Kerala, Lakshadweep.
- ❖ **Hailstorm** observed at isolated places over Uttarakhand.
- ❖ **Gusty winds/squally winds** data reported over the country is attached in **Annexure II**.

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

- ❖ **Southwest Monsoon** has further advanced into some parts of South Arabian Sea, some more parts of Maldives, Comorin area, South Bay of Bengal, Andaman & Nicobar Islands and Andaman Sea today on 22<sup>nd</sup> May, 2024.
- ❖ The Northern Limit of Monsoon passes through 05°N/60°E, 06°N/70°E, 6.5°N/75°E, 7.5°N/80°E, 10°N/85°E, Mayabandar and 16°N/100°E. (**Annexure IV**).
- ❖ **Conditions are favorable for further advance of Southwest Monsoon over some more parts of south Bay of Bengal, remaining parts of Andaman & Nicobar Islands, Andaman Sea and some parts of eastcentral Bay of Bengal during next 2 days.**
- ❖ A cyclonic circulation lies over south Kerala in lower & middle tropospheric levels. Under their influence:
  - Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe, Lakshadweep, Coastal & South Interior Karnataka and Isolated to scattered light/moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** over Coastal Andhra Pradesh & Yanam, Telangana, North Interior Karnataka and Rayalaseema during next 5 days.
  - **Isolated heavy rainfall very likely over Coastal & South Interior Karnataka on 22<sup>nd</sup> & 23<sup>rd</sup>; Lakshadweep on 23<sup>rd</sup>; Tamil Nadu, Puducherry & Karaikal on 24<sup>th</sup>; Kerala on 24<sup>th</sup> & 25<sup>th</sup> May, 2024.**

- **Isolated heavy to very heavy rainfall very likely over Tamil Nadu, Puducherry & Karaikal on 22<sup>nd</sup> & 23<sup>rd</sup>; Lakshadweep on 22<sup>nd</sup>; Kerala & Mahe on 23<sup>rd</sup> May, 2024 with isolated extremely heavy rainfall over Kerala on 22<sup>nd</sup> May, 2024.**
- Widespread light to moderate rainfall very likely over Andaman & Nicobar Islands during next 7 days. **Isolated heavy rainfall very likely over Andaman & Nicobar Islands during 22<sup>nd</sup>-25<sup>th</sup> May.**
- Isolated light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Konkan & Goa, Madhya Maharashtra, Marathawada, Vidarbha, Madhya Pradesh on 22<sup>nd</sup> & 23<sup>rd</sup> and Chhattisgarh during 22<sup>nd</sup>-26<sup>th</sup> May, 2024.
- ❖ A cyclonic circulation lies over Bangladesh & adjoining West Bengal and a trough runs from northwest Rajasthan to Bangladesh in lower tropospheric levels. Under its influence:
  - Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Gangetic West Bengal and isolated to scattered light to moderate rainfall over Odisha, Bihar and Jharkhand during next 7 days.
  - Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura during next 5 days.
  - **Isolated heavy rainfall very likely over Arunachal Pradesh and Assam & Meghalaya on 26<sup>th</sup> May, 2024.**

#### **Low Pressure Area over Southwest & adjoining Westcentral Bay of Bengal:**

- ❖ Under the influence of the cyclonic circulation over Southwest Bay of Bengal, a Low Pressure Area formed over Southwest & adjoining Westcentral Bay of Bengal at 0530 hrs IST and persisted over the same region at 0830 hrs IST of today, the 22<sup>nd</sup> May, 2024. It is very likely to move northeastwards and concentrate into a Depression over central parts of Bay of Bengal by morning of 24<sup>th</sup> May, 2024. It is likely to move northeastwards, intensify further and reach northeast & adjoining northwest Bay of Bengal by 25<sup>th</sup> evening.

#### **Heavy Rainfall Warning:**

- (a) Light to moderate rainfall at many places with heavy rainfall at isolated places is likely over North & South 24 Parganas, East Medinipur districts of West Bengal and Balasore district of Odisha on 25<sup>th</sup> and 26<sup>th</sup> May.
- (b) Light to moderate rainfall at many places with heavy rainfall at isolated places is likely over Mizoram, Tripura and South Manipur on 25<sup>th</sup> and 26<sup>th</sup> May.

#### **Fishermen Warning:**

- ❖ Fishermen are advised not to venture into central & adjoining south Bay of Bengal from 23<sup>rd</sup> May and into North Bay of Bengal from 24<sup>th</sup> May onwards till 26<sup>th</sup> May. Fishermen out at sea are advised to return to the coast before 23<sup>rd</sup> May.

#### **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 44-47°C in many places over Rajasthan; in some places over Haryana, Madhya Pradesh & Gujarat state; in isolated pockets over West Uttar Pradesh; in the range of 40- 44°C in many places over Punjab, Odisha & interior Maharashtra; in some parts of East Uttar Pradesh & Chhattisgarh; in isolated pockets of Telangana. These were above normal by 2-4°C over many parts of Punjab and Saurashtra & Kutch; in some places over Haryana; in isolated pockets of Uttar Pradesh, Rajasthan and Gujarat Region.
- ❖ Gradual rise by about 2-3°C in maximum temperatures very likely over many parts of Central India and Maharashtra during next 5 days.
- ❖ No significant change in maximum temperatures very likely over Northwest India during next 24 hours and gradual rise by 3-4°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 in isolated pockets of Jammu division, Himachal Pradesh, Gujarat state, northeast Madhya Pradesh during 22<sup>nd</sup>-26<sup>th</sup>; West Madhya Pradesh, Delhi on 22<sup>nd</sup> & 23<sup>rd</sup>; Vidarbha during 23<sup>rd</sup>-26<sup>th</sup>; East Uttar Pradesh during 24<sup>th</sup>-26<sup>th</sup> and north Madhya Maharashtra during 22<sup>nd</sup>-25<sup>th</sup> May, 2024.
- ❖ **Heat wave to severe heat wave conditions very likely in most parts of West Rajasthan; in many/some pockets over Punjab, Haryana-Chandigarh, East Rajasthan and West Uttar Pradesh during 22<sup>nd</sup> to 26<sup>th</sup>; in isolated pockets of northwest Madhya Pradesh & Delhi during 24<sup>th</sup>-26<sup>th</sup> May, 2024.**
- ❖ **Hot and humid weather** very likely to prevail over Assam during 22<sup>nd</sup>-24<sup>th</sup>; Konkan & Goa on 22<sup>nd</sup> May, 2024.
- ❖ **Warm night conditions** very likely to prevail over West Uttar Pradesh, Rajasthan during 22<sup>nd</sup>-26<sup>th</sup> and Punjab & Haryana-Chandigarh-Delhi during 22<sup>nd</sup>-25<sup>th</sup> May, 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)

**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 Andaman & Nicobar Islands, Kerala & Mahe, Lakshadweep, Coastal Karnataka; **at many places** over South Interior Karnataka, Tamil Nadu, Puducherry & Karaikal; **at a few places** over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, West Bengal & Sikkim, Bihar, Uttarakhand and **at isolated places** over Odisha, Jharkhand, Himachal Pradesh, Haryana, West Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Konkan & Goa, Madhya Maharashtra, Marathwada, Coastal Andhra Pradesh & Yanam, Telangana, North Interior Karnataka and Rayalaseema.

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

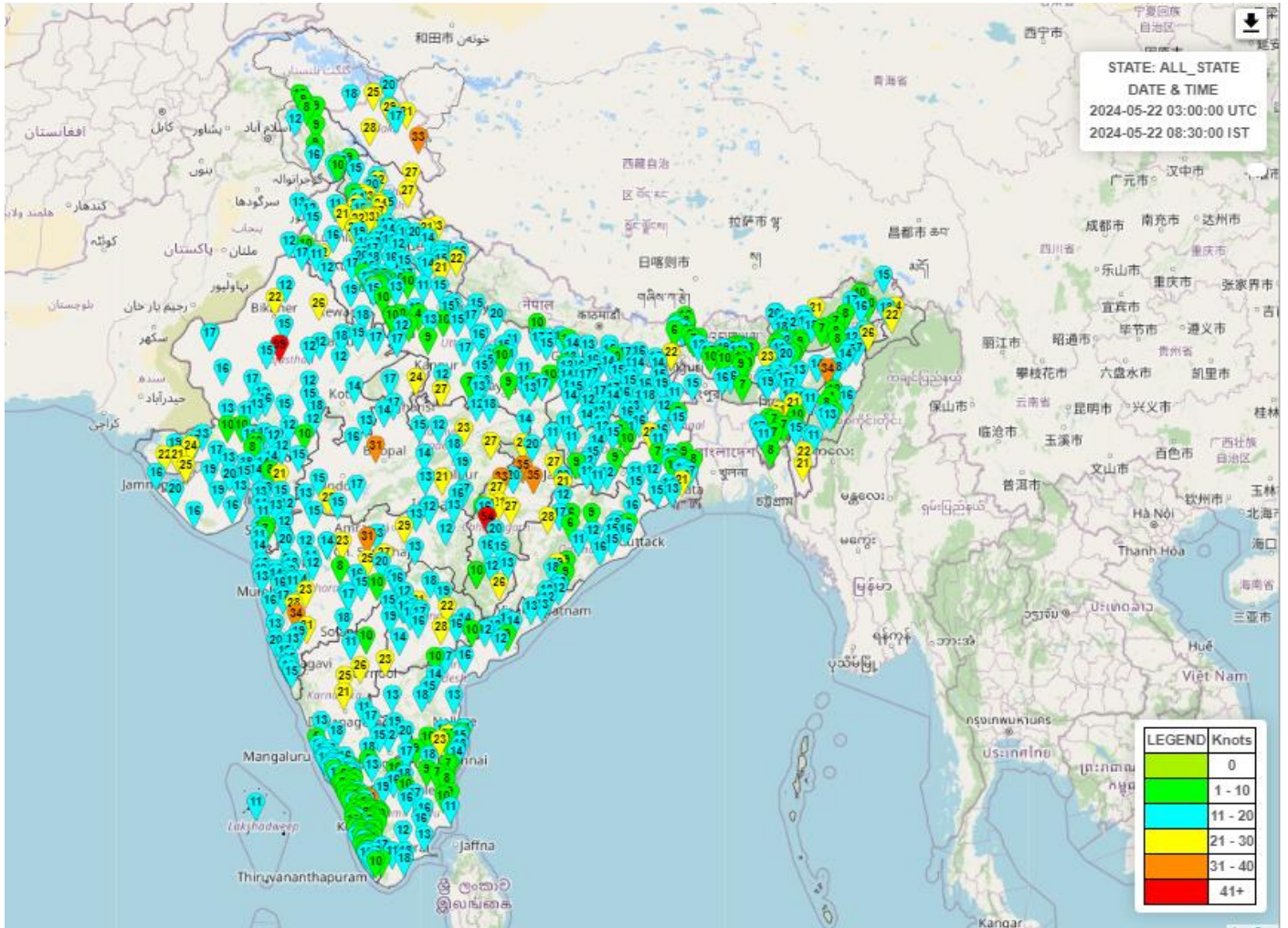
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Azhiyar (dist Coimbatore) 15, Thirumoorthi Dam (dist Tiruppur), Thirumoorthy IB (dist Tiruppur) 14 each, Amaravathy Dam (dist Tiruppur) 12, Kottaram (dist Kanniyakumari) 9, PWD Makkinampatti (dist Coimbatore), PWD Vaarappatti (dist Coimbatore) 8 each, Colachel (dist Kanniyakumari), Madathukulam (dist Tiruppur), RSCL-3 Semmedu (dist Villupuram), Tirupathur (dist Sivagangai), Kanniyakumari (dist Kanniyakumari) 7 each
- ❖ **Jharkhand:** Rajmahal(Sahibganj)- 11; Dumka: 9; Godda 7
- ❖ **Kerala & Mahe:** Alwaye Pwd (dist Ernakulam) 9, Pilicode Aws (dist Kasargod) 8, Parumbikulam(dist Palakkad) 8, Thiruvalla Aws (dist Pathanamthitta) 7, Kunnamkulam Aws (dist Thrissur) 7, Kunnamkulam (dist Thrissur) 7,
- ❖ **Lakshadweep:** Amini (dist Lakshadweep) 9, Agathi (dist Lakshadweep) 4
- ❖ **Coastal Karnataka:** Dharmasthala (dist Dakshina Kannada) 6, Sulya (dist Dakshina Kannada) 6, Shirali Pto(dist Uttara Kannada) 6, Gersoppa (dist Uttara Kannada) 4, Gokarna (dist Uttara Kannada) 2, Belthangadi (dist Dakshina Kannada) 2,
- ❖ **Andaman Islands:** Long Island (dist North & Middle Andaman) 6, Port Blair (dist South Andaman) 5,
- ❖ **South Interior Karnataka:** Kottigehara (dist Chikkamagaluru) 5, Bandipura (dist Chamarajanagar) 5, Hunchadakatte (dist Shivamogga) 5,

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

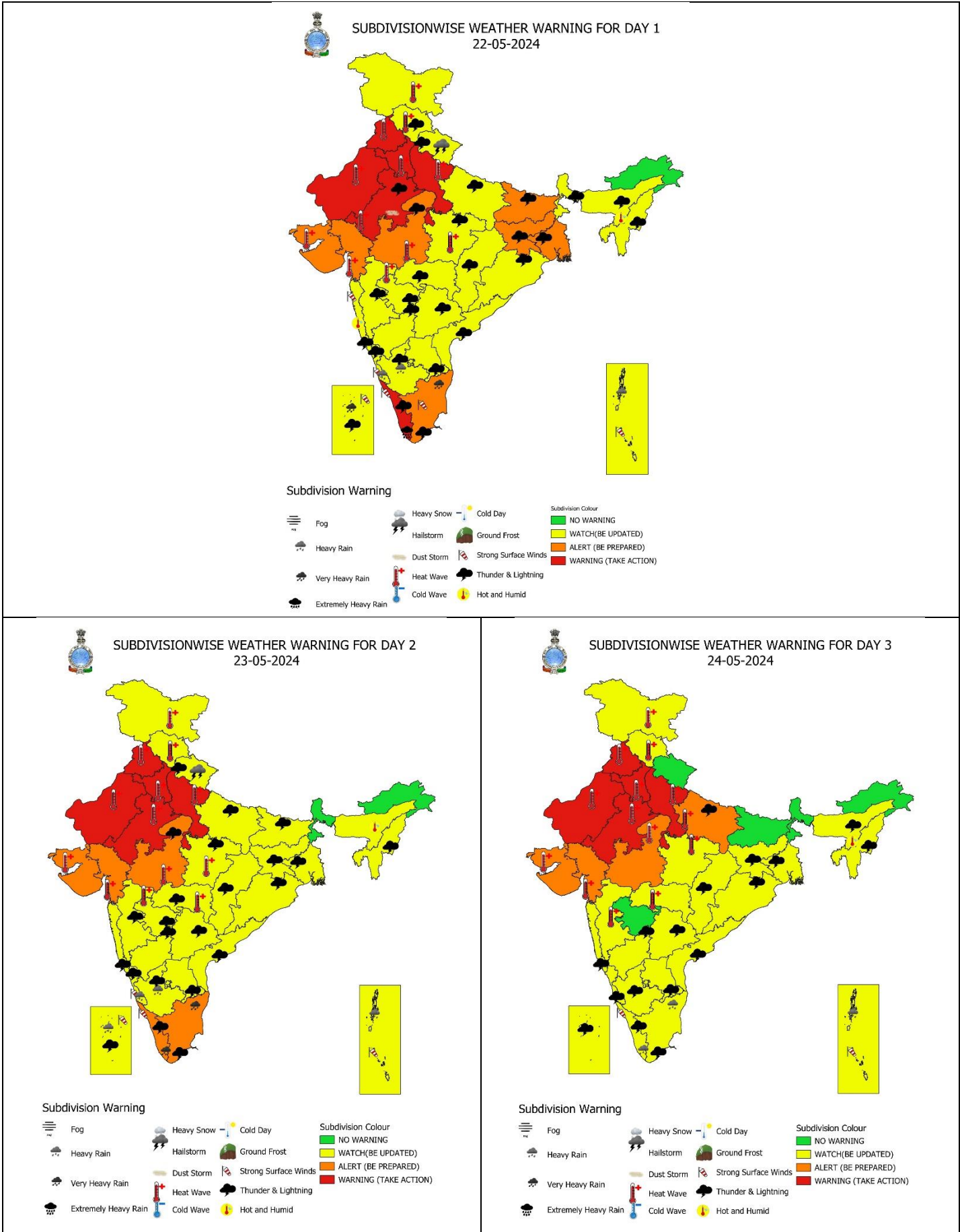
- ❖ **West Madhya Pradesh:** Sehore – 58, Shivpuri – 32, Ashoknagar – 32, Khandwa - 32
- ❖ **East Madhya Pradesh:** Shahdol – 50, Chhatarpur – 50, Jabalpur – 41, Seoni – 39, Balaghat - 32
- ❖ **Chhattisgarh:** Janjgir 64, Korba 64, Mungeli 59, Bemetara 50;
- ❖ **Maharashtra:** Satara 62, Washim 57, Yavatmal 53, Hingoli 50;
- ❖ **Odisha:** Rayagada 54, Balangir 52, Jharsuguda 38;
- ❖ **Kerala:** Palakkad 57, Kannur 41;
- ❖ **Himachal Pradesh:** Shimla 55, Solan 50, Bilaspur 42;
- ❖ **Saurashtra & Kutch:** Jamnagar 46, Kachchh 44;
- ❖ **Uttarakhand:** Chamoli 42, Champawat 40, Rudraprayag 38;
- ❖ **Punjab:** Patiala 39, Ludhiana 39;
- ❖ **Haryana:** Panchkula 40, Chandigarh 42, Sirsa 40, Gurgaon 50;
- ❖ **Rajasthan:** Sikar 48, Bikaner 40 Uttar Pradesh: Jhansi 44;
- ❖ **Karnataka:** Koppal 48, Haveri 46, Davanagere 38;
- ❖ **Telangana:** Nalgonda 51, Mahabubabad 40, Siddipet 38;
- ❖ **Tamil Nadu:** Ranipet 42;

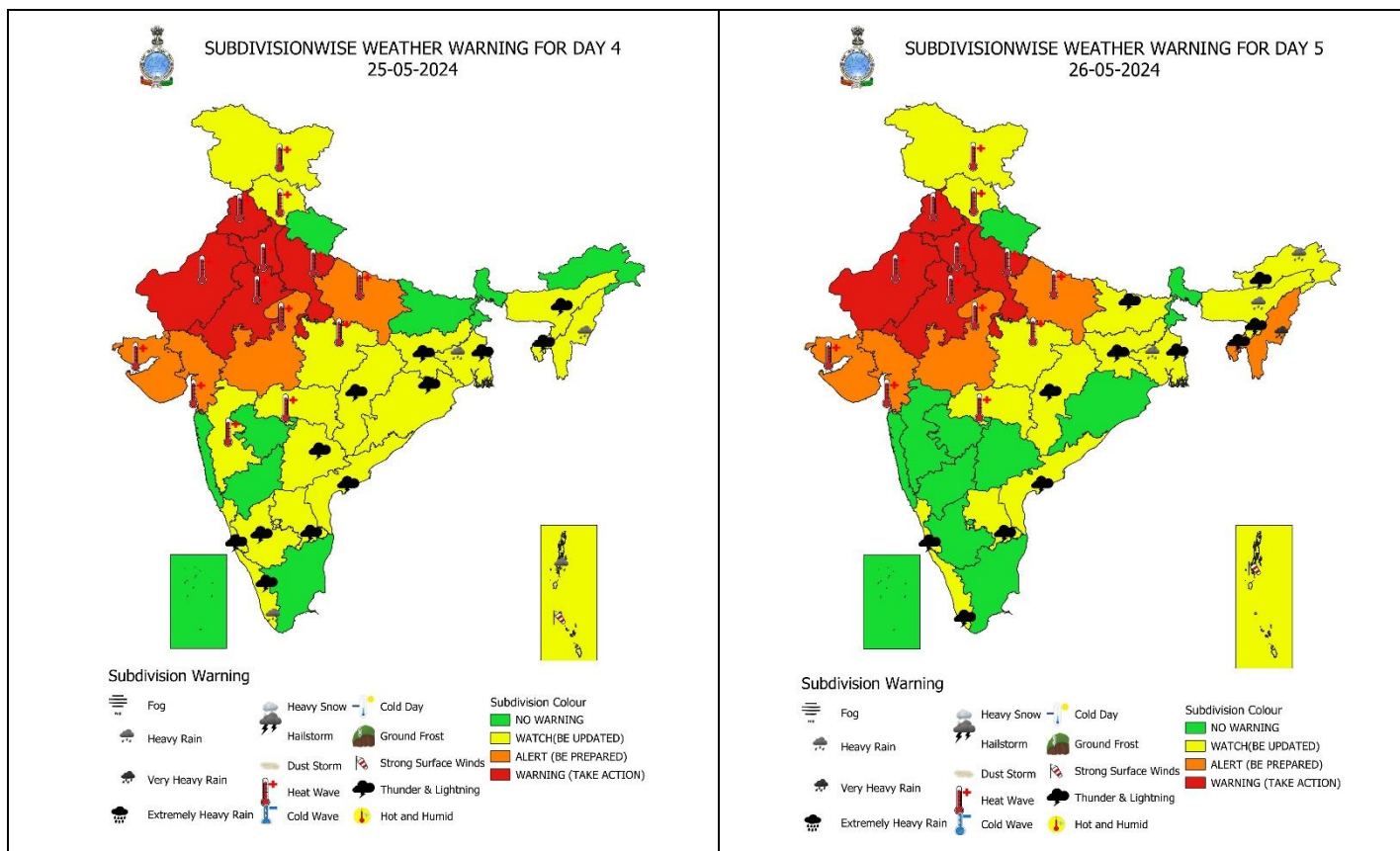


***Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 21.05.2024 to 0830 hrs IST of 22.05.2024***



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





**IMPACT & ACTION SUGGESTED due to very heavy rainfall/extremely falls over Tamil Nadu, Puducherry & Karaikal and Kerala & Mahe on 22<sup>nd</sup> & 23<sup>rd</sup> May 2024.**

**A. 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
- 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)

**B. 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 & ACTION SUGGESTED due to Heat Wave Conditions:**

#### **Red alert Areas: (Rajasthan, Punjab, Haryana, Chandigarh, Delhi, West Uttar Pradesh)**

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

#### **Orange alert Areas (East Uttar Pradesh, Gujarat State, West Madhya Pradesh)**

- ✓ 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 (East Madhya Pradesh, Vidarbha, Himachal Pradesh, Jammu division, Madhya Maharashtra)**

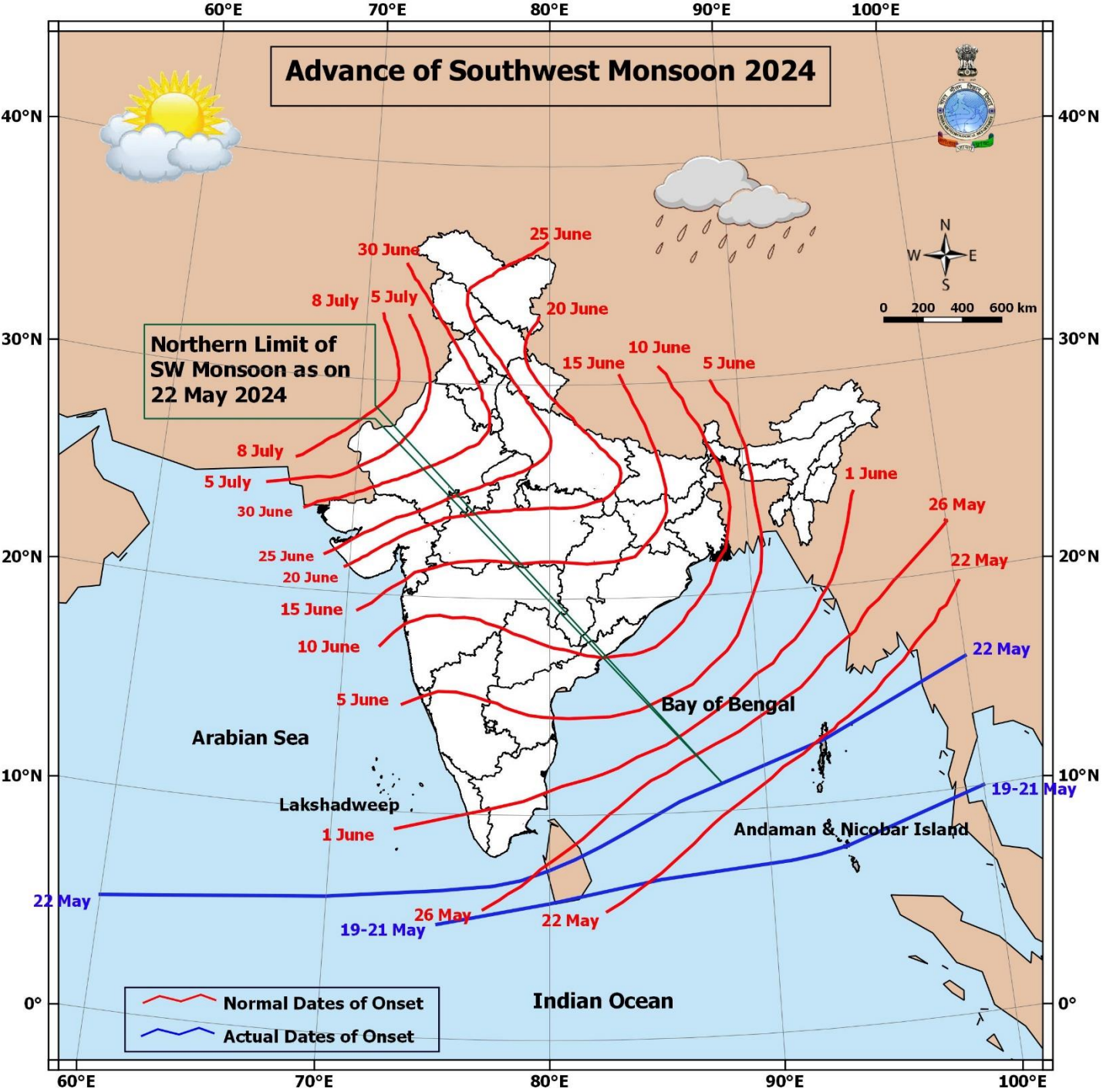
- ✓ Moderate temperature & heat is tolerable for general public but moderate health concern likely for vulnerable people e.g. infants, elderly, people with chronic diseases.
- ✓ Avoid heat exposure.
- ✓ Wear lightweight, light colour, loose, cotton clothes.
- ✓ Cover your head, use a cloth, hat or umbrella.

### **Agromet advisories for Heavy Rainfall, Gusty winds 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 Tamil Nadu, Kerala, Lakshadweep, Coastal and South Interior Karnataka and Andaman & Nicobar Islands.
- ✓ 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.
- ✓ Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Uttar Pradesh, Rajasthan, Gujarat, North Madhya Maharashtra and North Madhya Pradesh.
- ✓ Provide mechanical support to horticultural crops & staking to vegetables to prevent damage from gusty winds.



Advance of Southwest Monsoon 2024



## 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

 <b>Rain/ Snow *</b>	<b>Heavy:</b> 64.5 to 115.5 mm/cm * <b>Very Heavy:</b> 115.6 to 204.4 mm/cm* <b>Extremely Heavy:</b> > 204.4 mm/cm *
 <b>Heat Wave</b>	<p>When maximum temperature of a station reaches <math>\geq 40^{\circ}\text{C}</math> for plains and <math>\geq 30^{\circ}\text{C}</math> for hilly regions</p> <p><b>(a) Based on Departure from normal</b></p> <p><b>Heat Wave:</b> Maximum Temperature Departure from normal <math>4.5^{\circ}\text{C}</math> to <math>6.4^{\circ}\text{C}</math>.  <b>Severe Heat Wave:</b> Maximum Temperature Departure from normal <math>\geq 6.5^{\circ}\text{C}</math></p> <p><b>(b). Based on Actual maximum temperature</b></p> <p><b>Heat Wave:</b> When actual maximum temperature <math>\geq 45^{\circ}\text{C}</math>.  <b>Severe Heat Wave:</b> When actual maximum temperature <math>\geq 47^{\circ}\text{C}</math></p> <p><b>(c). Criteria for heat wave for coastal stations</b>            When maximum temperature departure is <math>&gt; 4.5^{\circ}\text{C}</math> from normal. Heat Wave may be described provided maximum temperature <math>\geq 37^{\circ}\text{C}</math></p>
 <b>Warm Night</b>	<p><b>When maximum temperature remains <math>40^{\circ}\text{C}</math></b></p> <p><b>Warm Night:</b> When minimum temperature departure <math>4.5^{\circ}\text{C}</math> to <math>6.4^{\circ}\text{C}</math>.  <b>Severe Warm Night:</b> When minimum temperature departure <math>&gt; 6.4^{\circ}\text{C}</math>.</p>
 <b>Cold Wave</b>	<p>When minimum temperature of a station <math>\leq 10^{\circ}\text{C}</math> for plains and <math>\leq 0^{\circ}\text{C}</math> for hilly regions.</p> <p><b>(a). Based on departure</b></p> <p><b>Cold Wave:</b> Minimum Temperature Departure from normal <math>-4.5^{\circ}\text{C}</math> to <math>-6.4^{\circ}\text{C}</math>.  <b>Severe Cold Wave:</b> Minimum Temperature Departure from normal <math>\leq -6.5^{\circ}\text{C}</math></p> <p><b>(b) Based on actual Minimum Temperature (for Plains only)</b></p> <p><b>Cold Wave :</b> When Minimum Temperature is <math>\leq 4.0^{\circ}\text{C}</math>  <b>Severe Cold Wave:</b> When Minimum Temperature is <math>\leq 2.0^{\circ}\text{C}</math></p> <p><b>(c) For Coastal Stations</b>            When Minimum Temperature departure is <math>\leq -4.5^{\circ}\text{C}</math> &amp; actual Minimum Temperature is <math>\leq 15^{\circ}\text{C}</math></p>
 <b>Cold Day</b>	<p>When minimum temperature of a station <math>\leq 10^{\circ}\text{C}</math> for plains and <math>\leq 0^{\circ}\text{C}</math> for hilly regions</p> <p><b>Based on departure</b></p> <p><b>Cold Day:</b> Maximum Temperature Departure from normal <math>-4.5^{\circ}\text{C}</math> to <math>-6.4^{\circ}\text{C}</math>.  <b>Severe Cold Day:</b> Maximum Temperature Departure from normal <math>\leq -6.5^{\circ}\text{C}</math></p>
 <b>Fog</b>	<p><b>Phenomenon of small droplets suspended in air and the horizontal visibility &lt; 1km</b></p> <p><b>Moderate Fog:</b> When the visibility between 500-200 metres  <b>Dense Fog:</b> when the visibility between 50- 200 metres  <b>Very Dense Fog:</b> when the visibility &lt; 50 metres</p>
 <b>Thunderstorm</b>	<p>Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)</p>
 <b>Dust/Sand Storm</b>	<p>An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.</p>
 <b>Frost</b>	<p><b>Ice deposits on ground</b></p> <p>Air temperature <math>\leq 4^{\circ}\text{C}</math> ( over Plains)</p>
 <b>Squall</b>	<p><b>A strong wind that rises suddenly, lasts for atleast 1 minute.</b></p> <p><b>Moderate:</b> Wind speed 52-61 kmph  <b>Severe:</b> Wind speed 62-87 kmph  <b>Very Severe:</b> Wind speed <math>&gt; 87</math> kmph</p>
 <b>Sea State</b>	<p><b>Effect of various waves in the sea over specific area</b></p> <p><b>Rough to very rough:</b> Wind speed 41-62 kmph (22-33 knots) &amp; Wave height 2.5-6 metre  <b>High to very high:</b> Wind speed 63-117 kmph ( 34-63 knots) &amp; Wave height 6-14 metre  <b>Phenomenal:</b> Wind speed <math>&gt; 117</math> kmph (<math>&gt; 63</math> knots) &amp; Wave height <math>&gt; 14</math> metre</p>
 <b>Cyclone</b>	<p><b>Cyclonic Storm:</b> Wind speed 62-87 kmph (34-47 knots)  <b>Severe Cyclonic Storm:</b> Wind speed 88-117 kmph (48-63 knots)  <b>Very Severe Cyclonic Storm:</b> Wind speed 118-165 kmph (64 - 89 knots)  <b>Extremely Severe Cyclonic Storm:</b> Wind speed 166-220 kmph (90 -119 knots)  <b>Super Cyclone Strom:</b> Wind speed <math>&gt; 220</math> kmph (<math>&gt; 119</math> knots)</p>