

Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release  
Date: 06<sup>th</sup> July, 2024  
Time of Issue: 1400 hours IST

**Subject: (1) Heavy to very heavy rainfall with isolated extremely heavy rainfall likely over Uttarakhand during next 2 days, West Madhya Pradesh, Sub Himalayan West Bengal & Sikkim and Bihar today.**  
**(2) Heavy to very heavy rainfall spell likely over Northwest India, Western parts of peninsular India during next 2-3 days and over Northeast India during next 5 days.**

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

- ✓ **Heavy to very heavy rainfall with extremely heavy falls occurred** at isolated places over Himachal Pradesh, West Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim and **Very heavy rainfall** at isolated places over Assam & Meghalaya, Gujarat Region, East Rajasthan, Uttarakhand, Punjab, Bihar, Coastal Karnataka; **Heavy rainfall** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, West Rajasthan, Saurashtra & Kutch, Uttar Pradesh, East Madhya Pradesh, Jharkhand, Odisha, Arunachal Pradesh, Konkan & Goa, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Telangana, Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal.
- ✓ **Gusty winds/squally winds data reported over the country is attached in Annexure II.**

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

- ❖ Monsoon trough is near normal position at mean sea level. A cyclonic circulation lies over southwest Uttar Pradesh extending upto mid-tropospheric levels and a trough runs from southwest Uttar Pradesh to a cyclonic circulation over northeast Assam in lower tropospheric levels. Another trough runs from the cyclonic circulation over southwest Uttar Pradesh to northeast Arabian Sea in middle tropospheric levels. There is moisture confluence over central and adjoining northwest India from the Arabian Sea and Bay of Bengal. Under their influence;
  - ✓ Fairly widespread to widespread light/moderate rainfall accompanied with thunderstorm, lightning very likely over Northwest and Central India during next 5 days.
  - ✓ Isolated heavy rainfall very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 06<sup>th</sup>; Himachal Pradesh on 06<sup>th</sup> & 07<sup>th</sup>; Uttarakhand during 08<sup>th</sup>-10<sup>th</sup>; Punjab on 07<sup>th</sup>; East Uttar Pradesh on 08<sup>th</sup> & 10<sup>th</sup>; East Rajasthan on 07<sup>th</sup> & 10<sup>th</sup>; East Madhya Pradesh during 06<sup>th</sup> -10<sup>th</sup>; West Madhya Pradesh during 07<sup>th</sup>-10<sup>th</sup>; Vidarbha on 08<sup>th</sup> & 09<sup>th</sup>; Chhattisgarh during 07<sup>th</sup> - 09<sup>th</sup> July.
  - ✓ **Isolated very heavy rainfall likely over Punjab, Haryana & East Rajasthan on 06<sup>th</sup>; Uttar Pradesh on 06<sup>th</sup> & 07<sup>th</sup> July.**
  - ✓ **Isolated extremely heavy rainfall very likely over Uttarakhand on 06<sup>th</sup> & 07<sup>th</sup> and West Madhya Pradesh on 06<sup>th</sup> July.**
  - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning very likely over East & Northeast India during next 5 days.

- ✓ Isolated **heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Bihar during 07<sup>th</sup>-10<sup>th</sup>; Odisha on 06<sup>th</sup> & 08<sup>th</sup>; Arunachal on 07<sup>th</sup>; Assam & Meghalaya on 07<sup>th</sup> & 08<sup>th</sup>; Nagaland, Manipur, Mizoram & Tripura during 06<sup>th</sup>-10<sup>th</sup> July.
- ✓ **Isolated very heavy rainfall likely over Odisha on 07<sup>th</sup>; Arunachal Pradesh on 06<sup>th</sup>, 08<sup>th</sup>, 09<sup>th</sup> & 10<sup>th</sup>; Assam & Meghalaya on 06<sup>th</sup>, 09<sup>th</sup> & 10<sup>th</sup> July.**
- ✓ **Isolated extremely heavy rainfall very likely over Sub-Himalayan West Bengal & Sikkim, Bihar on 06<sup>th</sup> July.**
- ❖ A cyclonic circulation lies over Westcentral Bay of Bengal off south Andhra Pradesh coast middle tropospheric levels. The off-shore trough at mean sea level runs along south Gujarat- Kerala coasts. Under the influence of these systems;
  - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Kerala & Mahe, Lakshadweep, Coastal Karnataka, Konkan & Goa, Gujarat region; scattered to fairly widespread light to moderate rainfall over Madhya Maharashtra, Marathwada, Saurashtra & Kutch, Coastal Andhra Pradesh & Yanam, Telangana and Interior Karnataka; isolated to scattered light to moderate rainfall over Tamil Nadu, Puducherry & Karaikal, Rayalaseema during next 5 days.
  - ✓ Isolated **heavy rainfall** very likely over Saurashtra & Kutch on 06<sup>th</sup>; Konkan & Goa during 07<sup>th</sup>-10<sup>th</sup>; Madhya Maharashtra during 08<sup>th</sup>-10<sup>th</sup>; Marathwada on 08<sup>th</sup>; Coastal Andhra Pradesh & Yanam, Rayalaseema on 06<sup>th</sup> & 07<sup>th</sup>; Telangana on 08<sup>th</sup> & 09<sup>th</sup>; Coastal Karnataka on 10<sup>th</sup>; North Interior Karnataka on 06<sup>th</sup> & 09<sup>th</sup>; South Interior Karnataka on 08<sup>th</sup> & 09<sup>th</sup>; Kerala & Mahe during 06<sup>th</sup>-09<sup>th</sup> July.
  - ✓ **Isolated very heavy rainfall very likely over Konkan & Goa on 06<sup>th</sup>; Coastal Karnataka during 06<sup>th</sup>-09<sup>th</sup>; Madhya Maharashtra, South Interior Karnataka on 06<sup>th</sup> & 07<sup>th</sup> and Gujarat region on 06<sup>th</sup> July.**

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)

**Significant Rainfall during past 24 hours till 0830 hours IST of today (in cm):**

- ❖ **West Madhya Pradesh:** Badoda (dist Sheopur) 33, Sheopur-aws (dist Sheopur) 19, Pohri (dist Shivpuri) 14, Shivpuri (dist Shivpuri) 13, Bamori (dist Guna) 12, Narwar (dist Shivpuri) 11, Karhal (dist Sheopur) 10, Bairad (dist Shivpuri) 9, Badarwas (dist Shivpuri) 9, Kolaras (dist Shivpuri) 8, Isagarh (dist Ashoknagar) 8, Guna-aws (dist Guna) 8, Gwalior (dist Gwalior) 7;
- ❖ **Himachal Pradesh:** Dharmshala Aws (dist Kangra) 22, Dharmshala (dist Kangra) 21, Palampur (dist Kangra) 21, Jogindarnagar (dist Mandi) 17, Kangra Aero (dist Kangra) 16, Baijnath (dist Kangra) 14, Chamba (dist Chamba) 9, Nagrota Surian (dist Kangra) 9, Chuari (dist Chamba) 7, Sujampur Tira (dist Hamirpur) 7, Ghamroor (dist Kangra) 7,
- ❖ **Sub-Himalayan West Bengal & Sikkim:** AMFU Pundibari (dist Cooch Behar) 21, Barobhisha (dist Alipurduar) 21, Domohani (dist Jalpaiguri) 18, Chepan (dist Alipurduar) 16, Jalpaiguri (dist Jalpaiguri) 15, Kumargram (dist Alipurduar) 15, Bagrakote (dist Jalpaiguri) 15, Buxaduar (dist Alipurduar) 14, Neora (dist Jalpaiguri) 13, NH31 Bridge (dist Jalpaiguri) 13, Cooch Behar (dist Cooch Behar) 13, Sukiapokhri (dist Darjeeling) 13, Bhutanghat (dist Alipurduar) 12, Falakata (dist Alipurduar) 12, Nagarkata (dist Jalpaiguri) 12, Alipurduar (pto) (dist Alipurduar) 12, Gajoldoba (dist Jalpaiguri) 12, Darjeeling (dist Darjeeling) 12, Mathabhanga (dist Cooch Behar) 11, Dhupguri (dist Jalpaiguri) 10, AMFU Kalimpong (dist Kalimpong) 10, Murti (dist Jalpaiguri) 10;
- ❖ **East Rajasthan:** Shahabad (dist Baran) 19, Deoli (dist Tonk) 15, Malpura (dist Tonk) 14, Piplu Sr (dist Tonk) 14, Tonk Tehsil Sr (dist Tonk) 14, Uniara / Aligarh (dist Tonk) 13, Todaraisingh Sr (dist Tonk) 13, Karauli (dist Karauli) 12, Nainwa (dist Bundi) 12, Nagarfort Sr (dist Tonk) 11, Kishanganj (dist Baran) 10, Chothkabarwara Sr (dist Sawai Madhopur) 9, Hindoli (dist Bundi) 9;
- ❖ **Bihar:** Kalyanpur (dist East Champaran) 19, Sikta (dist West Champaran) 17, Motihari (dist East Champaran) 16, Turkaulia (dist East Champaran) 13, Taibpur (dist Kishanganj) 13, Sugauli (dist East Champaran) 13, Srinagar (dist Purnea) 12, Mairwa (dist Siwan) 11, Pothia (dist Kishanganj) 11, Dumri (dist Sheohar) 11, Harsidhi (dist East Champaran) 11, Bahadurganj (dist Kishanganj) 11, Mansahi (dist Katihar) 11, Piprakothi (dist East Champaran) 11, Dhaka (dist East Champaran) 11, Banjaria (dist East Champaran) 11,
- ❖ **Uttarakhand:** Rishikesh (Dehradun): 17, Champawat (Champawat): 13, Lohaghat (Champawat): 12, Mori (Uttarkashi): 12, Devprayag (Tehri Garhwal): 9, Pithoragarh (Pithoragarh): 9, Haridwar (Haridwar): 9, Pati (Champawat): 9, Kotdwar (Pauri Garhwal): 9, Dehradun (Dehradun): 8, Haldwani (Nainital): 8, Nainital (Nainital): 8, Haripur (Dehradun): 8, Dwarahat (Almora): 7, Ukhimath (Rudraprayag): 7, Ganganagar (Rudraprayag): 7, Loharkhet (Bageshwar): 7, Jollygrant (Dehradun): 7,
- ❖ **Coastal Karnataka:** Castle Rock (dist Uttara Kannada) 17, Honavar Obsy (dist Uttara Kannada) 16, Udupi (dist Udupi) 15, Ankola (dist Uttara Kannada) 13, Kota (dist Udupi) 10, Gokarna (dist UttaraKannada) 9, Siddapura (dist Udupi) 9, Shirali Pto (dist Uttara Kannada) 9, Manki (dist UttaraKannada) 9, Gersoppa (dist Uttara Kannada) 8, Belthangadi (dist Dakshina Kannada) 8, Dharmasthala (dist Dakshina Kannada) 8, Kadra (dist Uttara Kannada) 8, Karkala (dist Udupi) 8, Joida (dist Uttara Kannada) 7, Karwar Obsy (dist Uttara Kannada) 7, Siddapur (dist UttaraKannada) 7, Kumta (dist Uttara Kannada) 7;
- ❖ **Gujarat Region:** Madhbun (dist Dadara & Nagar Haveli) 13, Vansda (dist Navsari) 11, Kaprada (dist Valsad) 11, Khergam (dist Navsari) 11, Pardi (dist Valsad) 10, Kamrej (dist Surat) 10, Daman (dist Daman) 9, Dediapada (dist Narmada) 9, Dolvan (dist Tapi) 9, Tilakwada (dist Narmada) 8, Dharampur (dist Valsad) 7, Bardoli (dist Surat) 7, Chikhli (dist Navsari) 7, Ukai (dist Surat) 7, Khanvel (dist Dadara & Nagar Haveli) 7, Mahuva (dist Surat) 7, Waghai (dist Dangs) 7;
- ❖ **Punjab:** Madhopur (dist Pathankot) 13, Ranjit Sagar Dam Site (dist Pathankot) 11, Shahpur Kandi (dist Pathankot) 9, Phangota (dist Pathankot) 7,

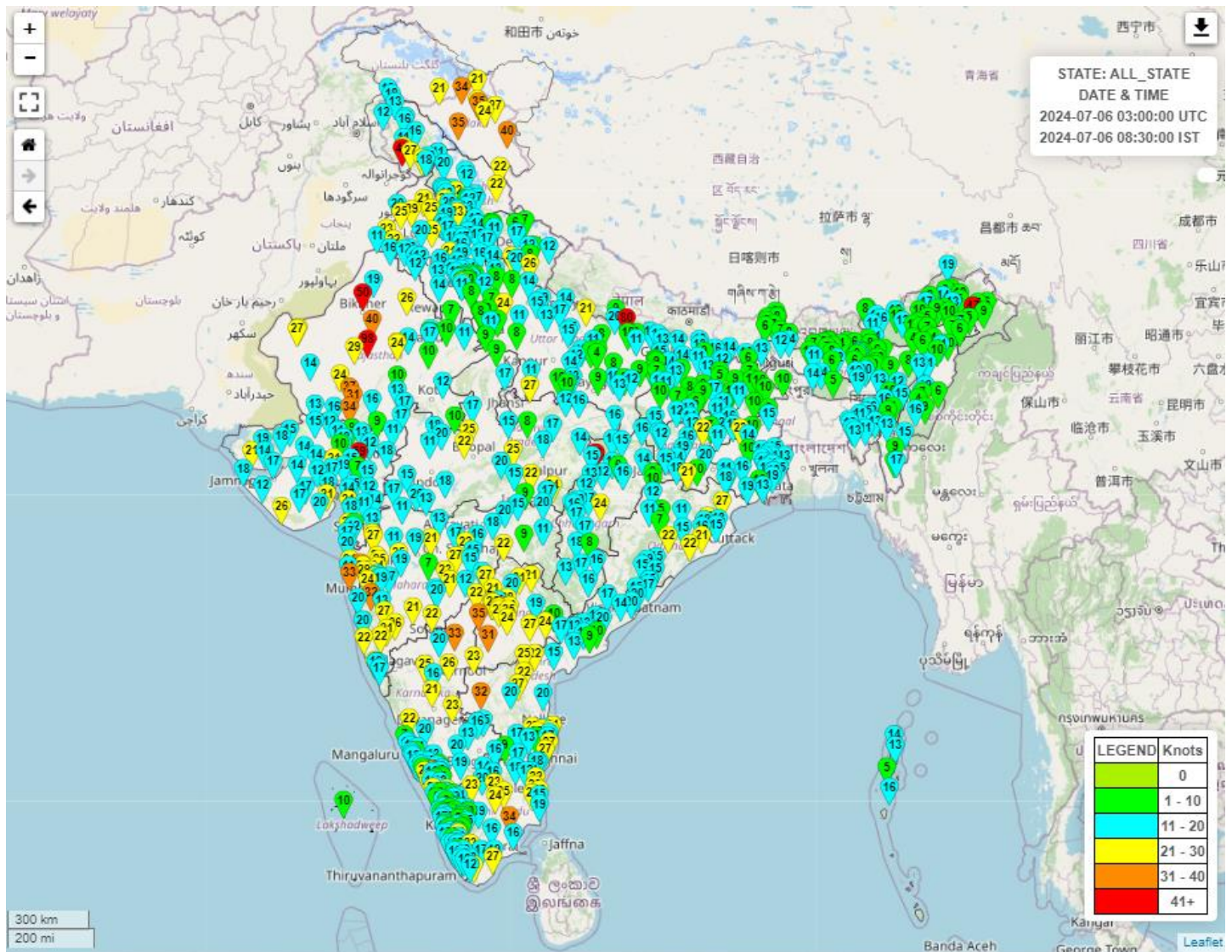
- ❖ **Assam & Meghalaya:** Cherrapunji (RKM) (dist East Khasi Hills) 13, Mawsynram (dist East Khasi Hills) 10, Beki Mathungari (dist Barpeta) 10, Gossaigaon (dist Kokrajhar) 9, Cherrapunji (dist East Khasi Hills) 9,
- ❖ **East Uttar Pradesh:** Raniganj (dist Pratapgarh) 11, Mukhlispur (dist Gorakhpur) 11, Bhinga (dist Shrawasti) 10, Bhanpur (dist Basti) 10, Rudhali (dist Basti) 9, Mehdawal (dist Sant Kabir Nagar) 9, Balrampur (dist Balrampur) 9,
- ❖ **East Madhya Pradesh:** Malthone (dist Sagar) 11, Bina (dist Sagar) 10, Badamalhera (dist Chhatarpur) 8;
- ❖ **Madhya Maharashtra:** Igatpuri (dist Nashik) 11, Gaganbawada (dist Kolhapur) 7;
- ❖ **Coastal Andhra Pradesh & Yanam:** Mandasa (dist Srikakulam) 11;
- ❖ **Arunachal Pradesh:** Naharlagun (dist Papumpara) 9,
- ❖ **Saurashtra & Kutch:** Vallabhipur (dist Bhavnagar) 9, Umralla (dist Bhavnagar) 8;
- ❖ **Kerala & Mahe:** Quilandi (dist Kozhikode) 7, Mahe (dist Mahe) 7;
- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Samba Aws (dist Samba) 9, Jammu Aws (dist Jammu) 7, Jammu (dist Jammu) 7;
- ❖ **West Rajasthan:** Parbatsar (dist Nagaur) 7;
- ❖ **Tamil Nadu:** Sethu\_Baskar\_Agri college AWS (Dist Sivaganga), Zone 10 Kodambakkam (dist Chennai) 7 each;
- ❖ **North Interior Karnataka:** Londa (dist Belagavi) 9;
- ❖ **South Interior Karnataka:** Kottigehara (dist Chikkamagaluru) 9, Agumbe Emo (dist Shivamogga) 9, Hunchadakatte (dist Shivamogga) 8, Linganamakki Hms (dist Shivamogga) 7,
- ❖ **Telangana:** Koilkonda (dist Mahabubnagar) 7,
- ❖ **Konkan & Goa:** Rajapur (dist Ratnagiri) 9, Quepem (dist South Goa) 9, Sanguem (dist South Goa) 8, Valpoi (dist North Goa) 7, Ratnagiri (dist Ratnagiri) 7, Chiplun (dist Ratnagiri) 7, Sangameshwar Devrukh (dist Ratnagiri) 7,
- ❖ **Odisha:** Jamsolaghat (dist Mayurbhanj) 10, Gunupur (dist Rayagada) 8;
- ❖ **Jharkhand:** Mehgawan-8;
- ❖ **West Uttar Pradesh:** Dataganj (dist Badaun) 8, Bidhuna (dist Auraiya) 7, Jalesar (dist Etah) 7,



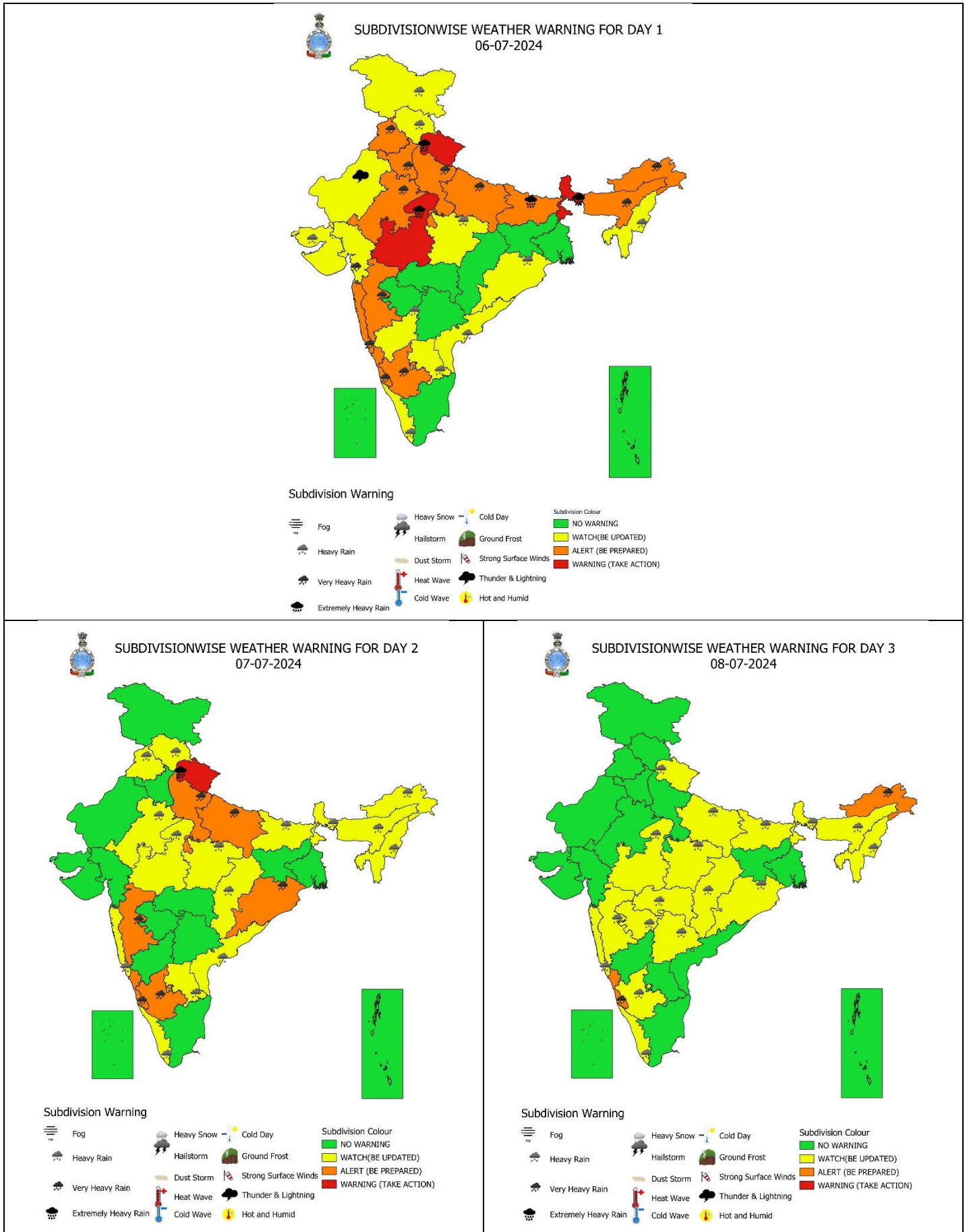
### Reported maximum wind speed (in kmph) during past 24 hours till 0830 hours IST of today:

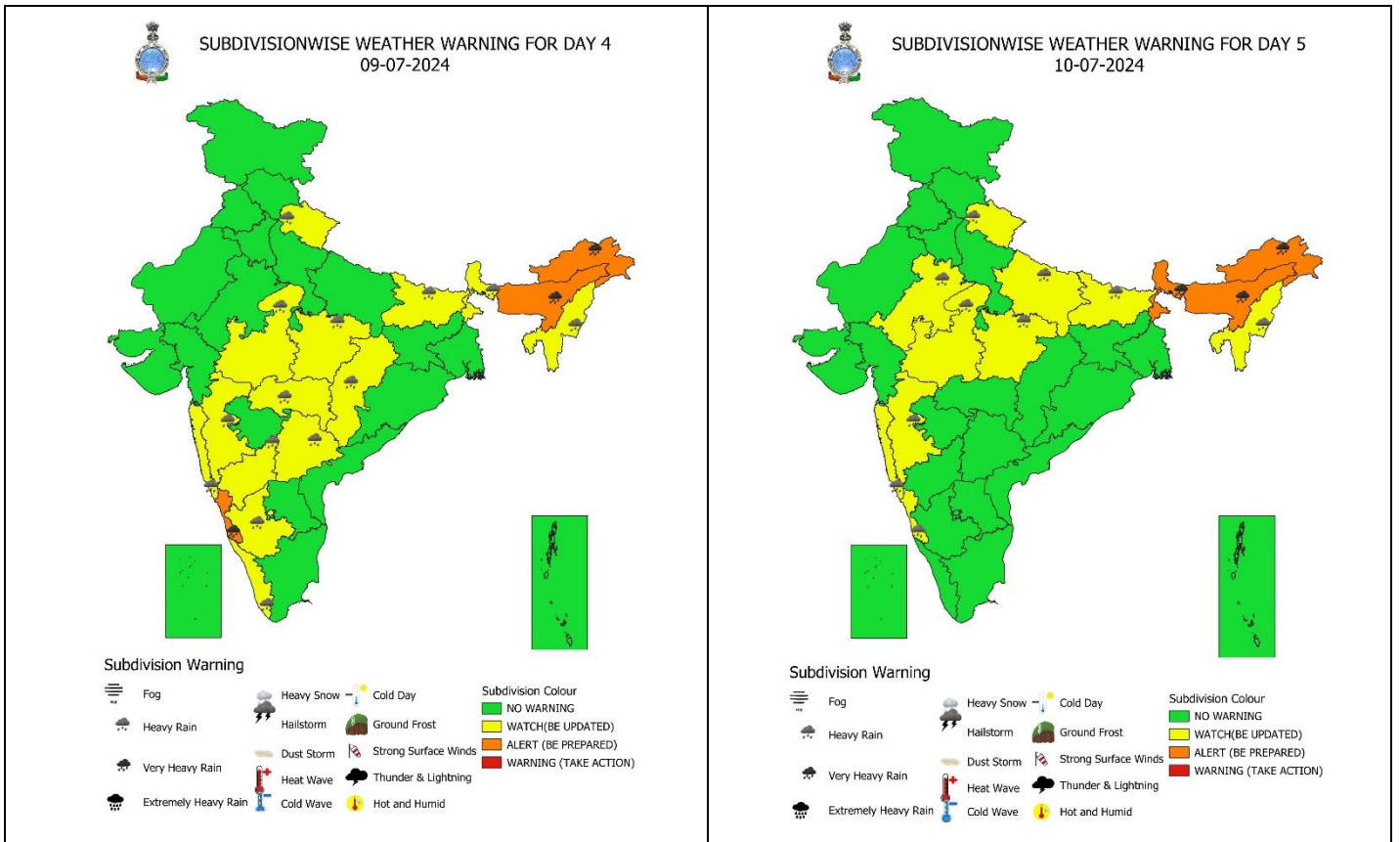
- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Jammu 80, Leh 74, Ladakh 65;
- ❖ **Rajasthan:** Nagpur 74, Shirohi 69;
- ❖ **Telangana:** Vikarabad 65, Hyderabad 60, Wanaparthy 57;
- ❖ **Kerala:** Wayanad 65, Kozhikode 43;
- ❖ **Tamil Nadu:** Sivaganga 63, Tiruvallur, Ranipet, Chehgalpattu, NCTPL Marg ECR 50 each;
- ❖ **Maharashtra:** Ragad 61, Satara 60, Pune 54, Parbhani, Nashik, Satara 50 each;
- ❖ **Karnataka:** Yadgir 61, Koppal 48, Gadag 46;
- ❖ **Andhra Pradesh:** Anantapur 60, Kadapa 50, Prakasam 46;
- ❖ **Punjab:** Moga 54, Faridkot, Ludhiana, Sangrur 46 each;
- ❖ **Madhya Pradesh:** Chhatarpur 50, Sehore, Chhindwara 46 each, Balaghat 44;
- ❖ **Gujarat Region:** Gir Somnath 48;

**Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 05.07.2024 to 0830 hrs IST of 06.07.2024**



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





**IMPACT & ACTION SUGGESTED due to**

- ✓ **Isolated extremely heavy rainfall very likely over Uttarakhand on 06th & 07th; East Madhya Pradesh, Sub-Himalayan West Bengal & Sikkim, Bihar on 06th July.**
- ✓ **Isolated very heavy rainfall very likely over Punjab, Haryana, East Rajasthan, Konkan & Goa, Gujarat Region on 06th; Uttar Pradesh, Madhya Maharashtra, South Interior Karnataka on 06th & 07th; Odisha on 07th; Arunachal Pradesh on 06th, 08th, 09th & 10th; Assam & Meghalaya on 06th, 09th & 10th; Coastal Karnataka during 06th-09th July.**

- 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/mud slips/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.



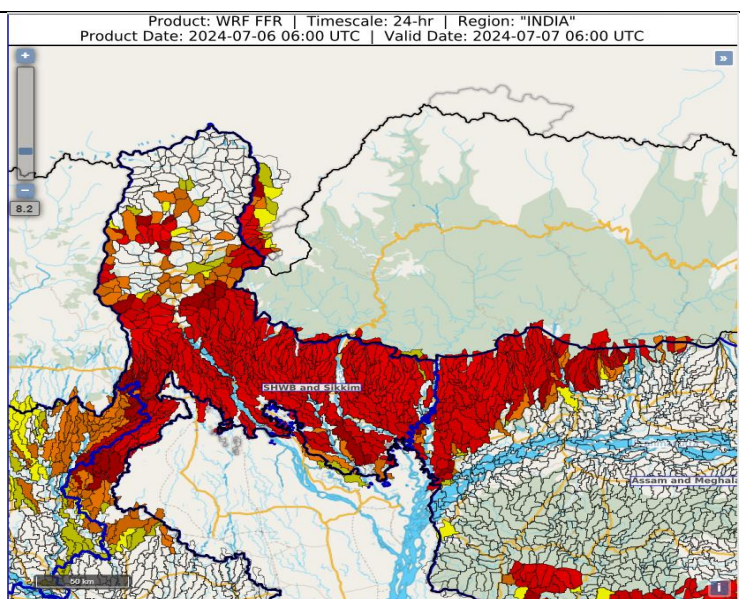
**Agromet advisories for Heavy Rainfall, Gusty winds and Heat Wave likely over various parts of the country:**

- Make provision for draining out excess water from crop fields to avoid water stagnation in North Eastern States, Sub-Himalayan West Bengal & Sikkim, Odisha, Bihar, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, East Rajasthan, Madhya Pradesh, Konkan & Goa, Madhya Maharashtra, Gujarat State, Karnataka and Coastal Andhra Pradesh.
- Postpone sowing of maize and soybean in Uttarakhand; sowing of maize in Himachal Pradesh; sowing of vegetables in Uttar Pradesh; nursery sowing of rice in Arunachal Pradesh; sowing of rice in nurseries, especially in valley areas, and millets in Meghalaya.
- Provide mechanical support to horticultural crops & staking to vegetables.

**24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 07-07-2024:**

Moderate to High flash flood risk likely over few watersheds & neighbourhoods of SHWB & Sikkim Met Sub-divisions during next 24 hours.

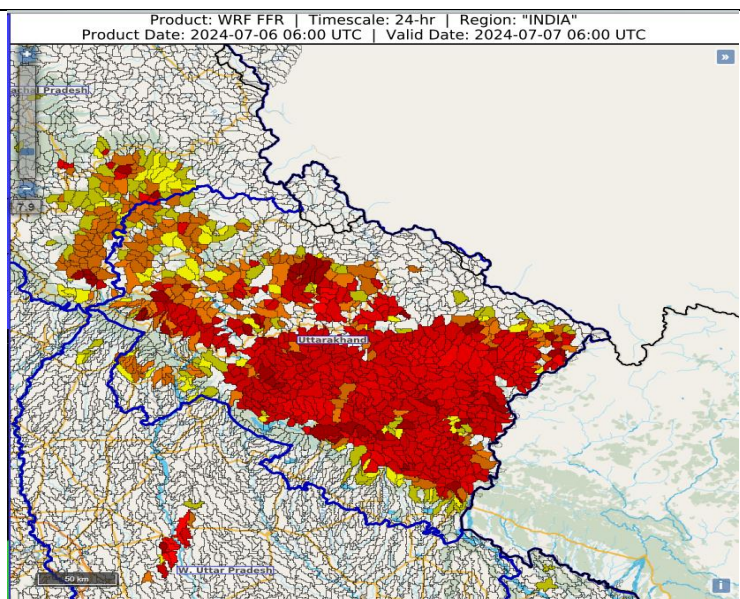
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



**24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 07-07-2024:**

Moderate to High flash flood risk likely over few watersheds & neighbourhoods of Uttarakhand Met Sub-divisions during next 24 hours.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.

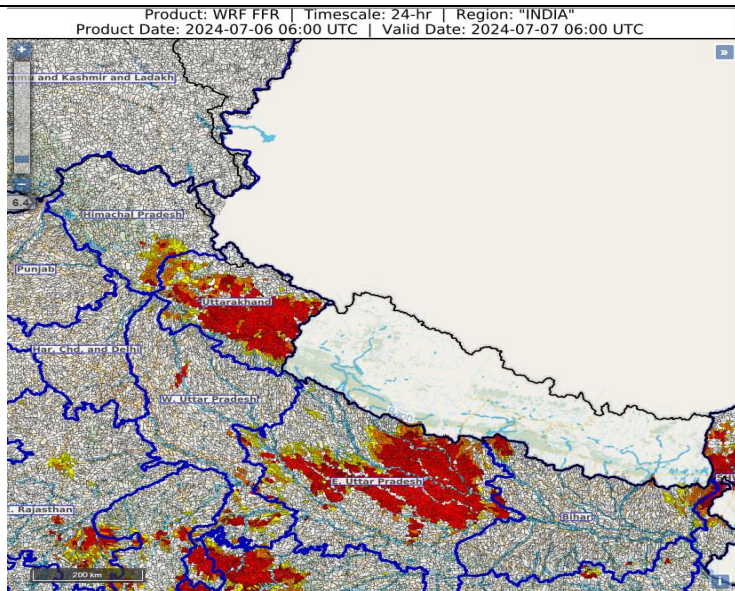




24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 07-07-2024:

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of East Uttar Pradesh and Himachal Pradesh Met Sub-divisions during next 24 hours.

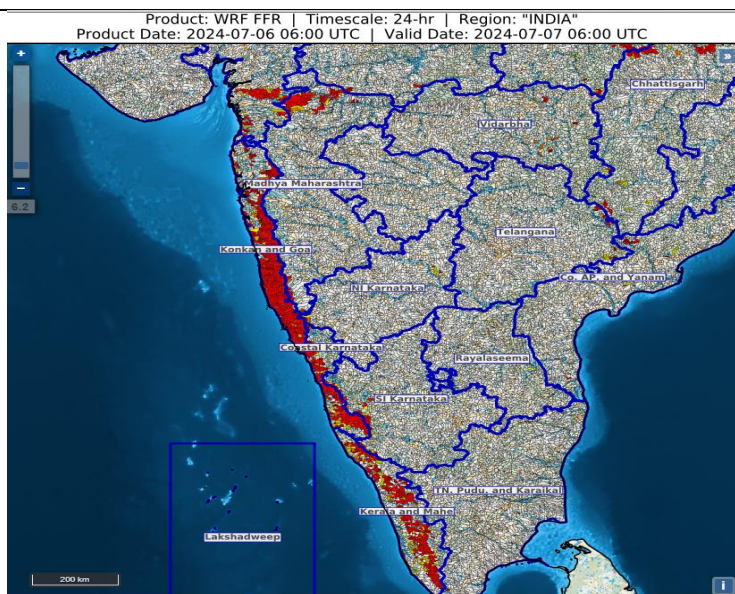
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 07-07-2024:

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Coastal Karnataka, Kerala & Mahe, Gujarat Region and Konkan & Goa Met Sub-divisions during next 24 hours.

Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



**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, **Aero:** Aerodrome.
- ❖ **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)

 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)

Probabilistic Forecast	
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)	
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**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)	