



Government of India  
Ministry of Earth Sciences  
India Meteorological Department



Press Release

Date: 27<sup>th</sup> June, 2024

Time of Issue: 1345 hours IST

- Subject: 1) Heavy to very heavy rainfall very likely along the West Peninsular Coast during next 5 days.**  
**2) Rainfall activity is likely to increase over Northwest India from today with heavy to very heavy rainfall over the plains of northwest India during 28<sup>th</sup>-30<sup>th</sup> June.**

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

- ❖ *Yesterday, Maximum temperatures* were in the range of 40-43°C over many parts of West Rajasthan, some parts of Punjab and in isolated pockets of East Rajasthan and North Madhya Pradesh. These were above normal by 2-4°C over these regions.
- ❖ *No Heat wave conditions* observed over the country.
- ❖ *Yesterday, the highest Maximum Temperature of 43.0°C* was reported at **Bikaner (West Rajasthan)** over the country.
- ❖ **Heavy to very heavy rainfall with extremely heavy falls occurred** at isolated places over Coastal & South Interior Karnataka; **Heavy to very heavy rainfall** at isolated places over East Rajasthan, West Madhya Pradesh, West Uttar Pradesh, Tamil Nadu, Konkan & Goa, Kerala, Telangana, Odisha, Sub-Himalayan West Bengal & Sikkim; **heavy rainfall** at isolated places over Punjab, East Uttar Pradesh, Saurashtra & Kutch, Madhya Maharashtra, Mahe, Coastal Andhra Pradesh, Chhattisgarh, East Madhya Pradesh, Assam & Meghalaya, Tripura and Bihar.
- ❖ *Gusty winds/squally winds* data reported over the country is attached in **Annexure II**.

**Advance of Southwest Monsoon:**

- ❖ Southwest Monsoon further advanced into remaining parts of North Arabian Sea, Gujarat State; some more parts of Rajasthan, most parts of Madhya Pradesh; some more parts of West Uttar Pradesh; Bihar, some parts of East Uttar Pradesh; most parts of Uttarakhand, Himachal Pradesh, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, some parts of Punjab today on 27<sup>th</sup> June 2024.
- ❖ The Northern Limit of Monsoon passes through 26.5°N/60°E, 25.5°N/65°E, Barmer, Jaipur, Agra, Banda, Siddhi, Chaibasa, Haldia, Pakur, Patna, Maharajganj, Dehradun, Una, Pathankot, Jammu, 33°N/74°E.
- ❖ Conditions are likely to become favourable for further advance of southwest Monsoon into some more parts of Rajasthan; remaining parts of Madhya Pradesh, Chhattisgarh, West Bengal, Jharkhand, Bihar, some more parts of Uttar Pradesh, Delhi, Chandigarh and some parts of Haryana, some more parts of Punjab, remaining parts of Uttarakhand, Himachal Pradesh and Jammu during next 2-3 days.

**Weather Systems and Forecast & Warnings:**

- ❖ A trough at mean sea level runs off Maharashtra-north Kerala coasts. A cyclonic circulation lies over central Gujarat and a trough runs from this cyclonic circulation to west Bihar in lower tropospheric levels. Under their influence:
  - Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Konkan & Goa, Madhya Maharashtra, Karnataka, Kerala & Mahe, Lakshadweep, Gujarat state, Madhya Pradesh, Vidarbha, Chhattisgarh; scattered to fairly widespread light to moderate rainfall over Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana, Marathwada and Tamil Nadu, Puducherry & Karaikal during next 5 days.
  - Isolated **heavy rainfall** very likely over Gujarat Region, Konkan & Goa, Madhya Maharashtra, Coastal Karnataka during 27<sup>th</sup> June-01<sup>st</sup> July; Saurashtra & Kutch, Kerala & Mahe, South Interior Karnataka on 27<sup>th</sup> & 28<sup>th</sup>; Tamil Nadu, Telangana, Coastal Andhra Pradesh, Vidarbha on 27<sup>th</sup>; West Madhya Pradesh during 26<sup>th</sup>-28<sup>th</sup>; East Madhya Pradesh during 27<sup>th</sup>-29<sup>th</sup> and over Chhattisgarh during 26<sup>th</sup>-30<sup>th</sup> June 2024

- **Isolated very heavy rainfall very likely over Konkan & Goa during 27th June-01st July; Coastal Karnataka, Saurashtra & Kutch on 27th & 28th; South Interior Karnataka, Kerala & Mahe, north Coastal Andhra Pradesh and West Madhya Pradesh on 27th June.**
- **Isolated extremely heavy rainfall very likely over Coastal Karnataka today.**
- ❖ A Western Disturbance as a trough in middle tropospheric westerlies runs roughly along Long. 64°E to the north of Lat. 28°N. A cyclonic circulation lies over northwest Rajasthan and another over east Assam in the lower tropospheric levels. Strong southerly/southwesterly winds prevail in the lower tropospheric levels from the Bay of Bengal into east & northeast India. Under their influence;
  - Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning & **isolated heavy rainfall** likely over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 5 days.
  - Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning** very likely over Northwest and east India during next 5 days.
  - Isolated **heavy rainfall** very likely over Himachal Pradesh, Uttarakhand, East Rajasthan, Uttar Pradesh, Punjab, Haryana during next 5 days; Delhi on 29th & 30th; West Rajasthan on 27th, 28th June & 01st July; East Madhya Pradesh, Gangetic West Bengal during 28th-30th; Chhattisgarh, Odisha during 27th-30th and Vidarbha on 27th; Bihar during 27th June-01st July; Jharkhand during 29th June-01st July.
  - **Isolated very heavy rainfall very likely over East Rajasthan during 27th June-01st July; Uttarakhand, Odisha during 27th-29th; East Uttar Pradesh on 28th & 29th and Bihar on 29th; over Haryana and West Uttar Pradesh on 29th & 30th June, 2024.**

#### **Maximum temperature forecast for next 5 days:**

- ❖ No significant change in maximum temperatures very likely over Northwest India during next 24 hours and fall by 3-5°C thereafter.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

#### **Heat Wave warning for next 5 days:**

- ❖ **Heat wave conditions has been abated over the country.**

**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)

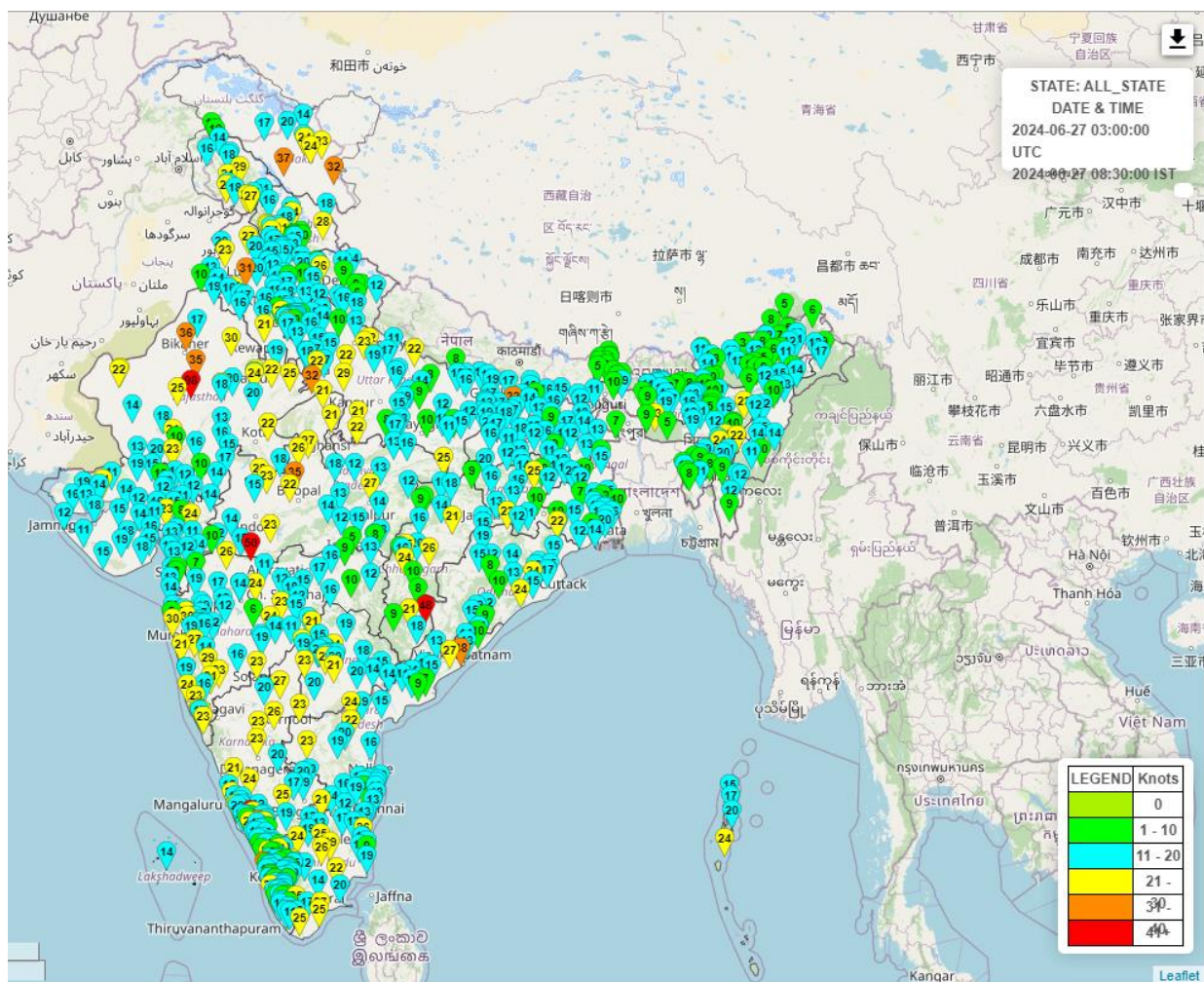
**Significant Rainfall during past 24 hours till 0830 hours IST of today (in cm):**

- ❖ **Coastal Karnataka:** Mulki (dist Dakshina Kannada) 30, Udupi (dist Udupi) 21, Mangaluru Ap Obsy (dist Dakshina Kannada) 17, Mani (dist Dakshina Kannada) 17, Karkala (dist Udupi) 17, Panambur Obsy (dist Dakshina Kannada) 15, Belthangadi (dist Dakshina Kannada) 15, Honavar Obsy (dist Uttara Kannada) 15, Dharmasthala (dist Dakshina Kannada) 15, Shirali Pto (dist Uttara Kannada) 14, Kota (dist Udupi) 14, Uppinangadi (dist Dakshina Kannada) 14,
- ❖ **South Interior Karnataka:** Bhagamandala (dist Kodagu) 21, Agumbe Emo (dist Shivamogga) 17, Kottigehara (dist Chikkamagaluru) 14, Napoklu (dist Kodagu) 13, Ponnampet Pwd (dist Kodagu) 12, Murnadu (dist Kodagu) 11, Kalasa (dist Chikkamagaluru) 9, Sringeri Hms (dist Chikkamagaluru) 9,
- ❖ **Kerala & Mahe:** Panathur AWS (Kasargod district) 19, Ayyankunnu AWS (Kannur district) & Muliya AWS (Kasargod district) 18 each, Vythiri (Wayanad district) 15, Vellarikkundu AWS (Kasargod district) 14, Cheruvanchery AWS (Kannur district) 11, Peerumedu (Idukki district) & Vadakara (Kozhikode district) 10 each, Perumbavur (Ernakulam district), Hosdurg (Kasaragod district) & Aralam AWS (Kannur district) 9 each,
- ❖ **West Uttar Pradesh:** Bilari (dist Moradabad) 18, Kasba Tanda (dist Rampur) 11, Ghiror (dist Mainpuri) 11, Moradabad Cwc (dist Moradabad) 10, Aonla (dist Bareilly) 10, Nawabganj (dist Bareilly) 10, Jansath (dist Muzaffarnagar) 9, Sahaswan (dist Badaun) 9, Bareilly Pbo (dist Bareilly) 9, Sahabad (dist Rampur) 8, Auraiya (cwc) (dist Auraiya) 7,
- ❖ **Konkan & Goa:** Ponda (dist North Goa) 17, Dapoli\_agri (dist Ratnagiri) 17, Ratnagiri - Imd Obsy (dist Ratnagiri) 15, Roha (dist Raigad) 14, Mandangad (dist Ratnagiri) 13, Margao (dist South Goa) 12, Awalegaon - Arg (dist Sindhudurg) 11, Valpoi (dist North Goa) 11, Sudhagad Pali (dist Raigad) 11, Canacona (dist South Goa) 11, Savarde-arg (dist Ratnagiri) 11, Vengurla Arg (dist Sindhudurg) 10, Mapusa (dist North Goa) 10, Kankavli (dist Sindhudurg) 9, Mahad (dist Raigad) 9, Quepem (dist South Goa) 8,
- ❖ **Telangana:** Chandurthi (dist Rajanna Sircilla) 15, Karimnagar (dist Karimnagar) 10, Metpalle (dist Jagtial) 9, Mallial (dist Jagtial) 9, Mallapur (dist Jagtial) 8, Gangadhara (dist Karimnagar) 7, Thimmapur (dist Karimnagar) 7, Bachhanpet (dist Jangaon) 7,
- ❖ **Odisha:** Kotpad (Koraput) 15, G Udayagiri (Kandhamal) 11, Papadahandi (Nawarangpur) 10, Nawarangpur Pto (Nawarangpur) 8, Borigumma (Koraput) 8, Jeypore (Koraput) 7, Dabugan (Nawarangpur) 7, Paralakhemundi (Gajapati) 7, Chitrakunda K Guma (Malkangiri) 7, Koraput (Koraput) 7,
- ❖ **Tamil Nadu:** Vint Worth Estate (dist The Nilgiris) 13, Taluk Office Pandalur (dist The Nilgiris), Avalanche (dist The Nilgiris), Nalumukku (dist Tirunelveli) 12 each, Chinnakalar (dist Coimbatore), Upper Bhavani (dist The Nilgiris), Oothu (dist Tirunelveli), Wood Braiyar Estate (dist The Nilgiris) 9 each, Harisan Malayalam Ltd. (dist The Nilgiris), Kakkachi (dist Tirunelveli) 8 each, Valparai PAP (dist Coimbatore), Valparai Taluk Office (dist Coimbatore) 7 each
- ❖ **East Rajasthan:** Dholpur Tehsil Sr (dist Dholpur) 13, Asind (dist Bhilwara) 9, Masuda Sr (dist Ajmer) 8, Kota-aero (dist Kota) 7, Phagi (dist Jaipur) 7,
- ❖ **West Madhya Pradesh:** Ghatigaon (dist Gwalior) 13, Gohad (dist Bhind) 12, Lateri (dist Vidisha) 10, Bhind-aws (dist Bhind) 8, Morena-aws (dist Morena) 8, Pichhore (dist Shivpuri) 7,
- ❖ **Sub-Himalayan West Bengal & Sikkim:** Bhutanghat (dist Alipurduar) 12, Sevoke (dist Darjeeling) 10, Kumargram (dist Alipurduar) 10, Murti (dist Jalpaiguri) 9, Barobhisha (dist Alipurduar) 7, Alipurduar (pto) (dist Alipurduar) 7, Cooch Behar (dist Cooch Behar) 7,
- ❖ **Saurashtra & Kutch:** Tankara (dist Morbi) 11, Kodinar (dist Gir Somnath) 8, Gondal (dist Rajkot) 7, Junagadh (dist Junagadh) 7;
- ❖ **Bihar:** Ramnagar (dist West Champaran) 11, Gopalganj (dist Gopalganj) 9, Basua (dist Supaul) 9, Saraiya (dist Muzaffarpur) 7, Bagaha (dist West Champaran) 7,
- ❖ **Madhya Maharashtra:** Akole (dist Ahmednagar) 11, Gaganbawada (dist Kolhapur) 7,
- ❖ **Coastal Andhra Pradesh:** Pathapatnam (dist Srikakulam) 11, Komarada (dist Parvathipuram Manyam) 9, Palakoderu (dist West Godavari) 7,
- ❖ **Assam & Meghalaya:** Dudhnoi Arg (dist Goalpara) 9, Dhubri\_Cwc (dist Dhubri) 8, Cherrapunji (dist East Khasi Hills) 8, Shella (dist East Khasi Hills) 7, Dhubri\_imd (dist Dhubri) 7,
- ❖ **East Madhya Pradesh:** Sihora (dist Jabalpur) 7, Kusmi (dist Sidhi) 7,
- ❖ **Tripura:** Amarpur Arg (dist Gomati) 7, Amarpur (dist Gomati) 7,
- ❖ **Chhattisgarh:** Gidam (dist Dantewada) 9, Pharasgaon (dist Kondagaon) 7, Lohandiguda (dist Bastar) 6, Lailunga (dist Raigarh) 5,
- ❖ **Punjab:** Kapurthala (dist Kapurthala) 8, Sangrur (dist Sangrur) 7,
- ❖ **East Uttar Pradesh:** Nichlaul (dist Maharajganj) 7,

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

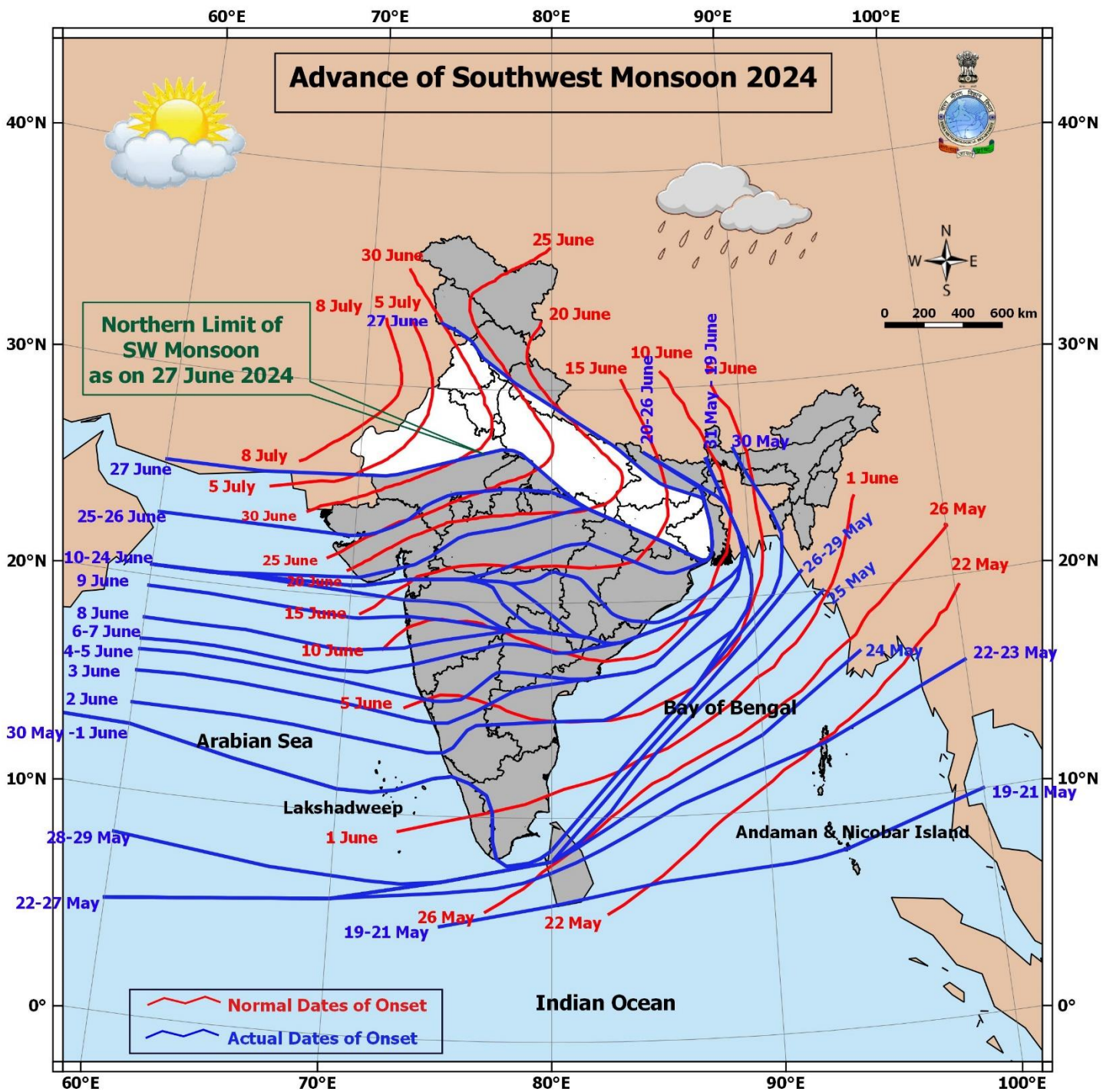
- ❖ **Chhattisgarh:** Bastar 89, Mahasamund 48, Durg 46, Balod 44;
- ❖ **Kerala & Mahe:** Wayanad 72, Thrissur 57, Idukki 52, Kozhikode 46;
- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Kargil 69, Ladakh 63, Ranban 54, Kathua 50;
- ❖ **Rajasthan:** Bikaner 67, Nagaur 65, Dholpur 59, Sikar 55, Jodhpur 46, Jaipur 44;
- ❖ **Madhya Pradesh:** Sehore 65, Agar 52, Jabalpur 50, Guna 48, Singrauli 46;
- ❖ **Bihar:** Muzaffarpur 61;
- ❖ **Punjab:** Barnala 57, Jalandhar, Pathankot 50 each;
- ❖ **Maharashtra:** Pune, Raigad 55, Satara 54, Dhule 48, Jalna, Beed, Sindhudurg 44 each;
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Tiruchirappalli 54, Karur, Cuddalore 48, Kanyakumari, Namakkal, Thoothukudi 46;
- ❖ **Himachal Pradesh:** Kinnaur 52, Hamirpur 46, Kullu 44;
- ❖ **Karnataka:** Yadgir 50, Koppal 48, Mandya 46, Chikmagalur 44;
- ❖ **Haryana:** Gurgaon 50, Sirsa 46;
- ❖ **Uttarakhand:** Dehradun 48;
- ❖ **Jharkhand:** Bokaro 46;
- ❖ **Gujarat Region:** Chhotaudepur 44, Anand 42;
- ❖ **Odisha:** Puri, Khurdha 44 each, Sundergarh 42;
- ❖ **Telangana:** Siddipet 44, Vikarabad 42, Ranga\_Reddy 41;

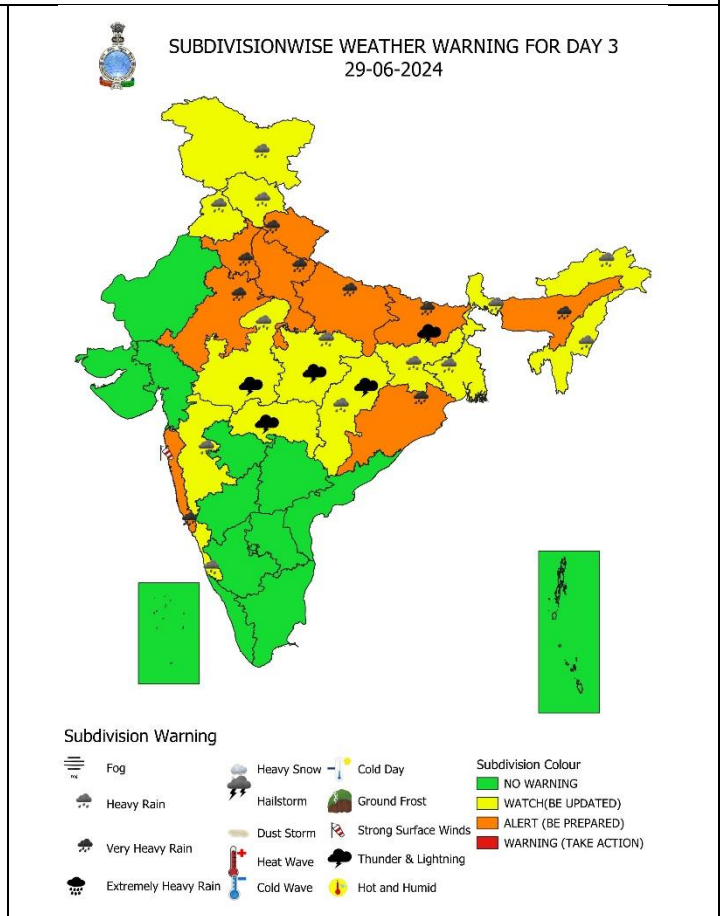
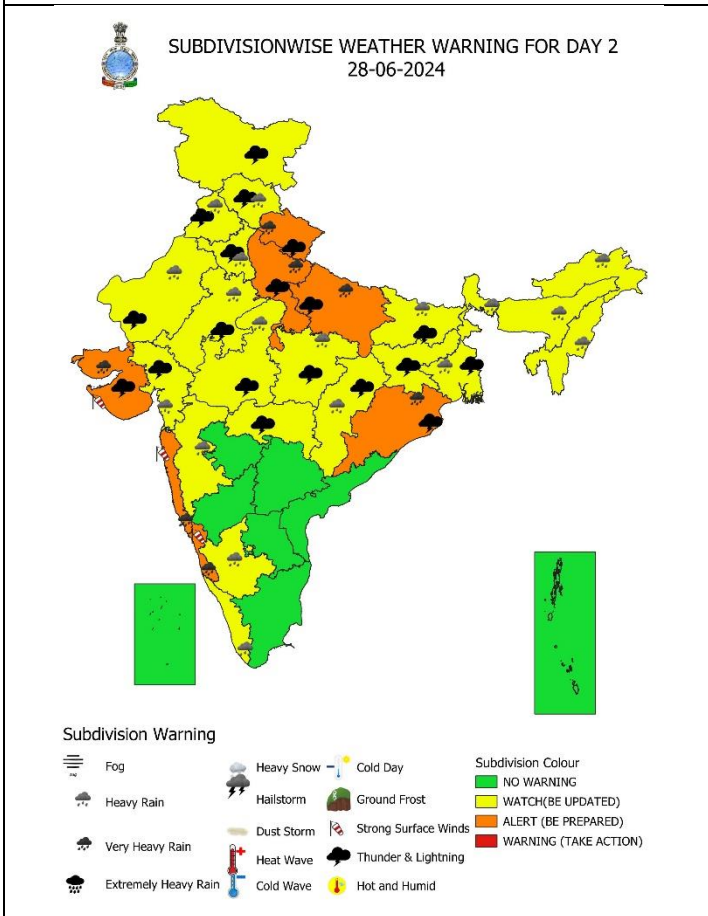
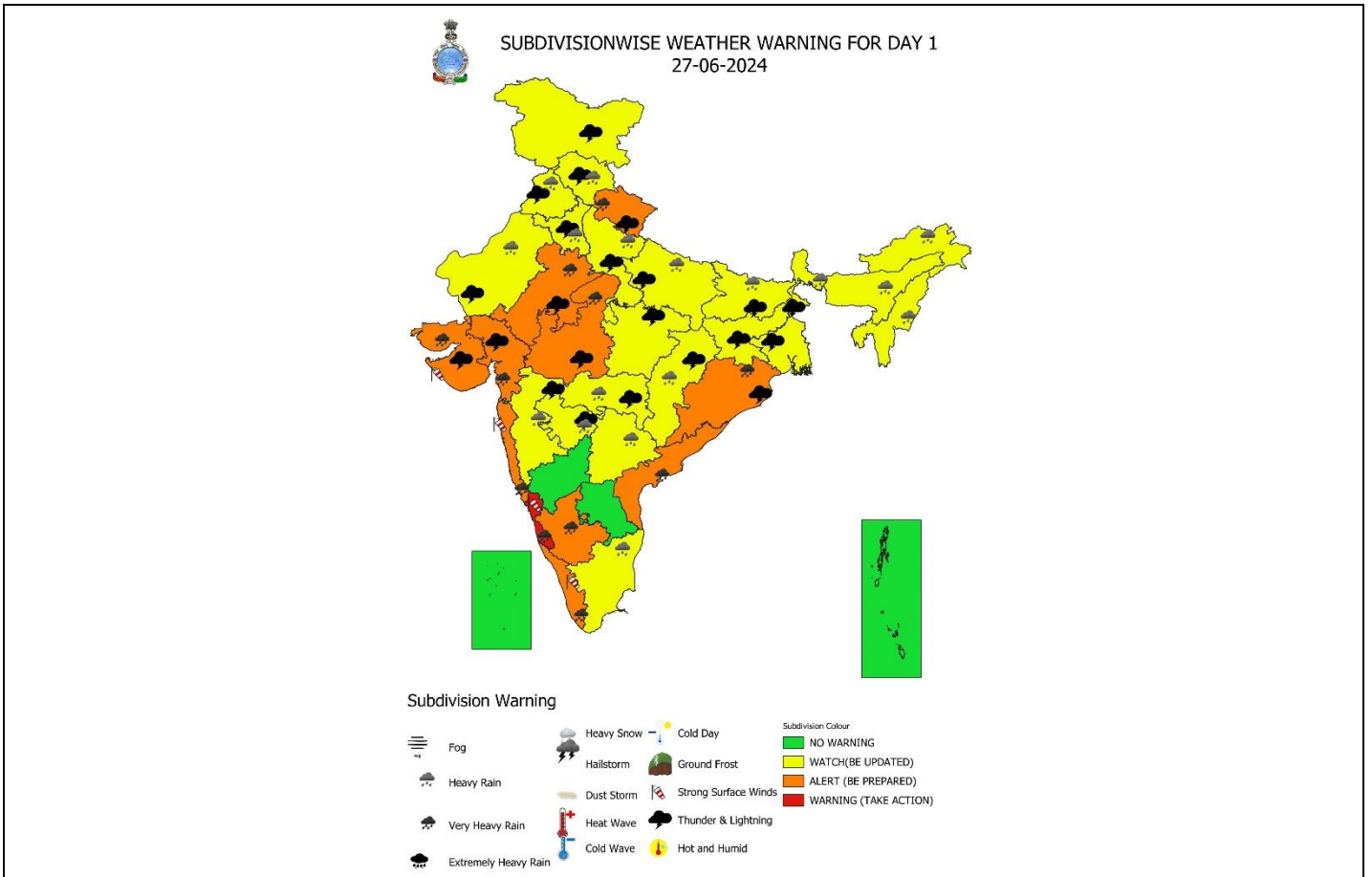
**Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 26.06.2024 to 0830 hrs IST of 27.06.2024**

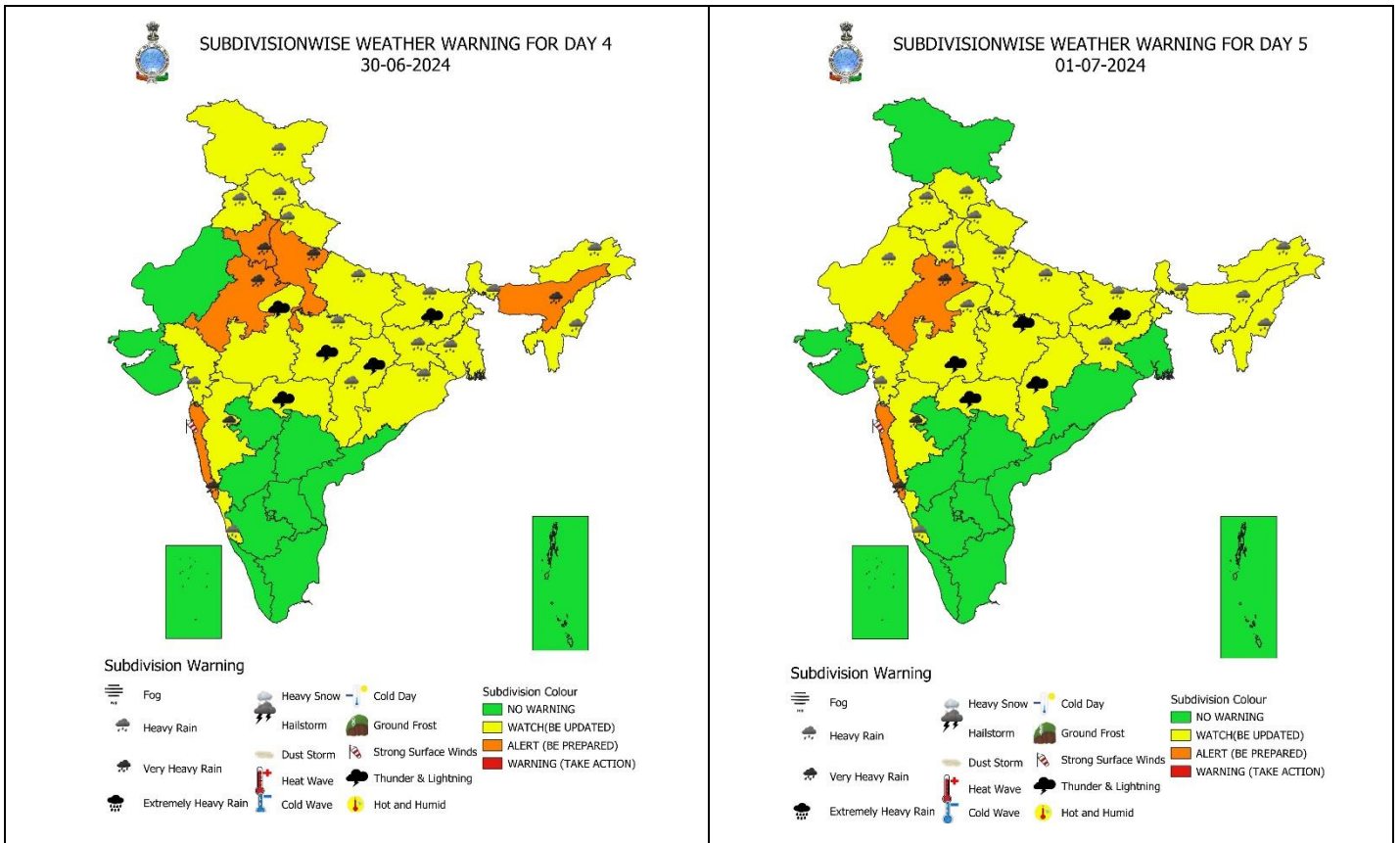


For more details, kindly refer: <http://aws.imd.gov.in:8091/>

### Advance of Southwest Monsoon 2024







**IMPACT & ACTION SUGGESTED due to very heavy rainfall over Konkan & Goa, East Rajasthan during next 5 days; Coastal Karnataka, Saurashtra & Kutch on 27<sup>th</sup> & 28<sup>th</sup>; Kerala & Mahe, South Interior Karnataka, West Madhya Pradesh on 27<sup>th</sup>; Uttarakhand during 27<sup>th</sup>-29<sup>th</sup>; East Uttar Pradesh on 28<sup>th</sup> & 29<sup>th</sup>; West Uttar Pradesh during 28<sup>th</sup>-30<sup>th</sup>; Haryana-Chandigarh-Delhi on 29<sup>th</sup> & 30<sup>th</sup> June.**

**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/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.

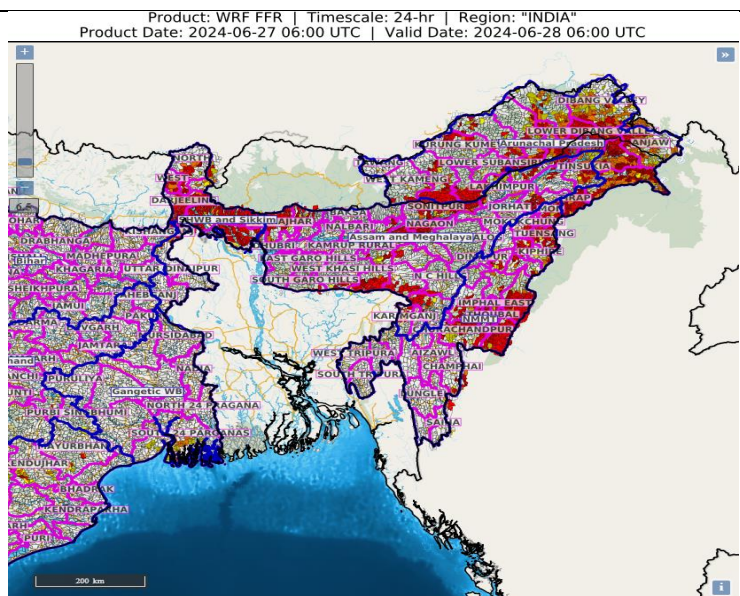
**Agromet advisories for Heavy Rainfall, Gusty winds and Heat Wave likely over various parts of the country:**

- 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, Rajasthan, Madhya Pradesh, Chhattisgarh, Maharashtra, Gujarat State, Tamil Nadu, Kerala, Coastal and South Interior Karnataka, Coastal Andhra Pradesh and Telangana.
- Provide mechanical support to horticultural crops & staking to vegetables. Provide mechanical support to horticultural crops & staking to vegetables.

24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 28-06-2024 :

Moderate flash flood risk likely over few watersheds & neighbourhoods of Arunachal Pradesh, Assam & Meghalaya, NMMT and SHWB & Sikkim Met Sub-divisions during next 24 hours.

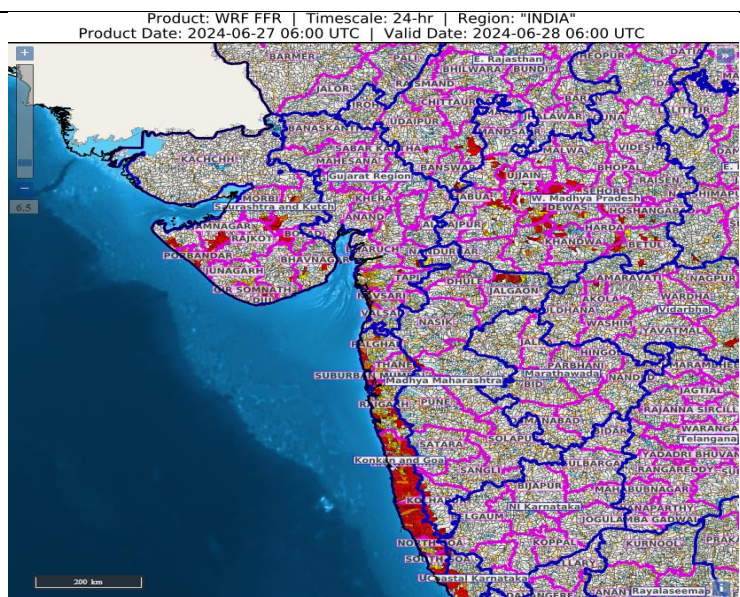
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 28-06-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Konkan & Goa and Saurashtra & Kutch 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.
- ❖ **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

<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)