



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release
Date: 30th July, 2024
Time of Issue: 1310 hours IST

**Subject: 1) Isolated extremely heavy rainfall likely over Kerala & adjoining Tamil Nadu on 30th and over Karnataka on 30th & 31st July 2024.
2) Fairly widespread to widespread rainfall with isolated heavy falls likely over northwest, central & East India during next 4-5 days.**

During past 24 hours till 0830 hours IST of today 30th July: (details in Annexure I)

- ✓ **Heavy to very heavy rainfall** at many places with **extremely heavy falls at isolated** places over Kerala & Mahe, **Heavy to very heavy rainfall** with **extremely heavy falls at isolated** places over Tamil Nadu, Puducherry & Karaikal, South Interior Karnataka; **Heavy to very heavy rainfall** at isolated places over Gujarat Region, Konkan & Goa, Coastal Karnataka, Madhya Maharashtra; **Heavy rainfall** at isolated places over Telangana, Assam & Meghalaya, Nagaland, North Interior Karnataka, West Madhya Pradesh, Uttarakhand, East Rajasthan, West Rajasthan, Saurashtra & Kutch, Haryana, East Madhya Pradesh.

Weather Systems

- ✓ The **Monsoon trough** is active and south of its normal position at mean sea level. It is likely to shift gradually northwards during next 4-5 days.
- ✓ A **cyclonic circulation** over Jharkhand & neighbourhood in lower & middle tropospheric levels tilting southwards with height.
- ✓ The **off-shore trough** at mean sea level now runs along South Gujarat to Kerala coast.
- ✓ A **cyclonic circulation** lies over northeast Arabian Sea and adjoining Saurashtra in lower & middle tropospheric levels tilting southwards with height.

Forecast & Warnings: (Annexure II)

❖ West & Central India

- ✓ Fairly widespread to widespread light to moderate rainfall **accompanied with thunderstorm & lightning** very likely over the region during next 5 days.
- ✓ **Isolated extremely heavy rainfall very likely over Madhya Maharashtra during 01st-03rd August.**
- ✓ **Very heavy rainfall very likely at isolated places over Konkan & Goa during 30th July - 03rd August; Madhya Maharashtra on 30th & 31st July; Gujarat State on 30th July; West Madhya Pradesh, Chhattisgarh during 01st - 03rd August; East Madhya Pradesh during 31st July - 03rd August; Vidarbha on 02nd August.**

- ✓ **Heavy rainfall** very likely at isolated places over Madhya Pradesh, Gujarat Region, Chhattisgarh during 30th July - 03rd August; Saurashtra & Kutch during 30th & 31st July; Marathwada on 03rd August; Vidarbha during 31st July - 03rd August.

❖ **Northwest India**

- ✓ Fairly widespread to widespread light to moderate rainfall **accompanied with thunderstorm & lightning** very likely over Himachal Pradesh, Uttarakhand; scattered to fairly widespread rainfall over Jammu-Kashmir, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh and Rajasthan during next 5 days.
- ✓ **Isolated very heavy rainfall also likely over Uttarakhand during 30th July - 01st August; Punjab, Haryana-Chandigarh, West Uttar Pradesh on 31st July & 01st August; over Jammu-Kashmir, Himachal Pradesh on 01st August.**
- ✓ Isolated **heavy rainfall** very likely over Himachal Pradesh, Uttarakhand, East Rajasthan during 30th July - 03rd August; Jammu-Kashmir, Punjab, Haryana-Chandigarh, West Uttar Pradesh during 30th July - 02nd August; East Uttar Pradesh on 30th July-01st August, West Rajasthan on 30th July.

❖ **South Peninsular India:**

- ✓ Fairly widespread to widespread light to moderate rainfall over Coastal Karnataka, Lakshadweep and Kerala & Mahe and Scattered to fairly widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Interior Karnataka and isolated to scattered rainfall over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Telangana and Rayalaseema during next 5 days.
- ✓ **Isolated extremely heavy rainfall very likely over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe on 30th July; Coastal & South Interior Karnataka on 30th & 31st July.**
- ✓ **Very heavy rainfall very likely at isolated places over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe on 31st July & 01st August; Coastal & South Interior Karnataka on 01st August.**
- ✓ **Heavy rainfall** very likely at isolated places over Kerala & Mahe, Coastal & South Interior Karnataka during 30th July - 03rd August, Tamil Nadu, Puducherry & Karaikal, North Interior Karnataka during 30th July & 02nd August.

❖ **East & Northeast India**

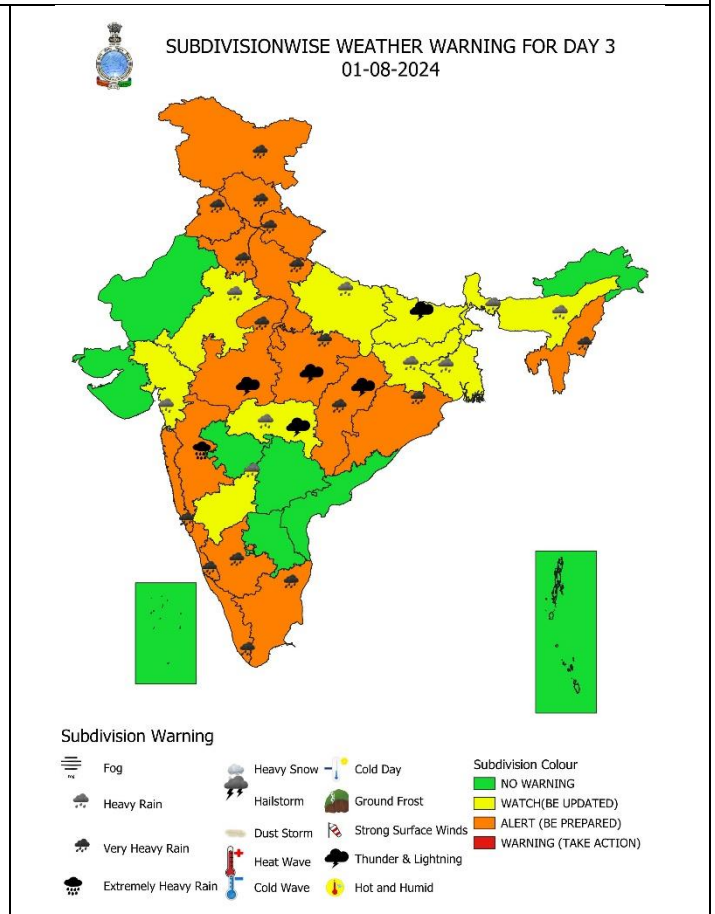
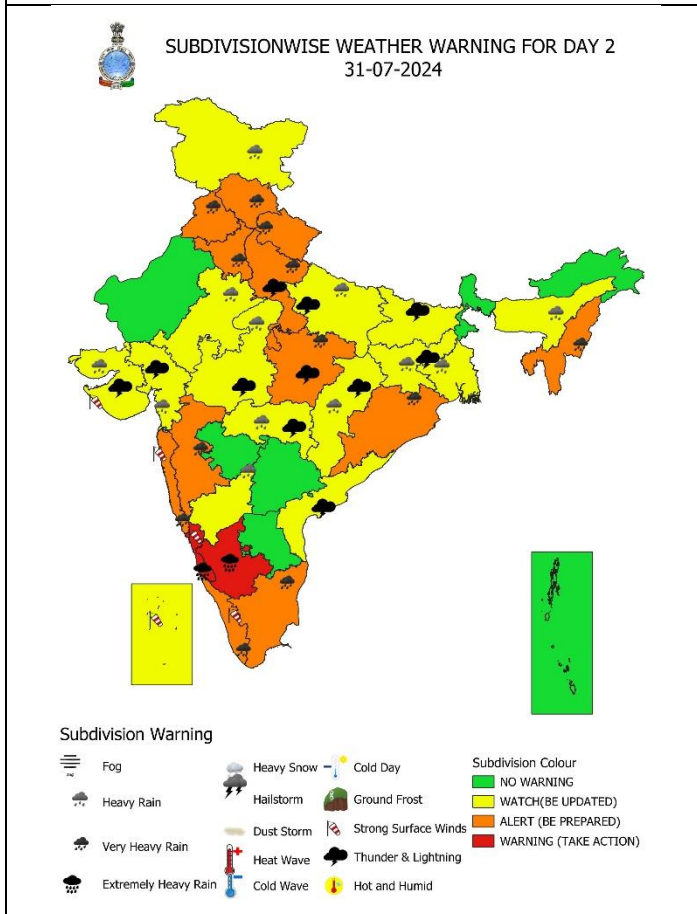
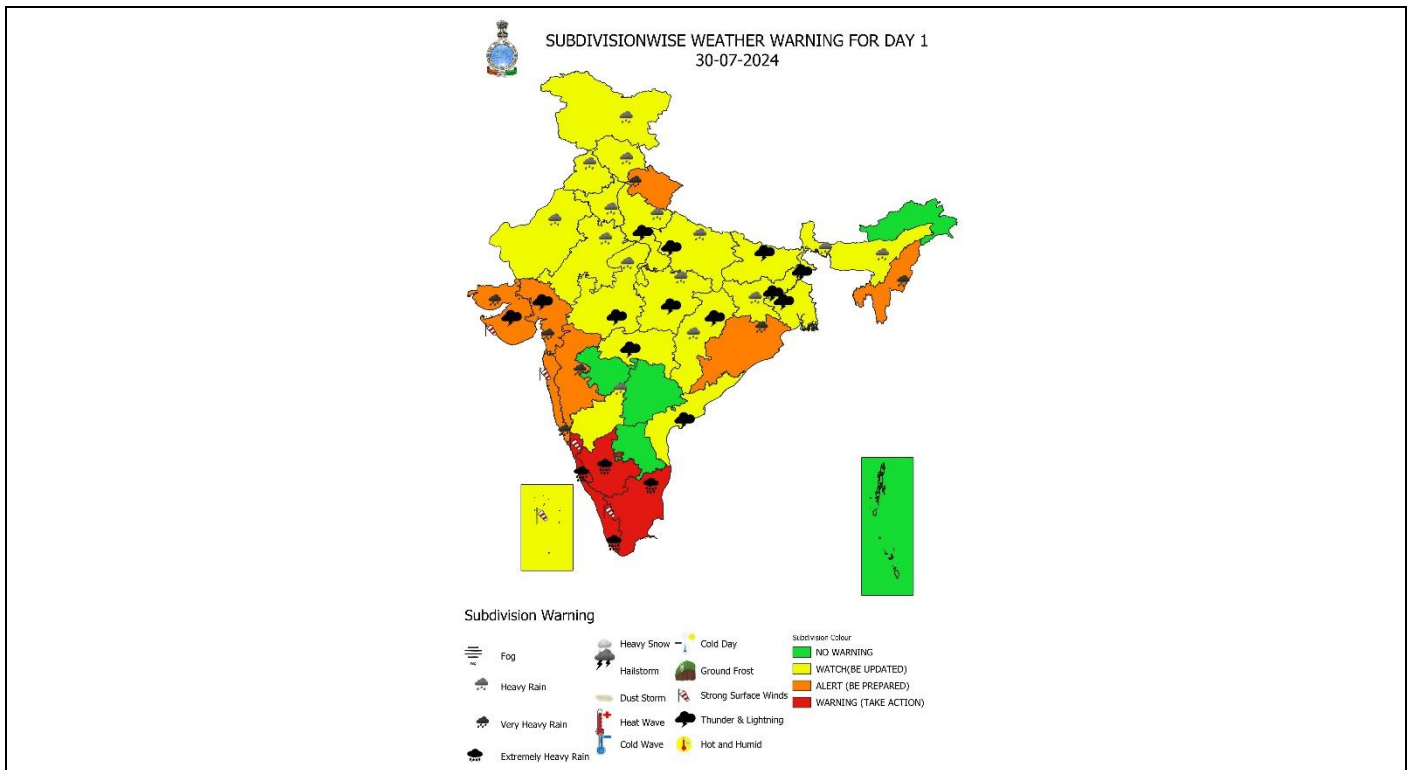
- ✓ Fairly widespread to widespread light to moderate rainfall **accompanied with thunderstorm, lightning** very likely over East India and Scattered to fairly widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Northeast India during next 5 days.
- ✓ **Very heavy rainfall very likely at isolated places over Nagaland, Manipur, Mizoram & Tripura Odisha during 30th July-01st August.**
- ✓ Isolated **heavy rainfall** very likely over Jharkhand, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during 30th July - 02nd August; Gangetic West Bengal during 31st July - 02nd August, Arunachal Pradesh on 02nd & 03rd August; Sub-Himalayan West Bengal & Sikkim during 30th July - 03rd August

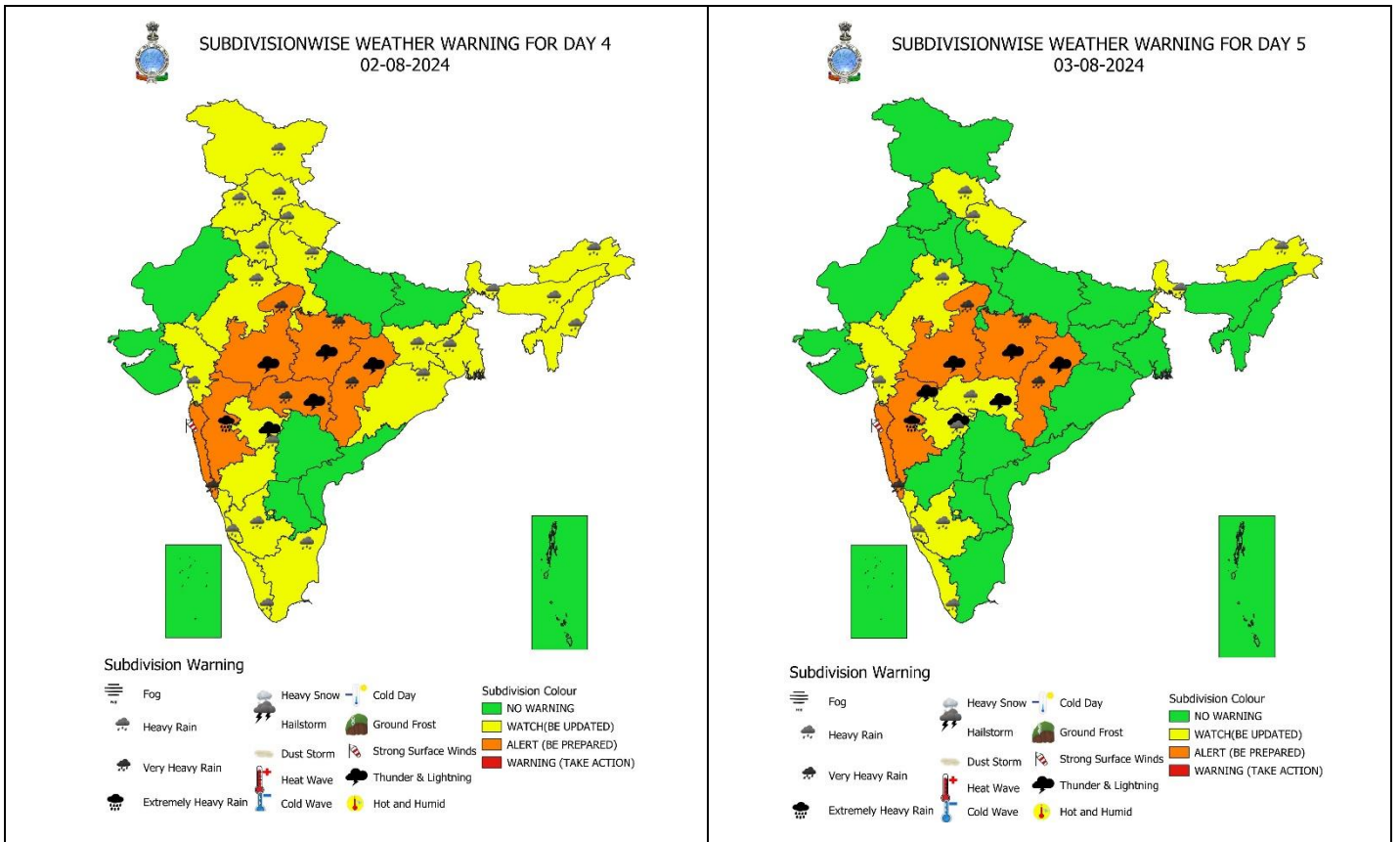
For more details, kindly refer: https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php

Significant Rainfall recorded during past 24 hours till 0830 hours IST of today 30th July (in cm):

- ❖ **Kerala & Mahe:** Vadakkancherry (dist Thrissur) 34, Alathur (dist Palakkad) 30, Vadakara (dist Kozhikode) 28, Vyttili (dist Wynad) 28, Kollengode (dist Palakkad) 27, Kollamkode (dist Palakkad) 27, Cheruvanchery (dist Cannur) 25, Anakayam (dist Malappuram) 25, Kannur (dist Cannur) 25, Thritla (dist Palakkad) 25, Kannur Airport (dist Cannur) 25, Karipur Ap. (dist Malappuram) 24, Pothundy Dam Aws (dist Palakkad) 24, Parumbikulam (dist Palakkad) 24, Pattedi (dist Palakkad) 23, Vadakara Aws (dist Kozhikode) 22, Athirappalli Aws (dist Thrissur) 22, Manjeri (dist Malappuram) 22, Ayyankunnu (dist Cannur) 22, Ottapalam (dist Palakkad) 21, Mannarkkad (dist Palakkad) 21, Perinthalamanna (dist Malappuram) 21, Munderi (dist Malappuram) 21, Mannarkkad (dist Palakkad) 21, Manantoddy (dist Wynad) 20, Munnar Kseb (dist Idukki) 20, Peechi (dist Thrissur) 20, Mankara (dist Palakkad) 19, Angadipuram (dist Malappuram) 19, Idamalayar Dam Aws (dist Ernakulam) 19, Vellanikkara (dist Thrissur) 19, Kannur Icar Aws (dist Cannur) 18, Aralam Aws (dist Cannur) 18, Malampuzha Dam (dist Palakkad) 18, Kannur (dist Cannur) 18, Nilambur (dist Malappuram) 17, Thennala Aws (dist Malappuram) 17, Kunnamangalam Aws (dist Kozhikode) 17, Quilandi (dist Kozhikode) 17, Udumbannoor Aws (dist Idukki) 16, Palakkad (dist Palakkad) 16, Nilambur (dist Malappuram) 16, Ponnani (dist Malappuram) 16, Peermade To (dist Idukki) 15, Kozhikode (dist Kozhikode) 15, Chittur (dist Palakkad) 15, Taliparamba (dist Cannur) 15, Mahe (dist Mahe) 14, Ambalavayal (dist Wynad) 14, Karapuzha (dist Wynad) 14, Vilangad (dist Kozhikode) 14, Pinarayi (dist Cannur) 14,
- ❖ **Tamil Nadu:** Valparai PTO (dist Coimbatore) 31, Chinnakalar (dist Coimbatore), Upasi TRF AWS (dist The Nilgiris) 24 each, Cincona (dist Coimbatore), Vint Worth Estate (dist The Nilgiris) 23 each, Taluk Office Pandalur (dist The Nilgiris), Devala (dist The Nilgiris) 20 each, Valparai PAP (dist Coimbatore), Valparai Taluk Office (dist Coimbatore), Sholayar (dist Coimbatore) 19 each, Avalanche (dist The Nilgiris) 18, Upper Gudalur (dist The Nilgiris), Gudalur Bazar (dist The Nilgiris) 17 each, Barwood (dist The Nilgiris) 14, Harisan Malayalam Ltd. (dist The Nilgiris), Wood Braiyar Estate (dist The Nilgiris) 12 each, Upper Bhavani (dist The Nilgiris) 10 each,
- ❖ **South Interior Karnataka:** Kalasa (dist Chikkamagaluru) 25, Bhagamandala (dist Kodagu) 25, Kottigehara (dist Chikkamagaluru) 21, Agumbe Emo (dist Shivamogga) 21, Kammardi (dist Chikkamagaluru) 19, Napoklu (dist Kodagu) 18, Koppa (dist Chikkamagaluru) 15, Ponnampet Pwd (dist Kodagu) 15, Sringeri Hms (dist Chikkamagaluru) 14, Murnadu (dist Kodagu) 13, Jayapura (dist Chikkamagaluru) 10, Somwarpet (dist Kodagu) 8, N R Pura (dist Chikkamagaluru) 8,
- ❖ **Gujarat Region:** Visnagar (dist Mehsana) 19, Mahesana (dist Mehsana) 18, Prantij (dist Sabarkantha) 16, Hansot (dist Bharuch) 14, Vijapur (dist Mehsana) 14, Vadgam (dist Banaskantha) 13, Mansa (dist Gandhinagar) 12, Jotana (dist Mehsana) 12, Talod (dist Sabarkantha) 11, Becharaji (dist Mehsana) 11, Kaprada (dist Valsad) 11, Khambhat (dist Anand) 10, Valsad_Kvk Aws (dist Valsad) 10, Himatanagar (dist Sabarkantha) 10, Silvassa (dist Dadara & Nagar Haveli) 10, Santalpur (dist Patan) 10,
- ❖ **Konkan & Goa:** Matheran (dist Raigad) 16, Mandangad (dist Ratnagiri) 11, Khalapur (dist Raigad) 9, Talasari (dist Palghar) 8, Sanguem (dist South Goa) 7, Sudhagad Pali (dist Raigad) 7, Poladpur (dist Raigad) 7,
- ❖ **Coastal Karnataka:** Dharmasthala (dist Dakshina Kannada) 17, Castle Rock (dist Uttara Kannada) 14, Sulya (dist Dakshina Kannada) 11, Mani (dist Dakshina Kannada) 11, Joida (dist Uttara Kannada) 10, Mangaluru Ap Obsy (dist Dakshina Kannada) 10, Belthangadi (dist Dakshina Kannada) 10,
- ❖ **Madhya Maharashtra:** Mahabaleshwar- Imd Obsy (dist Satara) 15, Lonavala_agri (dist Pune) 11, Chandgad (dist Kolhapur) 8, Velhe (dist Pune) 7, Peth (dist Nashik) 7, Ozarkheda - Fmo (dist Nashik) 7, Yaval (dist Jalgaon) 7,
- ❖ **Nagaland:** Jharnapani (dist Dimapur) 11, Kohima (dist Kohima) 7,
- ❖ **Telangana:** Kothaguda (dist Mahabubabad) 10,
- ❖ **Assam & Meghalaya:** Mawsynram (dist East Khasi Hills) 9, Lakhipur Arg (dist Cachar) 9, Cherrapunji (rkm) (dist East Khasi Hills) 8, Cherrapunji (dist East Khasi Hills) 7, Lakhipur (dist Cachar) 7,

- ❖ **Meghalaya:** Mawsynram (dist. East Khasi Hills) 9, Sohra ARG (dist. East Khasi Hills) 9, RKM Sohra (dist. East Khasi Hills) 8, Sohra (dist. East Khasi Hills) 8, Pynursla (dist. East Khasi Hills) 7.
- ❖ **North Interior Karnataka:** Londa (dist Belagavi) 9,
- ❖ **West Madhya Pradesh:** Khargone-aws (dist Khargone) 9, Warla (dist Barwani) 8, Hatpiplaya (dist Dewas) 7, Punasa Dam (dist Khandwa) 7, Pansemal (dist Barwani) 7,
- ❖ **Uttarakhand:** Jollygrant (Dehradun) 9,
- ❖ **East Rajasthan:** Sallopat Sr (dist Banswara) 8, Khushalgarh (dist Banswara) 8, Sheoganj (dist Sirohi) 7,
- ❖ **West Rajasthan:** Jaswantpura (dist Jalore) 8,
- ❖ **Saurashtra & Kutch:** Kalavad (dist Jamnagar) 8,
- ❖ **Haryana:** Tajewala (dist Yamuna Nagar) 7,
- ❖ **East Madhya Pradesh:** Kareli (dist Narsinghpur) 7,





IMPACT & ACTION SUGGESTED due to

- ✓ **Isolated extremely heavy rainfall very likely over Madhya Maharashtra during 01st-03rd August; Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe on 30th July; Coastal & South Interior Karnataka on 30th & 31st July.**
- ✓ **Very heavy rainfall very likely at isolated places over Konkan & Goa during 30th July - 03rd August; Madhya Maharashtra on 30th & 31st July; Gujarat State on 30th July; West Madhya Pradesh, Chhattisgarh during 01st - 03rd August; East Madhya Pradesh during 31st July - 03rd August; Vidarbha on 02nd August. Uttarakhand during 30th July - 01st August; Punjab, Haryana-Chandigarh, West Uttar Pradesh on 31st July & 01st August; over Jammu-Kashmir, Himachal Pradesh on 01st August. Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe on 31st July & 01st August; Coastal & South Interior Karnataka on 01st August. Nagaland, Manipur, Mizoram & Tripura Odisha during 30th July-01st August.**
- 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/land sinks/mud sinks.
- 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 likely over various parts of the country

- Make provision for draining out excess water from crop fields to avoid water stagnation in Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, West Bengal, Odisha, Himachal Pradesh, Uttarakhand, Punjab, Haryana, East Rajasthan, Madhya Pradesh, Vidarbha, Konkan & Goa, Ghat areas of Madhya Maharashtra, Gujarat State, Tamil Nadu, Kerala and Karnataka.
- Postpone transplanting of paddy seedlings in Coastal and South Interior Karnataka.
- Postpone planting of ginger and sowing of maize in Coastal Karnataka.
- Provide mechanical support to horticultural crops & staking to vegetables.

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; **ARG:** Automatic Rain Gauge; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome, **IAF:** Indian Air Force.
- ❖ **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

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



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°C to 6.4°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°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°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°C to -6.4°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°C to -6.4°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)