

Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release
Date: 25th July, 2024
Time of Issue: 1315 hours IST

**Subject: 1) Isolated extremely heavy rainfall very likely to continue over Konkan & Goa, Madhya Maharashtra during next 2 days; Gujarat region on 25th and reduce gradually thereafter.
2) Very heavy rainfall likely to continue over Central India during next 2 days and heavy rainfall during subsequent 3 days.**

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

- ✓ **Exceptionally heavy rainfall occurred over ghat areas of Pune (Tamini-56 cm).**
- ✓ **Heavy to very heavy rainfall** at some places with **extremely heavy falls at isolated** places over Gujarat Region, Madhya Maharashtra, Konkan & Goa, East Madhya Pradesh; **Heavy to very heavy rainfall** at isolated places over Chhattisgarh, Vidarbha, East Rajasthan, Coastal and South Interior Karnataka, Tamil Nadu, Odisha, Kerala & Mahe, Uttarakhand; **Heavy rainfall** at isolated places over North Interior Karnataka, West Rajasthan, Arunachal Pradesh, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim, Jharkhand, West Madhya Pradesh, West Uttar Pradesh and Himachal Pradesh.

Weather Systems

- ✓ A **cyclonic circulation** lies over Gangetic West Bengal & adjoining Bangladesh in lower & middle tropospheric levels tilting southwards with height.
- ✓ The **Monsoon trough** is active and lies near its normal position. It is likely to continue to remain near its normal position during next 4-5 days.
- ✓ The **shear zone** lies along 22°N over Indian region in lower & middle tropospheric levels tilting southwards with height.
- ✓ The **off-shore trough** at mean sea level runs along South Gujarat-north Kerala coasts.
- ✓ A **cyclonic circulation** lies over northwest Uttar Pradesh in lower tropospheric levels.

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 ghat areas of Madhya Maharashtra during 25th-27th; Konkan & Goa on 25th & 26th and Gujarat region on 25th July.**
- ✓ **Very heavy rainfall very likely at isolated places over Madhya Pradesh on 25th & 26th; Saurashtra & Kutch, Vidarbha, Marathwada on 25th; Konkan & Goa on 27th & 28th; Madhya Maharashtra on 28th & 29th; Gujarat region on 26th & 27th July.**

- ✓ **Heavy rainfall** very likely at isolated places over Chhattisgarh during 25th-29th; Vidarbha, Saurashtra & Kutch during 26th-29th; Madhya Pradesh during 27th-29th; Gujarat Region on 28th & 29th and Konkan & Goa on 29th July.

❖ **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-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Rajasthan during next 5 days.
- ✓ **Isolated very heavy rainfall also likely over East Rajasthan on 25th and Uttarakhand on 26th & 27th July.**
- ✓ Isolated **heavy rainfall** very likely over Himachal Pradesh, Uttarakhand, East Rajasthan, West Uttar Pradesh during 25th-29th; East Uttar Pradesh on 25th & 26th; Haryana-Chandigarh on 26th & 27th; Punjab on 27th and West Rajasthan on 25th, 26th & 29th July.

❖ **South Peninsular India:**

- ✓ Scattered to fairly widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Kerala & Mahe, Karnataka, Lakshadweep, Telangana and isolated to scattered rainfall over Coastal Andhra Pradesh & Yanam, Rayalaseema, Tamil Nadu, Puducherry & Karaikal during next 5 days.
- ✓ **Very heavy rainfall very likely at isolated places over South Interior Karnataka, Coastal Karnataka during 25th-27th and North Interior Karnataka on 25th & 26th July.**
- ✓ **Heavy rainfall** very likely at isolated places over Telangana on 25th; Tamil Nadu on 25th & 26th; Kerala & Mahe during 25th-29th and Coastal & South Interior Karnataka on 28th & 29th July.

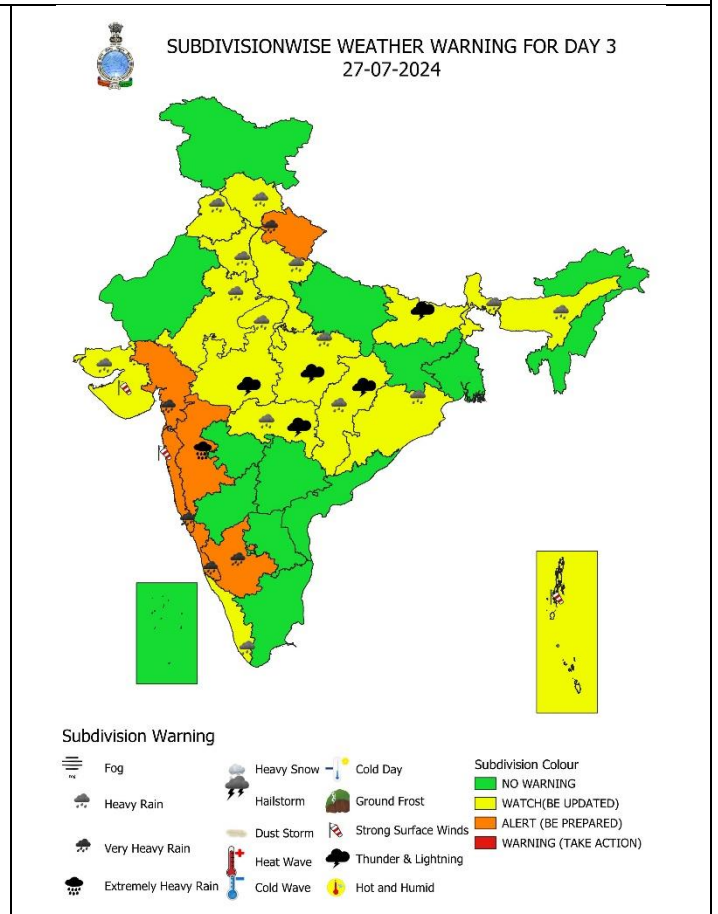
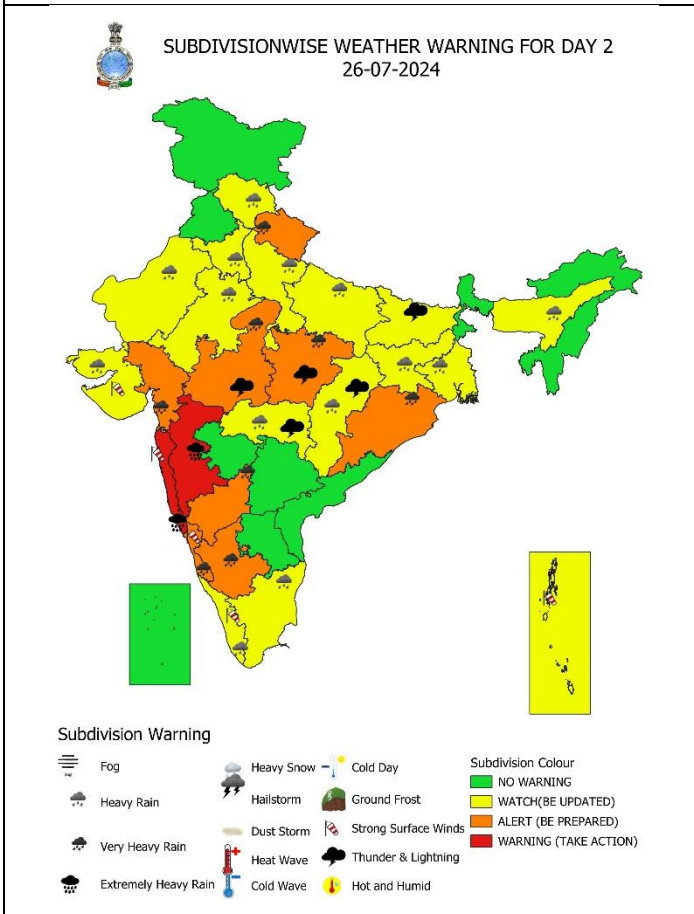
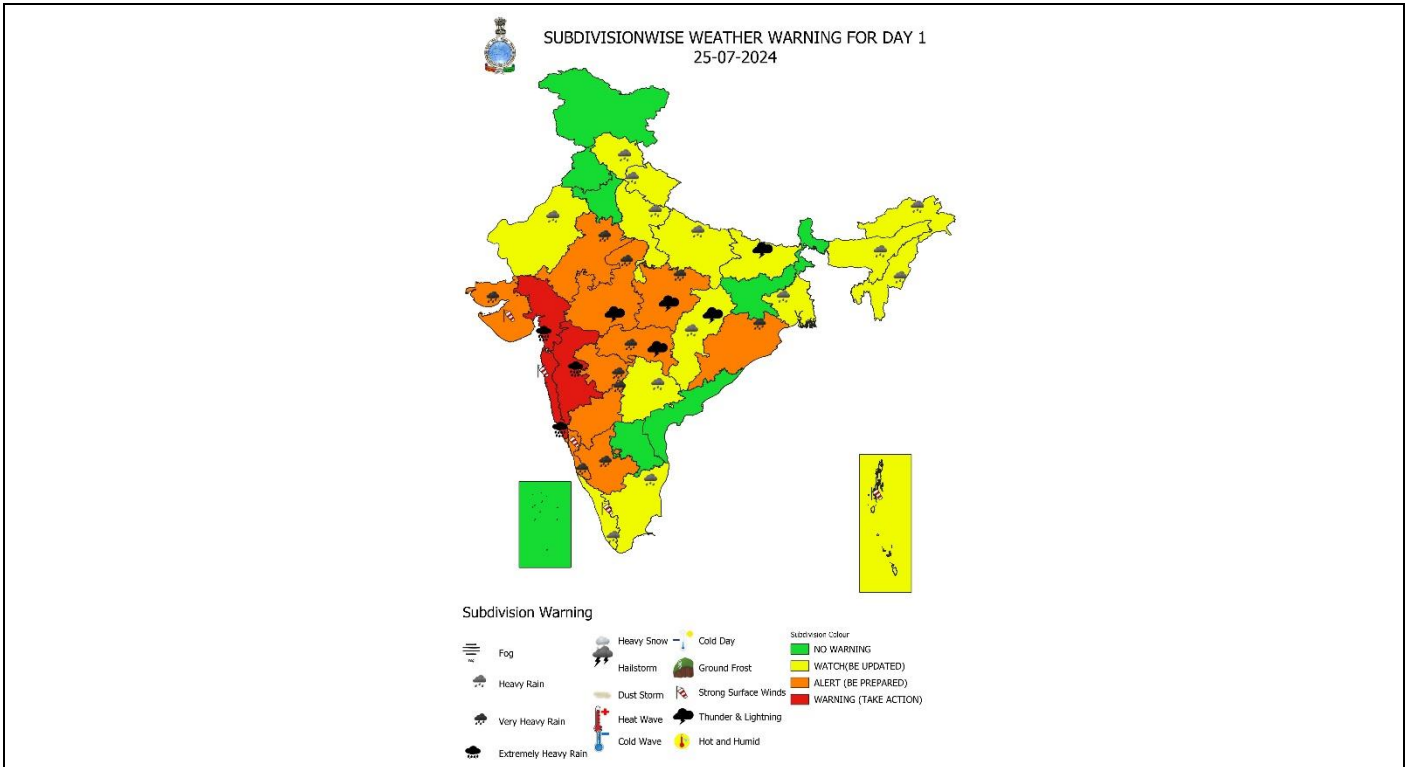
❖ **East & Northeast India**

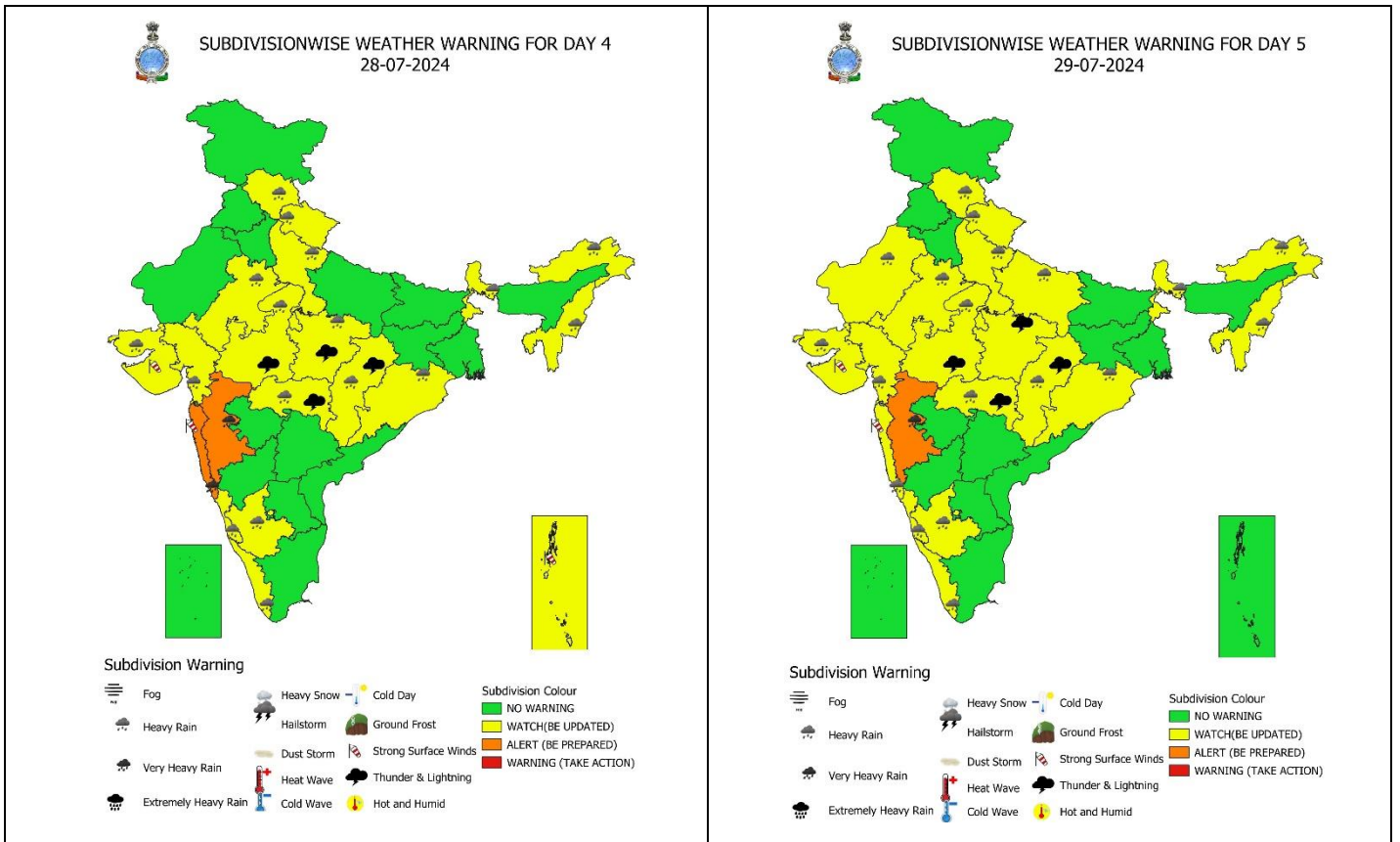
- ✓ Fairly widespread to widespread light to moderate rainfall **accompanied with thunderstorm, lightning** very likely over East & Northeast India during next 5 days.
- ✓ **Very heavy rainfall very likely at isolated places over Odisha on 25th & 26th July.**
- ✓ Isolated **heavy rainfall** very likely over Assam & Meghalaya during 25th-27th; Gangetic West Bengal on 25th & 26th; Jharkhand on 26th; Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura on 25th, 28th & 29th; Sub-Himalayan West Bengal & Sikkim and Odisha during 27th-29th July.

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 (in cm):

- ❖ **Madhya Maharashtra: Tamini-56, Lavasa-45;** Lonavala_agri (dist Pune) 35, Mahabaleshwar- Imd Obsy (dist Satara) 33, Mulher - Fmo (dist Nashik) 28, Igatpuri (dist Nashik) 22, Paud Mulshi (dist Pune) 20, Chinchwad - Arg (dist Pune) 17, Talegaon Aws (dist Pune) 17, Nda Pune - Arg (dist Pune) 17, Velhe (dist Pune) 16, Shahuwadi (dist Kolhapur) 14, Vadgaon Maval (dist Pune) 14, Ajra (dist Kolhapur) 12, Chandgad (dist Kolhapur) 12, Pune City - Imd Obsy (dist Pune) 11, Ozharkheda - Fmo (dist Nashik) 10, Peth (dist Nashik) 10, Junnar (dist Pune) 9,
- ❖ **Gujarat Region:** Borsad (dist Anand) 35, Vadodara (dist Vadodara) 32, Padra (dist Vadodara) 21, Tilakwada (dist Narmada) 20, Khergam (dist Navsari) 16, Chhotaudepur_kvks Aws (dist Chhota Udepur) 15, Subir (dist Dangs) 15, Naswadi (dist Chhota Udepur) 15, Sinor (dist Vadodara) 14, Dahegam (dist Gandhinagar) 13, Nandod (dist Narmada) 13, Rajpipala (dist Narmada) 13, Halol (dist Panchmahal) 12, Sankheda (dist Chhota Udepur) 12, Bharuch (dist Bharuch) 12, Vagra (dist Bharuch) 11, Dabhoi (dist Vadodara) 11, Waghai (dist Dangs) 11, Karjan (dist Vadodara) 11, Kapadvanj (dist Kheda) 10, Khambhat (dist Anand) 10, Talod (dist Sabarkantha) 10, Himatanagar (dist Sabarkantha) 10, Garudeshwar (dist Narmada) 10, Hansot (dist Bharuch) 10, Mahuva (dist Surat) 10,
- ❖ **Konkan & Goa:** Mokheda - Fmo (dist Palghar) 28, Matheran (dist Raigad) 23, Karjat_agri (dist Raigad) 23, Murbad (dist Thane) 23, Dapoli_agri (dist Ratnagiri) 21, Sudhagad Pali (dist Raigad) 20, Thane (dist Thane) 16, Poladpur (dist Raigad) 16, Pen (dist Raigad) 15, Wakwali_agri (dist Ratnagiri) 14, Khalapur (dist Raigad) 14, Wada (dist Palghar) 14, Ulhasnagar (dist Thane) 14, Roha (dist Raigad) 13, Mandangad (dist Ratnagiri) 13, Uran (dist Raigad) 13, Mahad (dist Raigad) 12, Sangameshwar Devrukh (dist Ratnagiri) 12, Tbia Imd Part Time (dist Thane) 12, Kalyan (dist Thane) 11, Jawhar (dist Palghar) 11, Bhiwandi (dist Thane) 11, Palghar_agri (dist Palghar) 10, Panvel_agri (dist Raigad) 10, Valpoi (dist North Goa) 10, Kankavli (dist Sindhudurg) 9, Harnai Imd Obsy (dist Ratnagiri) 9,
- ❖ **East Madhya Pradesh:** Mohargarh (dist Tikamgarh) 23, Sleemanabad (dist Katni) 15, Rithi (dist Katni) 15, Panna-aws (dist Panna) 15, Umariyapan (dist Katni) 14, Orchha (dist Niwari) 13, Katni(mudwara) (dist Katni) 12, Pawai (dist Panna) 11, Baldevgarh (dist Tikamgarh) 11, Shahnagar (dist Panna) 11, Bilhari (dist Katni) 11, Lidhora (dist Tikamgarh) 9, Bilaspur (dist Umaria) 9, Khargapur (dist Tikamgarh) 9, Raipura (dist Panna) 9, Simariya (dist Panna) 9, Tikamgarh-aws (dist Tikamgarh) 9, Amanganj (dist Panna) 9, Badagaon Dhasan (dist Tikamgarh) 9,
- ❖ **West Madhya Pradesh:** Mihona (dist Bhind) 8, Mau (dist Bhind) 7, Lahar (dist Bhind) 7, Indergarh (dist Datia) 7, Datia-aws (dist Datia) 7,
- ❖ **Chhattisgarh:** Pali (dist Korba) 20, Pakhanjur (dist Kanker) 13, Hardibazar (dist Korba) 13, Aundhi (dist Mohala Manpur Chowki) 11, Beltara (dist Bilaspur) 9, Shankargarh (dist Balrampur) 9, Premnagar (dist Surajpur) 9, Antagarh (dist Kanker) 7, Rajpur (dist Balrampur) 7, Kusmi (dist Balrampur) 7, Wandrafnagar (dist Balrampur) 7, Lal Bahadur Nagar (dist Rajnandgaon) 7, Ratanpur (dist Bilaspur) 7, Bhanupratappur (dist Kanker) 7,
- ❖ **East Rajasthan:** Dausa (dist Dausa) 20, Karauli (dist Karauli) 13, Baswa (dist Dausa) 11, Bonli (dist Sawai Madhopur) 9, Lachmangarh (dist Alwar) 9, Bansur (dist Alwar) 7, Mahwa (dist Dausa) 7,
- ❖ **Coastal Karnataka:** Siddapura (dist Udupi) 17, Siddapur (dist Uttara Kannada) 10, Kollur (dist Udupi) 10, Yellapur (dist Uttara Kannada) 9, Gersoppa (dist Uttara Kannada) 9, Dharmasthala (dist Dakshina Kannada) 8, Mangaluru Ap Obsy (dist Dakshina Kannada) 7, Kundapur (dist Udupi) 7, Uppinangadi (dist Dakshina Kannada) 7, Udupi (dist Udupi) 7
- ❖ **South Interior Karnataka:** Kammardi (dist Chikkamagaluru) 14, Kottigehara (dist Chikkamagaluru) 13, Agumbe Emo (dist Shivamogga) 11, Somwarpet (dist Kodagu) 11, Bhagamandala (dist Kodagu) 11, Kalasa (dist Chikkamagaluru) 11, Koppa (dist Chikkamagaluru) 8, Linganamakki Hms (dist Shivamogga) 7, N R Pura (dist Chikkamagaluru) 7, Napoklu (dist Kodagu) 7, Hunchadakatte (dist Shivamogga) 7, Sringeri Hms (dist Chikkamagaluru) 7,
- ❖ **Tamil Nadu:** Avalanche (dist The Nilgiris) 14,
- ❖ **Vidarbha:** Mul (dist Chandrapur) 14, Saoli (dist Chandrapur) 13, Gadchiroli (dist Gadchiroli) 13, Gadchiroli (aws) (dist Gadchiroli) 13, Dhanora (dist Gadchiroli) 11, Pombhurna (dist Chandrapur) 10, Sindewahi (dist Chandrapur) 10, Chandrapur (dist Chandrapur) 10, Bhadravati (dist Chandrapur) 9, Chamorshi (dist Gadchiroli) 9, Etapalli (dist Gadchiroli) 9, Deoli (dist Wardha) 8, Warora (dist Chandrapur) 7,
- ❖ **Kerala & Mahe:** Thennala AWS (Malappuram district) 12, Peechi AWS (Thrissur district) & Aralam AWS (Kannur district) 7 each;
- ❖ **Uttarakhand:** Mussoorie (Dehradun) : 12, Kapkot (Bageshwar) : 10, Loharkhet (Bageshwar) : 7,
- ❖ **West Uttar Pradesh:** Lalitpur (dist Lalitpur) 8, Madawara (dist Lalitpur) 8, Moradabad Obsy (dist Moradabad) 7, Mahroni (dist Lalitpur) 7,
- ❖ **Arunachal Pradesh: Nachu Arg (dist Upper Subansiri) 8,**
- ❖ **Assam & Meghalaya:** Amraghat (dist Cachar) 8, Lakhipur (dist Cachar) 7, Golaghat_pto (dist Golaghat) 7,
- ❖ **Himachal Pradesh:** Palampur (dist Kangra) 7,
- ❖ **North Interior Karnataka:** Belagavi Pto (dist Belagavi) 7,
- ❖ **West Rajasthan:** Sardarshahar (dist Churu) 7,
- ❖ **Jharkhand:** Bau Kanke (dist Ranchi) 7, Lohardaga Kvk Aws (dist Lohardaga) 7,
- ❖ **Sub-Himalayan West Bengal & Sikkim:** Jhallong (dist Kalimpong) 7





IMPACT & ACTION SUGGESTED due to

- ✓ **Isolated extremely heavy rainfall very likely over ghat areas of Madhya Maharashtra during 25th-27th; Konkan & Goa on 25th & 26th and Gujarat region on 25th July.**
- ✓ **Very heavy rainfall very likely at isolated places over South Interior Karnataka, Coastal Karnataka during 25th-27th; Madhya Pradesh, North Interior Karnataka and Odisha on 25th & 26th; Saurashtra & Kutch, Vidarbha, Marathwada, East Rajasthan on 25th; Gujarat region, Uttarakhand on 26th & 27th; Konkan & Goa on 27th & 28th; Madhya Maharashtra on 28th & 29th 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/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

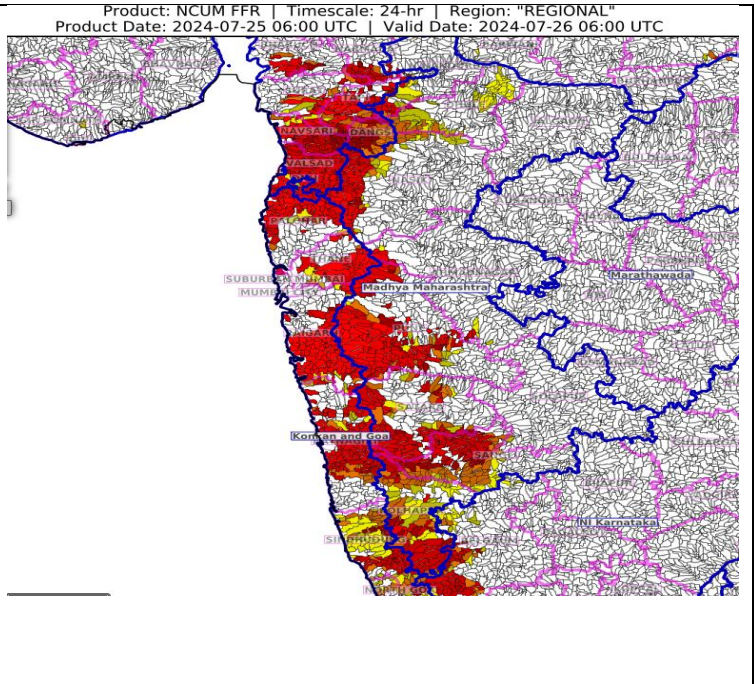
- Make provision for draining out excess water from crop fields to avoid water stagnation in Arunachal Pradesh, Assam & Meghalaya, Odisha, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Vidarbha, Konkan & Goa, Ghat areas of Madhya Maharashtra and Tamil Nadu, Gujarat State, Kerala and Karnataka.
- Postpone transplanting of rice in South Gujarat; rice, finger millet and vegetables in Konkan and ghat areas of Madhya Maharashtra.
- Postpone sowing of kharif groundnut, black gram, green gram and sesame in Saurashtra.
- Provide mechanical support to horticultural crops & staking to vegetables.

FLASH FLOOD GUIDANCE:

24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 26-07-2024 :

Moderate flash flood risk likely over few watersheds & neighbourhoods of southern parts of Gujarat Region, Konkan & Goa and Madhya Maharashtra Met Sub-divisions during next 24 hours.

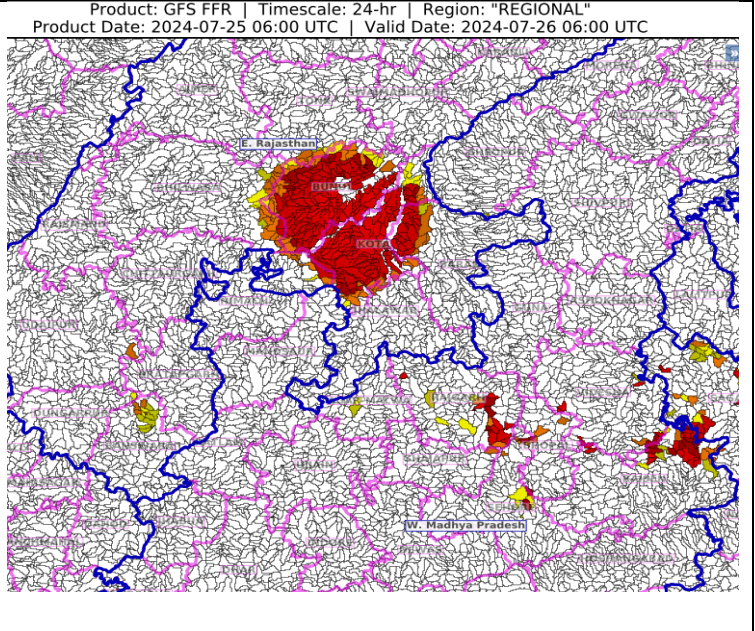
Surface runoff/ Inundation may occur at some fully saturated soils & low-lying areas over AoC as shown in map due to expected rainfall occurrence in next 24 hours.



24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 26-07-2024 :

Moderate flash flood risk likely over few watersheds & neighbourhoods of East Rajasthan and West Madhya 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.



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)