



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 16th July, 2024

Time of Issue: 1310 hours IST

**Subject: 1) Isolated extremely heavy rainfall very likely over Konkan & Goa, Gujarat state, Coastal & South Interior Karnataka, Ghat areas of Tamil Nadu and Kerala on 16th and isolated heavy to very heavy rainfall during subsequent 4-5 days.
2) Monsoon is likely to be active in Peninsular & central I during next 4-5 days.**

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

- ✓ **Heavy to very heavy rainfall** at some places with **isolated extremely heavy falls** over Coastal Karnataka; **Heavy to very heavy rainfall** with **extremely heavy falls at isolated** places over Tamil Nadu, South Interior Karnataka, Gujarat Region; **Heavy to very heavy rainfall** at many places over Kerala & Mahe, at some places over Konkan & Goa; isolated places over Telangana, West Madhya Pradesh, Odisha, Assam & Meghalaya; **Heavy rainfall** at isolated places over East Rajasthan, Uttarakhand, Rayalaseema, Madhya Maharashtra, Marathwada, East Madhya Pradesh, Vidarbha, Chhattisgarh, North Interior Karnataka, Lakshadweep, Saurashtra & Kutch, Sub-Himalayan West Bengal & Sikkim, Mizoram & Tripura.

Weather Systems

- ✓ A low-pressure area lies over south Chhattisgarh & adjoining Vidarbha and associated cyclonic circulation extends upto middle tropospheric levels tilting southwestwards with height.
- ✓ The Monsoon trough is active and south of its normal position. It is likely to be south of its normal position during next 4-5 days.
- ✓ A shear zone runs in lower & middle tropospheric levels roughly along 19°N tilting southwards with height.
- ✓ The off-shore trough runs along south Gujarat-north Kerala coasts at mean sea level.
- ✓ A fresh low-pressure area is likely to form over Westcentral & adjoining Northwest Bay of Bengal around 19th July.

Forecast & Warnings (Annexure II)

❖ West, Central and South Peninsular India

- ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Konkan & Goa, Madhya Maharashtra, Marathwada, Kerala & Mahe, Lakshadweep, Karnataka, Gujarat state, Madhya Pradesh, Vidarbha, Chhattisgarh, Coastal Andhra Pradesh & Yanam, Telangana; isolated to scattered light to moderate rainfall over Tamil Nadu, Puducherry & Karaikal, Rayalaseema during next 5 days.
- ✓ **Heavy to very heavy rainfall very likely at isolated/some places over Konkan & Goa, Madhya Maharashtra, Gujarat State, Karnataka and Kerala & Mahe during next 5 days.**
- ✓ **Isolated extremely heavy rainfall very likely over Konkan & Goa on 16th, 18th & 19th; Madhya Maharashtra during 18th-20th; Gujarat state, South Interior Karnataka, Tamil Nadu on 16th; Coastal Karnataka on 16th & 17th July.**

- ✓ Isolated **Heavy rainfall** very likely over Telangana, Coastal Andhra Pradesh & Yanam, Madhya Pradesh, Vidarbha, Chhattisgarh during 16th-20th; Tamil Nadu during 16th-18th and North Interior Karnataka on 16th, 19th & 20th July.
- ✓ **Isolated very heavy rainfall likely over Tamil Nadu on 17th; West Madhya Pradesh on 16th & 17th; Vidarbha on 16th, 19th & 20th; Chhattisgarh on 19th & 20th; Coastal Andhra Pradesh & Yanam, Telangana during 18th-20th July.**

❖ **East & Northeast India**

- ✓ Fairly widespread to widespread light to moderate rainfall **accompanied with thunderstorm, lightning** very likely over Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Northeast India and Odisha; scattered to fairly widespread light to moderate rainfall over Gangetic West Bengal, Bihar, Jharkhand during next 5 days.
- ✓ **Heavy rainfall** very likely at isolated places over Odisha, Nagaland, Manipur, Mizoram & Tripura during 16th-20th; Arunachal Pradesh, Sub-Himalayan West Bengal & Sikkim on 16th & 20th; Assam & Meghalaya on 16th, 19th & 20th; Andaman & Nicobar Islands on 16th and Gangetic West Bengal on 19th & 20th July.
- ✓ **Isolated very heavy rainfall also likely over Odisha on 19th & 20th; Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 20th July.**

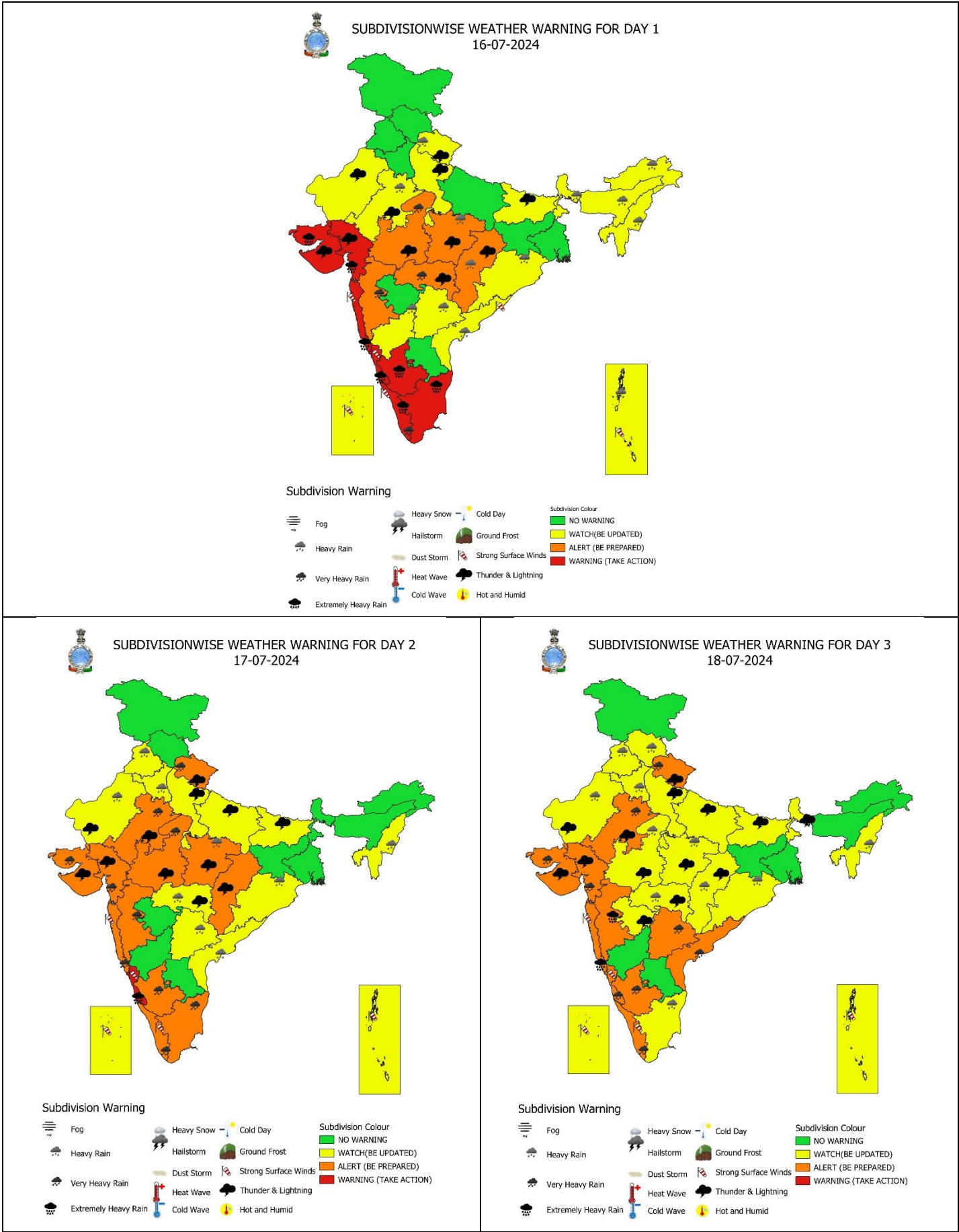
❖ **Northwest India**

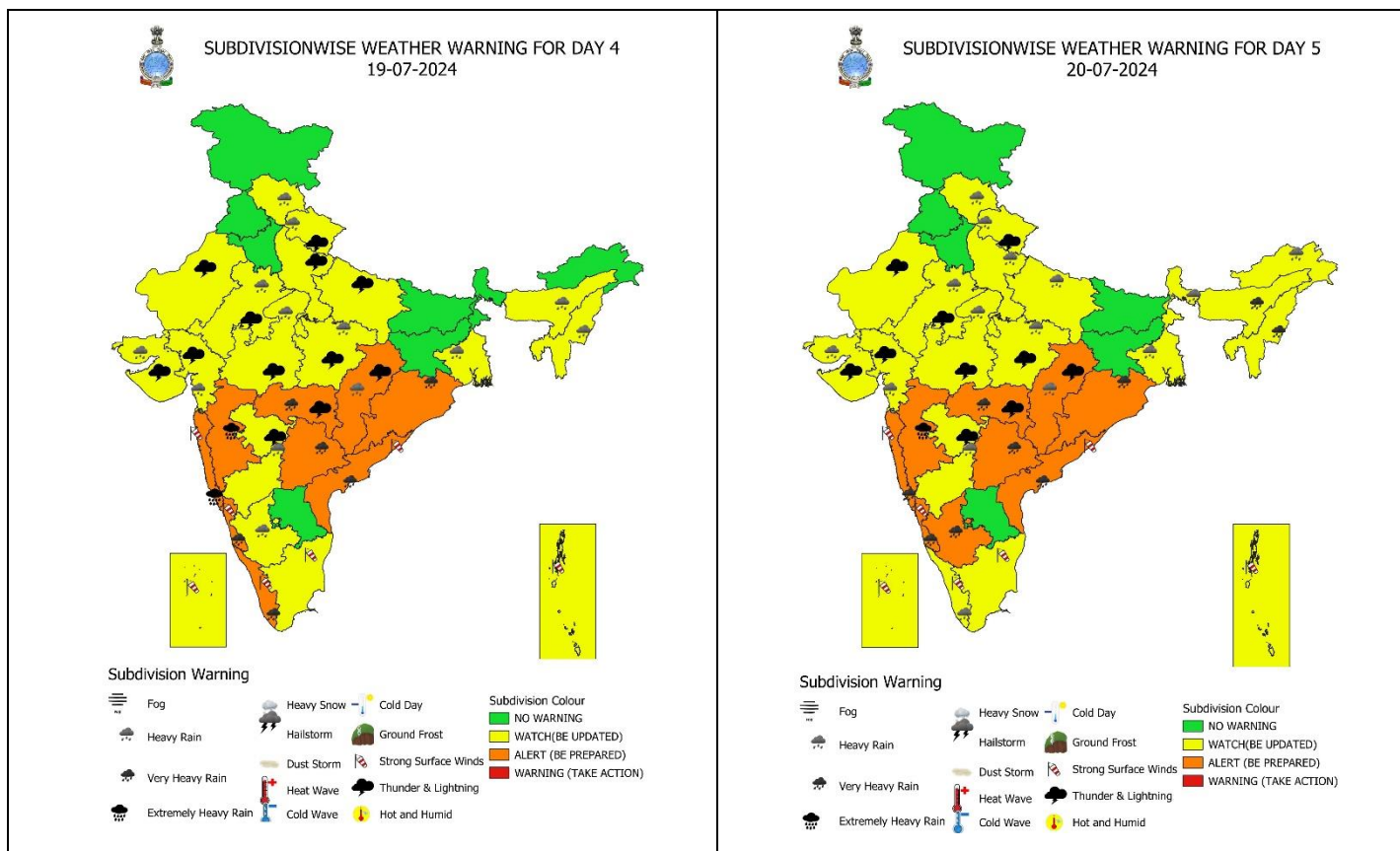
- ✓ Scattered to fairly widespread light to moderate rainfall **accompanied with thunderstorm & lightning** very likely over Himachal Pradesh, Uttarakhand and East Rajasthan; isolated to scattered rainfall likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh and West Rajasthan during next 5 days.
- ✓ Isolated **heavy rainfall** very likely over Uttarakhand, East Rajasthan during 16th-20th; West Rajasthan on 17th & 18th and Himachal Pradesh during 18th-20th; Punjab, Haryana on 17th & 18th and Uttar Pradesh on 20th July.
- ✓ **Isolated very heavy rainfall also likely over Uttarakhand and East Rajasthan on 17th & 18th 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):

- ❖ **Tamil Nadu:** Avalanche (dist The Nilgiris) 37, Valparai PTO (dist Coimbatore), Upper Bhavani (dist The Nilgiris) 25 each, Chinnakalar (dist Coimbatore) 23, Cincona (dist Coimbatore), Valparai PAP (dist Coimbatore) 17 each, Valparai Taluk Office (dist Coimbatore) 16, Sholayar (dist Coimbatore) 14, Emeraldad (dist The Nilgiris) 13, Vint Worth Estate (dist The Nilgiris), Gudalur Bazar (dist The Nilgiris), Upper Gudalur (dist The Nilgiris) 11 each, Periyar (dist Theni), Oothu (dist Tirunelveli) 10 each, Siruvani Adivaram (dist Coimbatore), Taluk Office Pandalur (dist The Nilgiris), PWD Makkinampatti (dist Coimbatore), Nalumukku (dist Tirunelveli), Barwood (dist The Nilgiris) 9, Wood Braiyar Estate (dist The Nilgiris) 9 each,
- ❖ **South Interior Karnataka:** Agumbe Emo (dist Shivamogga) 33, Linganamakki Hms (dist Shivamogga) 19, Kottigehara (dist Chikkamagaluru) 17, Bhagamandala (dist Kodagu) 17, Koppa (dist Chikkamagaluru) 17, Sringeri Hms (dist Chikkamagaluru) 17, Jayapura (dist Chikkamagaluru) 15, Kammardi (dist Chikkamagaluru) 14, Hunchadakatte (dist Shivamogga) 11, Kalasa (dist Chikkamagaluru) 11, Somwarpet (dist Kodagu) 10, Tyagarthi (dist Shivamogga) 9, N R Pura (dist Chikkamagaluru) 9, Mudigere (dist Chikkamagaluru) 8, Napoklu (dist Kodagu) 7,
- ❖ **Coastal Karnataka:** Ankola (dist Uttara Kannada) 26, Karwar Obsy (dist Uttara Kannada) 23, Gersoppa (dist Uttara Kannada) 21, Kundapur (dist Udupi) 19, Manki (dist Uttara Kannada) 19, Siddapura (dist Udupi) 18, Honavar Obsy (dist Uttara Kannada) 18, Kollur (dist Udupi) 17, Kumta (dist Uttara Kannada) 16, Siddapur (dist Uttara Kannada) 16, Castle Rock (dist Uttara Kannada) 16, Kota (dist Udupi) 15, Shirali Pto (dist Uttara Kannada) 13, Kadra (dist Uttara Kannada) 12, Udupi (dist Udupi) 10, Karkala (dist Udupi) 9, Banavasi (dist Uttara Kannada) 8, Yellapur (dist Uttara Kannada) 8, Dharmasthala (dist Dakshina Kannada) 8, Puttur Hms (dist Dakshina Kannada) 8, Uppinangadi (dist Dakshina Kannada) 7, Sulya (dist Dakshina Kannada) 7, Mani (dist Dakshina Kannada) 7,
- ❖ **Gujarat Region:** Umerpada (dist Surat) 25, Netrang (dist Bharuch) 18, Nandod (dist Narmada) 13, Chikhli (dist Navsari) 10, Mahuva (dist Surat) 9, Vijaynagar (dist Sabarkantha) 8, Godhra (dist Panchmahal) 7, Palsana (dist Surat) 7, V.vidyanagar Sr (dist Anand) 7,
- ❖ **Konkan & Goa:** Canacona (dist South Goa) 19, Panjim – Imd Obsy (dist North Goa) 18, Devgad (dist Sindhudurg) 17, Ponda (dist North Goa) 15, Malvan (dist Sindhudurg) 15, Mormugao – Pmo Imd (dist South Goa) 14, Quepem (dist South Goa) 13, Sanguem (dist South Goa) 12, Margao (dist South Goa) 12, Dabolim N.a.s.- Navy (dist South Goa) 11, Ratnagiri – Imd Obsy (dist Ratnagiri) 9, Mapusa (dist North Goa) 9, Rajapur (dist Ratnagiri) 9, Kudal (dist Sindhudurg) 9, Pernem (dist North Goa) 8, Mulde_ Agri (dist Sindhudurg) 8, Dodamarg (dist Sindhudurg) 7, Sawantwadi (dist Sindhudurg) 7, Rameshwar_agri (dist Sindhudurg) 7, Kankavli (dist Sindhudurg) 7;
- ❖ **Kerala & Mahe:** Munnar (Idukki district) 18, Idukki 17, Chalakkudy & Lower Sholayar AWS (both in Thrissur district) 16 each, Idamalayar Dam AWS (Ernakulam district) 15, Peerumedu (Idukki district), Kodungallur & Irinjalakuda (both in Thrissur district), Vadakara (Kozhikode district), Udumbannoor AWS (Idukki district) & Athirappalli AWS (Thrissur district) 14 each, Vythiri (Wayanad district), Kunnamangalam AWS (Kozhikode district) & Neeleswaram ARG (Ernakulam district) 13 each
- ❖ **Telangana:** Gangadhara (dist Karimnagar) 13, Navipet (dist Nizamabad) 12, Mallial (dist Jagtial) 11, Peddapalle (dist Peddapalle) 11, Chandurthi (dist Rajanna Sircilla) 9, Dilawarpur (dist Nirmal) 8, Sarangapurnrl (dist Nirmal) 8, Mortad (dist Nizamabad) 7, Nirmal (dist Nirmal) 7, Kollapur (dist Nagarkurnool) 7, Manopad (dist Jogulamba Gadwal) 7;
- ❖ **Assam & Meghalaya:** Amraghat (dist Cachar) 13, Matijuri (dist Hailakandi) 12, Amraghat Arg (dist Cachar) 11, Neamatighat (dist Jorhat) 11, Lala Arg (dist Hailakandi) 10, Dholai (dist Cachar) 10, Kokrajhar (dist Kokrajhar) 9, Tikrikilla (dist West Garo Hills) 7, Beky Rly.bridge (dist Barpeta) 7,
- ❖ **Odisha:** Lamataput (Koraput) 12, Kosagumda (Nawarangpur) 11, Dabugan (Nawarangpur) 8, Papadahandi (Nawarangpur) 7, Banpur (Khurda) 7,
- ❖ **Sub-Himalayan West Bengal & Sikkim;** Jhallong (dist Kalimpong) 11, Yuksom (dist Gyalshing) 8, Rongo (dist Kalimpong) 8, Chepan (dist Alipurduar) 7, Barobhisha (dist Alipurduar) 7, Nagarkata (dist Jalpaiguri) 7
- ❖ **Madhya Maharashtra:** Karjat (dist Ahmednagar) 10, Rahuri (dist Ahmednagar) 7,
- ❖ **Uttarakhand:** Uttarkashi_CWC (Uttarkashi): 9, Uttarkashi (Uttarkashi): 9, Rudraprayag (Rudraprayag) 8, Ghansali (Tehri Garhwal): 8,
- ❖ **Marathwada:** Ardhapur (dist Nanded) 8, Soegaon (dist Chh. Sambhajinagar) 7, Dharmabad (dist Nanded) 7,
- ❖ **Saurashtra & Kutch:** Lilia (dist Amreli) 9, Savarkundla (dist Amreli) 8,
- ❖ **Rayalaseema:** Pagidyala (dist Nandyal) 7,
- ❖ **East Rajasthan:** Rajakhera (dist Dholpur) 7, Todabhim (dist Karauli) 7, Kotputli (dist Jaipur) 7,
- ❖ **Mizoram & Tripura:** Kadamtala Arg (dist North Tripura) 10, Lengpui (dist Aizawl) 7.
- ❖ **North Interior Karnataka:** Ilkal (dist Bagalkote) 7, Deodurg (dist Raichur) 7,





IMPACT & ACTION SUGGESTED due to

- ✓ **Isolated extremely heavy rainfall very likely over Konkan & Goa on 16th, 18th & 19th; Madhya Maharashtra during 18th-20th; Gujarat state, South Interior Karnataka, Tamil Nadu on 16th; Coastal Karnataka on 16th & 17th July.**
- ✓ **Isolated very heavy rainfall likely over Tamil Nadu on 17th; West Madhya Pradesh on 16th & 17th; Vidarbha on 16th, 19th & 20th; Uttarakhand, East Rajasthan on 17th & 18th; Chhattisgarh, Odisha on 19th & 20th; Coastal Andhra Pradesh & Yanam, Telangana during 18th-20th 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

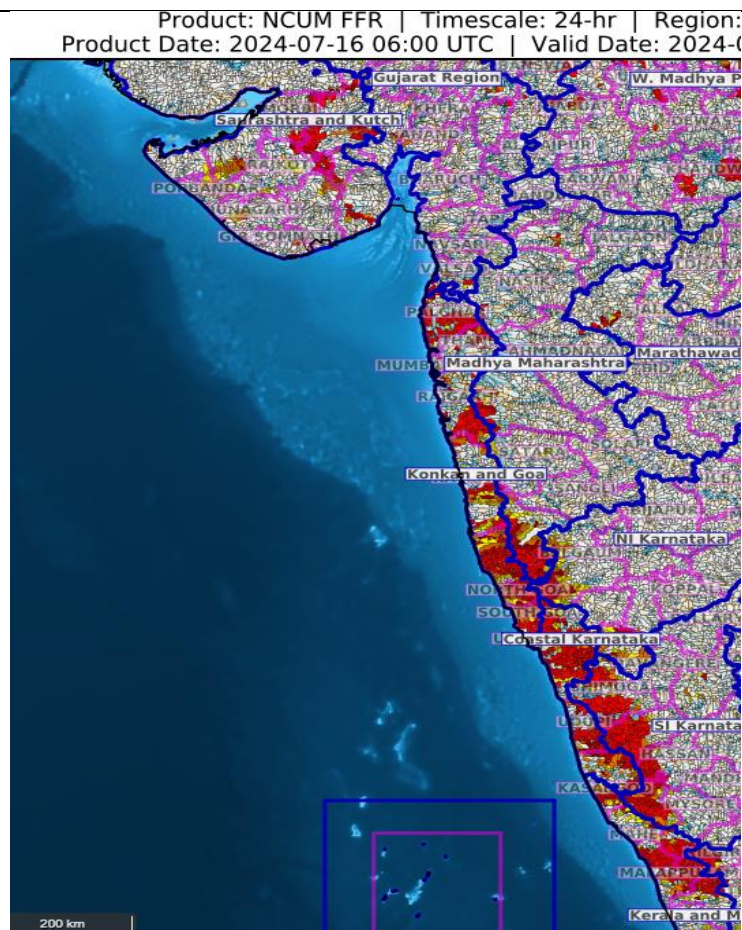
- Make provision for draining out excess water from crop fields to avoid water stagnation in Sub Himalayan West Bengal & Sikkim, Odisha, Uttarakhand, East Rajasthan, Madhya Pradesh, Chhattisgarh, Vidarbha, Konkan & Goa, Ghat areas of Madhya Maharashtra, Gujarat State, Tamil Nadu, Kerala, Karnataka, Coastal Andhra Pradesh and Telangana.
- Postpone transplanting of rice in Gujarat.
- 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 17-07-2024 :

Moderate flash flood risk likely over few watersheds & neighbourhoods of southern parts of Saurashtra & Kutch, Konkan & Goa adjoining Madhya Maharashtra, Coastal Karnataka adjoining SI Karnataka and Kerala & Mahe adjoining extreme north western parts (Nilgiri & Coimbatore districts) of Tamil Nadu - Pudu & Karaikal 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)



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	<p>When maximum temperature of a station reaches $\geq 40^{\circ}\text{C}$ for plains and $\geq 30^{\circ}\text{C}$ for hilly regions</p> <p>(a) Based on Departure from normal</p> <p>Heat Wave: Maximum Temperature Departure from normal 4.5°C to 6.4°C. Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^{\circ}\text{C}$</p> <p>(b). Based on Actual maximum temperature</p> <p>Heat Wave: When actual maximum temperature $\geq 45^{\circ}\text{C}$. Severe Heat Wave: When actual maximum temperature $\geq 47^{\circ}\text{C}$</p> <p>(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 $\geq 37^{\circ}\text{C}$</p>
 Warm Night	<p>When maximum temperature remains 40°C</p> <p>Warm Night: When minimum temperature departure 4.5°C to 6.4°C. Severe Warm Night: When minimum temperature departure $> 6.4^{\circ}\text{C}$.</p>
 Cold Wave	<p>When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions.</p> <p>(a). Based on departure</p> <p>Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C. Severe Cold Wave: Minimum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$</p> <p>(b) Based on actual Minimum Temperature (for Plains only)</p> <p>Cold Wave : When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$ Severe Cold Wave: When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$</p> <p>(c) For Coastal Stations When Minimum Temperature departure is $\leq -4.5^{\circ}\text{C}$ & actual Minimum Temperature is $\leq 15^{\circ}\text{C}$</p>
 Cold Day	<p>When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions</p> <p>Based on departure</p> <p>Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C. Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$</p>
 Fog	<p>Phenomenon of small droplets suspended in air and the horizontal visibility < 1km</p> <p>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</p>
 Thunderstorm	<p>Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)</p>
 Dust/Sand Storm	<p>An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.</p>
 Frost	<p>Ice deposits on ground</p> <p>Air temperature $\leq 4^{\circ}\text{C}$ (over Plains)</p>
 Squall	<p>A strong wind that rises suddenly, lasts for atleast 1 minute.</p> <p>Moderate: Wind speed 52-61 kmph Severe: Wind speed 62-87 kmph Very Severe: Wind speed > 87 kmph</p>
 Sea State	<p>Effect of various waves in the sea over specific area</p> <p>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</p>
 Cyclone	<p>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 Strom: Wind speed > 220 kmph (> 119 knots)</p>