



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 24th June, 2024

Time of Issue: 1315 hours IST

Subject: Heavy to very heavy rainfall very likely along the West Coast during next 5 days.

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 Punjab and West Rajasthan; in some parts of Haryana and in isolated pockets of Saurashtra & Kutch and Uttar Pradesh and in the range of 38-40°C over many parts of Delhi; in some parts of East Rajasthan and in isolated pockets of northwest Madhya Pradesh, southwest Bihar, northwest Jharkhand and Coastal Andhra Pradesh & Yanam. Maximum temperatures were above normal by 2-4°C over many parts Punjab; over some parts of West Rajasthan, Saurashtra & Kutch, Haryana, Uttar Pradesh, Bihar, Jharkhand, Odisha, Gangetic West Bengal and in isolated pockets over Madhya Pradesh.
- ❖ *Yesterday, the highest Maximum Temperature* of 43.6°C was reported at **Jodhpur (West Rajasthan)** over the country.
- ❖ **Heavy to very heavy rainfall** at isolated places over Madhya Maharashtra, Telangana, West Madhya Pradesh, Chhattisgarh, Andaman & Nicobar Islands; **heavy rainfall** at isolated places over Konkan & Goa, Marathwada, Tamil Nadu, Kerala, Coastal Karnataka, South Interior Karnataka, Gujarat State, Odisha, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh and Assam & Meghalaya.
- ❖ **Gusty winds/squally winds** data reported over the country is attached in **Annexure II**.

Advance of Southwest Monsoon:

- ❖ Northern Limit of Monsoon continues to pass through 20.5°N/60°E, 20.5°N/63°E, 20.5°N/70°E, Veraval, Rajpipla, Ujjain, Vidisha, Siddhi, Chaibasa, Haldia, Pakur, Sahibganj and Raxaul.
- ❖ Conditions are favourable for further advance of Southwest Monsoon into some more parts of North Arabian Sea and Gujarat State; some more parts of Madhya Pradesh; remaining parts of Chhattisgarh, West Bengal, Jharkhand and Bihar; some parts of Uttar Pradesh and Uttarakhand during next 3-4 days.

Weather Systems and Forecast & Warnings:

- ❖ A trough at mean sea level runs off Maharashtra-Kerala coasts. A cyclonic circulation lies over south Gujarat in lower & middle tropospheric levels and a trough runs from this cyclonic circulation to Jharkhand in lower tropospheric levels. Under their influence:
 - Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (40-50 kmph)** very likely over Konkan & Goa, Madhya Maharashtra, Marathwada, 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, Tamil Nadu, Puducherry & Karaikal during next 5 days.
 - Isolated **heavy to very heavy rainfall** very likely over Konkan & Goa, Ghat areas of Madhya Maharashtra, Karnataka during next 5 days, Coastal Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu during 24th-26th; over Gujarat Region on 24th & 25th and isolated **heavy rainfall** over Saurashtra & Kutch on 25th & 26th; Gujarat Region during 26th-28th; Kerala & Mahe, Coastal Karnataka, South Interior Karnataka on 27th & 28th; North Interior Karnataka during 25th-28th and over Coastal Andhra Pradesh during 25th-27th June, 2024.
 - **Isolated extremely heavy rainfall also likely over Gujarat state today, the 24th June, 2024.**
 - Isolated **heavy rainfall** very likely over West Madhya Pradesh, Vidarbha on 24th, 27th & 28th; East Madhya Pradesh during 24th-28th and over Chhattisgarh during 26th-28th June.

- ❖ A cyclonic circulation lies over northeast Assam in lower tropospheric levels. Strong southerly/southwesterly winds prevail in the lower tropospheric levels from the Bay of Bengal into east & northeast India. Under its influence;
 - Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning likely over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 5 days.
 - Isolated **heavy to very heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh during 24th–28th and isolated **heavy rainfall** over Nagaland, Manipur, Mizoram & Tripura on 24th, 27th & 28th June.

- ❖ A cyclonic circulation lies over southeast Rajasthan and a trough runs from this cyclonic circulation to north Bangladesh in the lower tropospheric levels. Under influence of these systems;
 - Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Gangetic West Bengal, Uttar Pradesh, East Rajasthan, Bihar, Jharkhand, Odisha during next 5 days.
 - Isolated **heavy to very heavy rainfall** very likely over Andaman & Nicobar Islands during 24th-26th and isolated **heavy rainfall** over Bihar during 25th-28th; Jharkhand on 27th; Odisha during 26th-28th June.
 - Isolated **heavy rainfall** over East Uttar Pradesh during 26th-28th; West Uttar Pradesh on 28th, East Rajasthan on 24th, 27th & 28th and Uttarakhand on 27th & 28th June.

Maximum temperature forecast for next 5 days:

- ❖ No significant change in maximum temperatures very likely over Central India during next 3 days and no significant change 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** very likely in isolated pockets of Punjab, Haryana, West Uttar Pradesh, Bihar on 24th & 25th and West Rajasthan during 25th-27th June and **abate thereafter**.

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

Realised Rainfall during past 24 hours till 0830 hours IST of today:

- ❖ Light to moderate rainfall accompanied with thunderstorm & lightning observed **at most places** over Kerala & Mahe, Lakshadweep, Coastal Karnataka, Konkan & Goa, Marathwada, Vidarbha, Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands; **at many places** over Telangana, Madhya Maharashtra, Saurashtra & Kutch, Madhya Pradesh, Chhattisgarh, Arunachal Pradesh; **at a few places** over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, South Interior Karnataka, Gujarat Region, Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, East Rajasthan, Gangetic West Bengal, Odisha, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura; **at isolated places** over North Interior Karnataka, Rayalaseema, Haryana-Chandigarh-Delhi, Uttar Pradesh, West Rajasthan, Bihar and Jharkhand.

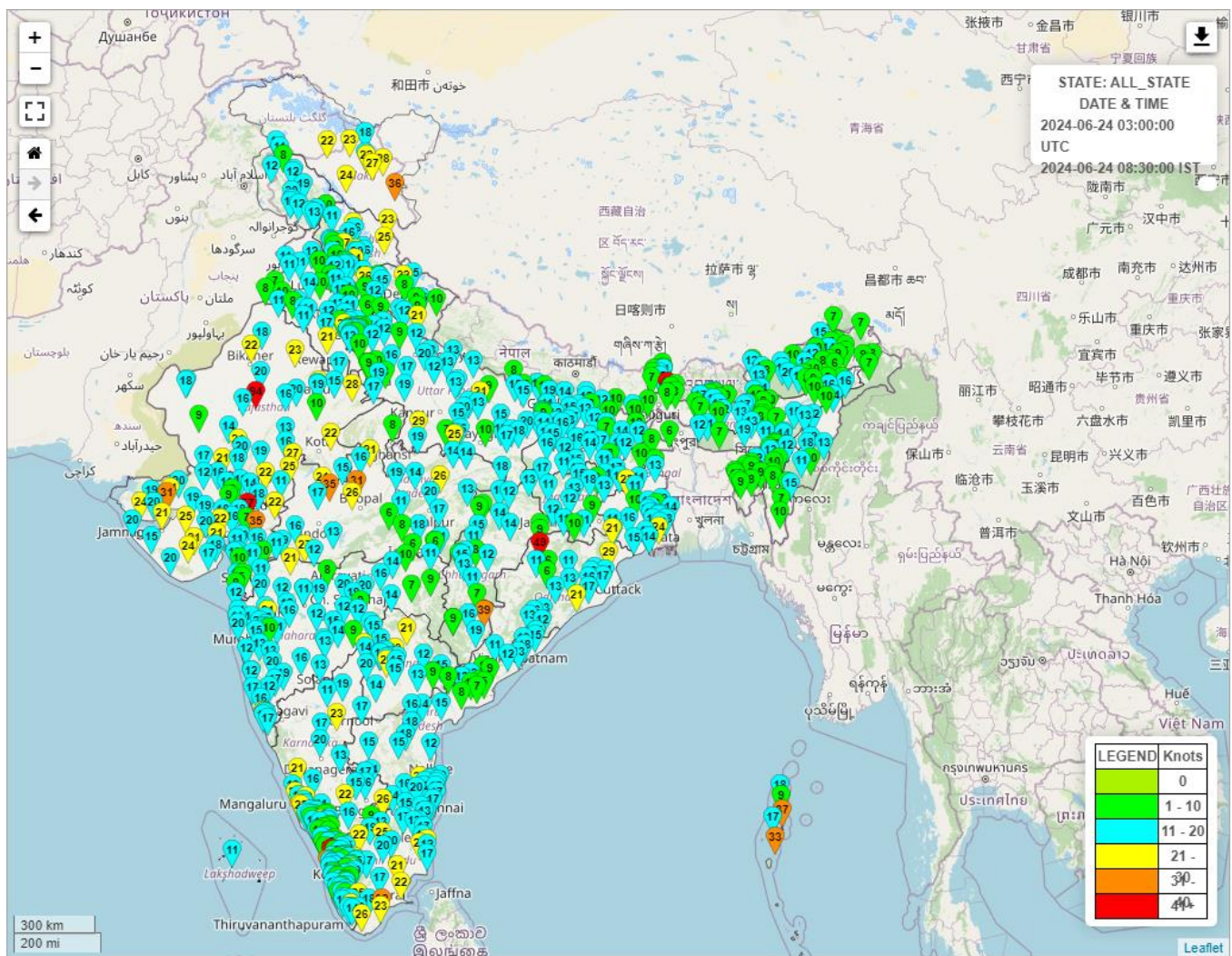
Realised Rainfall during past 24 hours till 0830 hours IST of today (in cm):

- ❖ **Chhattisgarh:** Bhopalpatnam (dist Bijapur) 15, Ahiwara (dist Durg) 6, Ghumka (dist Rajnandgaon) 4;
- ❖ **Telangana:** Srirampur (dist Peddapalle) 14, Dilawarpur (dist Nirmal) 7;
- ❖ **Andaman & Nicobar Islands:** Port Blair (dist South Andaman) 13, Maya Bandar (dist North & Middle Andaman) 8,
- ❖ **Madhya Maharashtra:** Chinchwad - Arg (dist Pune) 12, Barshi (dist Sholapur) 6, Jalgaon - Imd Pt (dist Jalgaon) 5,
- ❖ **West Madhya Pradesh:** Sondwa (dist Alirajpur) 12, Ichhawar (dist Sehore) 9, Anjad (dist Barwani) 9, Jhabua-aws (dist Jhabua) 8, Jabot (dist Alirajpur) 8, Badwani (dist Barwani) 7, Dharampuri Tappa (dist Dhar) 7, Udaigarh (dist Alirajpur) 7,
- ❖ **Konkan & Goa:** Harnai Imd Obsy (dist Ratnagiri) 11, Chiplun (dist Ratnagiri) 8, Ratnagiri - Imd Obsy (dist Ratnagiri) 5, Khed (dist Ratnagiri) 5,
- ❖ **Sub-Himalayan West Bengal & Sikkim:** Neora (dist Jalpaiguri) 11, Mathabhanga (dist Cooch Behar) 8, Murti (dist Jalpaiguri) 6,
- ❖ **Coastal Karnataka:** Mani (dist Dakshina Kannada) 10, Mangaluru Ap Obsy (dist Dakshina Kannada) 9, Dharmasthala (dist Dakshina Kannada) 7,
- ❖ **Assam & Meghalaya:** Tamulpur Arg (dist Baksa) 9, Tamulpur (dist Baksa) 8, Amraghat Arg (dist Cachar) 6,
- ❖ **Saurashtra & Kutch:** Mendarda (dist Junagadh) 9, Khambhalia (dist Devbhoomi Dwarka) 7,
- ❖ **Tamil Nadu, Puducherry & Karaikal:** Taluk Office Pandalur (dist The Nilgiris) 9, Wood Braiyar Estate (dist The Nilgiris), Went Worth Estate (dist The Nilgiris) 8 each, Harisan Malayalam Ltd. Cherumulli (dist The Nilgiris), Chinnakalar (dist Coimbatore) 7 each,
- ❖ **Kerala & Mahe:** Ayyankunnu Aws (dist Cannur) 9, Vellarikkundu Aws (dist Kasargod) 8, Aralam Aws (dist Cannur) 7, Panathur Aws (dist Kasargod) 7, Taliparamba (dist Cannur) 7,
- ❖ **Marathwada:** Renapur (dist Latur) 8, Loha (dist Nanded) 5,
- ❖ **Gujarat Region:** Chhotaudepur_kvK Aws (dist Chhota Udepur) 7, Sankheda (dist Chhota Udepur) 6,
- ❖ **South Interior Karnataka:** Kottigehara (dist Chikkamagaluru) 7, Bhagamandala (dist Kodagu) 6,
- ❖ **Odisha:** Aul (Kendrapara) 7, Rajkanika (Kendrapara) 5, Nawana (Mayurbhanj) 5,

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

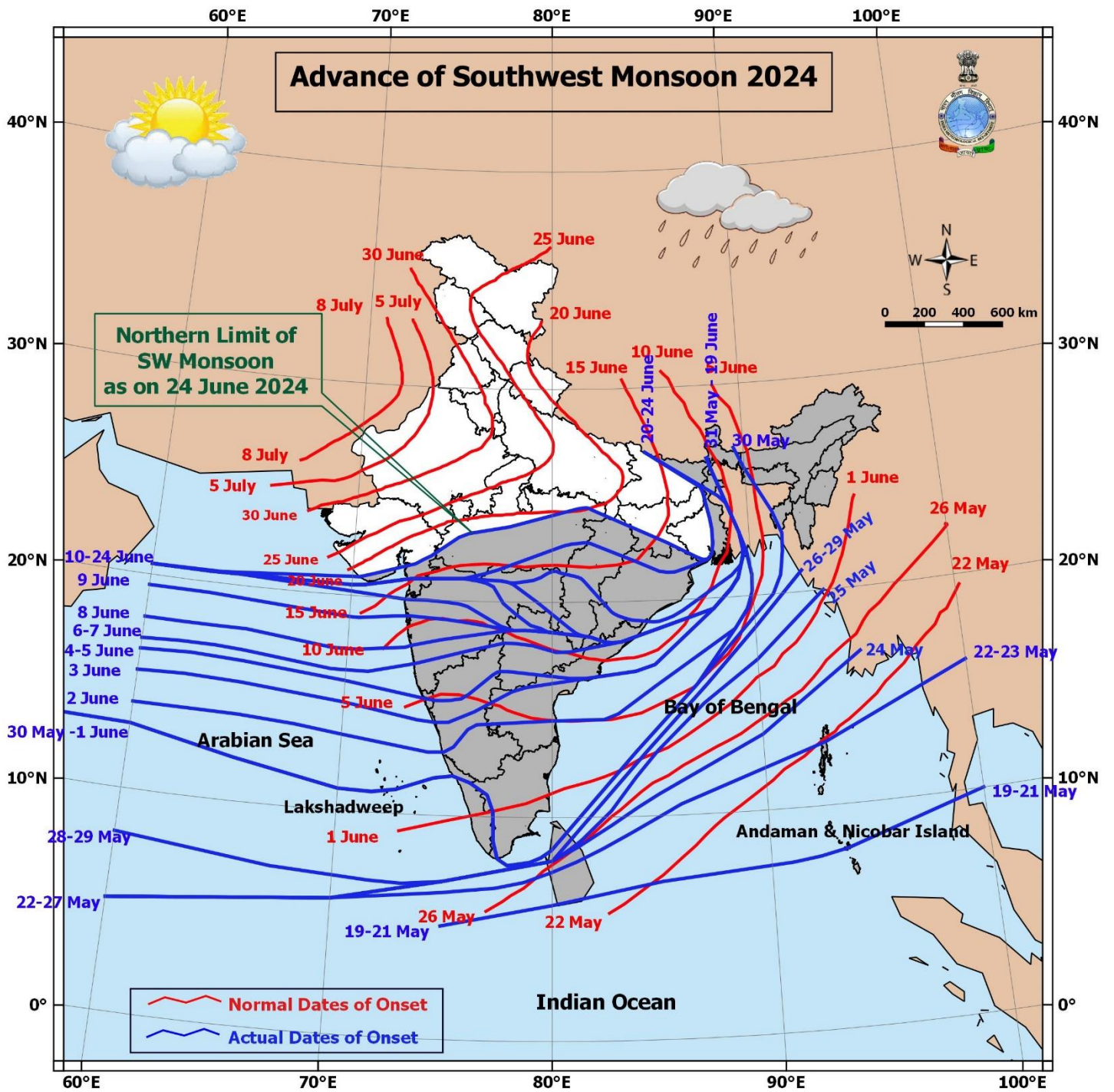
- ❖ **Chhattisgarh:** Bastar 72;
- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Leh 67, Kargil 44;
- ❖ **Madhya Pradesh:** Shajapur 65, Sehore 57, Katni, Sehore 48;
- ❖ **Kerala:** Thrissur 63, Wayanad 54, Idukki 43;
- ❖ **Tamil Nadu:** Thoothukudi 59, Krishnagiri, Kanyakumari 48 each, Tenkasi, Namakkal 46 each, Karaikal 43;
- ❖ **Odisha:** Bhadrak 54;
- ❖ **Uttar Pradesh:** Hamirpur 54;
- ❖ **Rajasthan:** Karauli 52, Sikar 46, Pratapgarh 46, Dungarpur, Bikaner 41 each;
- ❖ **Madhya Maharashtra:** Jalgaon 50;
- ❖ **Himachal Pradesh:** Bilaspur, Kullu 50, Kinnaur 46, Solan 44, Lahaul_And_Spiti 42, Mandi 41;
- ❖ **Haryana:** Yamunanagar 48, Rohtak 41;
- ❖ **Gujarat Region:** Rajkot 46, Amreli, Kachchh 44, Ahmedabad, Dahod 41;
- ❖ **Gangetic West Bengal:** South_Twenty_Four_Parganas 44, Durgapur 41;
- ❖ **Telangana:** Siddipet, Ranga_Reddy 43 each;
- ❖ **Karnataka:** Koppal 43, Mandya 41;
- ❖ **Uttarakhand:** Rudraprayag 41;

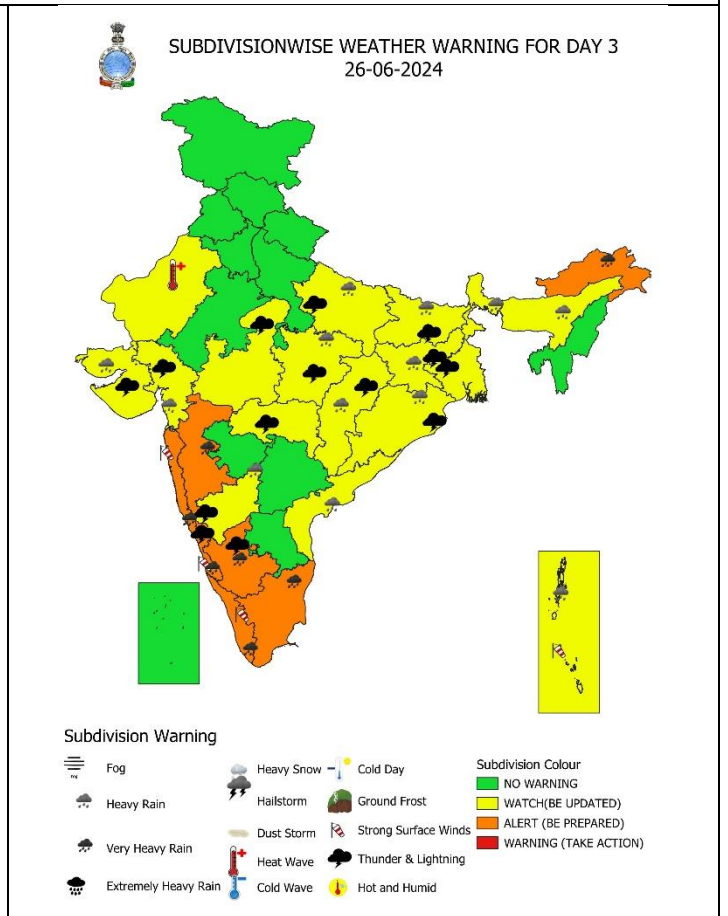
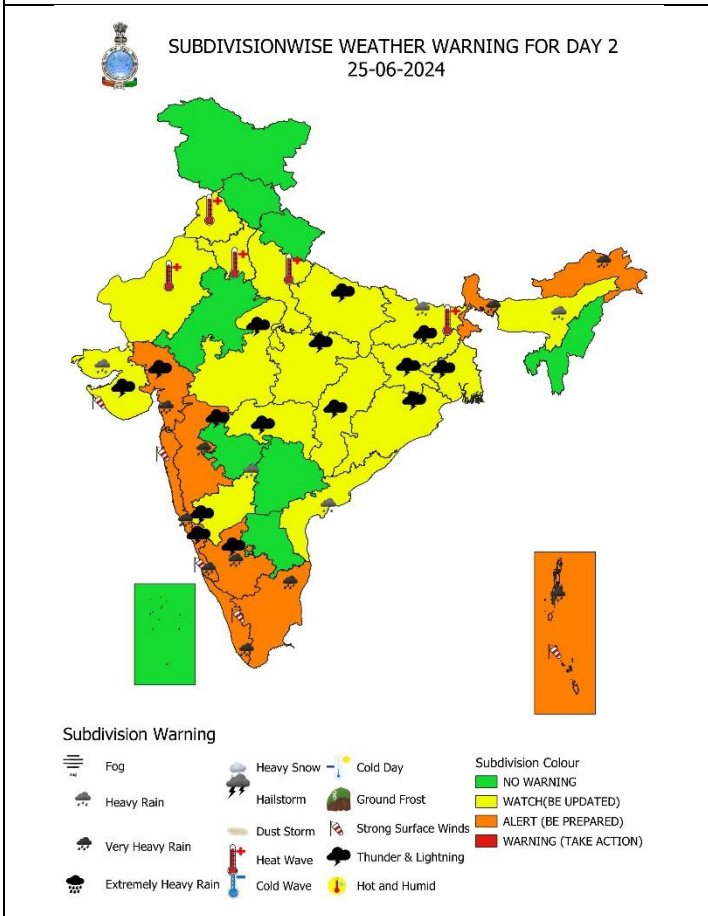
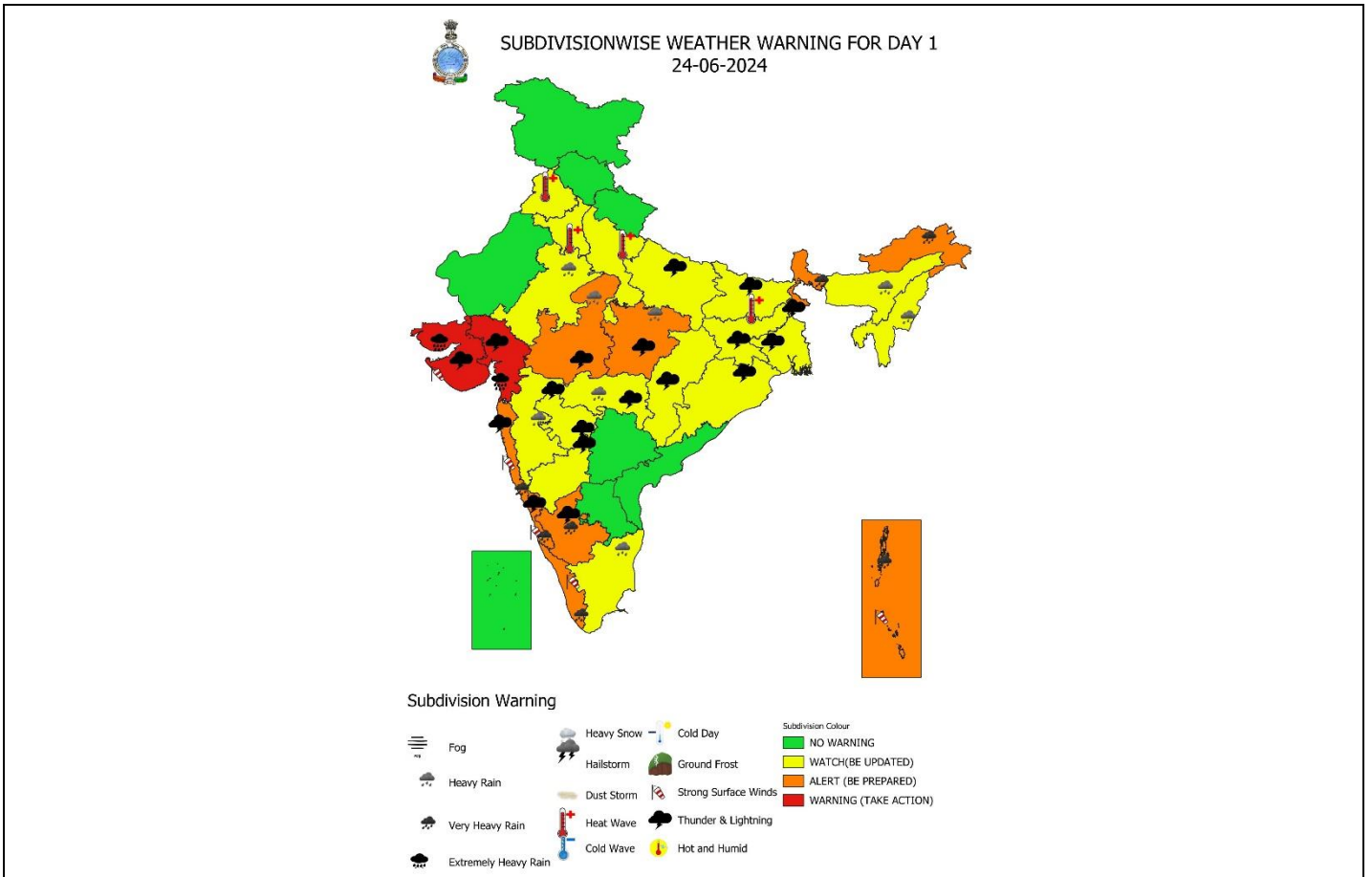
Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 23.06.2024 to 0830 hrs IST of 24.06.2024

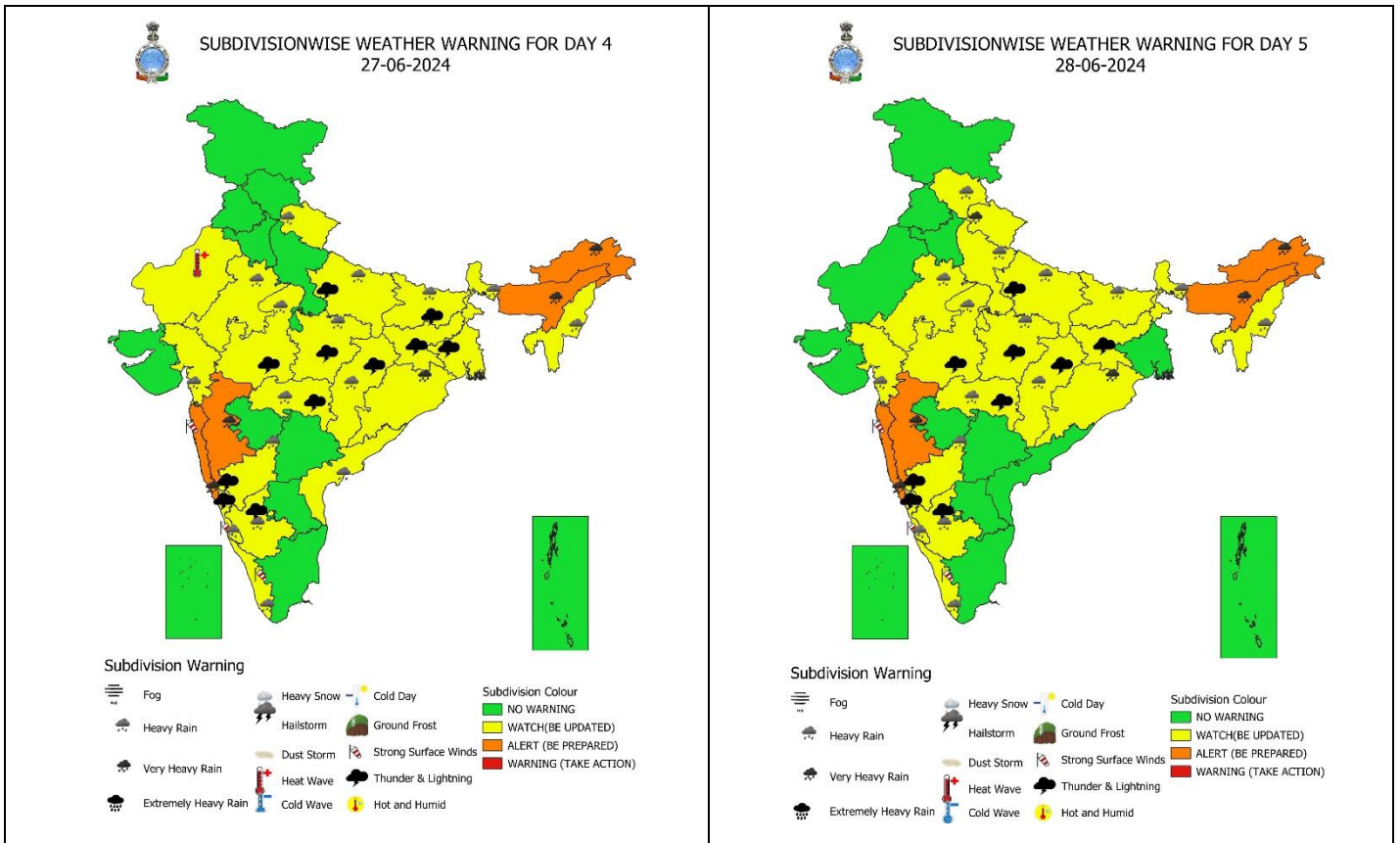


For more details, kindly refer: <http://aws.imd.gov.in:8091/>

Advance of Southwest Monsoon 2024







IMPACT & ACTION SUGGESTED due to very heavy/extremely heavy rainfall over Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim on 24th & 25th; Coastal & South Interior Karnataka, Kerala & Mahe during 24th-26th; Konkan & Goa, ghat areas of Madhya Maharashtra and Arunachal Pradesh during next 5 days.

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.

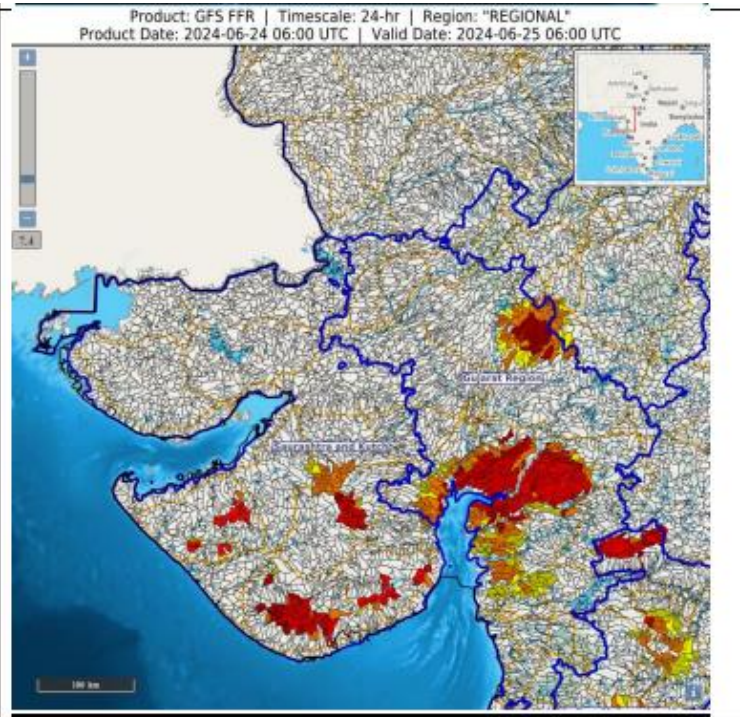
Agromet advisories for Heavy Rainfall, Gusty winds and Heat Wave likely over various parts of the country:

- Make provision for draining out excess water from crop fields to avoid water stagnation in Arunachal Pradesh, Assam & Meghalaya, Andaman & Nicobar Islands, Sub Himalayan West Bengal & Sikkim, West Madhya Pradesh, Vidarbha, Konkan & Goa, Madhya Maharashtra, Gujarat State, Tamil Nadu, Kerala, Karnataka and Telangana.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Bihar, Punjab, Jharkhand, Uttar Pradesh and West Rajasthan.
- Provide mechanical support to horticultural crops & staking to vegetables.

24 hours Outlook for the Flash Flood Risk (FFR) till 1130 IST of 25-06-2024 :

Low to Moderate flash flood risk likely over few watersheds & neighbourhoods of Southern parts of Saurashtra & Kutch, central & southern parts of Gujarat Region 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)

 Fog	 Heavy Snow	 Cold Day	Subdivision Colour  NO WARNING  WATCH(BE UPDATED)  ALERT (BE PREPARED)  WARNING (TAKE ACTION)
 Heavy Rain	 Hailstorm	 Ground Frost	
 Very Heavy Rain	 Dust Storm	 Strong Surface Winds	
 Extremely Heavy Rain	 Heat Wave	 Thunder & Lightning	
	 Cold Wave	 Hot and Humid	

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 *



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 $\geq 37^{\circ}\text{C}$



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 $> 6.4^{\circ}\text{C}$.



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 $\leq 15^{\circ}\text{C}$



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)