



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release

Date: 29th June, 2024

Time of Issue: 1415 hours IST

Subject: Heavy to very heavy rainfall very likely over Northwest & Northeast India 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 with extremely heavy falls occurred** at isolated places over Tamil Nadu, Meghalaya, Sub-Himalayan West Bengal & Sikkim; **Heavy to very heavy rainfall** at isolated places over Uttar Pradesh, Odisha, Arunachal Pradesh, Konkan & Goa, Madhya Maharashtra, Gujarat Region, South Interior Karnataka; **Heavy rainfall** at isolated places over Uttarakhand, Punjab, Rajasthan, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Coastal Karnataka and Kerala.
- ❖ **Gusty winds/squally winds** data reported over the country is attached in [Annexure II](#).

Advance of Southwest Monsoon:

- ❖ Southwest Monsoon has further advanced into remaining parts of East Uttar Pradesh and some more parts of West Uttar Pradesh today, the 29th June 2024.
- ❖ Northern Limit of Monsoon now passes through 26°N/65°E, Jaisalmer, Churu, Bhiwani, Delhi, Aligarh, Hardoi, Moradabad, Una, Pathankot, Jammu, 33°N/74°E.
- ❖ Conditions are favourable for further advance of southwest Monsoon into some more parts of West Rajasthan, Haryana-Chandigarh & Punjab and remaining parts of West Uttar Pradesh, Himachal Pradesh and Jammu during next 2-3 days.

Weather Systems and Forecast & Warnings:

- ❖ A cyclonic circulation lies over northeast Arabian Sea adjoining Saurashtra & Kutch in middle tropospheric levels. Shear zone runs roughly along 20°N in middle tropospheric levels and the feeble off-shore trough at mean sea level along south Maharashtra-central Kerala coasts. Under their influence:
 - Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm & lightning very likely over Kerala & Mahe, Lakshadweep, Coastal Karnataka, Konkan & Goa, Gujarat State, Madhya Maharashtra; isolated to scattered light to moderate rainfall over Marathwada, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana, North & South Interior Karnataka during next 5 days.
 - Isolated **heavy rainfall** very likely over Saurashtra & Kutch, Kerala & Mahe, Tamil Nadu, Coastal Karnataka, South Interior Karnataka during 29th June-01st July; Gujarat Region, Konkan & Goa, Madhya Maharashtra during 29th June-03rd July.
 - **Isolated very heavy rainfall very likely over Konkan & Goa, Madhya Maharashtra during 30th June-03rd July.**

- ❖ A Low Pressure Area lies over Northwest Bay of Bengal adjoining north Odisha-Gangetic West Bengal coasts. A cyclonic circulation lies over northeast Rajasthan in lower tropospheric levels. A cyclonic circulation lies over East Uttar Pradesh adjoining Bihar and another over northwest Uttar Pradesh in lower tropospheric levels. The east-west trough runs from northwest Uttar Pradesh to the centre of Low Pressure Area in lower tropospheric levels. Under their influence;
 - Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning very likely over Northwest, Central & East India during next 5 days.
 - Isolated **heavy rainfall** very likely over Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh, Madhya Pradesh and East Rajasthan during 29th June to 03rd July; West Rajasthan on 29th June, 02nd & 03rd July; Chhattisgarh, Gangetic West Bengal, Jharkhand, Odisha on 29th & 30th June and Bihar during 30th June-02nd July.
 - **Isolated very heavy rainfall likely over Uttarakhand during 30th June-03rd July; Himachal Pradesh, Punjab during 30th June-02nd July; Haryana-Chandigarh, Uttar Pradesh, East Rajasthan during 29th June-02nd July; West Madhya Pradesh on 01st & 02nd July.**
- ❖ A cyclonic circulation lies over northeast Assam in lower tropospheric levels. Under its influence;
 - Widespread light to moderate rainfall accompanied with thunderstorm, lightning & **isolated heavy to very heavy rainfall** likely over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 5 days.
 - **Isolated extremely heavy rainfall very likely over Arunachal Pradesh on 29th & 30th and Assam & Meghalaya on 29th June.**

Maximum temperature forecast for next 5 days:

- ❖ No significant change in maximum temperatures very likely over most parts of the country.

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

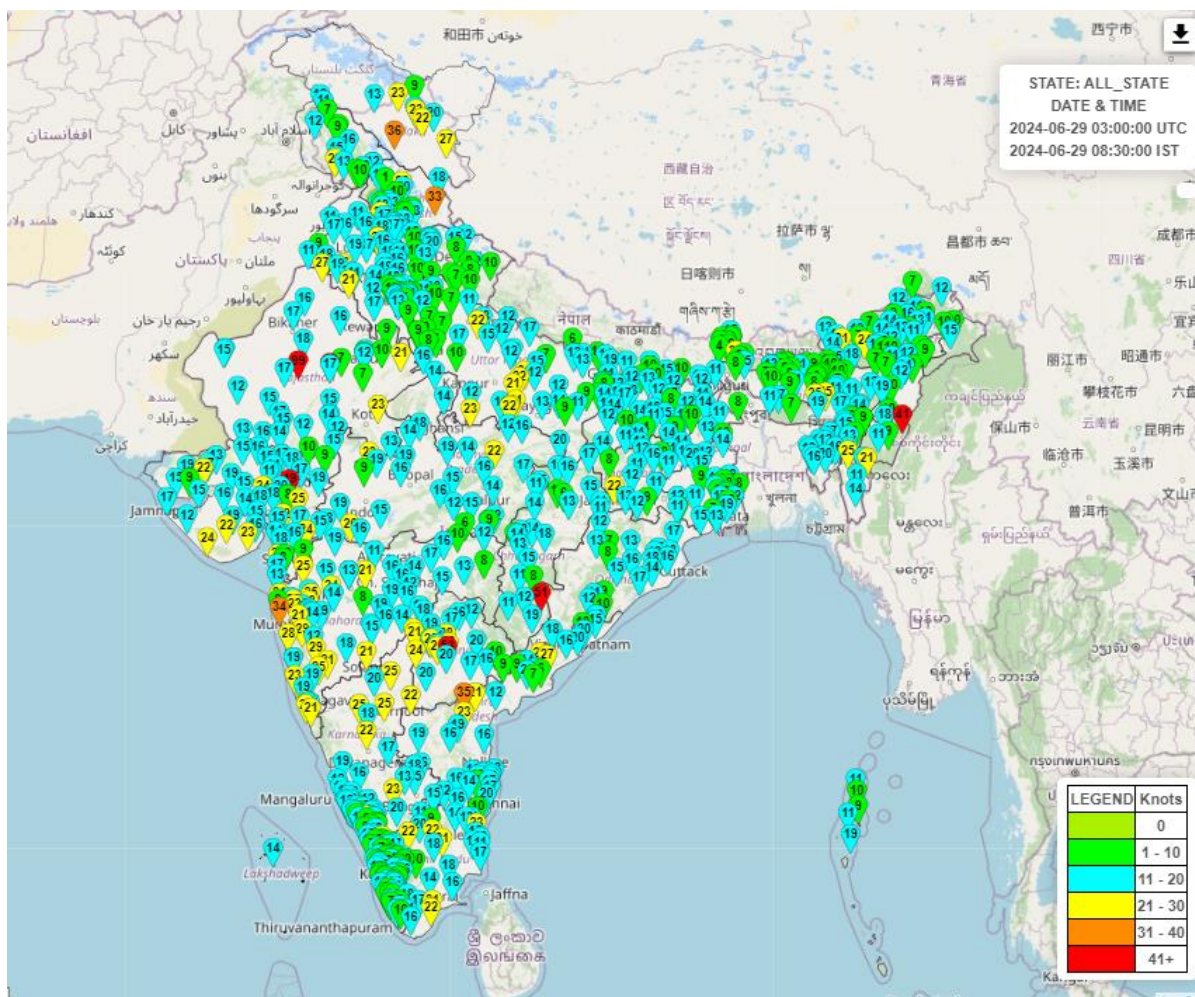
Significant Rainfall during past 24 hours till 0830 hours IST of today (in cm):

- ❖ **Tamil Nadu:** Taluk Office Pandalur (dist The Nilgiris) 28, Devala (dist The Nilgiris) 19, Wood Braiyar Estate (dist The Nilgiris) 11, Harisan Malayalam Ltd. (dist The Nilgiris) 10, Vint Worth Estate (dist The Nilgiris) 8;
- ❖ **Assam & Meghalaya:** Mawsynram (dist East Khasi Hills) 24, Cherrapunji (rkm) (dist East Khasi Hills) 20, Cherrapunji (dist East Khasi Hills) 14, Mawkyrwat (dist South West Khasi Hills) 14, Melabazar/matunga (dist Nalbari) 11, Mawkyrwat_arg (dist South West Khasi Hills) 11, Dholla Bazar (dist Tinsukia) 10, Jiagaon (dist Tinsukia) 10, Jonai Arg (dist Dhemaji) 9, Panbari (dist Chirang) 8, Dhemaji (dist Dhemaji) 8, Margherita (dist Tinsukia) 7, Beki Mathungari (dist Barpeta) 7, Nahar Katia (dist Dibrugarh) 7, Drf (dist Baksa) 7, Khowang (dist Dibrugarh) 7, Udaipur (dist Tinsukia) 7;
- ❖ **Sub-Himalayan West Bengal & Sikkim:** Buxaduar (dist Alipurduar) 22, Sevoke (dist Darjeeling) 20, Neora (dist Jalpaiguri) 10, Hasimara (dist Alipurduar) 9, Bhutanghat (dist Alipurduar) 9, Kalimpong (dist Kalimpong) 9, Barobhisha (dist Alipurduar) 9, Amfu Kalimpong (dist Kalimpong) 8, Bagrakote (dist Jalpaiguri) 8, Lava (dist Kalimpong) 7, Jhallong (dist Kalimpong) 7, Gajoldoba (dist Jalpaiguri) 7, Champasari (dist Darjeeling) 7, Kumargram (dist Alipurduar) 7, Siliguri Pto (dist Darjeeling) 7, Algarah (dist Kalimpong) 7, Rongli (dist Pakyong) 7, Rongo (dist Kalimpong) 7;
- ❖ **Odisha:** Bhapur (dist Nayagarh) 17, Dunguripalli (dist Sonepur) 14, Anandpur (dist Keonjhar) 12, Angul (dist Angul) 11, Ghasipura (dist Keonjhar) 10, Salebhatta (dist Bolangir) 9, Barkote (dist Deogarh) 8, Gudvela (dist Bolangir) 8, Jharbandh (dist Bargarh) 7, Saintala (dist Bolangir) 7, Reamal (dist Deogarh) 7, Batli (dist Bargarh) 7, Tangarpali (dist Sundargarh) 7;
- ❖ **West Uttar Pradesh:** Auraiya (cwc) (dist Auraiya) 17, Kalpi Cwc (dist Jalaun) 8, Kalpi Tehsil (dist Jalaun) 8, Mahroni (dist Lalitpur) 7;
- ❖ **Arunachal Pradesh :** Pasighat_ Aero (dist East Siang) 15, Roing (dist Lower Dibang Valley) 14, Anini_aws (dist Dibang Valley) 11, Namsai Kvk Aws (dist Lohit) 11, Hawaii (dist Anjaw) 10, Namsai (dist Lohit) 8, Kibithu (dist Anjaw) 8, Miao (dist Changlang) 7, Tezu (dist Lohit) 7, Tuting (dist Upper Siang) 7;
- ❖ **East Uttar Pradesh:** Kannauj (dist Kannauj) 12, Lambhuaa (dist Sultanpur) 11, Hardoi Teh (dist Hardoi) 10, Hardoi Obsy (dist Hardoi) 10, Sultanpur Cwc (dist Sultanpur) 8, Ayodhya (ag) (dist Ayodhya) 7, Bhatpurwaghat (dist Sitapur) 7, Ayoadhya (dist Ayodhya) 7, Balrampur (dist Balrampur) 7;
- ❖ **Gujarat Region:** Navsari (dist Navsari) 11, Navasari_aws (dist Navsari) 11, Palsana (dist Surat) 10, Jalalpor (dist Navsari) 9, Umernagar (dist Valsad) 9, Khergam (dist Navsari) 7;
- ❖ **South Interior Karnataka:** Agumbe Emo (dist Shivamogga) 10, Bhagamandala (dist Kodagu) 7;
- ❖ **Kerala & Mahe:** Ams Kannur (dist Cannur) 7, Aralam Aws (dist Cannur) 6, Cheruvanchery Aws (dist Cannur) 6, Vyttila (dist Wynad) 6, Kannur Icar Aws (dist Cannur) 6;
- ❖ **Vidarbha:** Gondia Ap (dist Gondia) 7;
- ❖ **Coastal Karnataka:** Kollur (dist Udupi) 9, Siddapura (dist Udupi) 6;
- ❖ **Chhattisgarh:** Bamhni (dist Janjgir) 9, Suhela (dist Baloda Bazar) 9, Kota (dist Bilaspur) 7;
- ❖ **Uttarakhand:** Banbasa 8, Kotadwar 5, kashipur 3,
- ❖ **Punjab:** Banbasa 8, Kotadwar 5, kashipur 3,
- ❖ **East Rajasthan:** Kaman (dist Bharatpur) 7, Sangod (dist Kota) 6,
- ❖ **West Rajasthan:** Banbasa 8, Kotadwar 5, kashipur 3,
- ❖ **Punjab:** Ballawal Saunkri (dist Sbs Nagar) 7;
- ❖ **Gangetic West Bengal:** Alipore (dist Kolkata) 7
- ❖ **East Madhya Pradesh:** Unchehra (dist Satna) 7, Seoni (dist Seoni) 7, Baldevgarh (dist Tikamgarh) 6,
- ❖ **West Madhya Pradesh:** Bhitwar (dist Gwalior) 7, Sabalgarh (dist Morena) 6,

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

- ❖ **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** Kargil 67, Leh 50, Jammu 41;
- ❖ **Coastal Andhra Pradesh:** Prakasam 65, Kakinada 50, East_Godavari, Prakasam 43;
- ❖ **Maharashtra:** Rajgod 63, Satara 54, Ratnagiri 52, Nashik, Kolhapur, Pune 46;
- ❖ **Himachal Pradesh:** Kinnaur 61, Kullu 41;
- ❖ **Telangana:** Siddipet 52, Vikarabad 44;
- ❖ **Kerala:** Wayanad, Palakkad 52;
- ❖ **Punjab:** Shahid_Bhagat_Singh_Nagar 50;
- ❖ **Rajasthan:** Hanumangarh 50, Baran 43;
- ❖ **Gujarat:** Daman 48, Chhotaudepurn 46, Nandurbar, Gir Somnath, Ahmedabad 44 each;
- ❖ **Goa:** South_Goa 48, North_Goa 43;
- ❖ **Haryana:** Sirsa 48;
- ❖ **Karnataka:** Yadgir, Gadag, Koppal 46, Mandya 43;
- ❖ **Karnataka:** Yadgir, Koppal, Gadag 46, Mandya, Bidar 43;
- ❖ **Madhya Pradesh:** Chhatarpur, Agar 43 each;
- ❖ **Tamil Nadu:** Cuddalore 43;

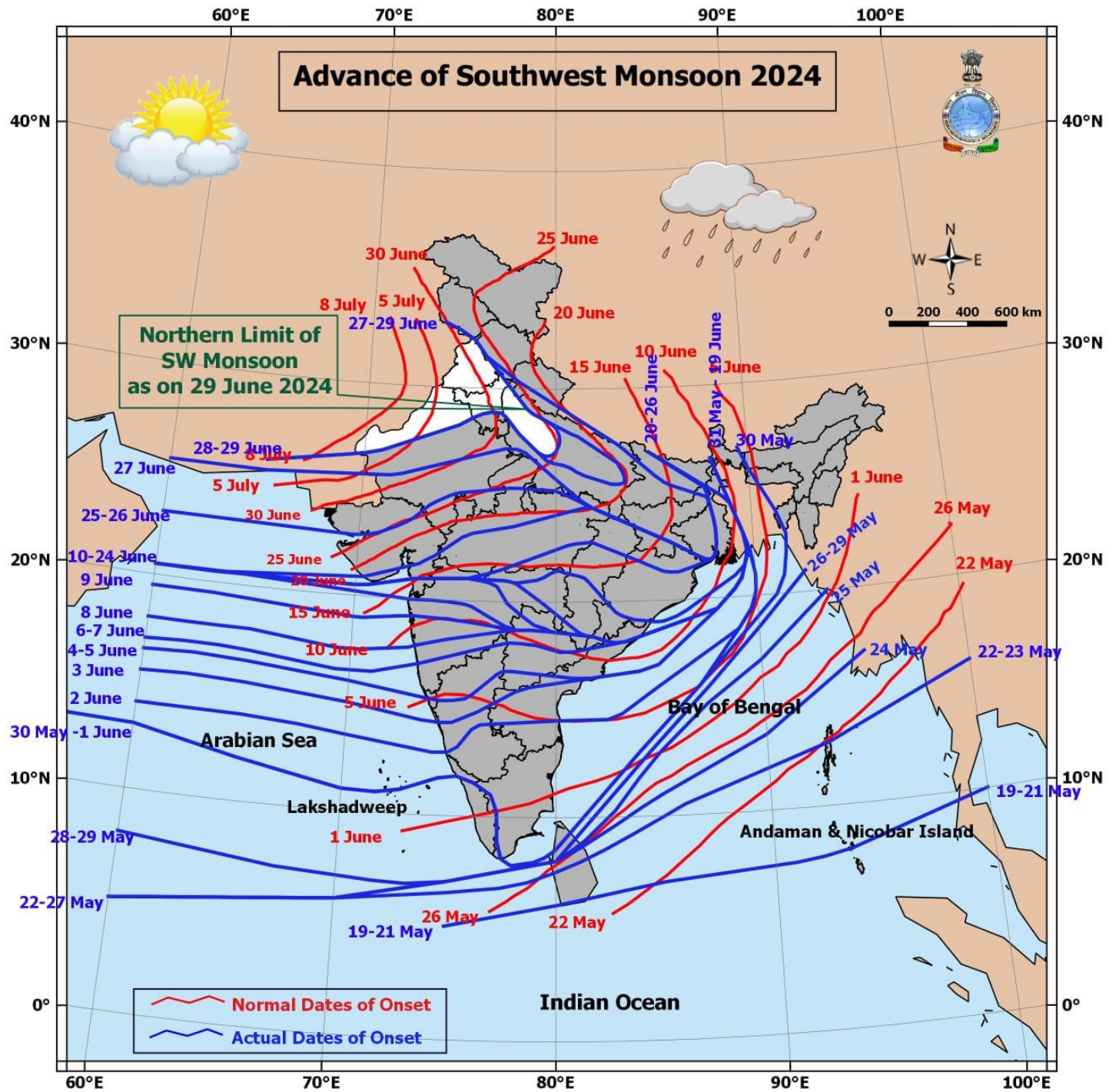
Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 28.06.2024 to 0830 hrs IST of 29.06.2024

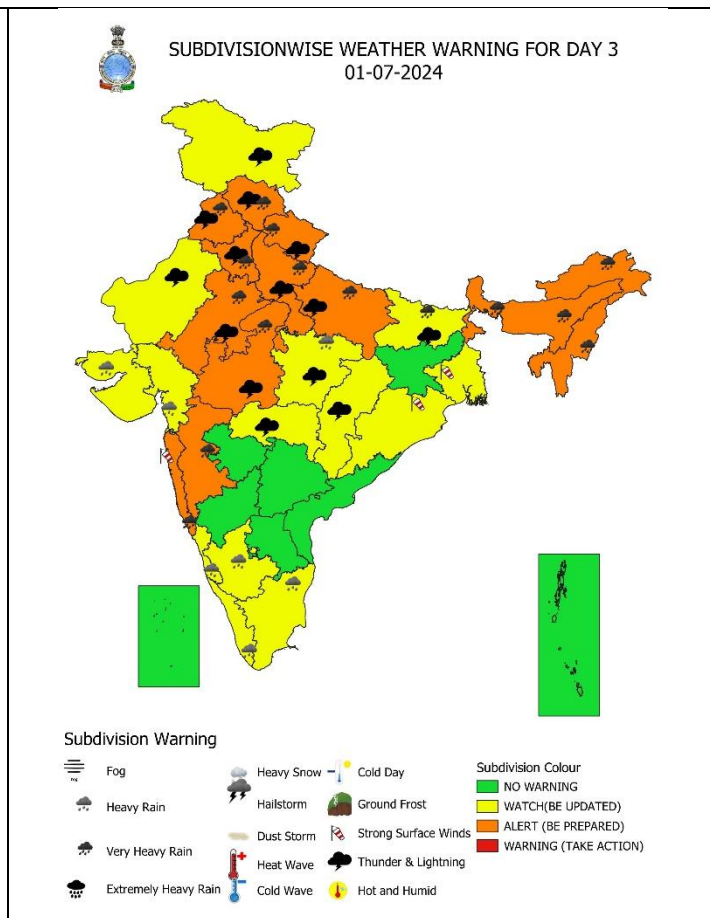
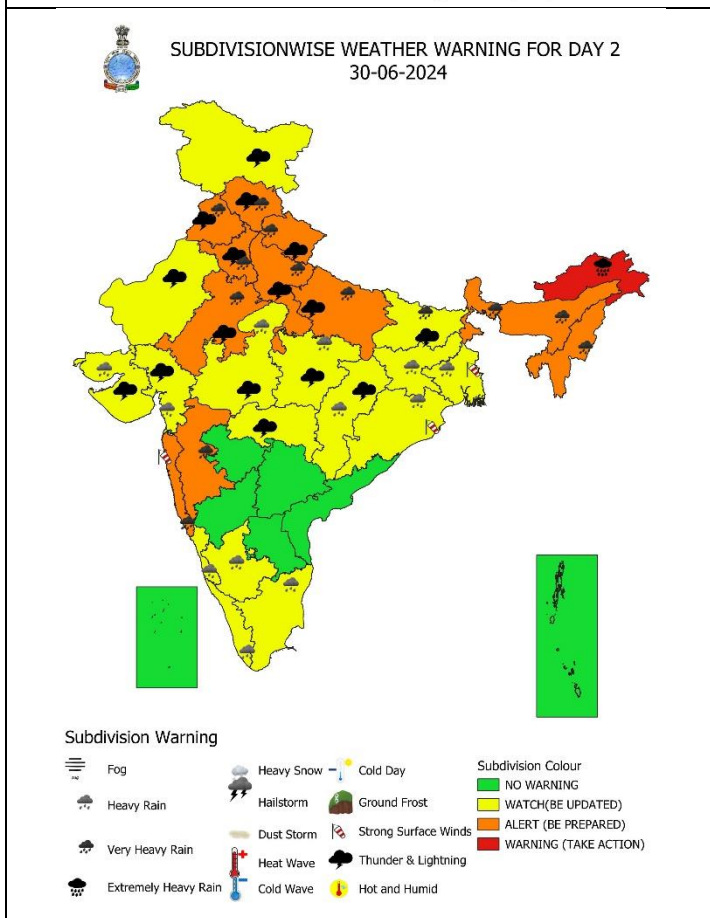
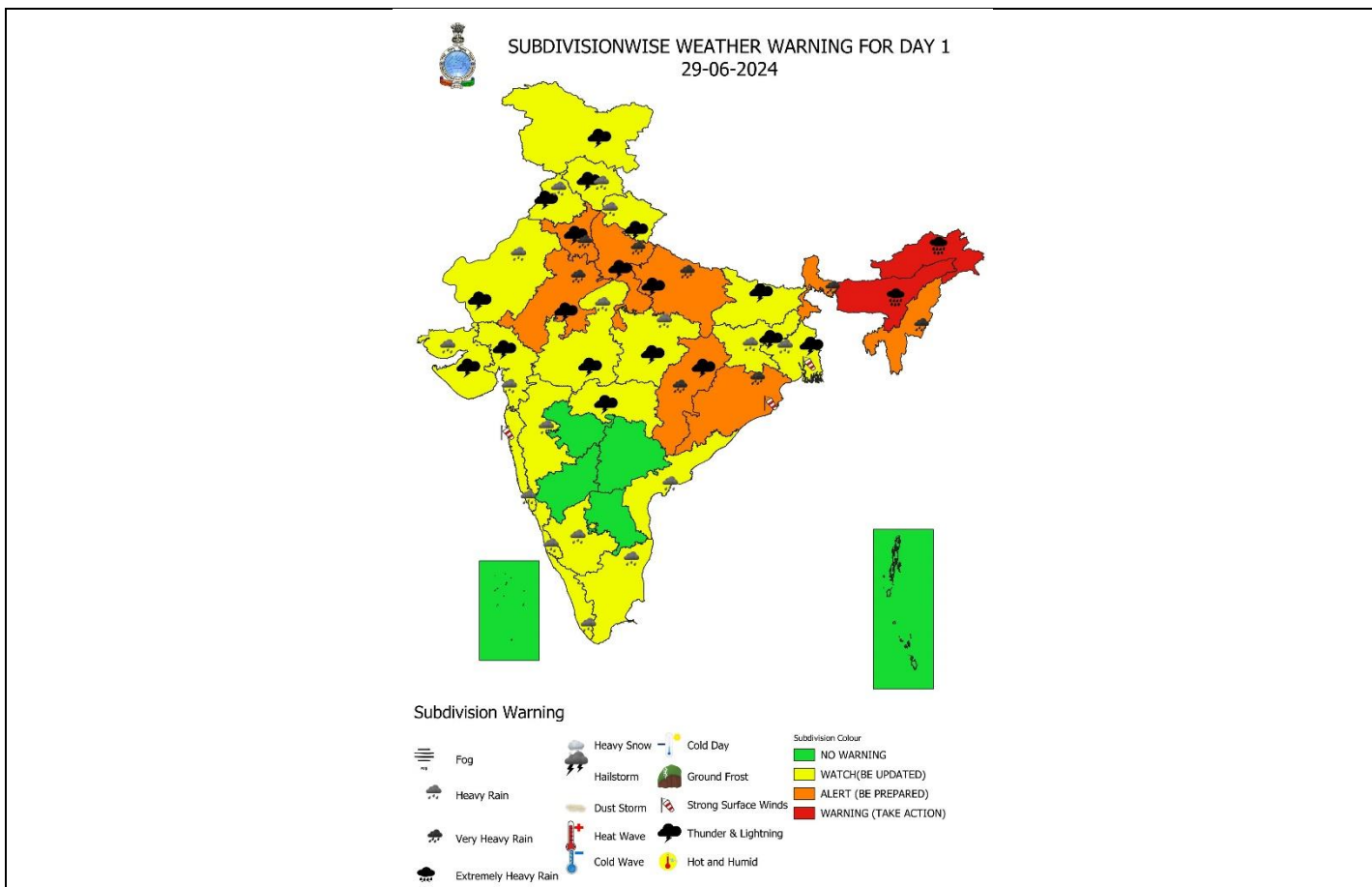


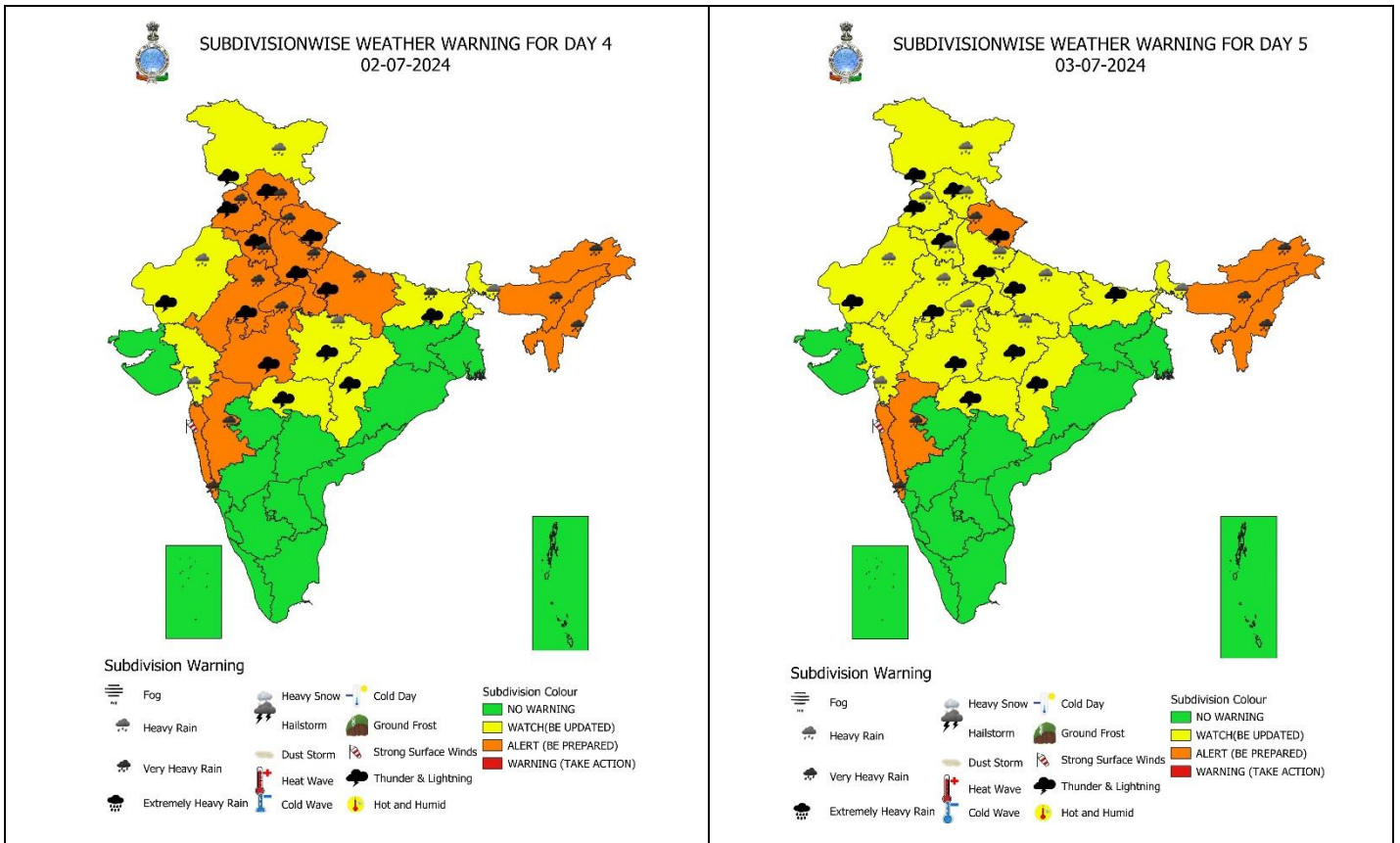
For more details, kindly refer: <http://aws.imd.gov.in:8091/>

Advance of Southwest Monsoon 2024

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IMPACT & ACTION SUGGESTED due to very heavy/extremely heavy rainfall over Konkan & Goa, ghat areas of Madhya Maharashtra, East Rajasthan, Uttar Pradesh, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura during next 4-5 days; Himachal Pradesh, Punjab, Haryana-Chandigarh during 30th June-02nd July.

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, West Bengal & Sikkim, Odisha, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Rajasthan, Madhya Pradesh, Chhattisgarh, Konkan & Goa, Madhya Maharashtra, Vidarbha, Gujarat, Tamil Nadu, Kerala, Coastal Karnataka and South Interior Karnataka.
- Postpone land preparation, nursery preparation and transplantation of WRC rice in Arunachal Pradesh. Postpone sowing of pigeon pea in Assam. Avoid sowing of rice nursery and millets in Meghalaya.
- 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; **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 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)