



Government of India
Ministry of Earth Sciences
India Meteorological Department



Press Release.

Date: 01st June, 2024

Time of Issue: 1345 hours IST

Subject:

- i. **Prevailing Heat wave conditions over Northwest, Central & East India are likely to reduce gradually during next 2 days.**
- ii. **Isolated heavy to very heavy rainfall likely to continue over Northeast India and south Peninsular India during next 4-5 days.**

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

- ❖ **Heat wave to severe heat wave conditions** prevailed over many parts of Haryana, Chandigarh-Delhi, and Uttar Pradesh; in some parts of Madhya Pradesh, Punjab, Rajasthan and in isolated pockets of Uttarakhand. **Heat wave conditions** prevailed in many parts of Vidarbha and Chhattisgarh; in some parts of Odisha, Himachal Pradesh; in isolated pockets of Jharkhand, Bihar and Coastal Andhra Pradesh & Yanam. **Heat wave conditions** have been prevailing over Haryana, Chandigarh & Delhi, Rajasthan since 17th and over Madhya Pradesh & Uttar Pradesh since 18th May, 2024.
- ❖ **Warm night conditions** observed in isolated pockets of Rajasthan, Delhi, Chhattisgarh, Odisha and Madhya Pradesh.
- ❖ Yesterday, **the highest maximum temperature of 48.2°C** was reported at **Kanpur (West Uttar Pradesh)** over the country.
- ❖ **Heavy to very heavy rainfall with extremely heavy falls** observed at isolated places over Kerala; **heavy rainfall** at isolated places over Coastal Andhra Pradesh, Arunachal Pradesh, Andaman & Nicobar Islands and Sub-Himalayan West Bengal.
- ❖ **Duststorm** reported at isolated places over Madhya Pradesh.
- ❖ **Gusty winds/squally winds** data reported over the country is attached in **Annexure II**.

Weather Systems and Forecast & Warnings: (Annexure III)

Advance of Southwest Monsoon:

- ❖ The Northern Limit of Monsoon passes through 13°N/60°E, 12°N/65°E, 11°N/70°E, Amini, Kannur, Coimbatore, Kanyakumari, 8.5°N/80°E, 13°N/84°E, 16°N/87°E, 18.5°N/89°E, 21°N/90°E, 23°N/89.5°E and Islampur. **(Annexure IV)**
- ❖ Conditions are favourable for further advance of Southwest Monsoon into some more parts of central Arabian Sea, remaining parts of south Arabian Sea, Lakshadweep area and Kerala, some parts of Karnataka and Rayalaseema, some more parts of Tamil Nadu and Southwest Bay of Bengal during next 2-3 days.
- ❖ A cyclonic circulation lies over Arunachal Pradesh in lower tropospheric levels. Strong southwesterly/southerly winds are prevailing from Bay of Bengal to northeastern States in lower tropospheric levels. Under their influence:
 - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with thunderstorm, lightning & gusty winds (30-40 kmph) likely over Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura and Sub-Himalayan West Bengal & Sikkim during next 7 days.

- ✓ Isolated **heavy to very heavy rainfall** very likely over Arunachal Pradesh, Assam & Meghalaya, Sub-Himalayan West Bengal & Sikkim during next 5 days and isolated **heavy rainfall** over Manipur on 03rd & 04th June.
- ❖ A trough runs from west Uttar Pradesh to west Assam in lower tropospheric levels. Under its influence:
 - ✓ Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Bihar, Gangetic West Bengal; Isolated to scattered light/moderate rainfall Odisha, Jharkhand, Chhattisgarh, Vidarbha, Konkan & Goa during next 5 days and over Madhya Maharashtra and Marathwada during 02nd-05th June.
 - ✓ Isolated **heavy rainfall** also very likely over south Odisha on 01st & 02nd and over Gangetic West Bengal on 01st June.
- ❖ A cyclonic circulation lies over southeast Arabian Sea off south Kerala in middle tropospheric levels and another cyclonic circulation lies over Coastal Andhra Pradesh in lower tropospheric levels. Strong westerly winds are prevailing along Kerala Coast. Under its influence:
 - ✓ Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over Kerala & Mahe, Lakshadweep, Andaman & Nicobar Islands, Karnataka; isolated to scattered light to moderate rainfall over Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh, Telangana, Rayalaseema during next 7 days.
 - ✓ **Isolated very heavy to extremely heavy rainfall very likely over Kerala & Mahe during next 5 days.**
 - ✓ **Isolated heavy rainfall very likely over Andaman & Nicobar Islands on 01st June; Tamil Nadu on 01st, 02nd & 05th; South Interior Karnataka on 01st & 02nd; North Interior Karnataka on 02nd & 03rd; Coastal Andhra Pradesh on 01st, 02nd & 04th; Telangana, Rayalaseema on 02nd June, 2024.**
- ❖ A cyclonic circulation lies over Eastcentral adjoining southeast Bay of Bengal in lower and middle tropospheric levels. Under its influence:
 - ✓ Widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over Andaman & Nicobar Islands during next 7 days.
 - ✓ **Isolated heavy rainfall very likely over Andaman & Nicobar Islands on 01st June.**
- ❖ A Western Disturbance as a trough aloft in middle tropospheric westerlies roughly along Long. 71°E to the north of Lat. 28°N. A cyclonic circulation lies over southwest Rajasthan in lower tropospheric levels. Under thier influence;
 - ✓ Isolated to scattered light rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand during next 5 days.

- ✓ Isolated very light to light rainfall with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Punjab and Haryana during 01st-05th; Uttar Pradesh during 01st-04th and Rajasthan on 01st & 02nd June.
- ✓ **Duststorm** very likely over Uttar Pradesh, Rajasthan and Gujarat on 01st & 02nd June.

Maximum temperature observation and forecast for next 5 days:

- ❖ **Areas having maximum temperatures ($\geq 42^{\circ}\text{C}$):** Yesterday, maximum temperatures were in the range of 45-48 $^{\circ}\text{C}$ in many parts of Haryana-Chandigarh-Delhi, Chhattisgarh; in some parts of Punjab, West Rajasthan, Uttar Pradesh, Vidarbha, Odisha; in isolated pockets over East Rajasthan, Madhya Pradesh, Coastal Andhra Pradesh & Yanam; in the range of 42-45 $^{\circ}\text{C}$ in many parts of Telangana; in some parts of Rayalaseema; in isolated pockets over Gujarat state, Tamil Nadu. These were above normal by 3- 6 $^{\circ}\text{C}$ over many parts of Uttar Pradesh, Odisha; over some parts of Punjab, Haryana-Chandigarh-Delhi, Rajasthan, Madhya Pradesh, Chhattisgarh, Coastal Andhra Pradesh & Yanam; in isolated parts of Vidarbha.
- ❖ **Gradual fall in maximum temperatures by 2-3 $^{\circ}\text{C}$ very likely over Northwest & East India during next 2-3 days and no significant change thereafter.**
- ❖ **Gradual fall in maximum temperatures by 2-3 $^{\circ}\text{C}$ very likely over Central India during next 5 days.**
- ❖ No significant change in maximum temperatures very likely over Maharashtra during next 3 days and fall in maximum temperatures by 2-3 $^{\circ}\text{C}$ thereafter.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

Heat Wave, Warm Night and Hot & Humid weather warning for next 5 days:

- ❖ **Heat wave to severe heat wave conditions** very likely in isolated pockets over Haryana-Chandigarh and **heat wave** in many parts over Punjab on 01st June and in some pockets over the region on 02nd June.
- ❖ **Heat wave conditions** very likely in isolated pockets of Uttarakhand, Jharkhand during 01st-03rd; Delhi, East Madhya Pradesh, Chhattisgarh, Bihar, Odisha on 01st & 02nd; Himachal Pradesh, East Rajasthan, Uttar Pradesh, West Madhya Pradesh, Telangana and Vidarbha on 01st and West Rajasthan on 01st, 04th & 05th June.
- ❖ **Warm night conditions** in some parts very likely to prevail over Punjab, Haryana, East Madhya Pradesh on 01st & 02nd; isolated pockets over Uttar Pradesh, Odisha, Chhattisgarh on 01st June.
- ❖ **Hot and humid weather** very likely to prevail over isolated pockets of Konkan & Goa during 01st-03rd; south Coastal Andhra Pradesh on 01st; Odisha during 03rd-05th; Jharkhand on 04th & 05th June, 2024.

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 Sub-Himalayan West Bengal & Sikkim, Andaman & Nicobar Islands, Arunachal Pradesh; **at many places** over Gangetic West Bengal, Assam & Meghalaya, Kerala & Mahe, Lakshadweep; **at a few places** over Odisha, Nagaland, Manipur, Mizoram & Tripura, Coastal Andhra Pradesh & Yanam and **at isolated places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, Punjab, Haryana, West Uttar Pradesh, Rajasthan, Konkan & Goa, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Tamil Nadu, Puducherry & Karaikal, Karnataka and Telangana.

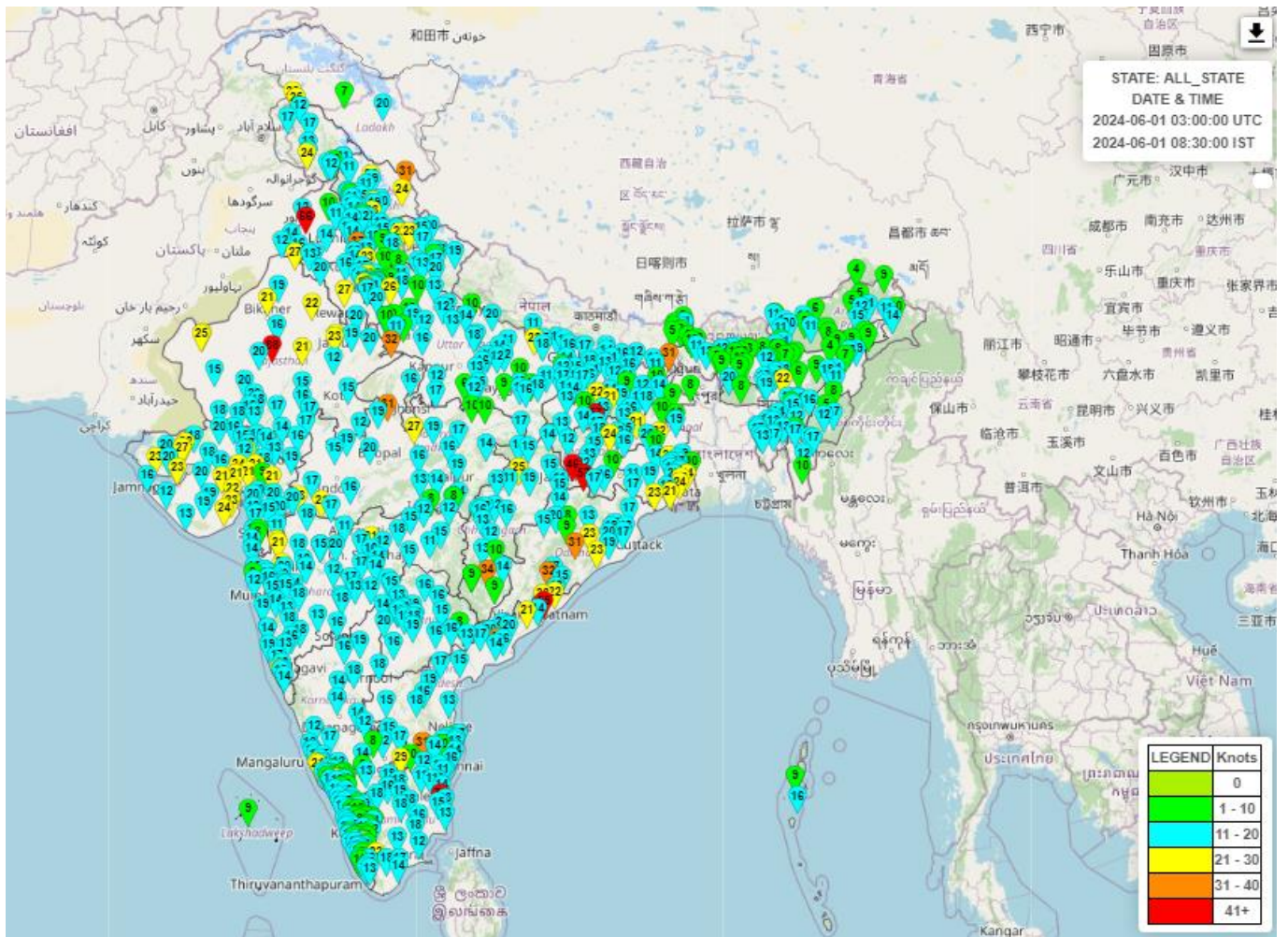
Significant amount of rainfall (in cm):

- ❖ **Kerala:** Udumbannoor (Idukki district) 23, Urumi (Kozhikode district) 14, Kottayam & Poonjar (Kottayam district) 11 each, Vadavathur (Kottayam district) 10, Aluva (Ernakulam district) & Thavanur (Malappuram district) 9 each, Kodungallur (Thrissur district) 8, Kumarakom (Kottayam district) & Idamalayar Dam (Ernakulam district) 7 each.
- ❖ **Assam & Meghalaya:** Mohanbari (dist Dibrugarh) 7, Dholla Bazar (dist Tinsukia) 7, Jowai (dist West Jaintia Hills) 6.
- ❖ **Coastal Andhra Pradesh & Yanam:** Ichchapuram (dist. Srikakulam) 7, Sompeta (dist. Srikakulam) 7, Veeraghattam (dist. Parvathipuram Manyam) 6, Anakapalle (dist. Anakapalli) 5.
- ❖ **Andaman & Nicobar Islands:** Hut Bay (dist South Andaman) 7, Port Blair (dist South Andaman) 6.
- ❖ **Sub-Himalayan West Bengal & Sikkim:** Sevoke (dist Darjeeling) 7, Singhik (dist North Sikkim) 7, Kabi (dist North Sikkim) 6, Sankalan (dist North Sikkim) 6.
- ❖ **Odisha:** Bhograï (dist Balasore) 6, Muruda (dist Mayurbhanj) 5, Dharakote (dist Ganjam) 4.
- ❖ **Arunachal Pradesh:** Namsai (dist Lohit) 6, Namsai (dist Lohit) 5, Deomali (dist Tirap) 3, Oyan (dist East Siang) 3.

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

- ❖ **Madhya Pradesh:** Ashoknagar – 58, Sagar – 50, Guna – 36, Damoh – 36, Chhatarpur, Katni – 32 each, Bhand, Jabalpur - 30 kmph, Gwalior – 26
- ❖ **Kerala:** Pathanamthitta 42, Kasaragod 39
- ❖ **Himachal Pradesh:** Lahaul & Spiti-56
- ❖ **Haryana:** Kiathal-67; Gurgaon-57
- ❖ **Rajasthan:** Dholpur- 57
- ❖ **Madhya Pradesh:** Aonwari- 55
- ❖ **Bihar:** Arrabari- 55
- ❖ **Chhattisgarh:** Dantewada-61
- ❖ **Odisha:** Benakuda-56
- ❖ **Andhra Pradesh:** Vizianagaram-58; Maruteru- 59
- ❖ **Tamil Nadu:** Virinjipuram-55

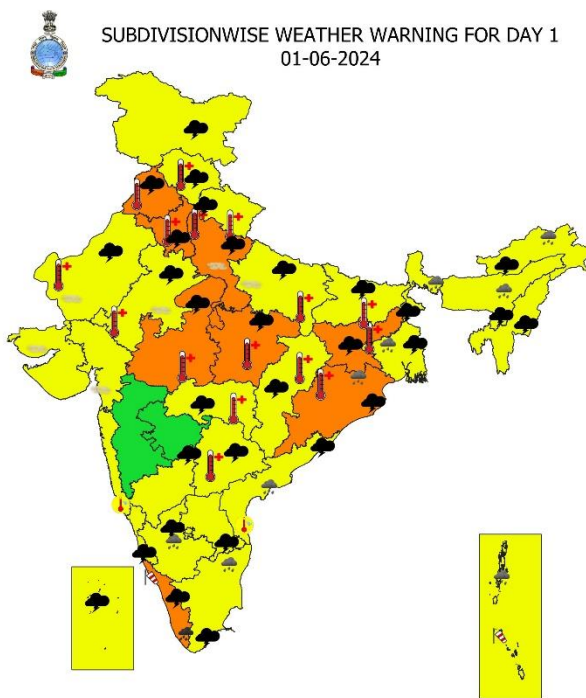
Fig.: Gusty winds reported over the country (in knots, 1 Knot = 1.85 kmph) from 0830 hrs IST of 31.05.2024 to 0830 hrs IST of 01.06.2024



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

ANNEXURE III

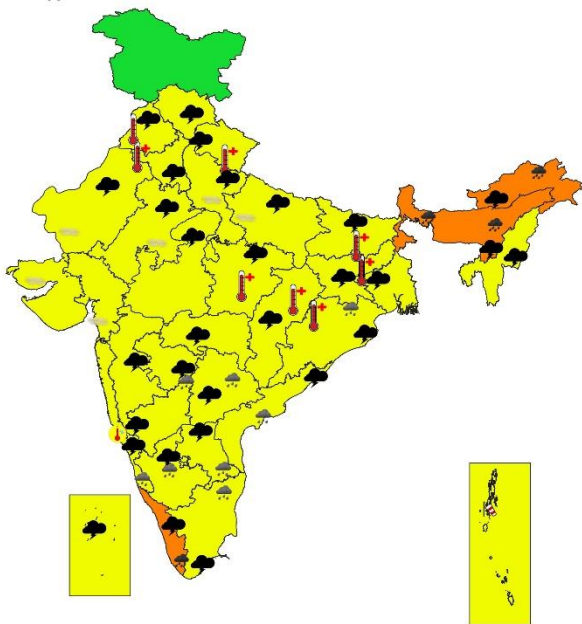
SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
01-06-2024



Subdivision Warning

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

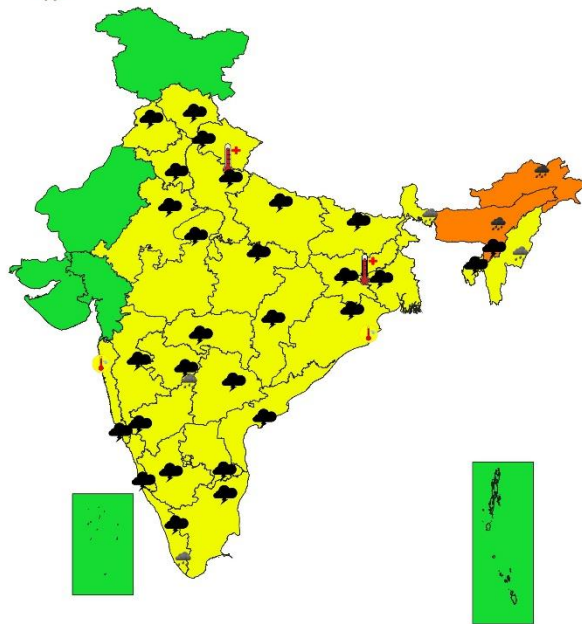
SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
02-06-2024



Subdivision Warning

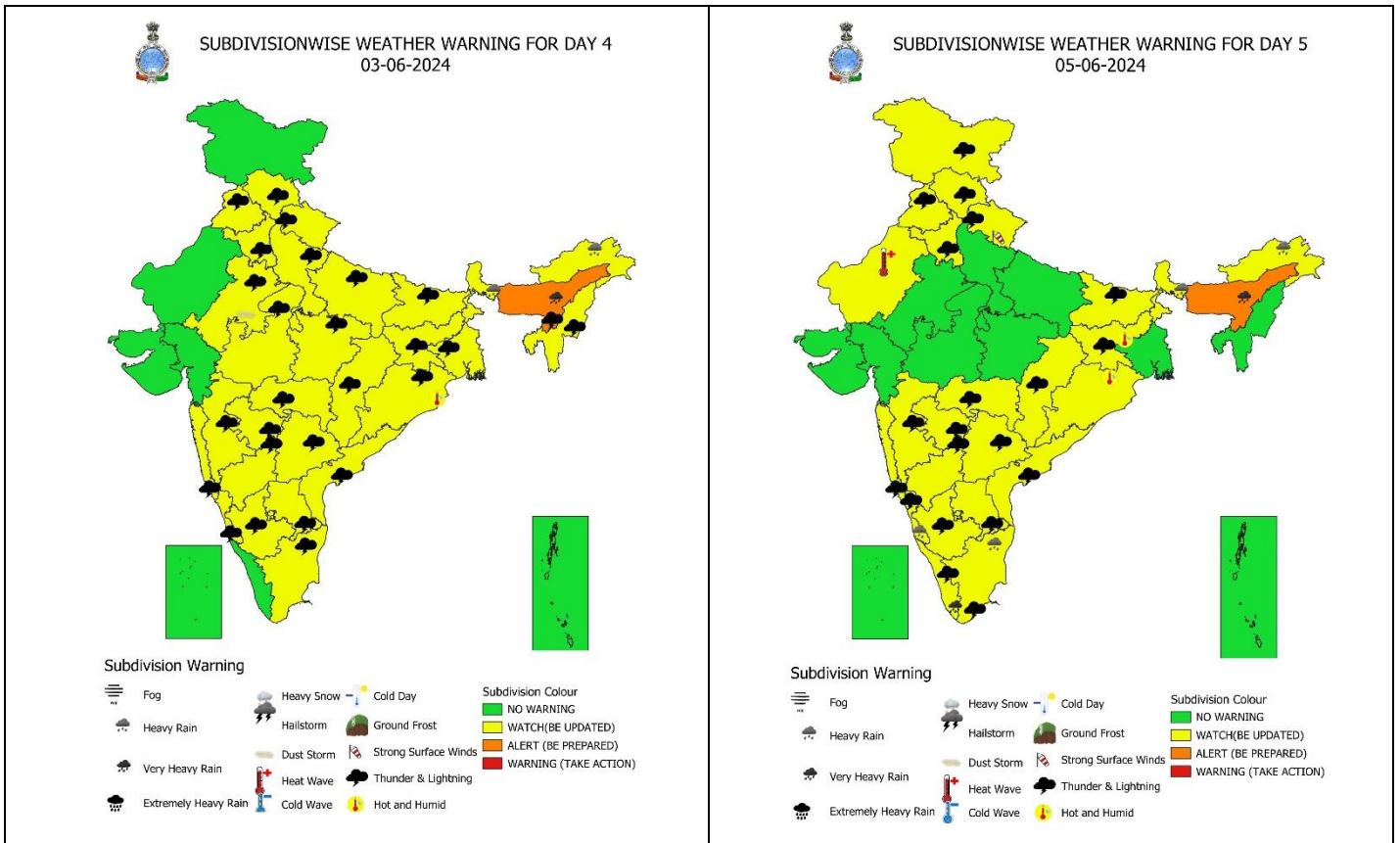
- | | | | |
|----------------------|------------|----------------------|---------------------------|
| Fog | Heavy Snow | Cold Day | Subdivision Colour |
| Heavy Rain | Hailstorm | Ground Frost | NO WARNING |
| Very Heavy Rain | Dust Storm | Strong Surface Winds | WATCH (BE UPDATED) |
| Extremely Heavy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

SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
03-06-2024



Subdivision Warning

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



IMPACT & ACTION SUGGESTED due to very heavy rainfall over Assam, Meghalaya during 02nd-05th June; Arunachal Pradesh on 02nd & 03rd; Sub-Himalayan West Bengal & Sikkim on 02nd June, Kerala & Mahe on 01st, 02nd & 05th June, 2024.

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/mudslips/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)

A. 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.

IMPACT & ACTION SUGGESTED due to Heat Wave Conditions:

Orange alert Areas:

- High temperature & increased likelihood of heat illness symptoms in people who are either exposed to sun for a prolonged period or doing heavy work.
- High health concern for vulnerable people e.g. infants, elderly, people with chronic diseases.
- Avoid heat exposure– keep cool. Avoid dehydration.
- Drink sufficient water- even if not thirsty.
- Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated.

Yellow alert Areas:

- Moderate temperature & heat is tolerable for general public but moderate health concern likely for vulnerable people e.g. infants, elderly, people with chronic diseases.
- Avoid heat exposure.
- Wear lightweight, light colour, loose, cotton clothes.
- Cover your head, use a cloth, hat or umbrella.

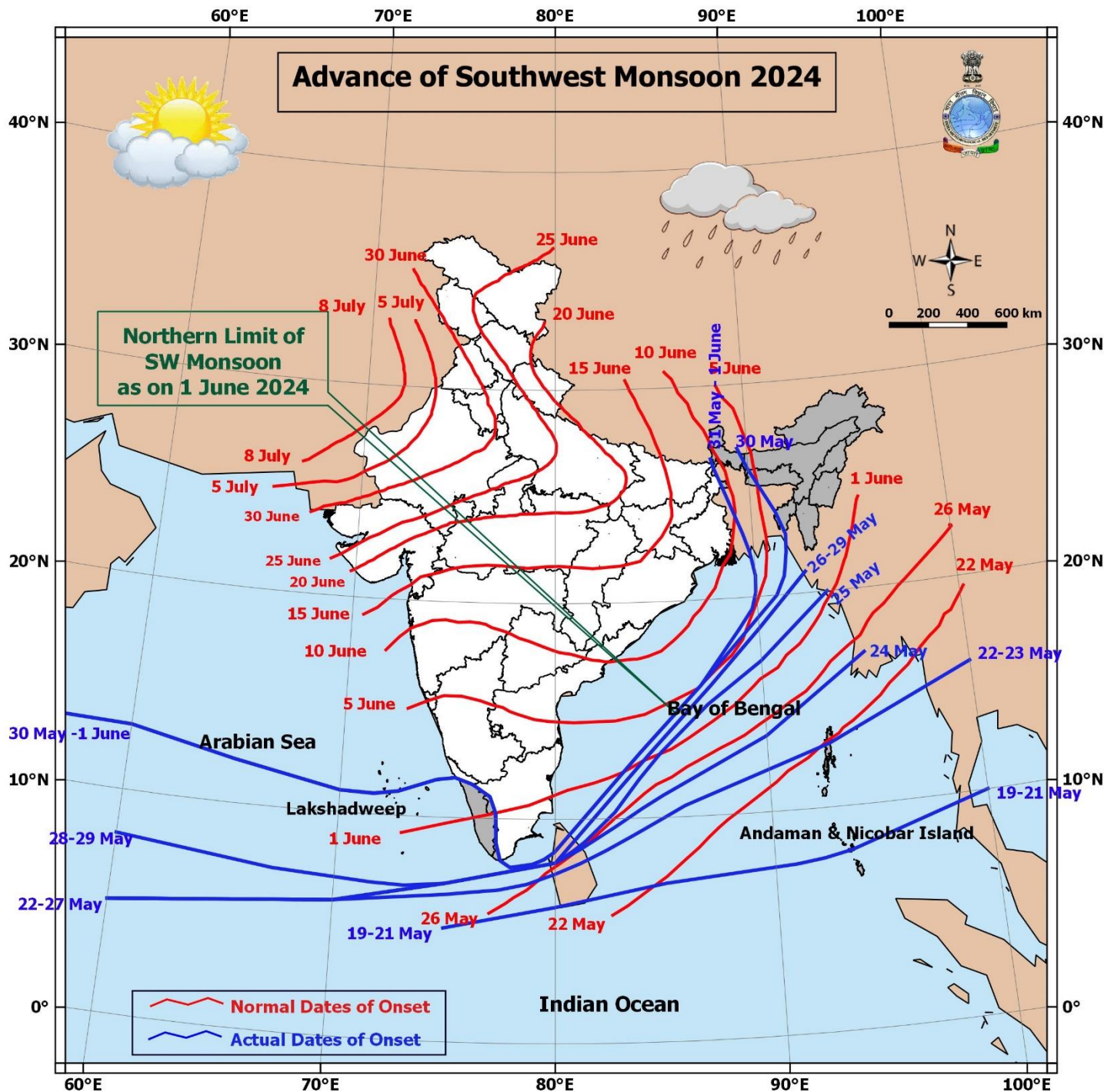
Agromet advisories for Heavy Rainfall, Gusty winds and Heat Wave likely over various parts of the country

(Based on the IBF and advisories issued by different AMFUs)

- Drain out excess water from crop fields to avoid water stagnation in Kerala, West Bengal and North-Eastern States.
- Apply light and frequent irrigation to standing crops to avoid heat stress; provide mulching to conserve soil moisture and minimise evaporation in Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, West Rajasthan, Bihar, Jharkhand, Odisha, Madhya Pradesh, Vidarbha, Chhattisgarh and Coastal Andhra Pradesh.
- Provide mechanical support to horticultural crops & staking to vegetables to prevent damage from gusty winds.

ANNEXURE IV

Advance of Southwest Monsoon 2024



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)



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 < 1km

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)