

Tuesday, June 18, 2024
Time of Issue: 0800 hours IST
(MORNING)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features:

Advance of Southwest Monsoon:

- ❖ The Northern Limit of Monsoon continues to pass through 20.5°N/60°E, 20.5°N/63°E, 20.5°N/70°E, Navsari, Jalgaon, Amravati, Chandrapur, Bijapur, Sukma, Malkangiri, Vizianagaram, 19.5°N/88°E, 21.5°N/89.5°E, 23°N/89.5°E and Islampur.
- ❖ Conditions are favourable for further advance of Southwest Monsoon into some more parts of Maharashtra, Chhattisgarh, Odisha, Coastal Andhra Pradesh & Northwest Bay of Bengal, some parts of Gangetic West Bengal, remaining parts of Sub Himalayan West Bengal and some parts of Bihar during next 3-4 days.

Weather Systems and Forecast & Warnings:

- ❖ A Western Disturbance as a trough in mid-tropospheric westerlies runs roughly along long. 67°E to the north of Lat. 30°N. Under its influence; isolated to scattered light rainfall with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Punjab, Haryana-Chandigarh-Delhi, Uttar Pradesh and Rajasthan during 18th-20th June, 2024.
- ❖ **Strong surface winds** (speed reaching 25-35 kmph) very likely over plains of Northwest India during next 5 days.
- ❖ A cyclonic circulation lies over northeast Assam and a north-south trough runs from north Bihar to southern parts of Gangetic West Bengal in lower tropospheric levels. Strong southwesterly/southerly winds are prevailing from Bay of Bengal to northeastern States in lower tropospheric levels. Under their influence:
 - 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 5 days.
 - Isolated **heavy to very heavy rainfall** very likely over Sub-Himalayan West Bengal & Sikkim, Assam & Meghalaya, Arunachal Pradesh during 18th-22nd; Nagaland, Manipur, Mizoram & Tripura during 18th-19th with **isolated extremely heavy rainfall over Assam & Meghalaya and Sub-Himalayan West Bengal during 18th-19th; Arunachal Pradesh on 19th and isolated exceptionally heavy rainfall over Meghalaya on 18th June, 2024.**
 - Isolated to scattered light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** very likely over Gangetic West Bengal, Bihar, Jharkhand, Odisha today, the 18th June and likely to increase thereafter.
 - Isolated **heavy rainfall** very likely over Odisha during 20th -22nd June, 2024.
- ❖ A cyclonic circulation lies over Northeast Arabian Sea adjoining Saurashtra and a north-south trough runs from this cyclonic circulation to Eastcentral Arabian Sea off south Maharashtra coast in lower tropospheric levels. An east-west trough runs from Goa to south Coastal Andhra Pradesh and a cyclonic circulation lies over Southeast Arabian Sea off Kerala coast in lower tropospheric levels. Under their influence:
 - Scattered to fairly widespread light to moderate rainfall accompanied with **thunderstorm, lightning** likely over Gujarat state, Konkan & Goa, Madhya Maharashtra & Marathwada during next 5 days.
 - Isolated **heavy rainfall** very likely over Konkan & Goa and ghat areas of Madhya Maharashtra during 18th-22nd and Gujarat Region during 20th -22nd June, 2024.
 - Fairly widespread to widespread light to moderate rainfall accompanied with **thunderstorm, lightning & gusty winds (30-40 kmph)** likely over Karnataka, Kerala & Mahe, Lakshadweep; isolated to scattered light to moderate rainfall over Coastal Andhra Pradesh & Yanam, Rayalaseema, Telangana, Tamil Nadu, Puducherry & Karaikal during next 5 days.
 - Isolated **heavy rainfall** very likely over Kerala & Mahe on 18th & 21st; Coastal Andhra Pradesh & Yanam during 18th-19th and Coastal Karnataka during 20th -22nd June, 2024.
- ❖ Isolated to scattered light to moderate rainfall with **thunderstorm, lightning & gusty winds (40-60 kmph)** very likely over Madhya Pradesh, Vidarbha, Chhattisgarh during next 5 days.
- ❖ Yesterday, **Maximum temperatures** were in the range of 44-46°C over most parts of plains of north India and these were above normal by 5-8°C over the region.

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

- ❖ **Heat wave to severe heat wave conditions** very likely in many/most parts of Uttar Pradesh during 18th-19th and Punjab, Haryana-Chandigarh-Delhi on 18th; in isolated/some parts of Himachal Pradesh & Bihar on 18th June and **decrease in intensity thereafter over above regions.**
- ❖ **Heat wave conditions** very likely in isolated parts of Jammu-Kashmir, north Madhya Pradesh and north Coastal Andhra Pradesh on 18th; north Rajasthan during 18th-19th June, 2024 and abate thereafter.
- ❖ **Warm night to severe warm night conditions** very likely in isolated pockets of Uttar Pradesh on 18th and **Warm night conditions** in isolated pockets of East Madhya Pradesh on 18th June, 2024.
- ❖ **Hot & Humid weather** very likely over Odisha during 18th-19th; Gangetic West Bengal on 18th and Jharkhand on 20th June, 2024.

Main Weather Observations:

- ❖ **Rainfall distribution** (from 0830 hours IST to 1730 hours IST of yesterday): **at most places** over Assam & Meghalaya; **at a few places** over Himachal Pradesh, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Madhya Maharashtra, Konkan & Goa and Vidarbha; **at isolated places** over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Nagaland, Manipur, Mizoram & Tripura, Gangetic West Bengal, Madhya Pradesh, Saurashtra & Kutch, Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal, Coastal Andhra Pradesh & Yanam, Telangana and Odisha.
- ❖ **Heavy rainfall recorded** (from 0830 hours IST to 1730 hours IST of yesterday): **NIL**.
- ❖ **Significant amount of rainfall** (from 0830 hours IST to 1730 hours IST of yesterday) (in cm): **Assam & Meghalaya**: Cherrapunji-5, Goalpara-4, North Lakhimpur, Jorhat and Silchar-2 each; **Tamil Nadu, Puducherry & Karaikal**: Uthagamandalam-3; **Arunachal Pradesh**: Itanagar-2; **Nagaland, Manipur, Mizoram & Tripura**: Kailashahar-2; **Vidarbha**: Nagpur-2; **Telangana**: Hyderabad-2; **Lakshadweep**: Amini divi-2.
- ❖ Today, **Hailstorm observed** (from 0830 hours IST to 1730 hours IST of yesterday): **West MP**: Datia, Betul; **East MP**: Chhatarpur, Shahdol, Chhindwara and Seoni.
- ❖ Yesterday, **Heatwave to severe heat wave** conditions prevailed in most parts of Punjab & Haryana-Chandigarh-Delhi and Uttar Pradesh; in some parts of Himachal Pradesh, Uttarakhand, Jharkhand, Bihar, north Madhya Pradesh; at isolated pockets over Odisha. **Heatwave conditions** at isolated pockets over northwest Rajasthan, Gangetic West Bengal, & Jammu division.
- ❖ **Reported maximum wind speed (in kmph)** (from 0830 hours IST to 1830 hours IST of yesterday): **Telangana**: Daira and Hyderabad -59 each; **Odisha**: Bhubhneshwar-68; **Jharkhand**: Bokaro-64; **Madhya Pradesh**: Balaghat-8, Betul-61, Chhatarpur-59, Khargone-52, Bhind-50, Indore-46, Gwalior-44, Datia-43, Badwani-35, Singrauli-5, Satna-46, Rewa/ Shahdol-43, Chhindwara-43; **Himachal Pradesh**: Dharmshala-61.
- ❖ **Minimum Temperature Departures (as on 17-06-2024)**: Minimum temperatures were **markedly above normal (5.1°C or more)** at isolated places over Haryana-Chandigarh-Delhi, West Rajasthan, West Uttar Pradesh and East Madhya Pradesh; **appreciably above normal (3.1°C to 5.0°C)** at many places over Gangetic West Bengal; at a few places over Punjab, East Rajasthan, East Uttar Pradesh and Odisha; at isolated places over Himachal Pradesh, East Madhya Pradesh, Gujarat State, Vidarbha and Jharkhand; **above normal (1.6°C to 3.0°C)** at many places over Kerala & Mahe and Andaman & Nicobar Islands; at a few places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Bihar, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam and Lakshadweep; at isolated places over Uttarakhand, Konkan & Goa and North Interior Karnataka. These were **below normal (-1.6°C to -3.0°C)** at isolated places over Assam & Meghalaya, Marathwada, Telangana and Tamil Nadu, Puducherry & Karaikal and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature of 22.0°C** was reported at **Narsinghpur (East Madhya Pradesh) & Forbesganj (Bihar)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 17-06-2024)**: Maximum temperatures were **markedly above normal (5.1°C or more)** at most places over Uttar Pradesh, Haryana-Chandigarh-Delhi and Uttarakhand; at many places over Himachal Pradesh, East Madhya Pradesh and Jharkhand; at a few places over Bihar and at isolated places over West Madhya Pradesh; **appreciably above normal (3.1°C to 5.0°C)** at many places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Vidarbha, Rajasthan; at a few places over Kerala & Mahe; at isolated places over Coastal Andhra Pradesh & Yanam, Odisha; **above normal (1.6°C to 3.0°C)** at most place over Andaman & Nicobar Islands and Gujarat state; at many places over Konkan & Goa, Madhya Maharashtra, Chhattisgarh, Karnataka, Rayalaseema, Tamil Nadu, Puducherry & Karaikal and at isolated places over Marathwada. These were **below normal (-1.6°C to -3.0°C)** at a few places over Assam & Meghalaya and isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Sub-Himalayan West Bengal & Sikkim and **near normal** over rest parts of the country. Yesterday, **the highest Maximum Temperature of 47.6°C** was reported at **Prayagraj (East Uttar Pradesh)** over the country.

Meteorological Analysis (Based on 0530 hours IST)

- ❖ The Northern Limit of Monsoon continues to pass through 20.5°N/60°E, 20.5°N/63°E, 20.5°N/70°E, Navsari, Jalgaon, Amravati, Chandrapur, Bijapur, Sukma, Malkangiri, Vizianagaram, 19.5°N/88°E, 21.5°N/89.5°E, 23°N/89.5°E and Islampur.
- ❖ Conditions are favourable for further advance of Southwest Monsoon into some more parts of Maharashtra, Chhattisgarh, Odisha, Coastal Andhra Pradesh & Northwest Bay of Bengal, some parts of Gangetic West Bengal, remaining parts of Sub Himalayan West Bengal and some parts of Bihar during next 3-4 days.
- ❖ The Western Disturbance as a trough in mid-tropospheric westerlies with its axis at 5.8 km above mean sea level now runs roughly along long. 67°E to the north of Lat. 30°N.
- ❖ The cyclonic circulation over Northeast Arabian Sea adjoining Saurashtra at 3.1 km above mean sea level persists.
- ❖ The north-south trough from the above cyclonic circulation to Eastcentral Arabian Sea off south Maharashtra coast at 3.1 km above mean sea level persists.
- ❖ The north-south trough from north Bihar to southern parts of Gangetic West Bengal at 1.5 km above mean sea level persists.
- ❖ The cyclonic circulation over northeast Assam & neighbourhood extending upto 1.5 km above mean sea level persists.
- ❖ The east-west trough from Goa to south Coastal Andhra Pradesh at 3.1 km above mean sea level persists.
- ❖ The cyclonic circulation over Southeast Arabian Sea off Kerala coast at 0.9 km above mean sea level persists.

Weather Forecast for next 7 days (Upto 0830 hours IST of 25th June, 2024)

- ❖ Meteorological sub-division wise detailed 7 days rainfall forecast is given in Table-1.
- ❖ Fall in maximum temperatures by about 2°C very likely over Northwest India during next 4-5 days.
- ❖ No significant change in maximum temperatures very likely over Central & East India during next 2 days and fall by about 2-4°C thereafter.
- ❖ No significant change in maximum temperatures very likely over rest parts of the country.

Weather Outlook for subsequent 3 days (During 25th-27th June, 2024)

- ❖ Scattered to fairly widespread rainfall likely over Islands, Northeast India, East India, west coast and Peninsular India. Isolated to Scattered rainfall likely over Northwest, Central India.
- ❖ Mainly dry weather likely to prevail over rest parts of the country.

Table-1

7 Days Rainfall Forecast								
S. No.	Subdivision	18-Jun	19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	FWS	WS	WS	WS	WS	WS	WS
2	ARUNACHAL PRADESH	WS	WS	WS	WS	WS	WS	WS
3	ASSAM & MEGHALAYA	WS	WS	WS	WS	WS	WS	WS
4	NAGALAND, MANIPUR, MIZORAM & TRIPURA	WS	WS	WS	FWS	FWS	FWS	FWS
5	SUB-HIMALAYAN WEST BENGAL & SIKKIM	WS	WS	WS	WS	WS	WS	WS
6	GANGETIC WEST BENGAL	FWS	FWS	FWS	FWS	FWS	FWS	FWS
7	ODISHA	SCT	FWS	FWS	FWS	FWS	FWS	FWS
8	JHARKHAND	SCT	FWS	FWS	FWS	FWS	FWS	FWS
9	BIHAR	ISOL	SCT	SCT	FWS	FWS	FWS	FWS
10	EAST UTTAR PRADESH	ISOL	ISOL	ISOL	ISOL	SCT	SCT	SCT
11	WEST UTTAR PRADESH	DRY	DRY	ISOL	ISOL	ISOL	ISOL	ISOL
12	UTTARAKHAND	ISOL	SCT	SCT	SCT	SCT	SCT	SCT
13	HARYANA CHANDIGARH & DELHI	ISOL	SCT	SCT	ISOL	ISOL	DRY	DRY
14	PUNJAB	SCT	SCT	SCT	ISOL	ISOL	DRY	DRY
15	HIMACHAL PRADESH	ISOL	SCT	SCT	ISOL	ISOL	ISOL	ISOL
16	JAMMU & KASHMIR AND LADAKH	ISOL	SCT	SCT	SCT	ISOL	DRY	DRY
17	WEST RAJASTHAN	DRY	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
18	EAST RAJASTHAN	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
19	WEST MADHYA PRADESH	SCT	ISOL	ISOL	ISOL	SCT	SCT	SCT
20	EAST MADHYA PRADESH	FWS	SCT	SCT	SCT	SCT	SCT	SCT
21	GUJARAT REGION	ISOL	SCT	SCT	SCT	ISOL	ISOL	ISOL
22	SAURASHTRA & KUTCH	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
23	KONKAN & GOA	WS	WS	WS	WS	WS	WS	WS
24	MADHYA MAHARASHTRA	SCT	SCT	SCT	SCT	FWS	SCT	SCT
25	MARATHAWADA	ISOL	ISOL	ISOL	ISOL	ISOL	SCT	SCT
26	VIDARBHA	FWS	SCT	SCT	SCT	FWS	FWS	FWS
27	CHHATTISGARH	FWS	FWS	FWS	FWS	FWS	FWS	FWS
28	COASTAL ANDHRA PRADESH & YANAM	FWS	FWS	SCT	SCT	ISOL	ISOL	ISOL
29	TELANGANA	ISOL	ISOL	ISOL	SCT	SCT	SCT	SCT
30	RAYALASEEMA	SCT	SCT	SCT	SCT	SCT	ISOL	ISOL
31	TAMILNADU PUDUCHERRY & KARAIKAL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
32	COASTAL KARNATAKA	WS	WS	WS	WS	WS	WS	WS
33	NORTH INTERIOR KARNATAKA	FWS	SCT	SCT	SCT	SCT	SCT	SCT
34	SOUTH INTERIOR KARNATAKA	FWS	FWS	SCT	SCT	SCT	SCT	SCT
35	KERALA & MAHE	WS	WS	WS	WS	WS	WS	WS
36	LAKSHADWEEP	WS	WS	WS	WS	FWS	FWS	FWS

Legend	Category	% Stations
WS	Widespread/Most Places	76-100
FWS	Fairly Widespread/Many Places	51-75
SCT	Scattered/ A Few Places	26-50
ISOL	Isolated Places	1-25
DRY	No Rain	0

* Red colour warning does not mean "Red Alert", Red colour warning means "Take Action".
Forecast and Warning for any day is valid from 0830 hours IST of day till 0830 hours IST of next day.
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Fig. 1: Maximum Temperatures

Fig. 2: Departure of Maximum Temperatures

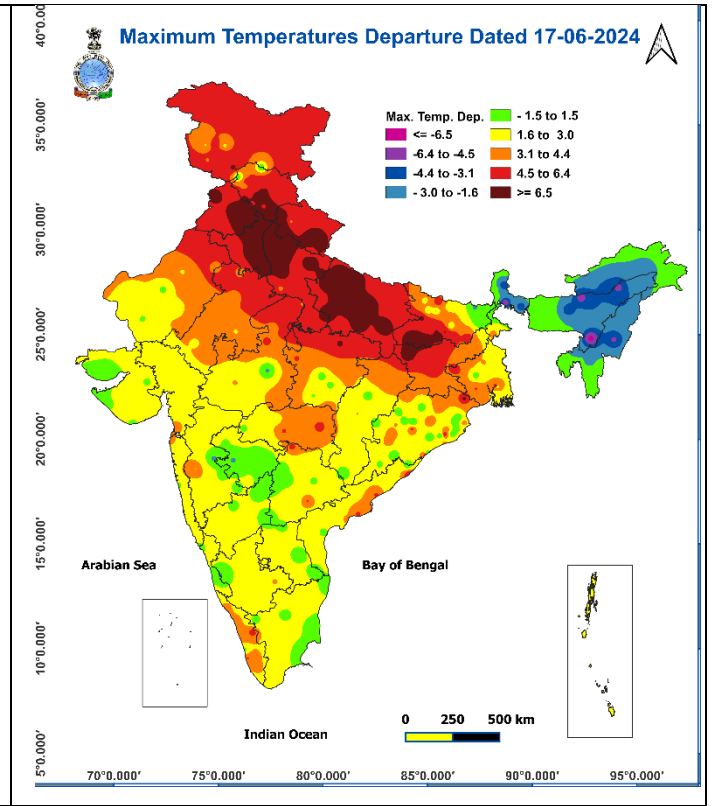
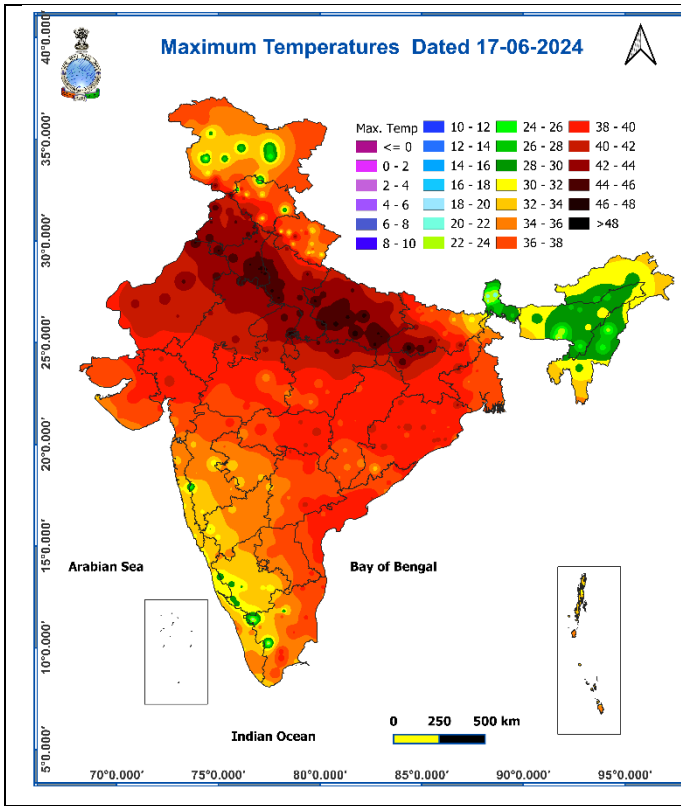


Fig. 3: Minimum Temperatures

Fig. 4: Departure of Minimum Temperatures

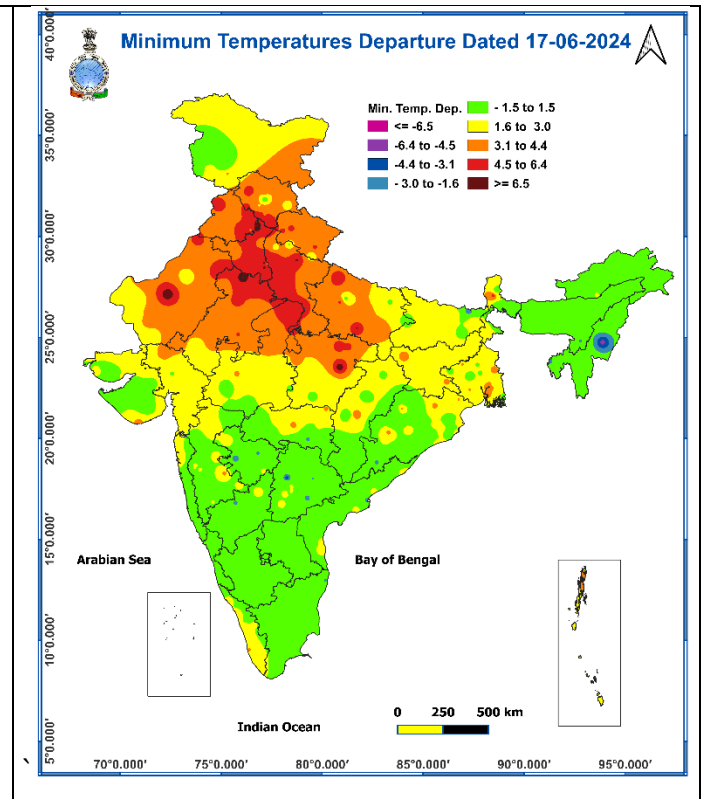
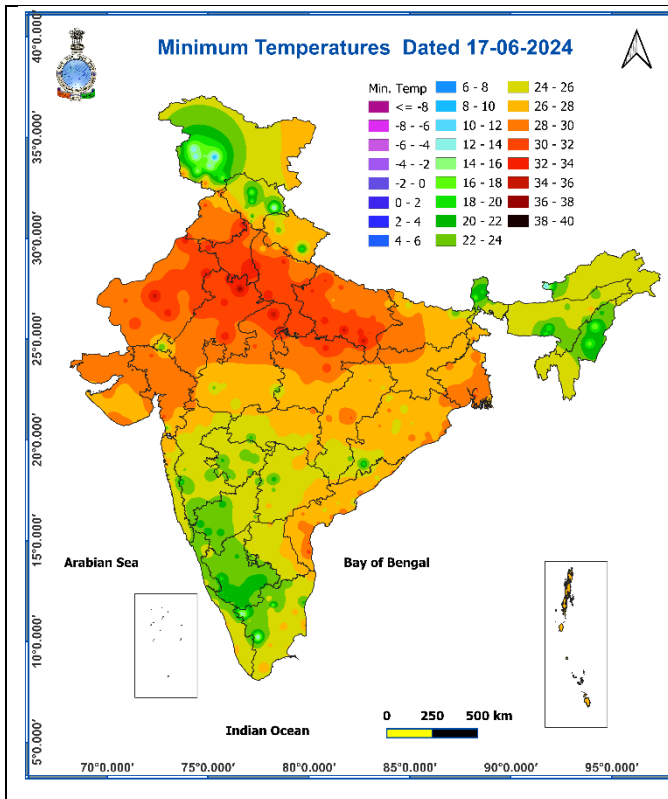
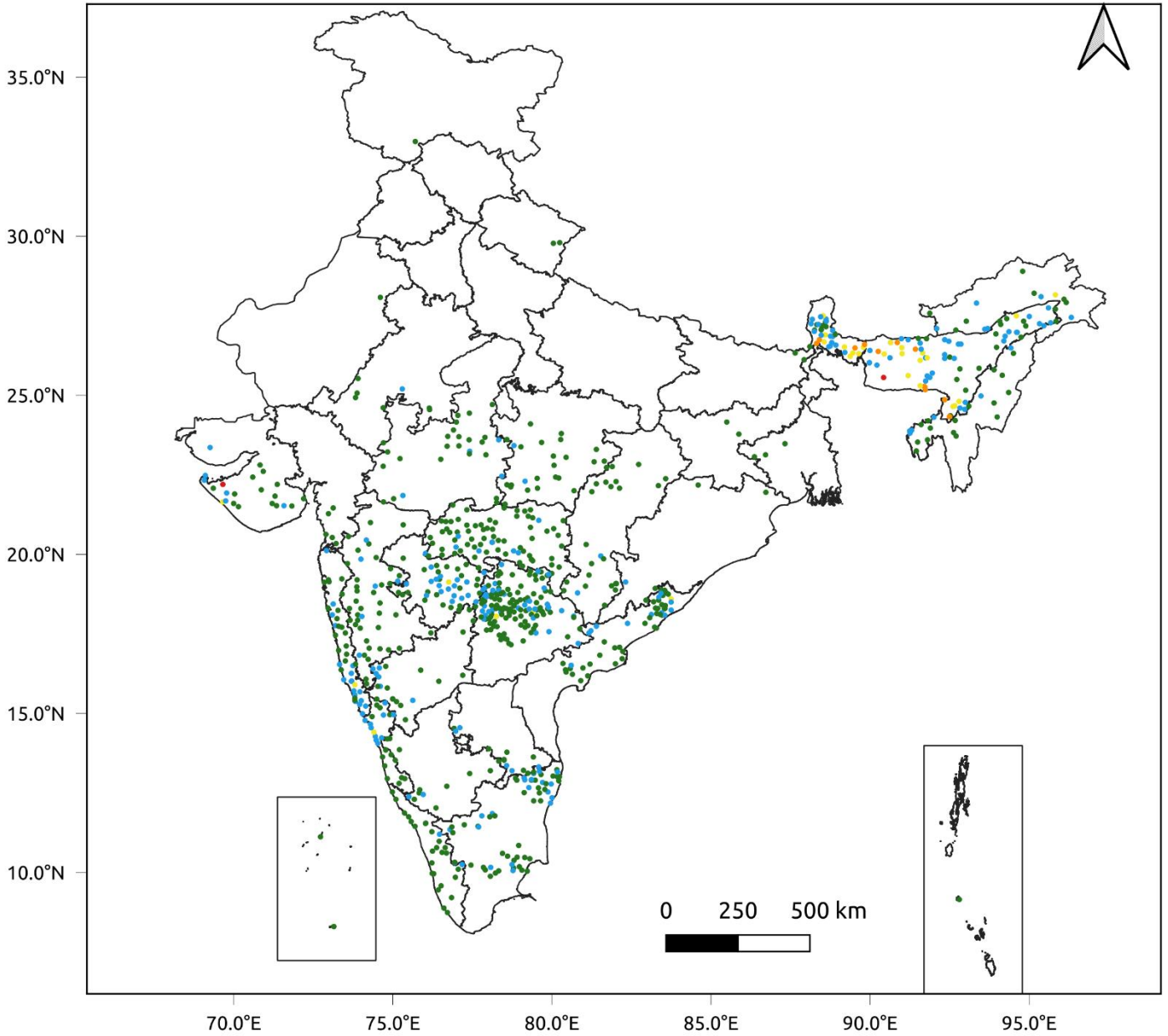


Fig. 5: Accumulated Rainfall (mm) during past 24 hours



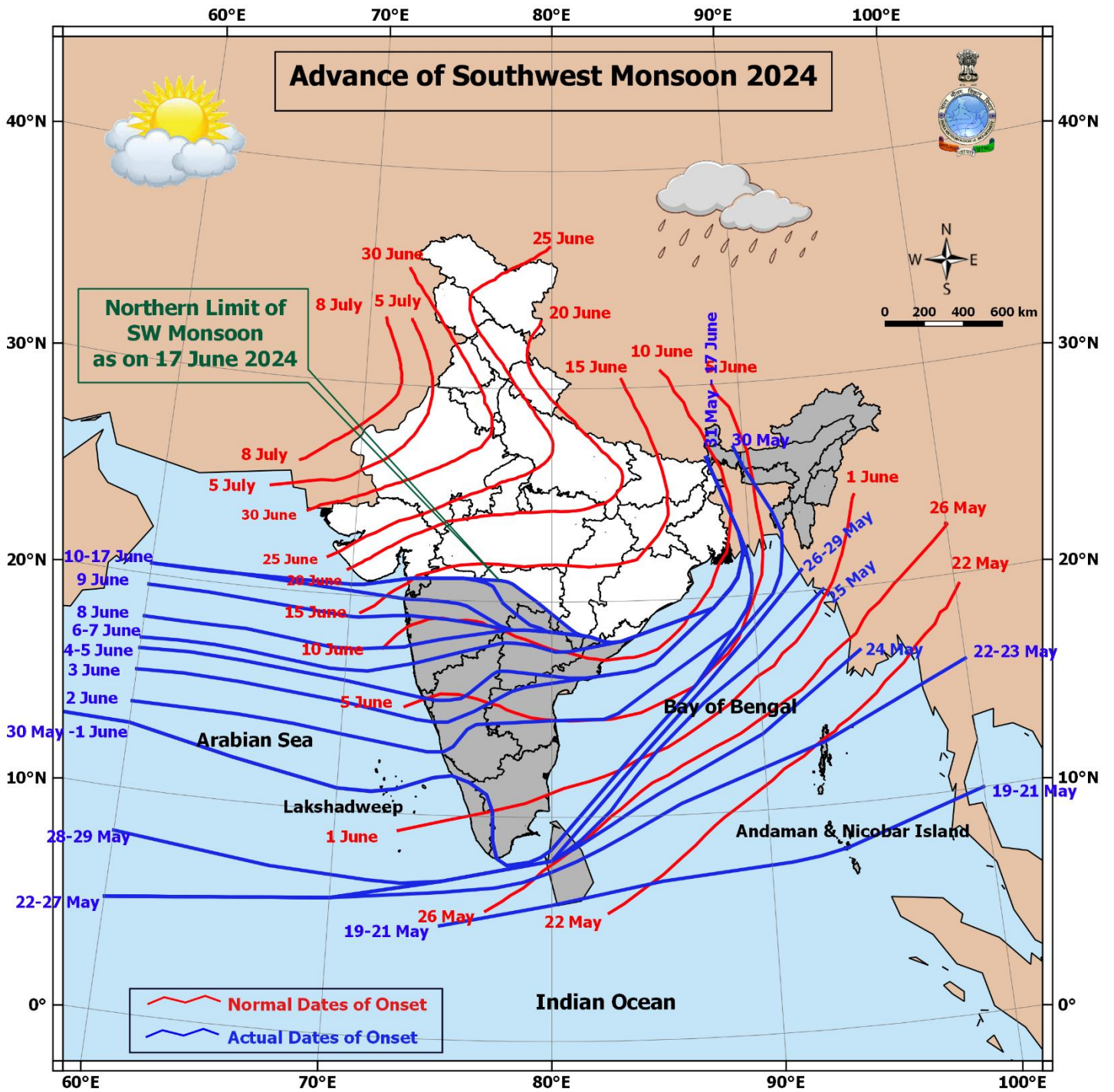
24 Hr cumulative rainfall recorded over different stations during 0830 IST of 16-6-2024 to 0830 IST of 17-6-2024



Legends

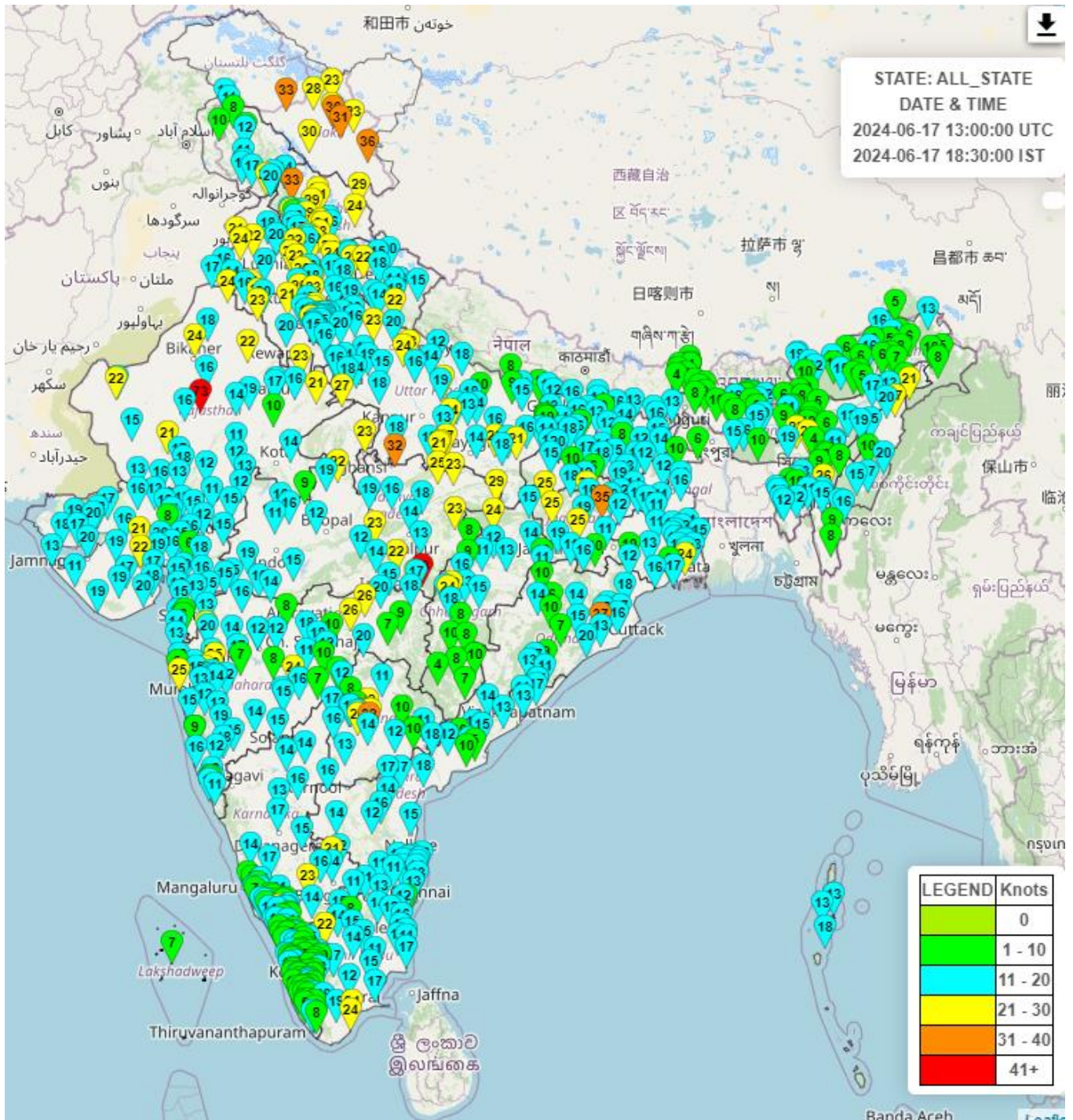
- Very Light to Light Rainfall (0.1 - 15.5 mm)
- Moderate Rainfall (15.6 - 64.4 mm)
- Heavy Rainfall (64.5 - 115.5 mm)
- Very Heavy Rainfall (115.6 - 204.4 mm)
- Extremely Heavy Rainfall (≥ 204.5 mm)

Fig. 6: Advance of Southwest Monsoon 2024



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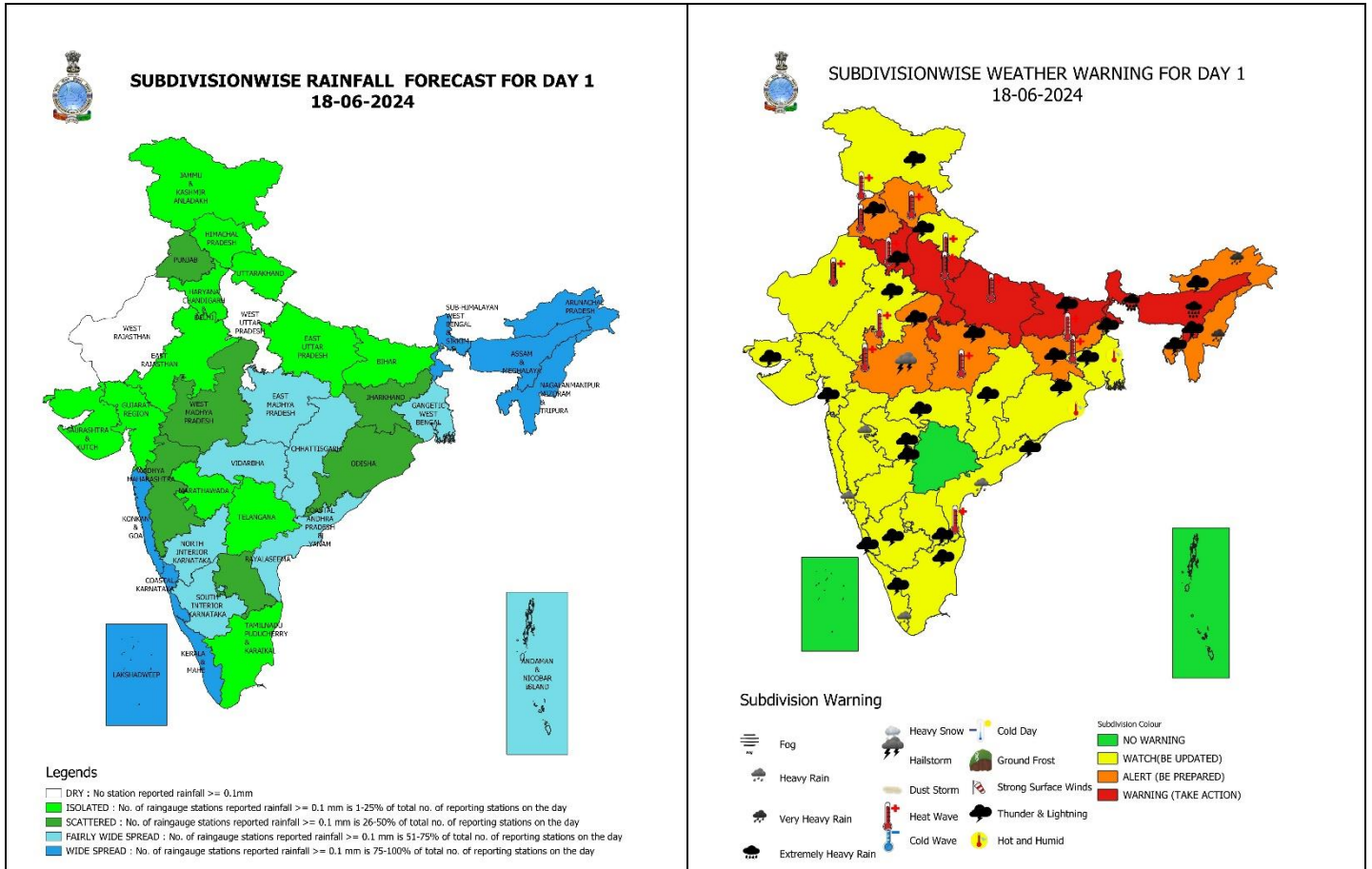
Fig. 7: Gusty winds reported over the country (in knots) from 0830 hours IST to 1830 hours IST of 17.06.2024



1 Knot = 1.852 kmph

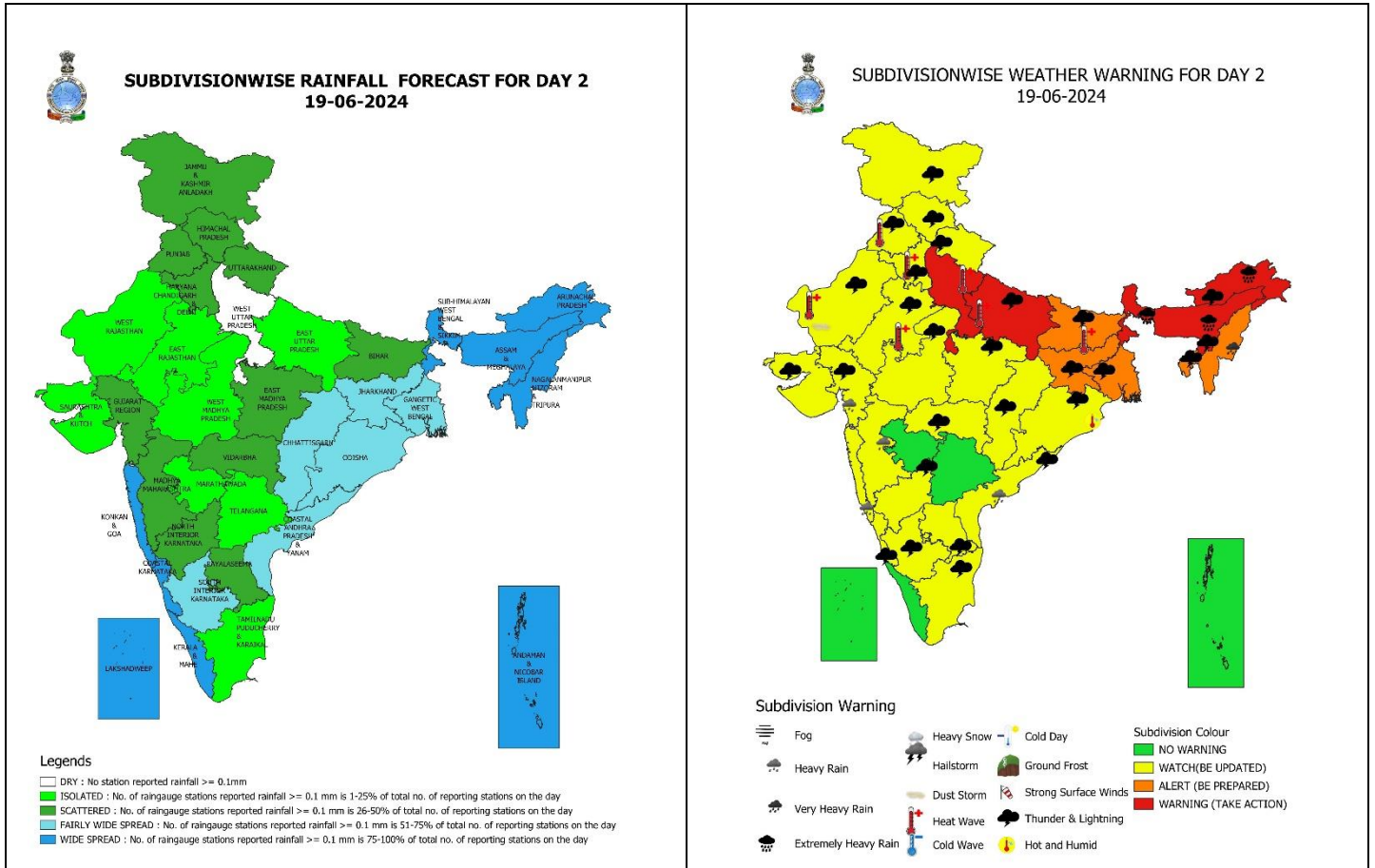
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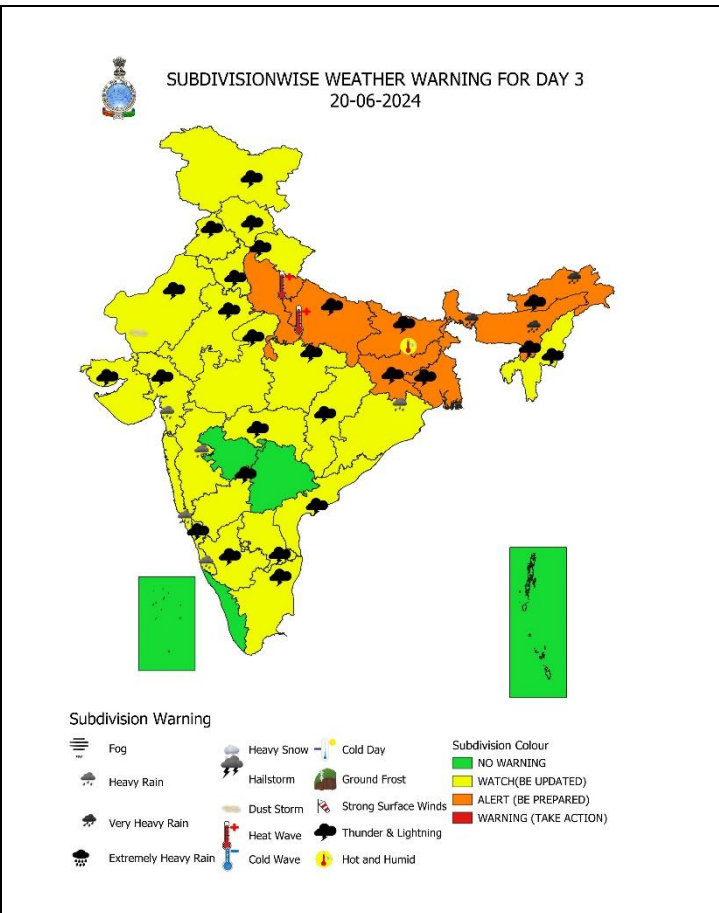
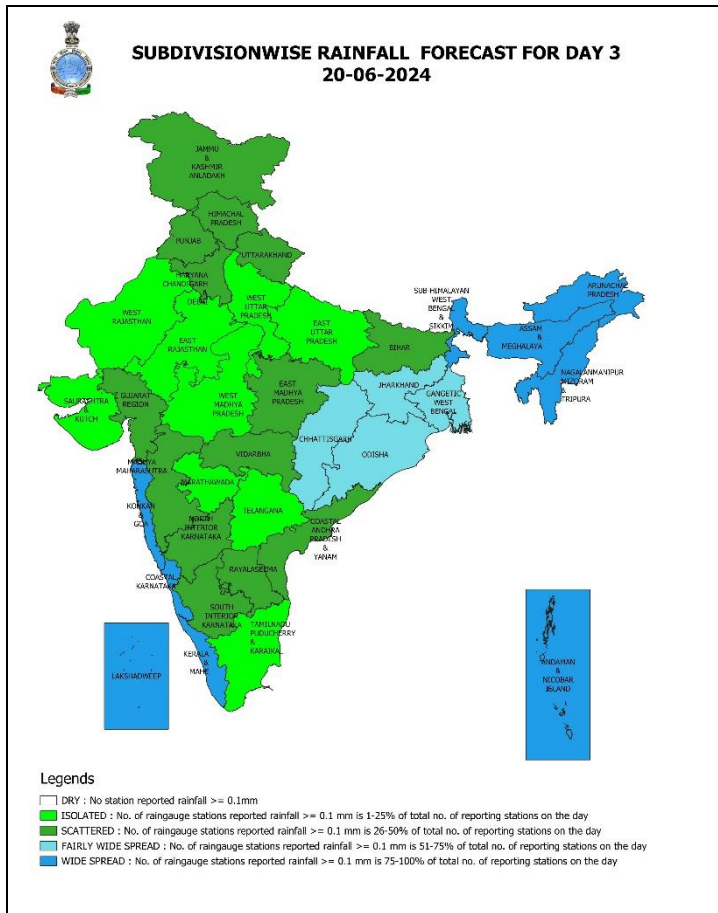
18 June (Day 1):

- ❖ **Isolated exceptionally heavy rainfall** very likely over Assam & Meghalaya; **Heavy to very heavy rainfall with extremely heavy falls** at isolated places over Sub-Himalayan West Bengal & Sikkim; **Heavy to very heavy rainfall** at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura; **heavy rainfall** at isolated places over Konkan & Goa, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam and Kerala & Mahe.
- ❖ **Thunderstorm accompanied with lightning, hail & squally winds (speed reaching 50-60 kmph gusting to 70 kmph)** very likely at isolated places over West Madhya Pradesh; **with lightning, hail & squally winds (speed reaching 50-60 kmph gusting to 70 kmph)** very likely at isolated places over East Madhya Pradesh; **lightning & gusty winds (speed reaching 40-50 kmph)** at isolated places over Gangetic West Bengal, Jharkhand, Vidarbha, Chhattisgarh, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places over Punjab, Haryana-Chandigarh-Delhi, East Rajasthan, Sub-Himalayan West Bengal & Sikkim, Bihar, Odisha, Gujarat state, North Interior Karnataka, South Interior Karnataka; **with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Uttarakhand, Tamil Nadu, Puducherry & Karaikal, Coastal Karnataka.
- ❖ **Heat wave to severe heat wave conditions** very likely in most parts of Uttar Pradesh, Haryana-Chandigarh-Delhi; in few parts of Himachal Pradesh, Punjab; in isolated places of Bihar. **Heat wave conditions** in isolated pockets over Jammu-Kashmir, Uttarakhand, north Rajasthan, Madhya Pradesh, Jharkhand and north Coastal Andhra Pradesh.
- ❖ **Hot & Humid weather** very likely to prevail over Gangetic West Bengal and Odisha.
- ❖ **Warm night conditions** very likely to prevail in isolated pockets over Uttar Pradesh, Rajasthan and East Madhya Pradesh.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** very likely to prevail over along and off Sri Lanka coast, Gulf of Mannar, Southwest and adjoining westcentral Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** very likely to prevail along and off Somalia coast, southwest and adjoining Westcentral Arabian sea. Fishermen are advised not to venture into these areas.



19 June (Day 2):

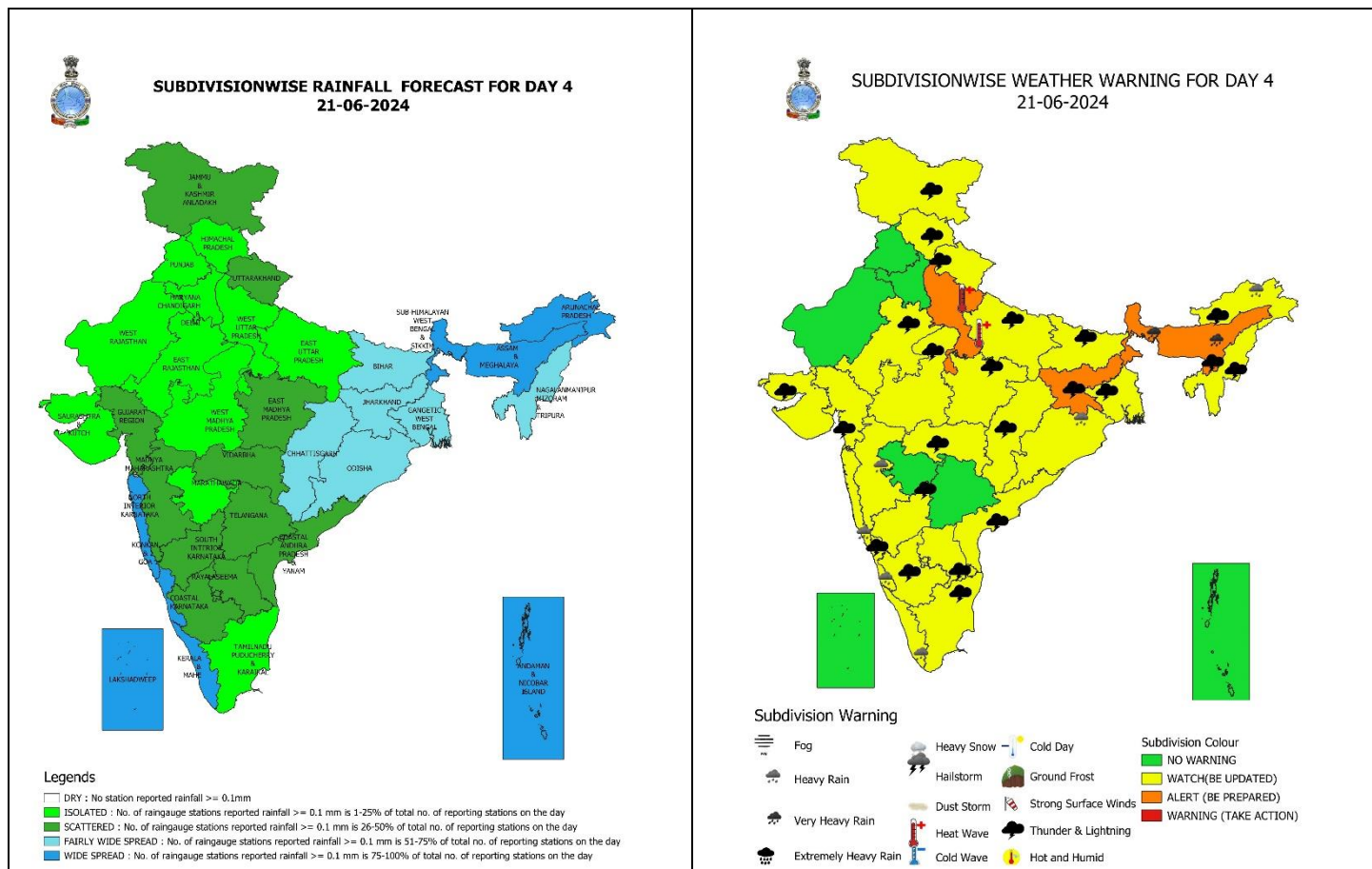
- ❖ **Heavy to very heavy rainfall with extremely heavy falls** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya; **Heavy to very heavy rainfall** at isolated places over Nagaland, Manipur, Mizoram & Tripura; **heavy rainfall** at isolated places over Konkan & Goa, Madhya Maharashtra, Gujarat Region, Coastal Andhra Pradesh & Yanam.
- ❖ **Thunderstorm accompanied with lightning & squally winds (speed reaching 50-60 kmph gusting to 70 kmph)** likely at isolated places over Uttarakhand and East Madhya Pradesh; **Thunderstorm accompanied with lightning, gusty winds (speed reaching 40-50 kmph)** at isolated places over West Madhya Pradesh, Jharkhand, Gangetic West Bengal, Bihar, Vidarbha, Gujarat Region, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places Punjab, Haryana-Chandigarh-Delhi, East Uttar Pradesh, Rajasthan, Sub-Himalayan West Bengal & Sikkim, Odisha, Chhattisgarh, Saurashtra & Kutch, Interior Karnataka; with **lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Tamil Nadu, Puducherry & Karaikal, Coastal Karnataka.
- ❖ **Thunderstorm/ Duststorm accompanied with lightning & gusty winds (speed reaching 30-40 kmph)** likely at isolated places over West Rajasthan.
- ❖ **Heat wave conditions to severe heat wave conditions** very likely in many parts of Uttar Pradesh. **Heat wave conditions** in isolated pockets over Punjab, Haryana-Chandigarh-Delhi, north Rajasthan and Bihar.
- ❖ **Hot & Humid weather** likely to prevail over Odisha.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over along and off Gujarat coast, along and off Sri Lanka coast, Gulf of Mannar, Southwest and adjoining Westcentral Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** very likely to prevail along and off Somalia coast, southwest, west central and adjoining northwest Arabian sea. Fishermen are advised not to venture into these areas.



20 June (Day 3):

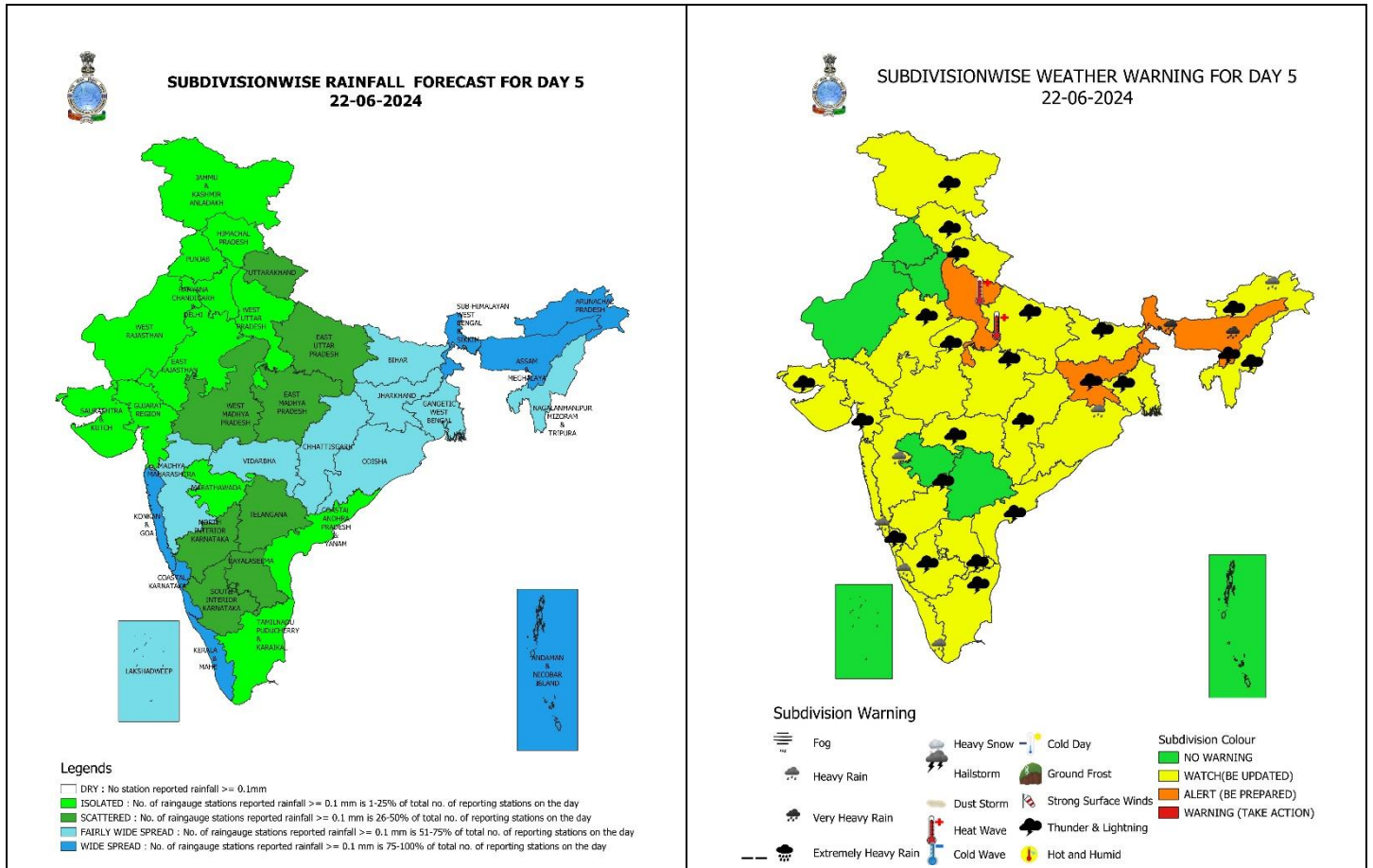
- ❖ **Heavy to very heavy rainfall** at isolated places over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya; **heavy rainfall** at isolated places over Odisha, Konkan & Goa, Madhya Maharashtra, Gujarat Region, Coastal Karnataka.
- ❖ **Thunderstorm accompanied with lightning & squally winds (speed reaching 50-60 kmph gusting to 70 kmph)** likely at isolated places over Uttarakhand and East Madhya Pradesh; **with lightning, gusty winds (speed reaching 40-50 kmph)** at isolated places over Gangetic West Bengal, Bihar, Jharkhand, West Madhya Pradesh, Gujarat Region, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places Punjab, Haryana-Chandigarh-Delhi, East Uttar Pradesh, Rajasthan, Vidarbha, Chhattisgarh, Saurashtra & Kutch and Interior Karnataka; with **lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Tamil Nadu, Puducherry & Karaikal, Coastal Karnataka.
- ❖ **Thunderstorm/ Duststorm accompanied with lightning & gusty winds (speed reaching 30-40 kmph)** likely at isolated places over West Rajasthan.
- ❖ **Heat wave conditions to severe heat wave conditions** very likely in some parts of Uttar Pradesh.
- ❖ **Hot & Humid weather** likely to prevail over Bihar.
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over along and off Gujarat, Maharashtra, Konkan, Goa, Karnataka coasts, along and off Sri Lanka coast, Gulf of Mannar, South, Central adjoining north Bay of Bengal, off Andhra Pradesh coast. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** very likely to prevail along and off Somalia & Oman coast, southwest, west central and adjoining & north Arabian sea. Fishermen are advised not to venture into these areas.

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21 June (Day 4):

- ❖ **Heavy to very heavy rainfall** at isolated places over Assam & Meghalaya and Sub-Himalayan West Bengal & Sikkim; **heavy rainfall** at isolated places over Odisha, Arunachal Pradesh, Konkan & Goa, Madhya Maharashtra, Kerala & Mahe and Coastal Karnataka.
- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed reaching 40-50 kmph)** at isolated places over Madhya Pradesh, Bihar, Jharkhand, Coastal Andhra Pradesh & Yanam and Rayalaseema; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places East Uttar Pradesh, East Rajasthan, Gangetic West Bengal, Vidarbha, Chhattisgarh, Gujarat state, Interior Karnataka; **with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Saurashtra & Kutch, Gujarat Region, Tamil Nadu, Puducherry & Karaikal, Coastal Karnataka.
- ❖ **Heat wave conditions to severe heat wave conditions** likely in few parts of West Uttar Pradesh. **Heat wave conditions** in isolated pockets over East Uttar Pradesh,
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over along and off Gujarat, Maharashtra, Konkan, Goa, Karnataka coasts, along and off Sri Lanka coast, Gulf of Mannar, South and adjoining Central Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** very likely to prevail along and off Somalia & Oman coast, southwest, west central and adjoining east & north Arabian sea. Fishermen are advised not to venture into these areas.

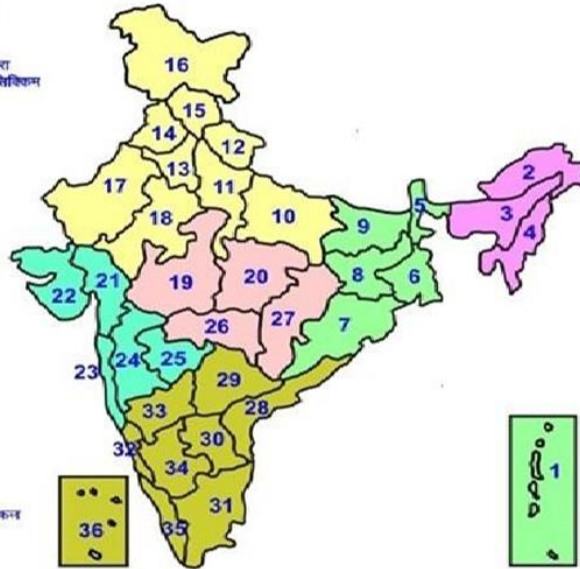


22 June (Day 5):

- ❖ **Heavy to very heavy rainfall** at isolated places over Assam & Meghalaya and Sub-Himalayan West Bengal & Sikkim; **heavy rainfall** at isolated places over Odisha, Arunachal Pradesh, Konkan & Goa, Madhya Maharashtra, Kerala & Mahe and Coastal Karnataka.
- ❖ **Thunderstorm accompanied with lightning, gusty winds (speed reaching 40-50 kmph)** at isolated places over Madhya Pradesh, Bihar, Jharkhand, Coastal Andhra Pradesh & Yanam and Rayalaseema; **with lightning & gusty winds (speed reaching 30-40 kmph)** at isolated places East Uttar Pradesh, East Rajasthan, Gangetic West Bengal, Vidarbha, Chhattisgarh, Gujarat state, Interior Karnataka; **with lightning** at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand, Assam & Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura, Saurashtra & Kutch, Gujarat Region, Tamil Nadu, Puducherry & Karaikal, Coastal Karnataka.
- ❖ **Heat wave conditions to severe heat wave conditions** likely in few parts of West Uttar Pradesh. **Heat wave conditions** in isolated pockets over East Uttar Pradesh,
- ❖ **Squally weather with wind speed 35 kmph to 45 kmph gusting to 55 kmph** likely to prevail over along and off Gujarat, Maharashtra, Konkan, Goa, Karnataka coasts, along and off Sri Lanka coast, Gulf of Mannar, South and adjoining Central Bay of Bengal. **Squally weather with wind speed 45 kmph to 55 kmph gusting to 65 kmph** very likely to prevail along and off Somalia & Oman coast, southwest, west central and adjoining east & north Arabian sea. Fishermen are advised not to venture into these areas.

LEGENDS

- 1 अंडमन और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
- 5 उप-हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम बंगाल
- 7 ओडिशा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा, चंडीगढ़ एवं दिल्ली
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू एवं कश्मीर एवं लद्दाख
- 17 पश्चिम राजस्थान
- 18 पूर्वी राजस्थान
- 19 पश्चिम मध्य प्रदेश
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात
- 22 सौराष्ट्र
- 23 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठवाड़ा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 आंध्र प्रदेश एवं यानम
- 29 तेलंगाना
- 30 तमिलनाडु, पुदुचेरी एवं कराईकल
- 31 उत्तर कर्नाटक
- 32 दक्षिण कर्नाटक
- 33 उत्तर कर्नाटक
- 34 दक्षिण कर्नाटक
- 35 केरल एवं माहे
- 36 लक्षद्वीप



1. Andaman & Nicobar Islands
2. Arunachal Pradesh
3. Assam & Meghalaya
4. Nagaland, Manipur, Mizoram & Tripura
5. Sub-Himalayan West Bengal & Sikkim
6. Gangetic West Bengal
7. Odisha
8. Jharkhand
9. Bihar
10. East Uttar Pradesh
11. West Uttar Pradesh
12. Uttarakhand
13. Haryana, Chd & Delhi
14. Punjab
15. Himachal Pradesh
16. Jammu & Kashmir and Ladakh
17. West Rajasthan
18. East Rajasthan
19. West Madhya Pradesh
20. East Madhya Pradesh
21. Gujarat
22. Saurashtra
23. Konkan & Goa
24. Madhya Maharashtra
25. Marathwada
26. Vidharbha
27. Chhattisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnada, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. 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)

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

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LEGENDS

WARNING

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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)

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