



Saturday, June 10, 2023  
Time of Issue: 0930 hours IST  
(MORNING)

## ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

### Significant Weather Features

#### **Advance of Southwest Monsoon:**

- ❖ The Northern Limit of Monsoon (NLM) continues to pass through lat. 13.5°N/ Long. 55°E, lat. 14.0°N/Long. 60°E, lat. 13.5°N/ Long. 65°E, lat. 13°N/ Long. 70°E, Cannur, Kodaikanal, Adirampattinam, lat. 12.0°N/ Long. 83.0°E, 16.0°N/88.0°E, 18.5°N/90.0°E, 22.0°N/93.0°E. (Annexure II)
- ❖ Conditions are favourable for further advance of Southwest monsoon into some more parts of central Arabian Sea, remaining parts of Kerala, some more parts of Tamil Nadu, some parts of Karnataka and some more parts of southwest, Central & northeast Bay of Bengal and some parts of northeastern states during next 24 hours. Conditions are also becoming favourable for advance of Southwest Monsoon over the remaining parts of northeastern states and some parts of Sub-Himalayan West Bengal & Sikkim during subsequent 48 hours.

#### **Very Severe Cyclonic Storm "Biparjoy" (pronounced as "Biporjoy") over eastcentral Arabian Sea**

The **very severe cyclonic storm "Biparjoy"** (pronounced as "Biporjoy") over eastcentral Arabian Sea moved nearly northwards with a speed of 9 kmph during past 6-hours and lay centered at 0530 hours IST of today, the 10th June, 2023 over the same region near latitude 16.5°N and longitude 67.4°E, about 700 km west of Goa, 630 km west-southwest of Mumbai, 620 km south-southwest of Porbandar and 930 km south of Karachi. It is very likely to intensify further and move north-northeastwards gradually during next 24 hours. Then it would move gradually north-northwestwards during subsequent 3 days

#### **Fishermen Warning:**

- Total suspension of fishing operations over
- eastcentral and adjoining westcentral Arabian Sea till 15<sup>th</sup> June.
- north and adjoining central Arabian Sea during 12<sup>th</sup> -15<sup>th</sup> June
- Fishermen are advised not to venture into:
- Central Arabian Sea till 15<sup>th</sup> June.
- North Arabian Sea during 12<sup>th</sup> -15<sup>th</sup> June.
- **Along & off Saurashtra & Kutch coasts during 10<sup>th</sup> to 15<sup>th</sup> June.**
- Those out at sea are advised to return to coast.
- Judicious regulation of offshore and onshore activities.

#### **Low Pressure Area over northeast Bay of Bengal:**

The **well marked low pressure area** over northeast Bay of Bengal lay over Northeast Bay of Bengal and adjoining area of Southeast Bangladesh-North Myanmar Coasts at 0530 hours IST of today, the 10th June, 2023.

#### **Weather forecast and warning over the country during next 5 days:**

##### **Northeast India:**

- ❖ Light/moderate scattered to fairly widespread rainfall with thunderstorm/lightning very likely over the region during next 4 days.
- ❖ **Very Heavy rainfall** very likely at isolated places over Assam & Meghalaya on 12<sup>th</sup> & 13<sup>th</sup> June. Isolated **heavy rainfall** over Arunachal Pradesh and Assam & Meghalaya during next 5 days and over Manipur & Mizoram on 10<sup>th</sup> & 12<sup>th</sup> June.

##### **South India:**

- ❖ Light/moderate scattered to fairly widespread rainfall with thunderstorm/lightning/gusty winds very likely over the region during next 4 days.
- ❖ **Heavy rainfall** very likely at isolated places over Kerala and Coastal Karnataka during next 2 days and over Lakshadweep during next 24 hours.

##### **East India:**

- ❖ **Very Heavy rainfall** likely at isolated places over Sub-Himalayan West Bengal & Sikkim during 11<sup>th</sup>-13<sup>th</sup> June. Isolated **heavy rainfall** over Andaman & Nicobar islands during 10<sup>th</sup>-11<sup>th</sup> June, over Sub-Himalayan West Bengal & Sikkim on 10<sup>th</sup> June.

**No significant weather is likely over rest parts of the country during next 5 days.**

#### **Heat Wave warning:**

- ❖ **Heat wave to severe heat wave conditions** very likely to continue in some pockets over Bihar on 10<sup>th</sup> & 11<sup>th</sup> June and heat wave in isolated pockets on 12<sup>th</sup> & 13<sup>th</sup> June.
- ❖ **Heat wave conditions** very likely to continue in isolated pockets over Gangetic West Bengal during 10<sup>th</sup>-13<sup>th</sup>; over Odisha and Jharkhand during 10<sup>th</sup>-12<sup>th</sup> June; Uttar Pradesh on 10<sup>th</sup> & 11<sup>th</sup> June; over Sub-Himalayan West Bengal & Sikkim, Andhra Pradesh on 10<sup>th</sup> June.

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## Main Weather Observations

- ❖ **Rainfall/thundershowers observed** (from 0830 hours IST to 1730 hours IST of yesterday): **at most places** over Kerala & Mahe; **at many places** over Andaman & Nicobar Islands, Coastal Karnataka and Lakshadweep; **at a few places** over Gangetic West Bengal, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura and **at isolated places** over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Haryana, East Rajasthan, Madhya Pradesh, Chhattisgarh, Sub-Himalayan West Bengal & Sikkim, Madhya Maharashtra, Konkan & Goa and Tamil Nadu, Puducherry & Karaikal.
- ❖ **Significant rainfall recorded (in cm)** (from 0830 hours IST to 1730 hours IST of yesterday): **Andaman & Nicobar Islands:** Mayabandar-5, long Island & Hut Bay-2 each, Port Blair-1; **Tamilnadu:** Vellore-5, Valprai-2; **Kerala:** Cannur & Thrissur-4 each, Cochin-3, Kottayam-2, Alapuzha & Punalur-1 each; **Mizoram:** Aijal-3, Lengpui-1; **Meghalaya:** Shillong-2; **Tripura:** Kailashahar-2; **East Rajasthan:** Alwar-2; **Jammu & Kashmir:** Baderwah-1; **Haryana:** Narnaul-1; **Coastal Karnataka:** Shirali-1; **Lakshadweep:** Agathi-1; **Gangetic West Bengal:** Kolkata & Canning-1 each.
- ❖ **Thunderstorm observed** (from 0830 hours IST of yesterday to 0530 hours IST of today): at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Gangetic West Bengal, Bihar, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, West Madhya Pradesh, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam, Rayalaseema, Coastal Karnataka, Kerala & Mahe, Lakshadweep and Tamilnadu, Puducherry & Karaikal.
- ❖ Yesterday, **Heat Wave to Severe Heat Wave conditions** prevailed in some parts of Bihar; **Heat Wave conditions** in some parts of Gangetic West Bengal. This is 9th day of Heat Wave conditions over the above areas. **Heat Wave conditions** also observed in many parts of Coastal Andhra Pradesh; in isolated pockets over Jharkhand, Chhattisgarh, Odisha and Telangana.
- ❖ **Minimum Temperature Departures (as on 09-06-2023):** Minimum temperatures were **appreciably above normal (3.1°C to 5.0°C)** at a few places over Arunachal Pradesh, Bihar, Gangetic West Bengal; at isolated places over Coastal Andhra Pradesh & Yanam, East Madhya Pradesh; **above normal (1.6°C to 3.0°C)** at many places over Konkan & Goa, Coastal Karnataka, Lakshadweep, Jharkhand; at a few places over Andaman & Nicobar Islands, Marathwada, Telangana, Odisha, Rayalaseema, Chhattisgarh; at isolated places over Gujarat Region, Madhya Maharashtra, Tamil Nadu, Puducherry & Karaikal. They were **appreciably below normal (-3.1°C to -5.0°C)** at a few places over West Madhya Pradesh; **below normal (-1.6°C to -3.0°C)** at many places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad, Uttarakhand, Haryana, Chandigarh & Delhi, East Rajasthan; at a few places over East Uttar Pradesh and **near normal** over rest parts of the country. Yesterday, **the lowest minimum temperature of 19.8°C** was reported at **Ajmer (East Rajasthan)** over the plains of the country.
- ❖ **Maximum Temperature Departures (as on 09-06-2023):** Maximum temperatures were **markedly above normal (5.1°C or more)** at a few places over Odisha and Coastal Andhra Pradesh & Yanam; at isolated places over Bihar, Assam & Meghalaya, Gangetic West Bengal, Arunachal Pradesh and Telangana; **appreciably above normal (3.1°C to 5.1°C)** at most places over Jharkhand; at many places over Madhya Maharashtra; at a few places over East Uttar Pradesh, Chhattisgarh, Konkan & Goa and Tamil Nadu, Puducherry & Karaikal; at isolated places over Vidarbha and Karnataka; **above normal (1.6°C to 3.0°C)** at many places over Nagaland, Manipur, Mizoram & Tripura; at a few places over Himachal Pradesh, West Uttar Pradesh, Saurashtra & Kutch, Marathwada and Kerala & Mahe; at isolated places over Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad and West Madhya Pradesh. They were **below normal (-1.6°C to -3.0°C)** at many places over Andaman & Nicobar Islands and Rajasthan and **near normal** over rest parts of the country. Yesterday, **the highest maximum temperature of 45.6°C** was reported at **Jharsuguda (Odisha)**.



## Meteorological Analysis (Based on 0530 hours IST)

- ❖ The Northern Limit of Monsoon (NLM) continues to pass through lat. 13.5°N/ Long. 55°E, lat. 14.0°N/ Long. 60°E, lat. 13.5°N/ Long. 65°E, lat. 13°N/ Long. 70°E, Cannur, Kodaikanal, Adirampattinam, lat. 12.0°N/ Long. 83.0°E, 16.0°N/88.0°E, 18.5°N/90.0°E, 22.0°N/93.0°E.
- ❖ Conditions are favourable for further advance of Southwest monsoon into some more parts of central Arabian Sea, remaining parts of Kerala, some more parts of Tamil Nadu, some parts of Karnataka and some more parts of southwest, Central & northeast Bay of Bengal and some parts of northeastern states during next 24 hours. Conditions are also becoming favourable for advance of Southwest Monsoon over the remaining parts of northeastern states and some parts of Sub-Himalayan West Bengal & Sikkim during subsequent 48 hours.
- ❖ The **very severe cyclonic storm "Biparjoy"** (pronounced as "Biporjoy") over eastcentral Arabian Sea moved nearly northwards with a speed of 9 kmph during past 6-hours and lay centered at 0530 hours IST of today, the 10th June, 2023 over the same region near latitude 16.5°N and longitude 67.4°E, about 700 km west of Goa, 630 km west-southwest of Mumbai, 620 km south-southwest of Porbandar and 930 km south of Karachi. It is very likely to intensify further and move north-northeastwards gradually during next 24 hours. Then it would move gradually north-northwestwards during subsequent 3 days.
- ❖ The **well marked low pressure area** over northeast Bay of Bengal lay over Northeast Bay of Bengal and adjoining area of Southeast Bangladesh-North Myanmar Coasts at 0530 hours IST of today, the 10th June, 2023.
- ❖ The Western Disturbance as a cyclonic circulation over Uttarakhand at 5.8 km above mean sea level persists.
- ❖ The cyclonic circulation over south Chhattisgarh & adjoining Odisha extending upto 1.5 km above mean sea level persists.
- ❖ The cyclonic circulation over east Bihar & neighbourhood at 0.9 km above mean sea level with a trough aloft at 1.5 km above mean sea level roughly along Lat. 88°E to the north of 20°N persists.
- ❖ The Western Disturbance as a trough in middle tropospheric levels with its axis at 5.8 km above mean sea level roughly along Lat. 55°E to the north of 25°N persists.

## Weather Forecast for next 5 days (Upto 0830 hours IST of 15<sup>th</sup> June, 2023)

- ❖ Meteorological sub-division wise detailed 5 days rainfall forecast is given in Table-1.
- ❖ Maximum Temperatures Forecast:
  - **Central India:** Fall in maximum temperatures by 2-3°C very likely over during next 24 hours and no significant change thereafter.
  - **Gujarat:** No significant change in maximum temperatures very likely over during next 24 hours and fall by 2-3°C thereafter.
  - No significant change in maximum temperature very likely over rest parts of the country during next 5 days.

## Weather Outlook for subsequent 2 days (During 15<sup>th</sup> -17<sup>th</sup> June, 2023)

- ❖ Fairly widespread to widespread light/moderate rainfall with thunderstorm likely to continue over northeast India, Kerala & Mahe and Coastal Karnataka. Isolated to scattered rainfall over Tamil Nadu, Puducherry & Karaikal, Interior Karnataka and Islands.
- ❖ Isolated rainfall over Western Himalayan Region and adjoining plains of Northwest India.
- ❖ Dry weather over rest parts of the country.



## Weather Warning during next 5 days

**10 June (Day 1):** ♦ **Heavy rainfall** very likely at isolated places over Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, Lakshadweep and Coastal Karnataka.

♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Gangetic West Bengal and Karnataka; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Madhya Pradesh, Vidarbha, Chhattisgarh, Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, Lakshadweep, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema; **with lightning** at isolated places over Uttarakhand, East Rajasthan, Sub-Himalayan West Bengal & Sikkim, Odisha, Bihar, Arunachal Pradesh, Maharashtra, Tamil Nadu, Puducherry & Karaikal.

♦ **Heat Wave to severe heat wave conditions** very likely in some parts of Bihar and **heat wave conditions** in isolated pockets over Uttar Pradesh, Odisha, Jharkhand, West Bengal, Coastal Andhra Pradesh & Yanam and Telangana.

♦ **Gale wind speed reaching 135-145 kmph gusting to 160 kmph** is prevailing over eastcentral & adjoining areas of westcentral Arabian Sea and likely to increase gradually becoming 150-160 kmph gusting to 175 kmph from night. **Gale wind speed reaching 90-100 kmph gusting to 110 kmph** is likely to prevail over adjoining areas of northeast Arabian Sea. **Squally weather** with wind speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail over northeast Bay of Bengal on 10<sup>th</sup> June. **Squally wind speed reaching 35-45 kmph gusting to 55 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.

**11 June (Day 2):** ♦ **Heavy to very heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim and **Heavy rainfall** at isolated places over Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Kerala & Mahe and Coastal Karnataka.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over Chhattisgarh, Andaman & Nicobar Islands, Jharkhand, Kerala & Mahe Lakshadweep, Karnataka, Coastal Andhra Pradesh & Yanam and Rayalaseema; **with lightning** at isolated places over Uttarakhand, Madhya Pradesh, Vidarbha, West Bengal & Sikkim, Odisha, Bihar, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Maharashtra, Tamil Nadu, Puducherry & Karaikal and Telangana.

♦ **Heat Wave to severe heat wave conditions** very likely in isolated pockets of Bihar and **heat wave conditions** in isolated pockets over Uttar Pradesh, Odisha, Jharkhand and Gangetic West Bengal.

♦ **Gale wind speed reaching 155-165 kmph gusting to 180 kmph** is likely to prevail over eastcentral and adjoining westcentral & northeast Arabian Sea and becoming 145-155 kmph gusting to 170 kmph over the region from evening. **Squally wind speed reaching 40-50 kmph gusting to 60 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.

**12 June (Day 3):** ♦ **Heavy to very heavy rainfall** likely at isolated places over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya and **heavy rainfall** at isolated places over Arunachal Pradesh.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Uttarakhand, Andaman & Nicobar Islands, Jharkhand, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning** at isolated places over Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Maharashtra, Tamil Nadu, Puducherry & Karaikal, Karnataka, Telangana.

♦ **Heat Wave conditions** likely in isolated pockets of Gangetic West Bengal, Odisha, Bihar and Jharkhand.

♦ **Gale wind speed reaching 140-150 kmph gusting to 165 kmph** is likely to prevail over northeast and adjoining central Arabian Sea and becoming 135-145 kmph gusting to 160 kmph from evening. **Squally wind speed reaching 45-55 kmph gusting to 65 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.

**13 June (Day 4):** ♦ **Heavy to very heavy rainfall** likely at isolated places over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya and **heavy rainfall** at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura.

♦ **Hailstorm with lightning & gusty winds (speed 50-60 kmph)** likely at isolated places over Uttarakhand.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Andaman & Nicobar Islands, Odisha, Jharkhand, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Rayalaseema; **with lightning** at isolated places over Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Bihar, Madhya Maharashtra, Gujarat state, Tamil Nadu, Puducherry & Karaikal, Karnataka and Telangana.

♦ **Heat Wave conditions** likely in isolated pockets of Gangetic West Bengal and Bihar.

♦ **Gale wind speed reaching 135-145 kmph gusting to 160 kmph** is likely to prevail over northeast and adjoining northwest & central Arabian Sea and decrease thereafter to become 125-135 kmph gusting to 150 kmph from evening. **Squally wind speed reaching 50-60 kmph gusting to 70 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.

**14 June (Day 5):** ♦ **Heavy to very heavy rainfall** likely at isolated places over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya and **heavy rainfall** at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura.

♦ **Hailstorm with lightning & gusty winds (speed 50-60 kmph)** likely at isolated places over Uttarakhand.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Andaman & Nicobar Islands, Odisha, Jharkhand, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Rayalaseema; **with lightning** at isolated places over Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Bihar, Madhya Maharashtra, Gujarat state, Tamil Nadu, Puducherry & Karaikal, Karnataka and Telangana.

♦ **Heat Wave conditions** likely in isolated pockets of Gangetic West Bengal and Bihar.

♦ **Gale wind speed reaching 115-125 kmph gusting to 140 kmph** is likely to prevail over northeast and adjoining northwest Arabian Sea and decrease thereafter to become 105-115 kmph gusting to 125 kmph from evening. **Gale wind speed reaching 70-80 kmph gusting to 90 kmph** over adjoining areas of central Arabian Sea. **Squally wind speed reaching 50-60 kmph gusting to 70 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.

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Table-1

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

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

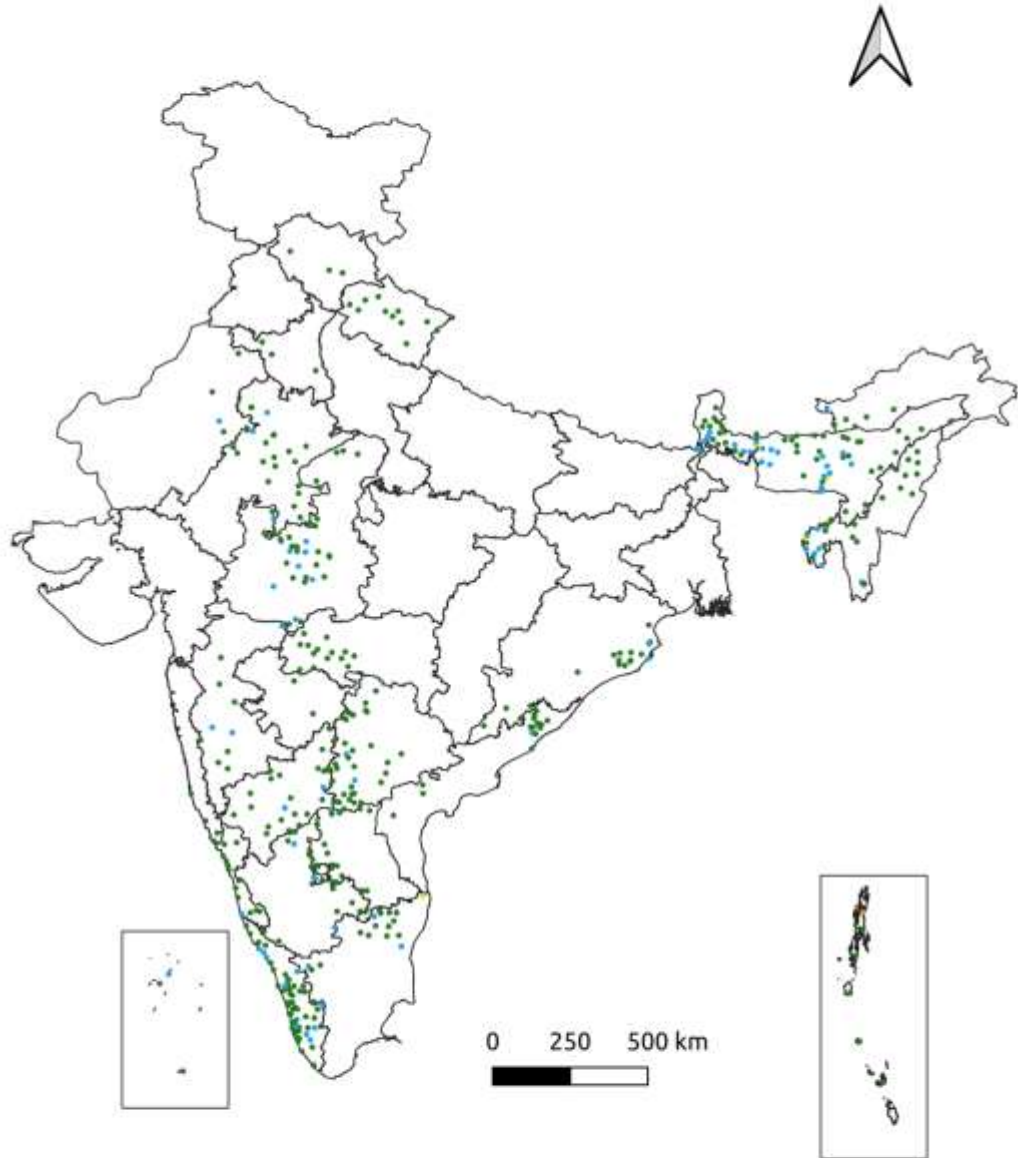
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Fig. 1: Accumulated Rainfall (mm) during past 24 hours



24 Hr cumulative rainfall recorded over different stations  
during 0830 IST of 8-6-2023 to 0830 IST of 9-6-2023

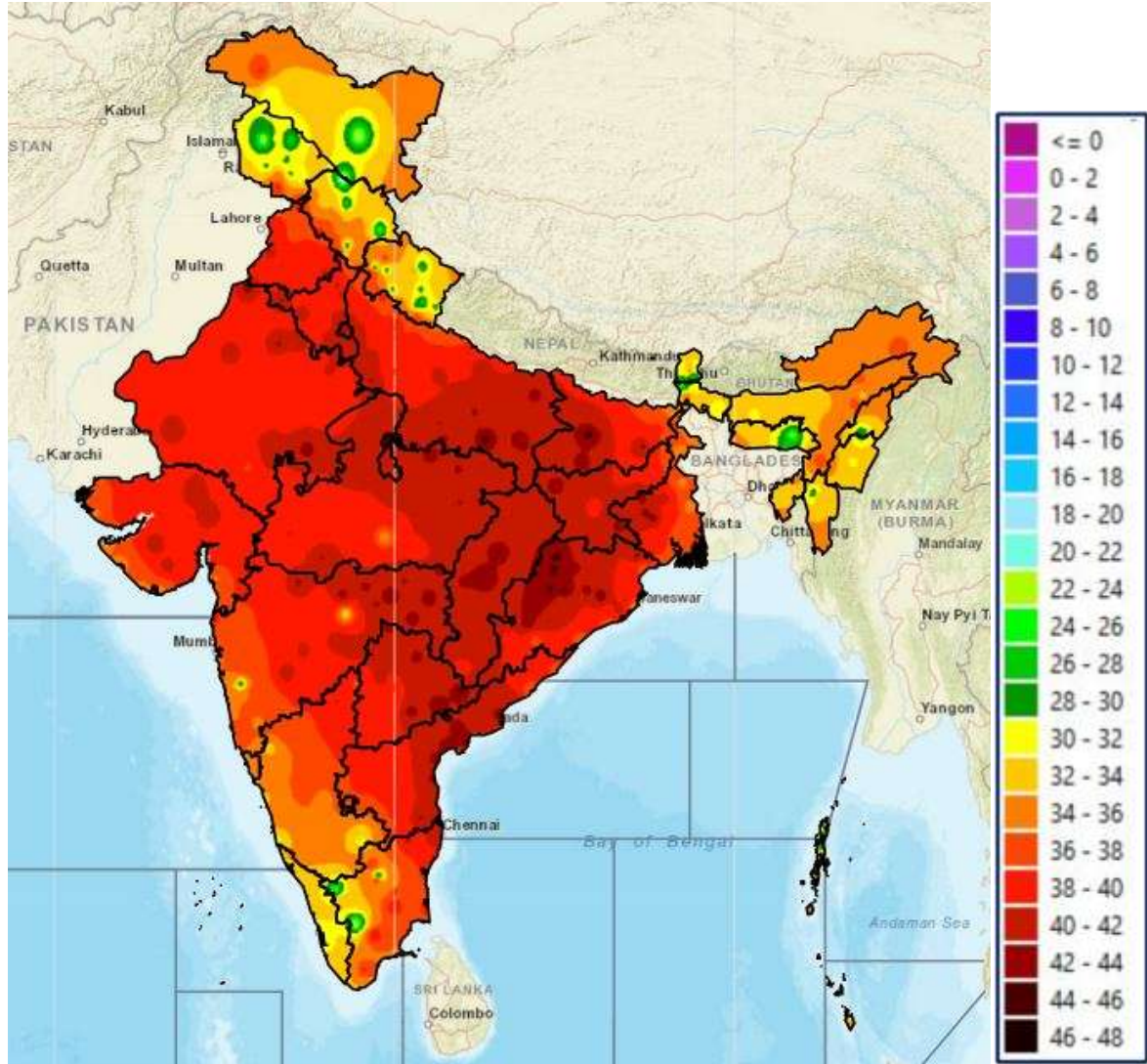


### Legends

- 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 ( $\geq 204.5$  mm)



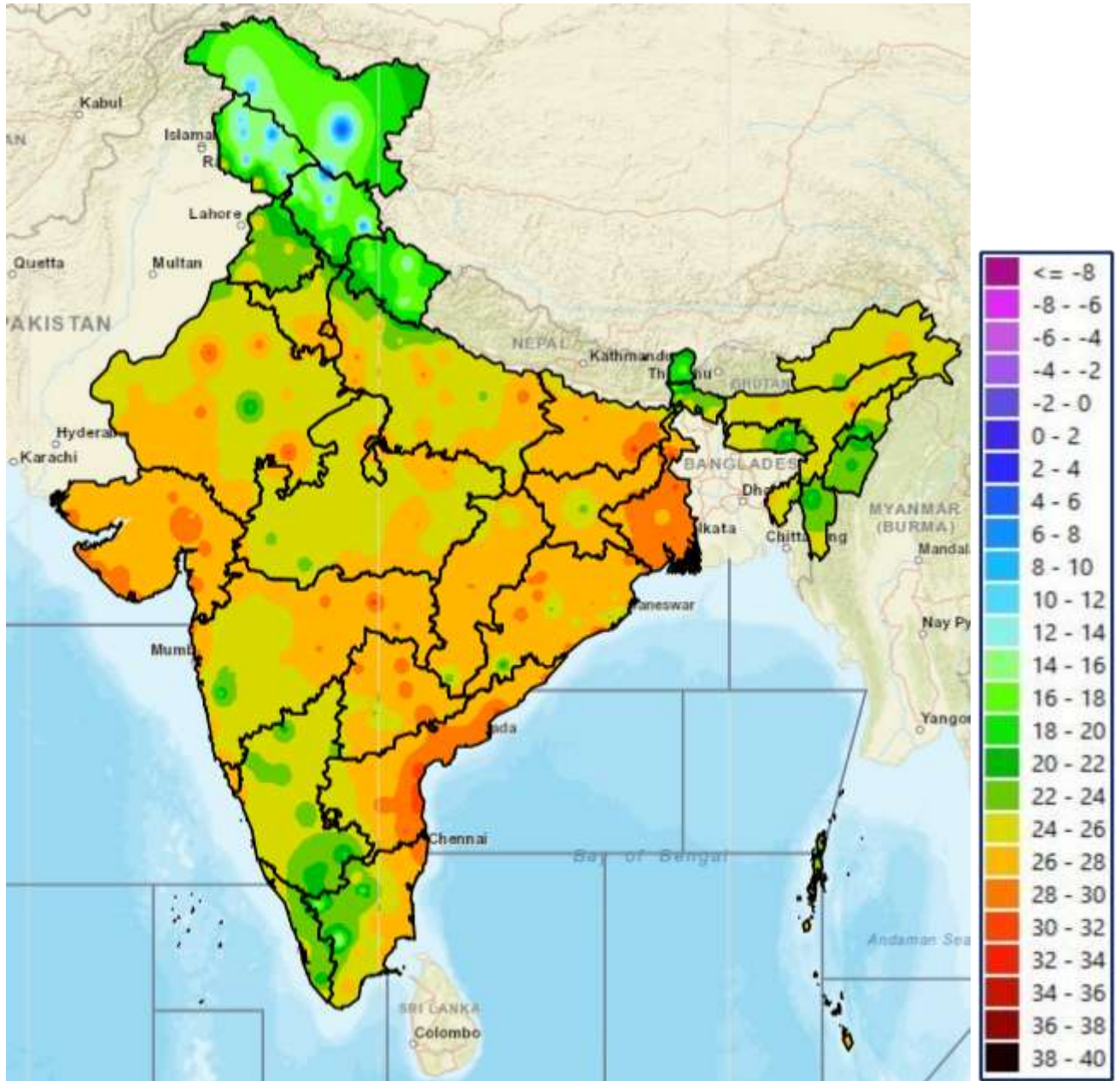
Fig. 2: Maximum Temperatures Dated 09.06.2023



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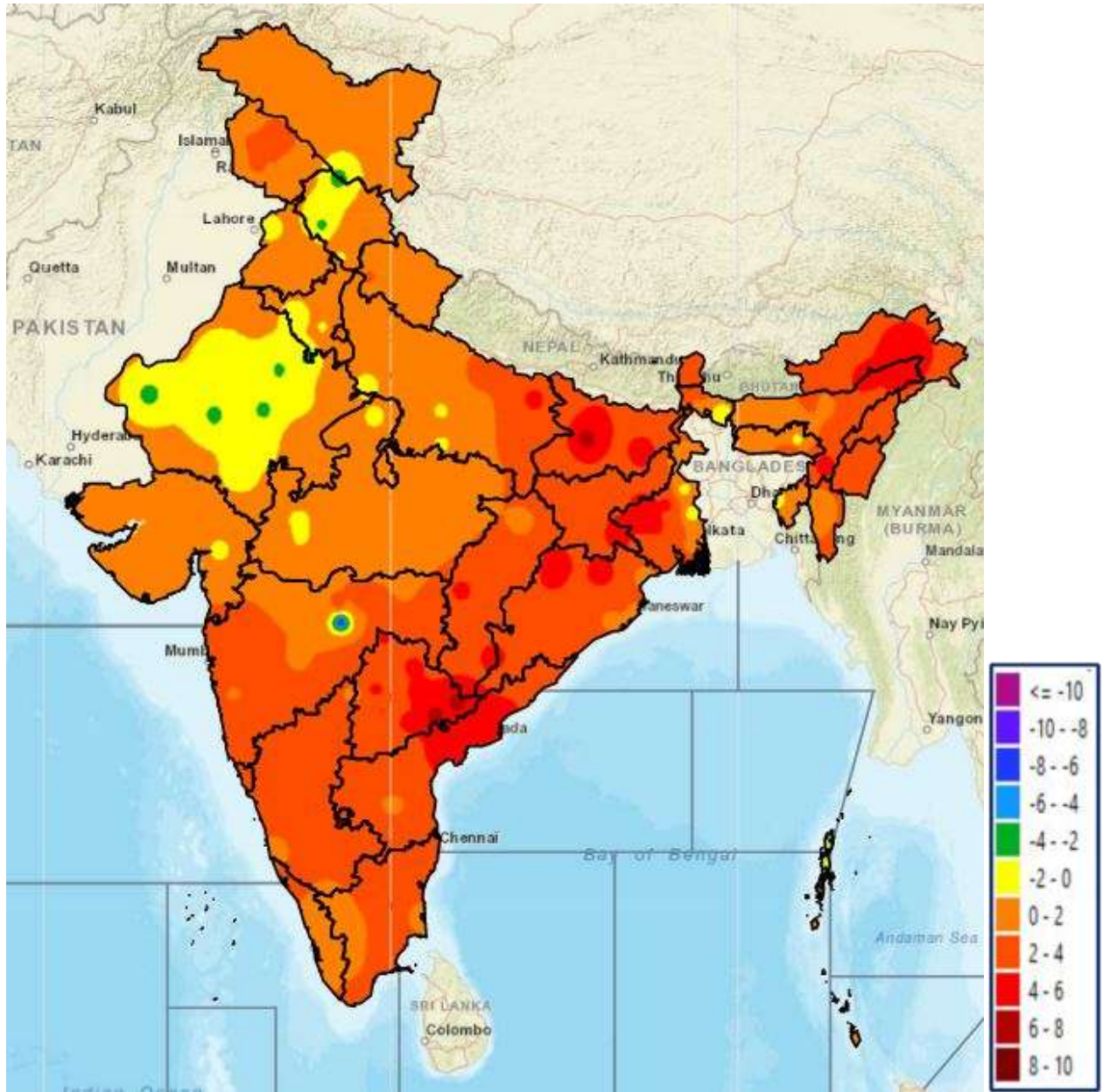
Fig. 3: Minimum Temperatures Dated 09.06.2023



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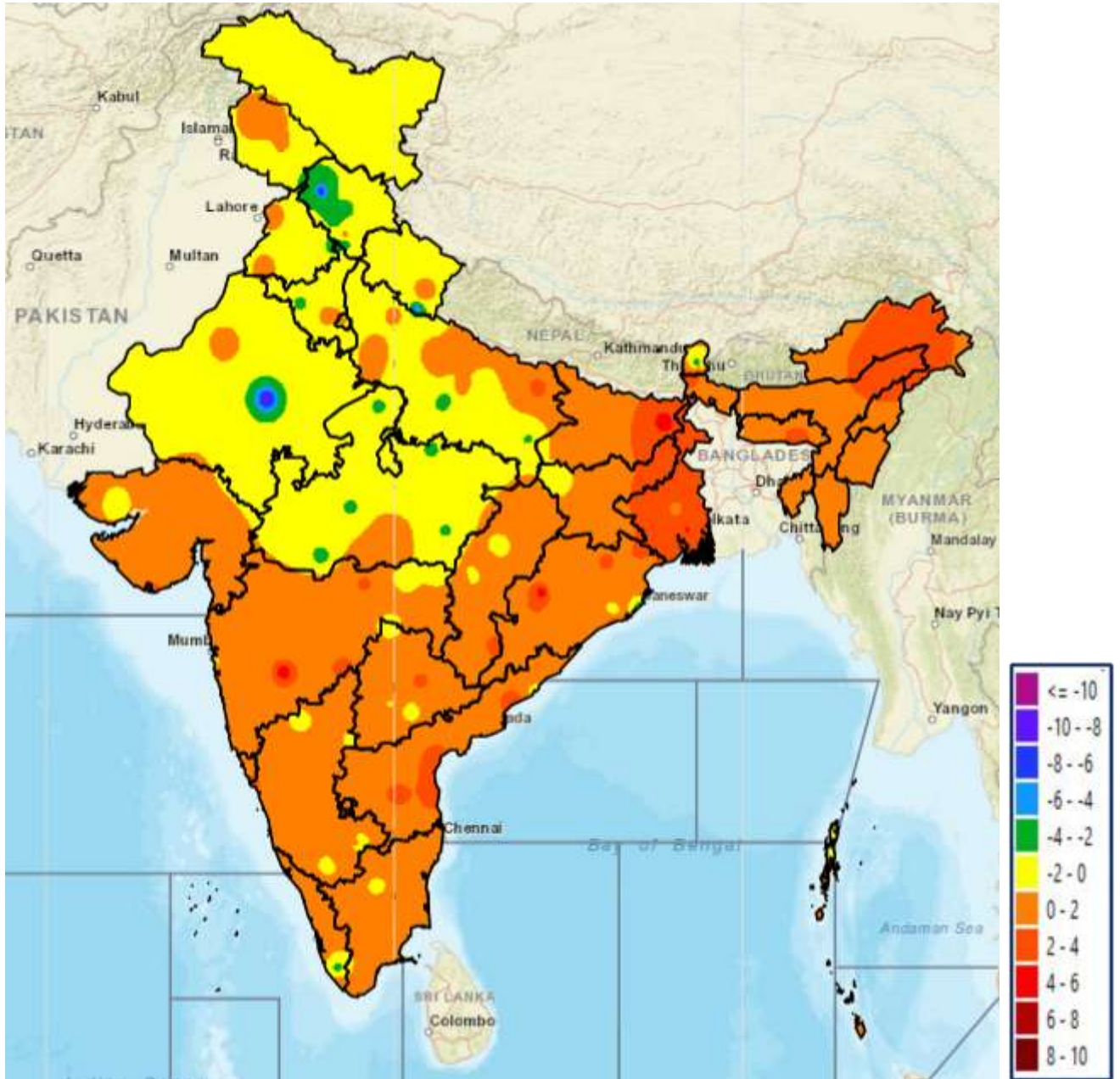
Fig. 4: Departure from Normal of Maximum Temperatures Dated 09.06.2023



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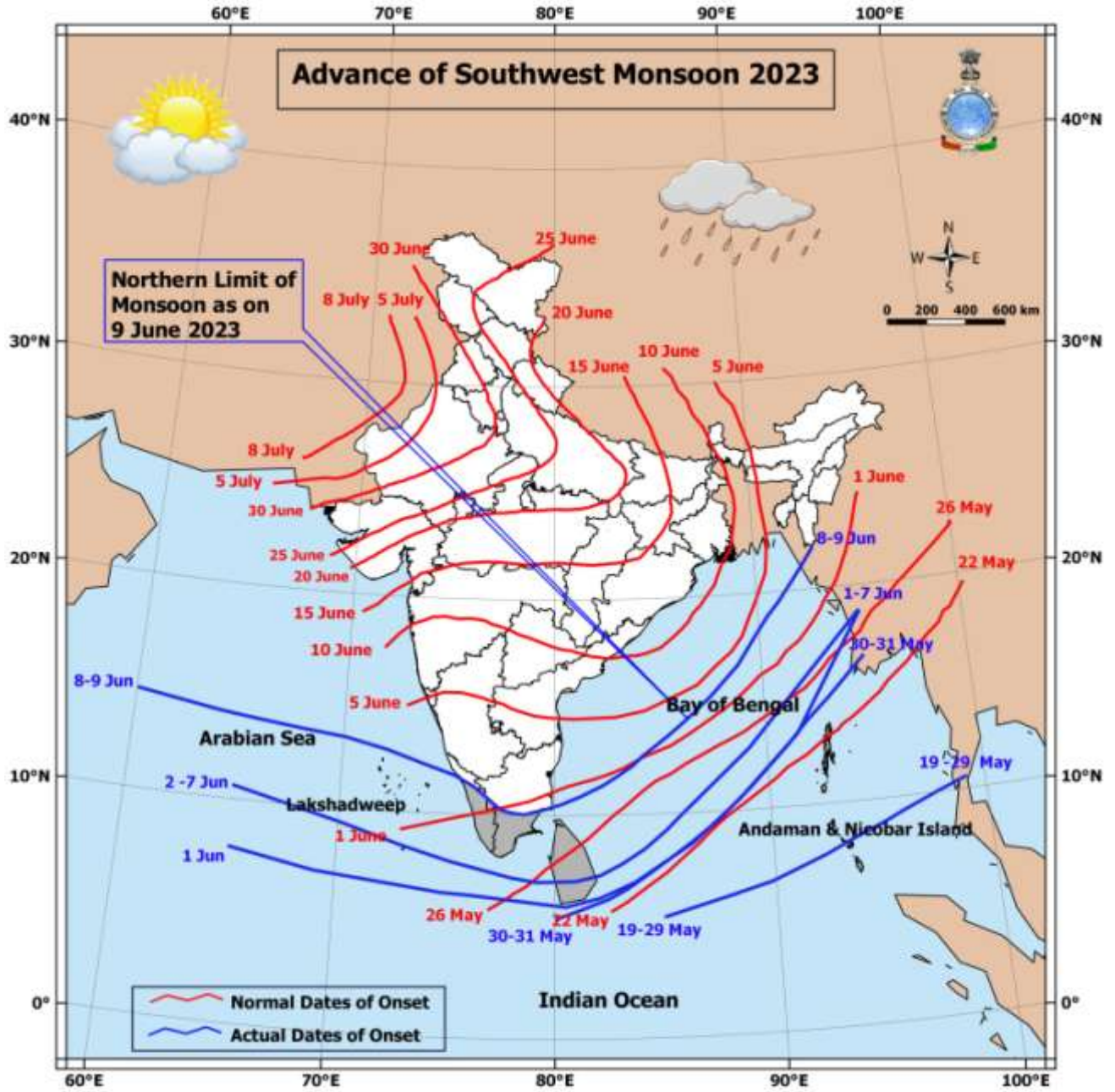
Fig. 5: Departure from Normal of Minimum Temperatures Dated 09.06.2023



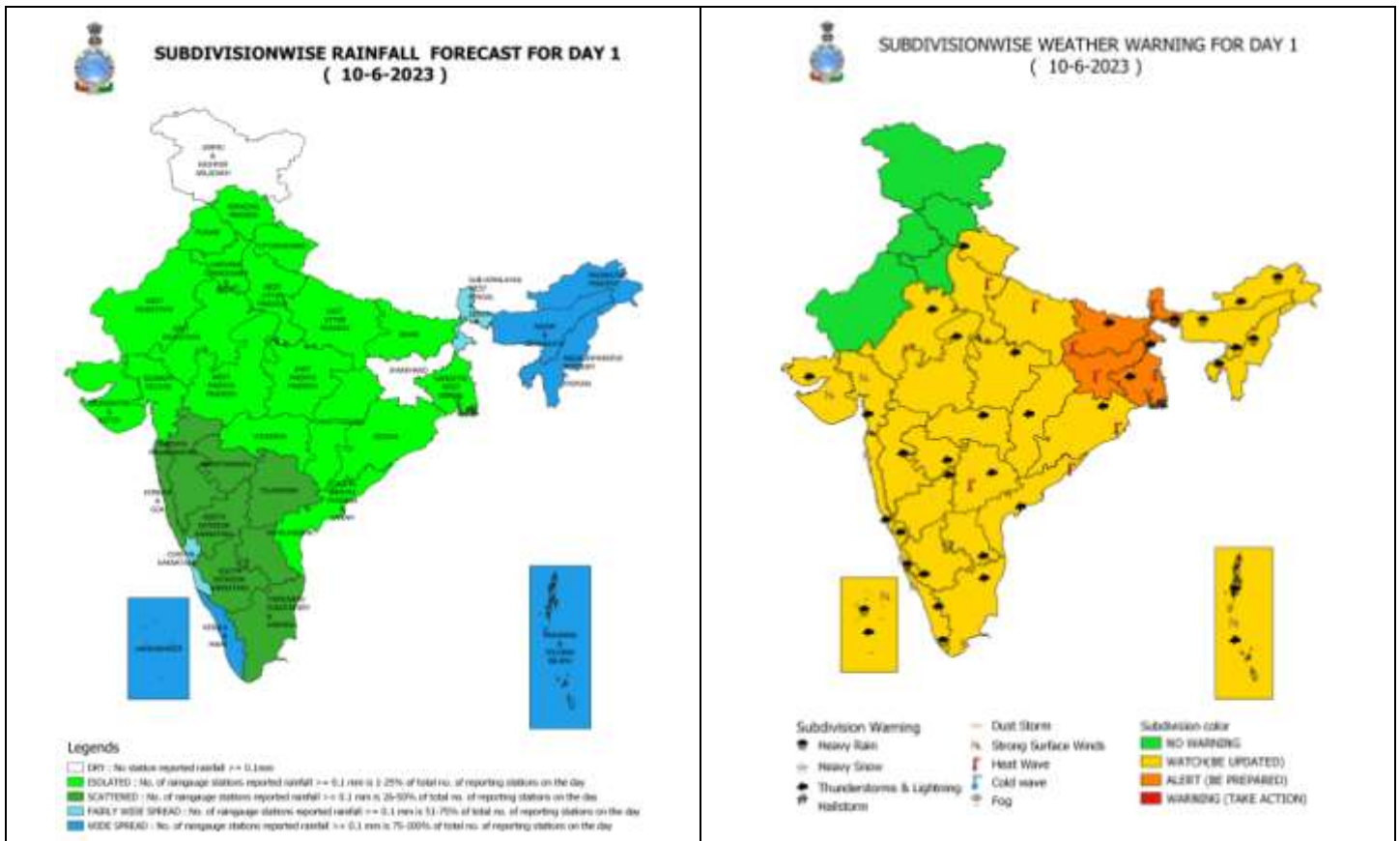
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Fig. 6: Advance of Southwest Monsoon



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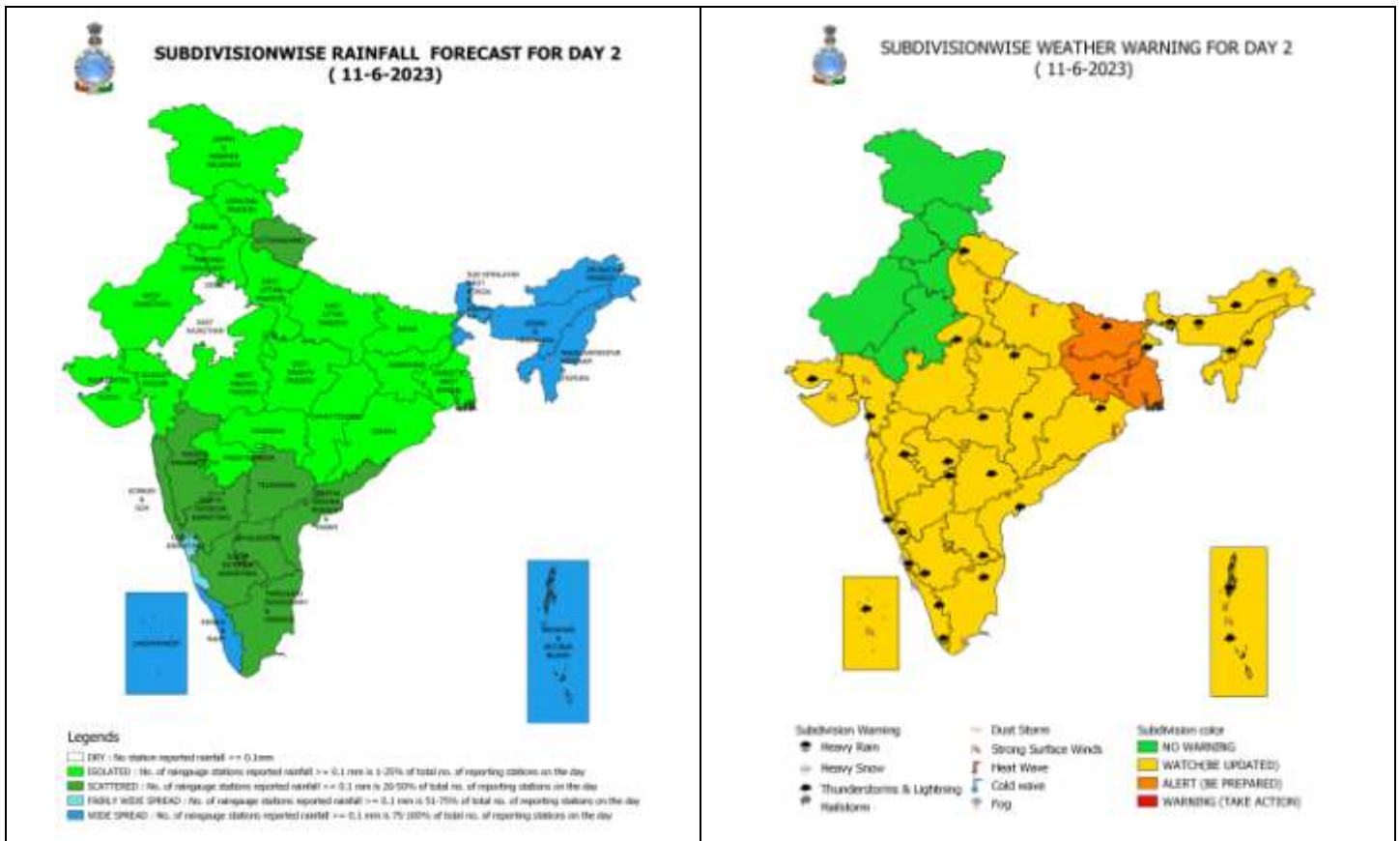


**10 June (Day 1):** ♦ **Heavy rainfall** very likely at isolated places over Andaman & Nicobar Islands, Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, Lakshadweep and Coastal Karnataka.

♦ **Thunderstorm with lightning & gusty winds (speed 40-50 kmph)** very likely at isolated places over Gangetic West Bengal and Karnataka; **with lightning & gusty winds (speed 30-40 kmph)** at isolated places over Madhya Pradesh, Vidarbha, Chhattisgarh, Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Kerala & Mahe, Lakshadweep, Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema; **with lightning** at isolated places over Uttarakhand, East Rajasthan, Sub-Himalayan West Bengal & Sikkim, Odisha, Bihar, Arunachal Pradesh, Maharashtra, Tamil Nadu, Puducherry & Karaikal.

♦ **Heat Wave to severe heat wave conditions** very likely in some parts of Bihar and **heat wave conditions** in isolated pockets over Uttar Pradesh, Odisha, Jharkhand, West Bengal, Coastal Andhra Pradesh & Yanam and Telangana.

♦ **Gale wind speed reaching 135-145 kmph gusting to 160 kmph** is prevailing over eastcentral & adjoining areas of westcentral Arabian Sea and likely to increase gradually becoming 150-160 kmph gusting to 175 kmph from night. **Gale wind speed reaching 90-100 kmph gusting to 110 kmph** is likely to prevail over adjoining areas of northeast Arabian Sea. **Squally weather** with wind speed reaching 40-50 kmph gusting to 60 kmph is likely to prevail over northeast Bay of Bengal on 10<sup>th</sup> June. **Squally wind speed reaching 35-45 kmph gusting to 55 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.

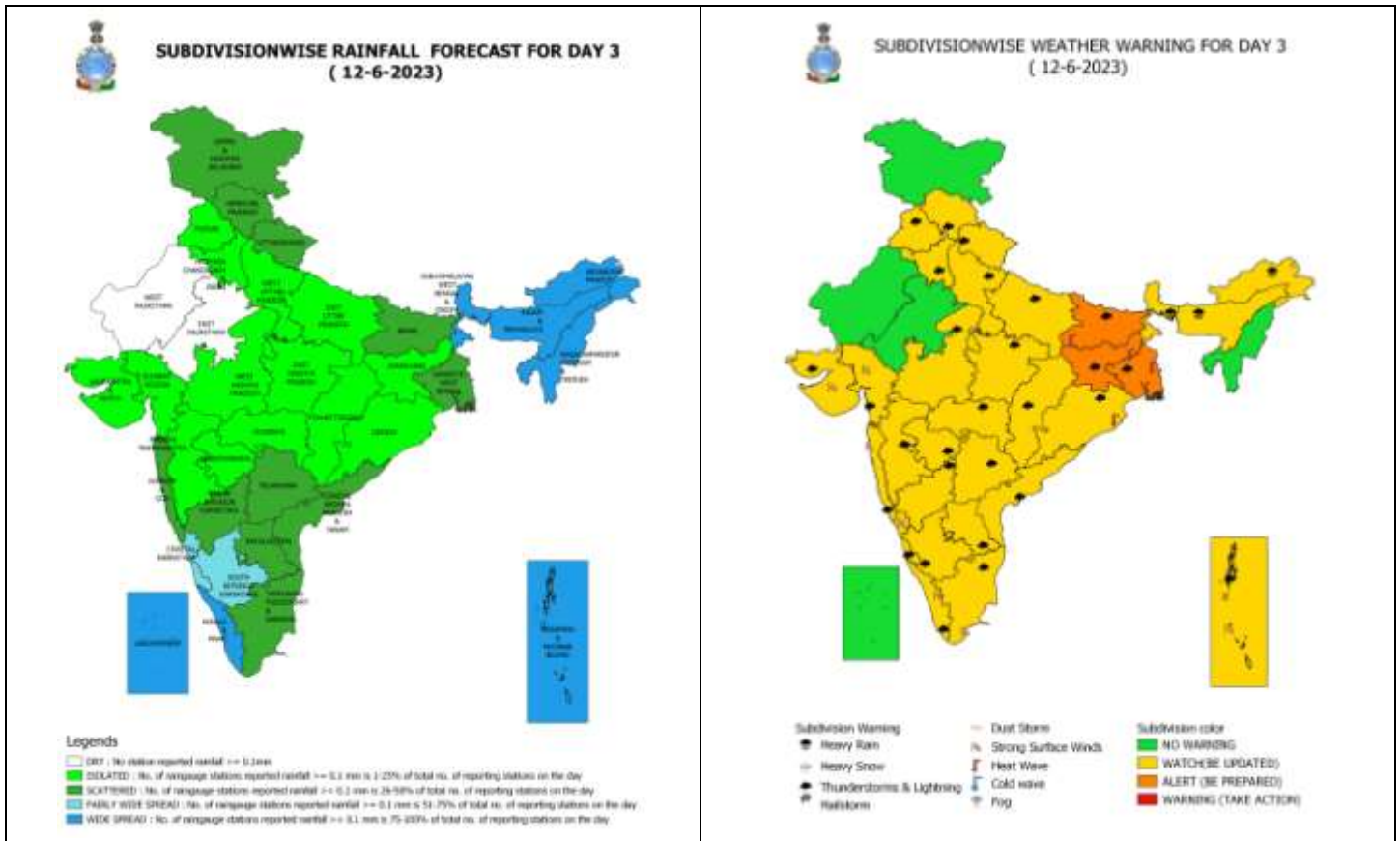


**11 June (Day 2):** ♦ **Heavy to very heavy rainfall** very likely at isolated places over Sub-Himalayan West Bengal & Sikkim and **Heavy rainfall** at isolated places over Andaman & Nicobar Islands, Arunachal Pradesh, Assam & Meghalaya, Kerala & Mahe and Coastal Karnataka.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** very likely at isolated places over Chhattisgarh, Andaman & Nicobar Islands, Jharkhand, Kerala & Mahe Lakshadweep, Karnataka, Coastal Andhra Pradesh & Yanam and Rayalaseema; **with lightning** at isolated places over Uttarakhand, Madhya Pradesh, Vidarbha, West Bengal & Sikkim, Odisha, Bihar, Arunachal Pradesh, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Maharashtra, Tamil Nadu, Puducherry & Karaikal and Telangana.

♦ **Heat Wave to severe heat wave conditions** very likely in isolated pockets of Bihar and **heat wave conditions** in isolated pockets over Uttar Pradesh, Odisha, Jharkhand and Gangetic West Bengal.

♦ **Gale wind speed reaching 155-165 kmph gusting to 180 kmph** is likely to prevail over eastcentral and adjoining westcentral & northeast Arabian Sea and becoming 145-155 kmph gusting to 170 kmph over the region from evening. **Squally wind speed reaching 40-50 kmph gusting to 60 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.



**12 June (Day 3):** ♦ **Heavy to very heavy rainfall** likely at isolated places over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya and **heavy rainfall** at isolated places over Arunachal Pradesh.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Uttarakhand, Andaman & Nicobar Islands, Jharkhand, Kerala & Mahe, Coastal Andhra Pradesh & Yanam, Rayalaseema; **with lightning** at isolated places over Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Maharashtra, Tamil Nadu, Puducherry & Karaikal, Karnataka, Telangana.

♦ **Heat Wave conditions** likely in isolated pockets of Gangetic West Bengal, Odisha, Bihar and Jharkhand.

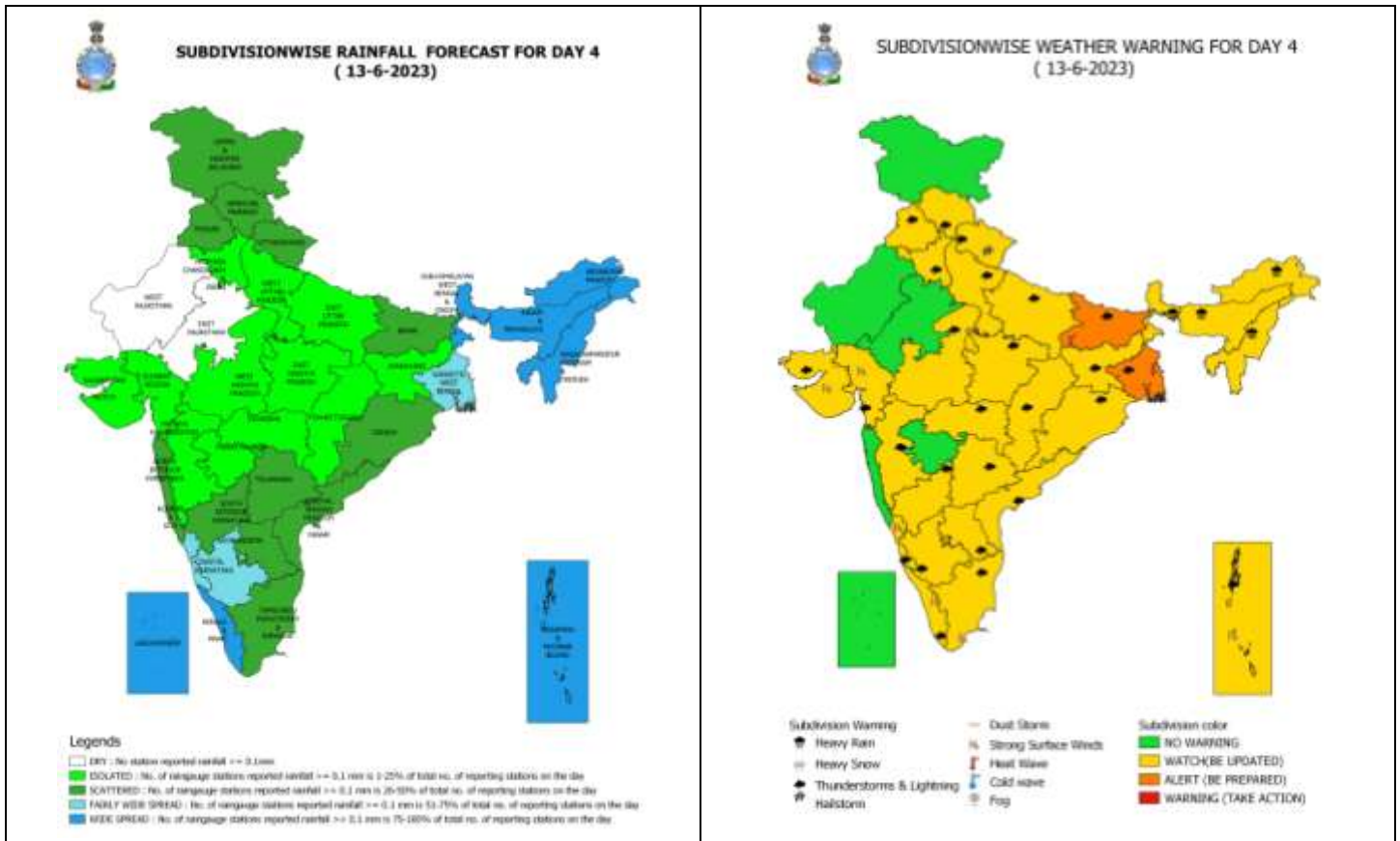
♦ **Gale wind speed reaching 140-150 kmph gusting to 165 kmph** is likely to prevail over northeast and adjoining central Arabian Sea and becoming 135-145 kmph gusting to 160 kmph from evening. **Squally wind speed reaching 45-55 kmph gusting to 65 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.

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**13 June (Day 4):** ♦ **Heavy to very heavy rainfall** likely at isolated places over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya and **heavy rainfall** at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura.

♦ **Hailstorm with lightning & gusty winds (speed 50-60 kmph)** likely at isolated places over Uttarakhand.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Andaman & Nicobar Islands, Odisha, Jharkhand, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Rayalaseema; **with lightning** at isolated places over Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Bihar, Madhya Maharashtra, Gujarat state, Tamil Nadu, Puducherry & Karaikal, Karnataka and Telangana.

♦ **Heat Wave conditions** likely in isolated pockets of Gangetic West Bengal and Bihar.

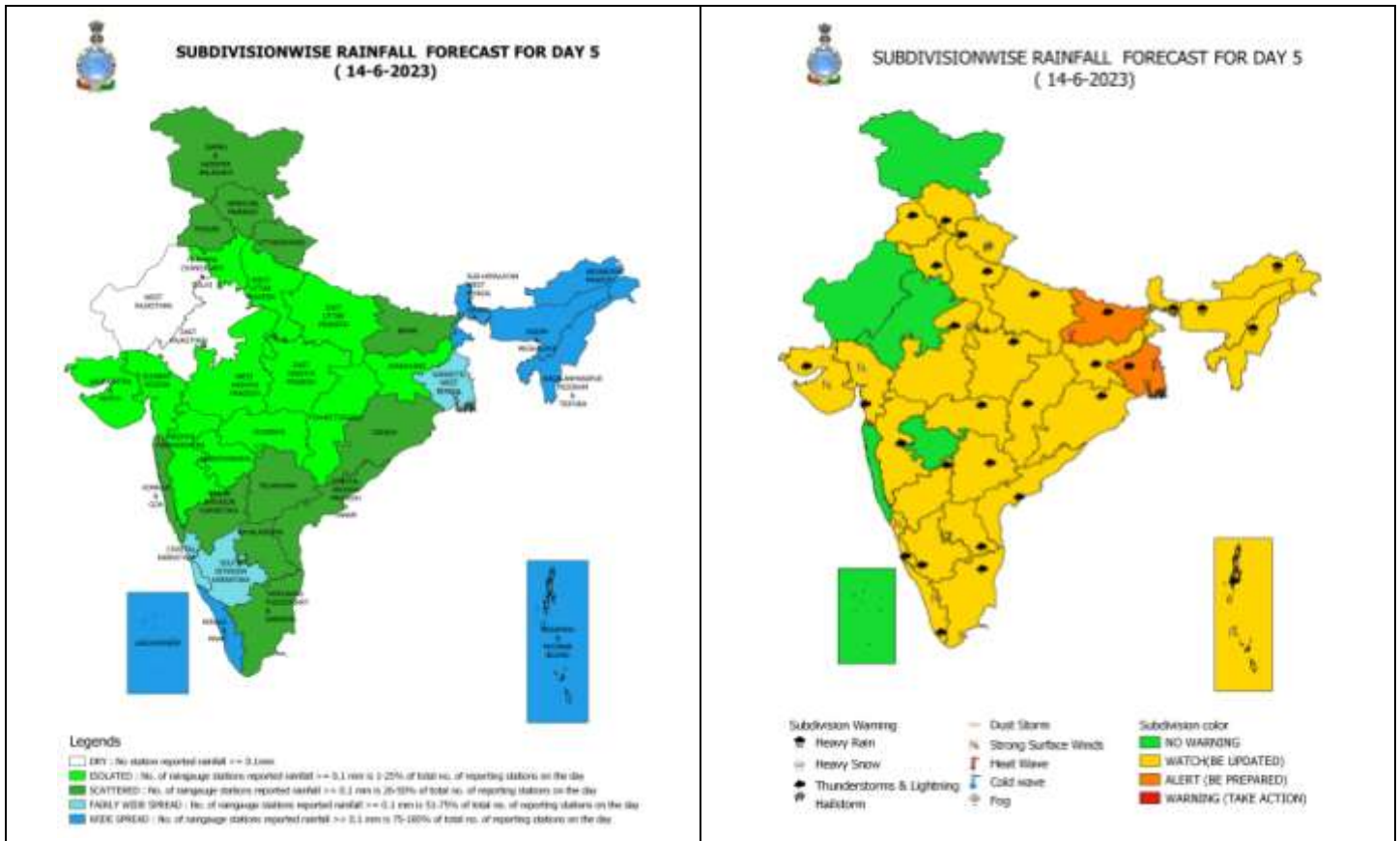
♦ **Gale wind speed reaching 135-145 kmph gusting to 160 kmph** is likely to prevail over northeast and adjoining northwest & central Arabian Sea and decrease thereafter to become 125-135 kmph gusting to 150 kmph from evening. **Squally wind speed reaching 50-60 kmph gusting to 70 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.

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**14 June (Day 5):** ♦ **Heavy to very heavy rainfall** likely at isolated places over Sub-Himalayan West Bengal & Sikkim and Assam & Meghalaya and **heavy rainfall** at isolated places over Arunachal Pradesh, Nagaland, Manipur, Mizoram & Tripura.

♦ **Hailstorm with lightning & gusty winds (speed 50-60 kmph)** likely at isolated places over Uttarakhand.

♦ **Thunderstorm with lightning & gusty winds (speed 30-40 kmph)** likely at isolated places over Andaman & Nicobar Islands, Odisha, Jharkhand, Kerala & Mahe, Coastal Andhra Pradesh & Yanam and Rayalaseema; **with lightning** at isolated places over Himachal Pradesh, Punjab, Haryana, Chandigarh & Delhi, Uttar Pradesh, Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Bihar, Madhya Maharashtra, Gujarat state, Tamil Nadu, Puducherry & Karaikal, Karnataka and Telangana.

♦ **Heat Wave conditions** likely in isolated pockets of Gangetic West Bengal and Bihar.

♦ **Gale wind speed reaching 115-125 kmph gusting to 140 kmph** is likely to prevail over northeast and adjoining northwest Arabian Sea and decrease thereafter to become 105-115 kmph gusting to 125 kmph from evening. **Gale wind speed reaching 70-80 kmph gusting to 90 kmph** over adjoining areas of central Arabian Sea. **Squally wind speed reaching 50-60 kmph gusting to 70 kmph** is likely to prevail along & off Saurashtra & Kutch coasts.

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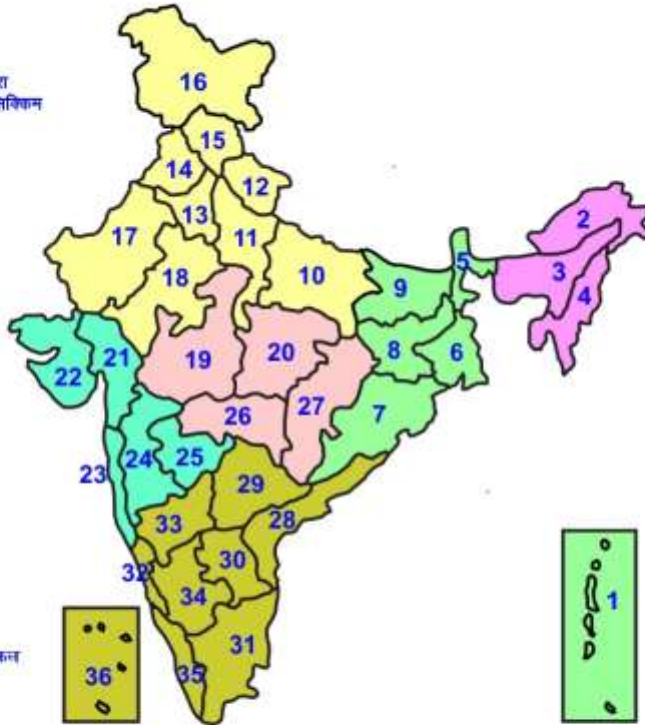
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## LEGENDS

- 1 अंडमान और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीज़ोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम गंगेय 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 क्षेत्र
- 22 सौराष्ट्र एवं कच्छ
- 23 कोकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठवाड़ा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 वटीय आंध्र प्रदेश एवं थलम
- 29 तेलंगाना
- 30 रायलसीमा
- 31 तमिलनाडु, पुदुचेरी एवं कराईकल
- 32 तटिय कर्नाटक
- 33 आंतरिक उत्तरी कर्नाटक
- 34 आंतरिक दक्षिणी 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. Orissa
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. Tamilnadu, 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

<b>WARNING (TAKE ACTION)</b>
<b>ALERT ( BE PREPARED)</b>
<b>WATCH (BE UPDATED)</b>
<b>NO WARNING ( NO ACTION)</b>

## Probabilistic Forecast

Terms	Probability of Occurrence (%)
Unlikely	< 25
Likely	25 - 50
Very Likely	50 - 75
Most Likely	> 75



Heavy Rain



Heavy Snow



Thunderstorm



Dust Storm



Strong Winds



Visibility



Cyclone



Squall/ Hail



Frost



Cold Wave



Heat Wave



Sea State

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## 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



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  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .  
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  $40^{\circ}\text{C}$

Warm Night: When minimum temperature departure  $4.5^{\circ}\text{C}$  to  $6.4^{\circ}\text{C}$ .  
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  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .  
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  $-4.5^{\circ}\text{C}$  to  $-6.4^{\circ}\text{C}$ .  
Severe Cold Day: Maximum Temperature Departure from normal  $\leq -6.5^{\circ}\text{C}$



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



Sudden electrical discharges manifested by a flash of light (Lightning) and a sharp rumbling sound (thunder)



An ensemble of particles of dust or sand energetically lifted to great heights by a strong and turbulent wind.



Ice deposits on ground

Air temperature  $\leq 4^{\circ}\text{C}$  ( over Plains)



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



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



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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