

2026-03-21

Time of Issue: 14:08:00 hours IST
(Mid-Day)

ALL INDIA WEATHER SUMMARY AND FORECAST BULLETIN

Significant Weather Features

Northwest India:

- **Isolated to scattered** light rainfall/snowfall with isolated thunderstorm, lightning & gusty winds speed reaching (30-50 kmph) likely over **Himachal Pradesh and Uttarakhand** on 23rd March. Another fresh wet spell with isolated to scattered light to moderate rainfall/snowfall likely over the region during 24th -27th March.
- **Isolated** thunderstorm, lightning & gusty winds speed reaching (30-40 kmph) likely over East Uttar Pradesh on 21st; over West Rajasthan on 21st & 22nd March.

Northeast India:

- **Scattered to fairly widespread** light to moderate rainfall with **thunderstorm, lightninggusty winds speed reaching (30-50 kmph)** likely over Assam & Meghalaya on 22st and Nagaland, Manipur, Mizoram & Tripura on 21st & 22nd March; **Thunderstorm & lightning** likely over Northeast India during next 5 days.
- **Isolated heavy rainfall** likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 27th; Arunachal Pradesh on 24th & 27th March.

East India:

- Isolated **heavyrainfall** very likely over Bihar 21st March with isolated **very heavy falls** rainfall likely over Sub-Himalayan West Bengal & Sikkim on 21st March.
- **Isolated to Scattered** light to moderate rainfall with **thunderstorm, lightning & gusty winds speed reaching (40-50 gusting to 60 kmph)** likely over Jharkhand on 21st, Bihar on 21st, 26th & 27th; Sub-Himalayan West Bengal & Sikkim during 22nd -25th March.
- **Thundersquall (wind speed reaching 50-60 kmph gusting to 70 kmph)** at isolated places over Odisha and Sub-Himalayan West Bengal & Sikkim on 21st March.
- Isolated **Hailstorm** activity likely over Gangetic West Bengal on 21st March.

Central India:

- **Isolated** light to moderate rainfall with **thunderstorm, lightning & gusty winds speed reaching (40-60 kmph)** likely over Vidarbha on 24th with thunderstorm, lightning & **gusty winds speed reaching (30-40 kmph)** over Chhattisgarh on 21st and with lightening on 24th & 25th March.

South Peninsular India:

- **Isolated to Scattered** light to moderate rainfall with **thunderstorm, lightning& gusty winds speed reaching (30-50 kmph)**likely over Coastal Andhra Pradesh & Yanam on 21st, 23rd & 24th; Rayalaseema, Telangana, North Interior Karnataka on 21st; **with lightning** over Tamil Nadu, Puducherry & Karaikal, Kerala & Mahe and South Interior Karnataka on 21stMarch.

West India:

- **Isolated** light/moderate rainfall with **thunderstorm & lightning & gusty winds speed reaching (30-50 kmph)**likely over Madhya Maharashtra and Marathawada on 21st, 23rd & 24th March.

Hot & Humid weather Warnings:

- **Hot & humid conditions** very likely to prevail in isolated pockets over Kerala & Mahe during 21st-23rd; Konkan & Goa on 23rd & 24th and Coastal Karnataka on 21st & 22nd March.

Forecast of maximum/day temperatures:

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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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- Gradual rise in maximum temperatures by 6-8°C likely over Northwest India during next 5 days and no large change thereafter.
- Gradual rise in maximum temperatures by 3-5°C likely over Central India during next 5 days and no large change thereafter.
- Gradual fall in maximum temperatures by 2-4°C likely over East India during next 24 hours and gradual rise by 2-3°C during subsequent 5 days.
- Gradual rise in maximum temperatures by 3-5°C likely over Gujarat State during next 3 days and no significant change during subsequent 4 days.
- Gradual rise in maximum temperatures by 2-4°C likely over Maharashtra during next 2 days and no significant change during subsequent 5 days.
- No significant change in maximum temperatures likely over rest parts of the country.

Main Weather Observations:

❖ **Rainfall distribution** (from 0830 hours IST of yesterday to 0830 hours IST of today): **at most places** over Sub Himalayan West Bengal & Sikkim, Gangetic West Bengal, Bihar, Uttarakhand and Himachal Pradesh; **at many places** over Haryana-Chandigarh-Delhi and Jammu-KashmirLadakh-Gilgit-Baltistan-Muzaffarabad; **at a few places** over East Madhya Pradesh and Coastal Andhra Pradesh & Yanam; **at isolated places** over East Rajasthan, West Madhya Pradesh, Saurashtra & Kutch, Chhattisgarh, Telangana, Tamil Nadu, Puducherry & Karaikal, South Interior Karnataka and Kerala & Mahe; **Dry** over rest of the country.

❖ **Significant rainfall recorded(in cm)** (from 0830 hours IST of yesterday to 0830 hours IST of today): **Sub Himalayan West Bengal & Sikkim:** Jhallong (dist Kalimpong) 11; Kalimpong (dist Kalimpong) 9; Malda (dist Malda) 7; **Gangetic West Bengal:** Burdwan PTO (dist Purba Bardhaman) 9; Sagar Island PTO (dist South 24 Parganas) 7; **Saurashtra & Kutch:** Gir Gadhada (dist Gir Somnath) 7; **Uttarakhand:** Keertinagar (dist Garhwal Tehri) 7; Tehri (dist Garhwal Tehri), Mussoorie (dist Dehradun), Pauri (dist Garhwal Pauri), Narendranagar (dist Garhwal Tehri), Dhanaulti (dist Garhwal Tehri), Nainital (dist Nainital), Gairsain (dist Chamoli) 5 Each; Landsdown (dist Garhwal Pauri), Uttar Kashi (dist Uttarkashi), Purola (dist Uttarkashi) 4 Each; **Bihar:** Cheria B.pur 1 (dist Begusarai), Kodawanpur (dist Begusarai), Chhaurahi (dist Begusarai), Korha (dist Katihar), Bibhutipur (dist Samastipur), Mohiuddinnagar (dist Samastipur), Pipra (dist Supaul) 7 Each; **East Madhya Pradesh:** Khajuraho AP (dist Chhatarpur) 6; **Coastal Andhra Pradesh & Yanam:** Chodavaram (dist Anakapalli), Jiyamma Valasa (dist Parvathipuram Manyam) 5 Each; Palakonda (dist Parvathipuram Manyam) 4; **Chhattisgarh:** Nangur (dist Bastar) 5; **Himachal Pradesh:** Kandaghat (dist Solan) 5; Shimla AP (dist Shimla), Simla (dist Shimla), Gohar (dist Mandi), Jatton Barrage (dist Sirmaur), Barthin (dist Bilaspur), Manali (dist Kullu) 4 Each.

❖ **Heavy Rainfall observed** (from 0830 hours IST of yesterday to 0830 hours IST of today):**Heavy rain** at isolated places over Sub Himalayan West Bengal & Sikkim, Gangetic West Bengal, Bihar, Uttarakhand and Saurashtra & Kutch.

❖ **Minimum Temperature Departures (as on 21-03-2026):** **markedly above normal(> 5.1°C)** at isolated places over Coastal Andhra Pradesh & Yanam. **appreciably above normal(3.1°C to 5.0°C)** at isolated places over Bihar and Madhya Maharashtra. **above normal(1.6°C to 3.0°C)** at most places over Arunachal Pradesh; at few places over Andaman & Nicobar Islands and Vidarbha; at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Odisha, Jharkhand, East Uttar Pradesh, Jammu-KashmirLadakh-Gilgit-Baltistan-Muzaffarabad, Saurashtra & Kutch, Madhya Maharashtra, Coastal Andhra Pradesh & Yanam and Tamil Nadu, Puducherry & Karaikal. **near normal(-1.5°C to 1.5°C)** at many places over Andaman & Nicobar Islands, Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, Sub Himalayan West Bengal & Sikkim, Bihar, East Uttar Pradesh, West Uttar Pradesh, Madhya Maharashtra, Marathwada, Vidarbha, Telangana, Tamil Nadu, Puducherry & Karaikal and South Interior Karnataka; at most places over Konkan & Goa and Kerala & Mahe; at few places over Odisha, Jharkhand, Jammu-KashmirLadakh-Gilgit-Baltistan-Muzaffarabad, West Rajasthan, East Rajasthan, West Madhya Pradesh, Gujarat Region, Saurashtra & Kutch, Chhattisgarh, Coastal Andhra Pradesh & Yanam, Rayalaseema, Coastal Karnataka and Lakshadweep; at isolated places over Gangetic West Bengal, Uttarakhand, Haryana-Chandigarh-Delhi, Punjab, Himachal Pradesh, East Madhya Pradesh and North Interior Karnataka. **The lowest minimum temperature** of 7.7°C was reported at MANDI (HIMACHAL PRADESH) over the Plains of India.

❖ **Maximum Temperature Departures (as on 20-03-2026):** **markedly above normal(> 5.1°C)** at isolated places over Coastal Andhra Pradesh & Yanam. **above normal(1.6°C to 3.0°C)** at few places over Arunachal Pradesh, Kerala & Mahe and Lakshadweep; at isolated places over Gangetic West Bengal, Jharkhand, Konkan & Goa and Vidarbha. **near normal(-1.5°C to 1.5°C)** at many places over Odisha, Bihar and Tamil Nadu, Puducherry & Karaikal; at most places over Coastal Karnataka; at few places over Andaman & Nicobar Islands, Sub Himalayan West Bengal & Sikkim and South Interior Karnataka; at isolated places over Assam & Meghalaya, Nagaland, Manipur, Mizoram & Tripura, East Uttar Pradesh, Jammu-KashmirLadakh-Gilgit-Baltistan-Muzaffarabad, West Madhya Pradesh, Gujarat Region, Saurashtra & Kutch, Madhya Maharashtra, Chhattisgarh and Telangana. **The highest maximum temperature** of 37.6°C was reported at PUNALUR (KERALA).

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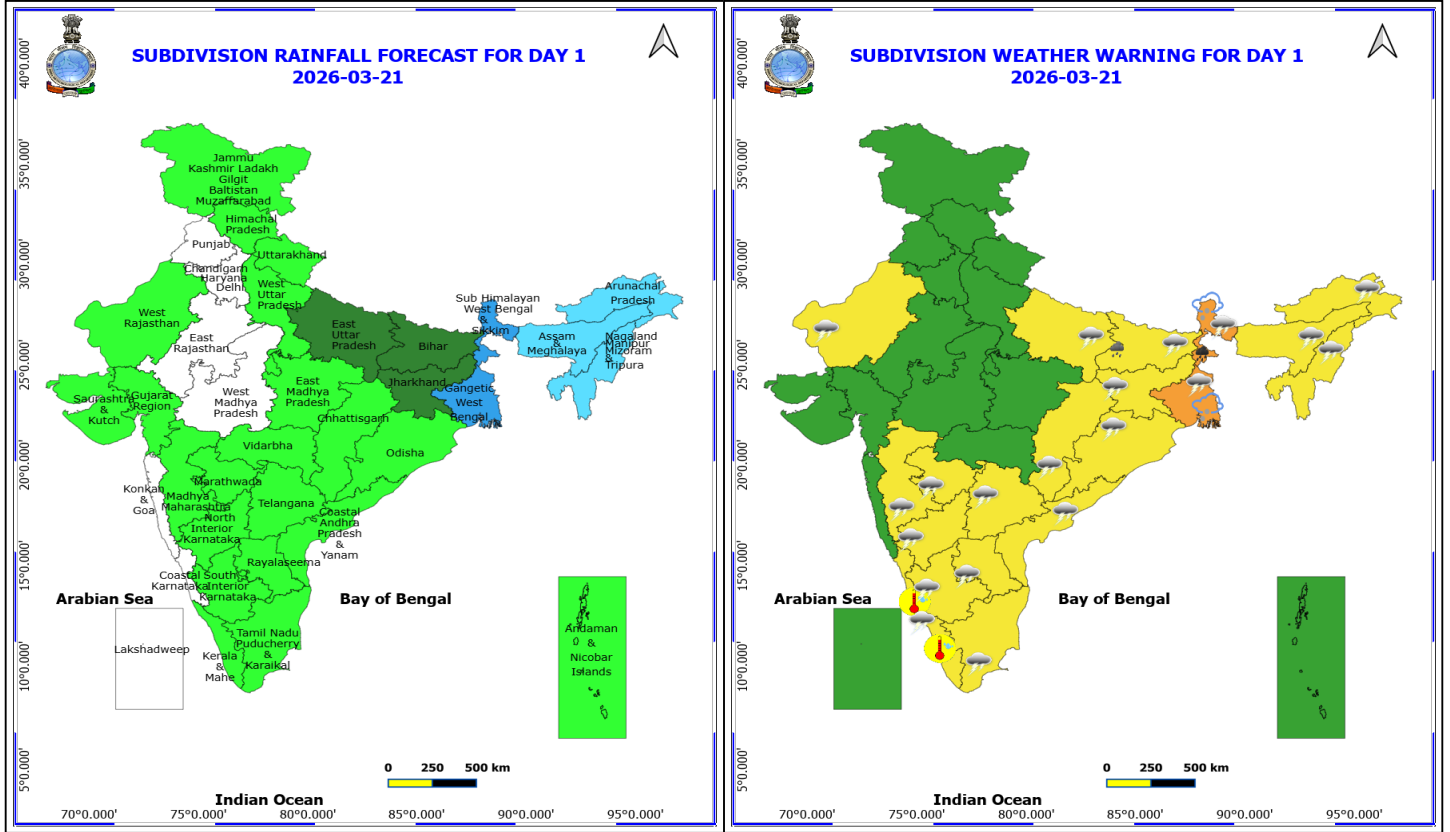
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Meteorological Analysis (Based on 0830 hours IST)

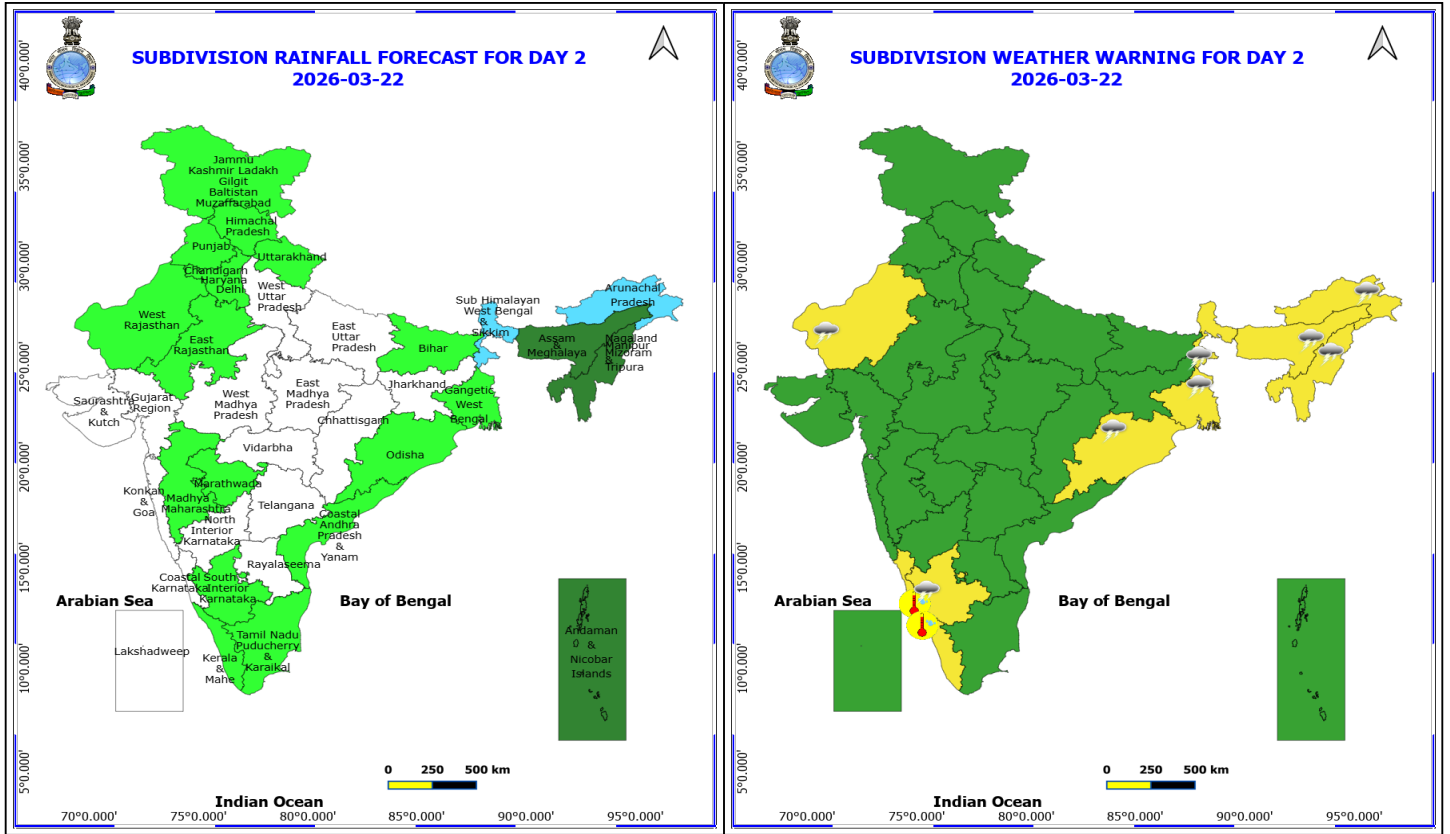
- A fresh **Western Disturbance** as a trough in middle tropospheric westerlies with its axis at 5.8 km above mean sea level runs roughly along Long. 57°E to the north of Lat. 32°N.
- The **Western Disturbance** now seen as a trough from north Haryana to north Chhattisgarh across Uttar Pradesh, East Madhya Pradesh between 3.1 & 12.6 km above mean sea level.
- The **upper air cyclonic circulation** over South Interior Karnataka & neighbourhood at 1.5 km above mean sea level persists.
- The **trough** from Gulf of Mannar to North Interior Karnataka across Tamil Nadu and South Interior Karnataka at 0.9 km above mean sea level persists.
- An **upper air cyclonic circulation** lies over East Bangladesh & neighbourhood at 1.5 km above mean sea level.
- An **upper air cyclonic circulation** lies over southwest Rajasthan & adjoining Pakistan at 1.5 km above mean sea level.
- A **trough** runs along Long. 88°E to the north of Lat. 22°N between 3.1 & 5.8 km above mean sea level.
- **Subtropical westerly Jet Stream** with core winds of the order of 70 knots at 12.6 km above mean sea level prevails over East India.
- A fresh feeble **Western Disturbance** is likely to affect northwest India from 26th March 2026.
- The induced **upper air cyclonic circulation** over Haryana at 1.5 km above mean sea level has become less marked.
- The **trough** from **upper air cyclonic circulation** over Haryana to North Gujrat across Rajasthan at 1.5 km above mean sea level has become less marked.
- The **upper air cyclonic circulation** over northwest Madhya Pradesh & adjoining south Uttar Pradesh at 0.9 km above mean sea level has become less marked.
- The **trough** from **upper air cyclonic circulation** over northwest Madhya Pradesh & adjoining south Uttar Pradesh to Vidarbha at 0.9 km above mean sea level has become less marked.
- The **trough** from **cyclonic circulation** over northwest Madhya Pradesh & adjoining south Uttar Pradesh to Nagaland has become less marked.
- The **upper air cyclonic circulation** over Lakshadweep & neighbourhood at 3.1 km above mean sea level has become less marked.
- The **upper air cyclonic circulation** over Northeast Assam & adjoining Arunachal Pradesh between 1.5 & 3.1 km above mean sea level has become less marked.
- The **upper air cyclonic circulation** over westcentral Bay of Bengal off north Coastal Andhra Pradesh at 3.1 km above mean sea level has become less marked.



21 March (Day 1)

- ❖ **Heavy to Very Heavy Rainfall** very likely at isolated places over Sub Himalayan West Bengal & Sikkim.
- ❖ **Heavy Rainfall** very likely at isolated places over Bihar.
- ❖ **Thunderstorm accompanied with Hailstorm** very likely at isolated places over West Bengal & Sikkim.
- ❖ **Thundersquall with wind speed reaching(50-60kmph)** very likely at isolated places over Odisha and West Bengal & Sikkim.
- ❖ **Thunderstorm accompanied with lightning & gusty winds(40-50kmph)** very likely at isolated places over Assam & Meghalaya, Bihar, Coastal Andhra Pradesh, Jharkhand and Nagaland, Manipur, Mizoram and Tripura.
- ❖ **Thunderstorm accompanied with lightning & gusty winds(30-40kmph)** very likely at isolated places over Chhattisgarh, East Uttar Pradesh, Madhya Maharashtra, Marathwada, North Interior Karnataka, Rayalaseema, Telangana and West Rajasthan.
- ❖ **Thunderstorm accompanied with Lightning** very likely at isolated places over Arunachal Pradesh, Kerala & Mahe, South Interior Karnataka and Tamil Nadu Puducherry & Karaikal.
- ❖ **Hot and Humid weather** very likely at isolated places over Coastal Karnataka and Kerala & Mahe.
- ❖ **Squally weather with speed 40–50 kmph gusting to 60 kmph** likely to prevail along and off north Odisha, West Bengal, Bangladesh coasts and adjoining sea areas.

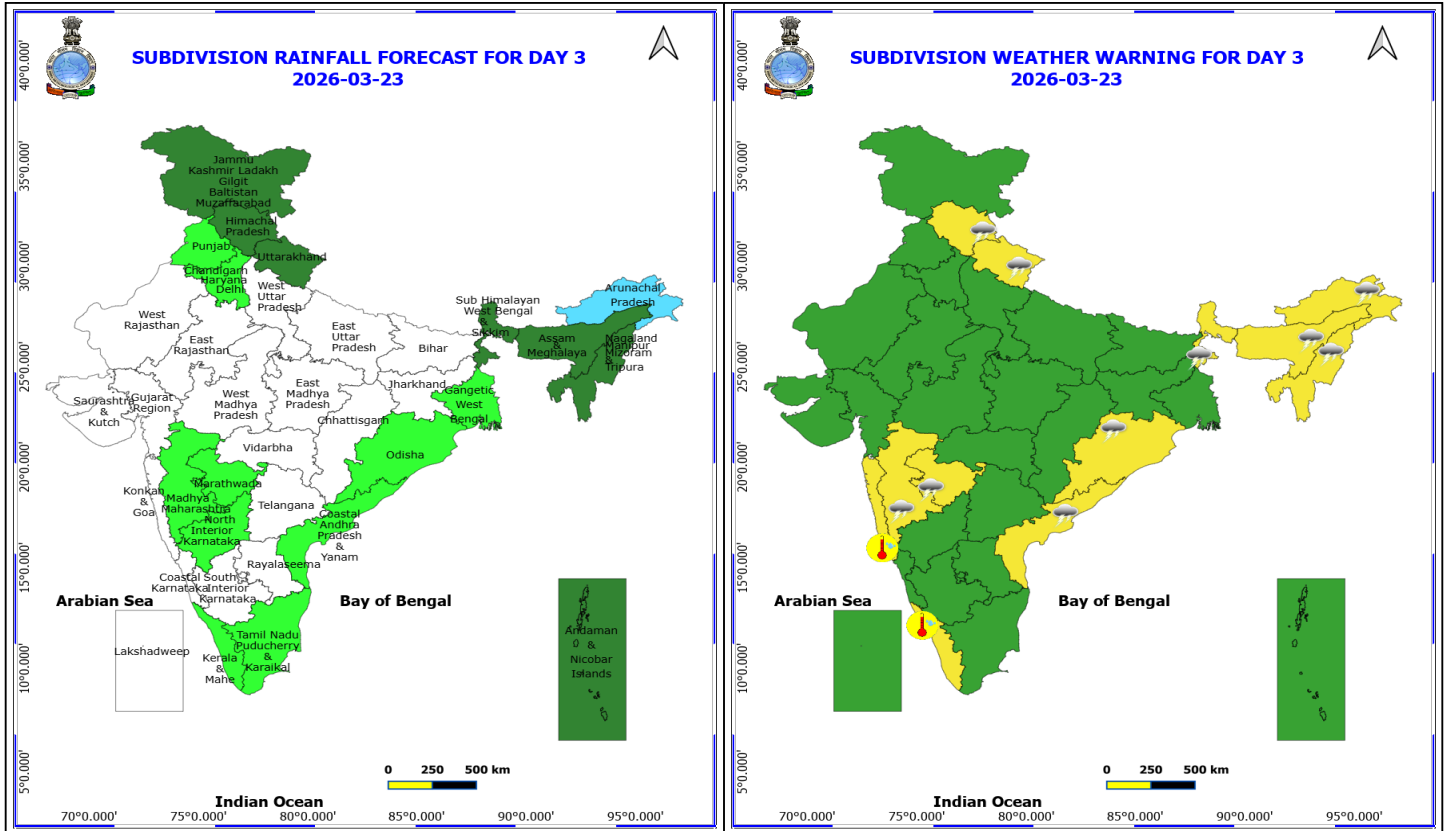
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22 March (Day 2)

- ❖ **Thunderstorm accompanied with lightning & gusty winds(40-50kmph)** very likely at isolated places over Sub Himalayan West Bengal & Sikkim.
- ❖ **Thunderstorm accompanied with lightning & gusty winds(30-40kmph)** very likely at isolated places over Gangetic West Bengal, Nagaland, Manipur, Mizoram and Tripura, Odisha and West Rajasthan.
- ❖ **Thunderstorm accompanied with Lightning** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and South Interior Karnataka.
- ❖ **Hot and Humid weather** very likely at isolated places over Coastal Karnataka and Kerala & Mahe.

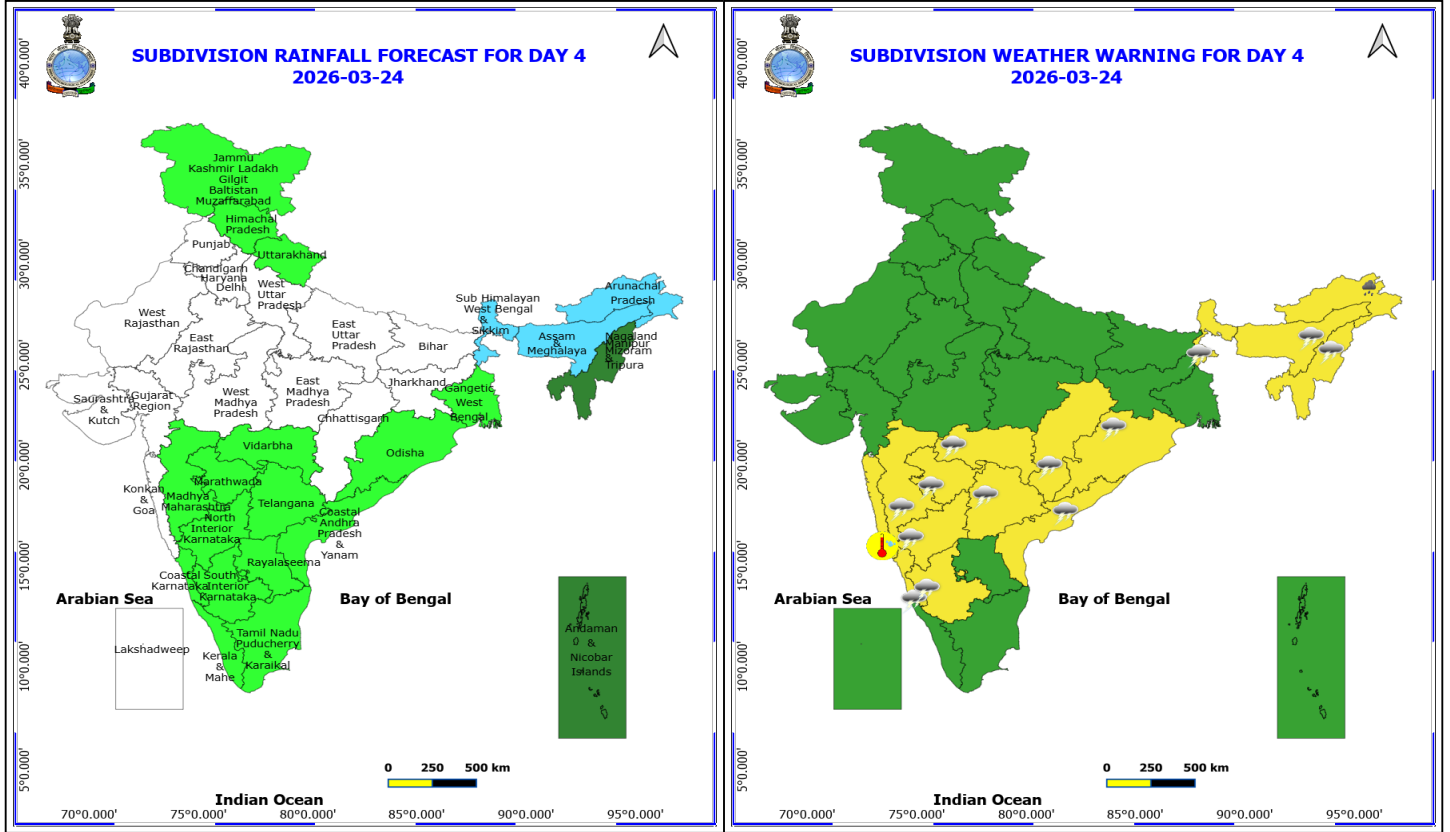
No Fishermen Warning



23 March (Day 3)

- ❖ **Thunderstorm accompanied with lightning & gusty winds(40-50kmph)** very likely at isolated places over Madhya Maharashtra, Marathwada and Uttarakhand.
- ❖ **Thunderstorm accompanied with lightning & gusty winds(30-40kmph)** very likely at isolated places over Coastal Andhra Pradesh, Himachal Pradesh, Odisha and Sub Himalayan West Bengal & Sikkim.
- ❖ **Thunderstorm accompanied with Lightning** very likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram and Tripura.
- ❖ **Hot and Humid weather** very likely at isolated places over Kerala & Mahe and Konkan & Goa.

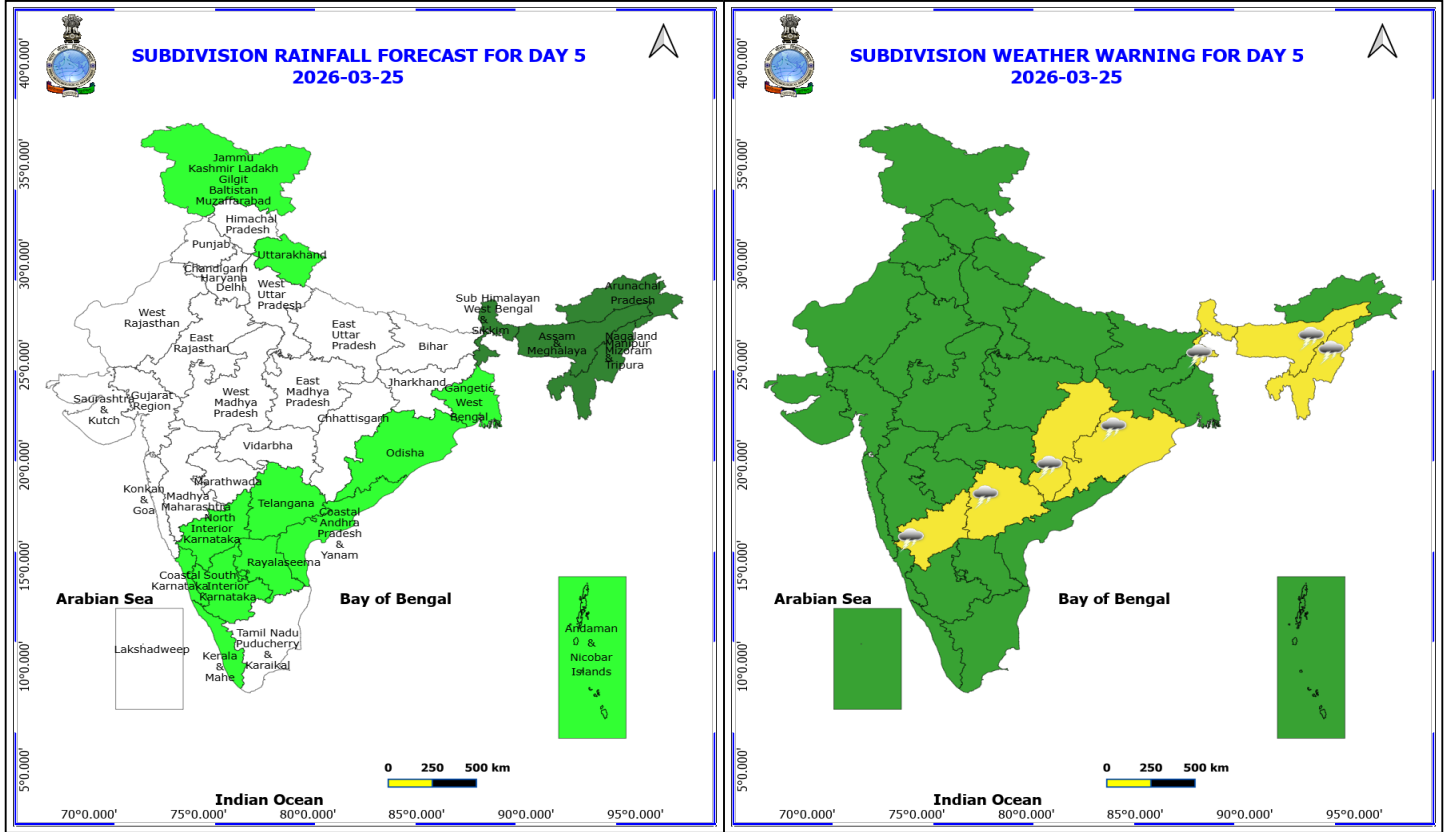
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24 March (Day 4)

- ❖ **Heavy Rainfall** likely at isolated places over Arunachal Pradesh.
- ❖ **Thunderstorm accompanied with lightning & gusty winds(40-50kmph)** likely at isolated places over Maharashtra and Sub Himalayan West Bengal & Sikkim.
- ❖ **Thunderstorm accompanied with lightning & gusty winds(30-40kmph)** likely at isolated places over Coastal Andhra Pradesh, North Interior Karnataka and Odisha.
- ❖ **Thunderstorm accompanied with Lightning** likely at isolated places over Assam & Meghalaya, Chhattisgarh, Coastal Karnataka, Nagaland, Manipur, Mizoram and Tripura, South Interior Karnataka and Telangana.
- ❖ **Hot and Humid weather** likely at isolated places over Konkan & Goa.

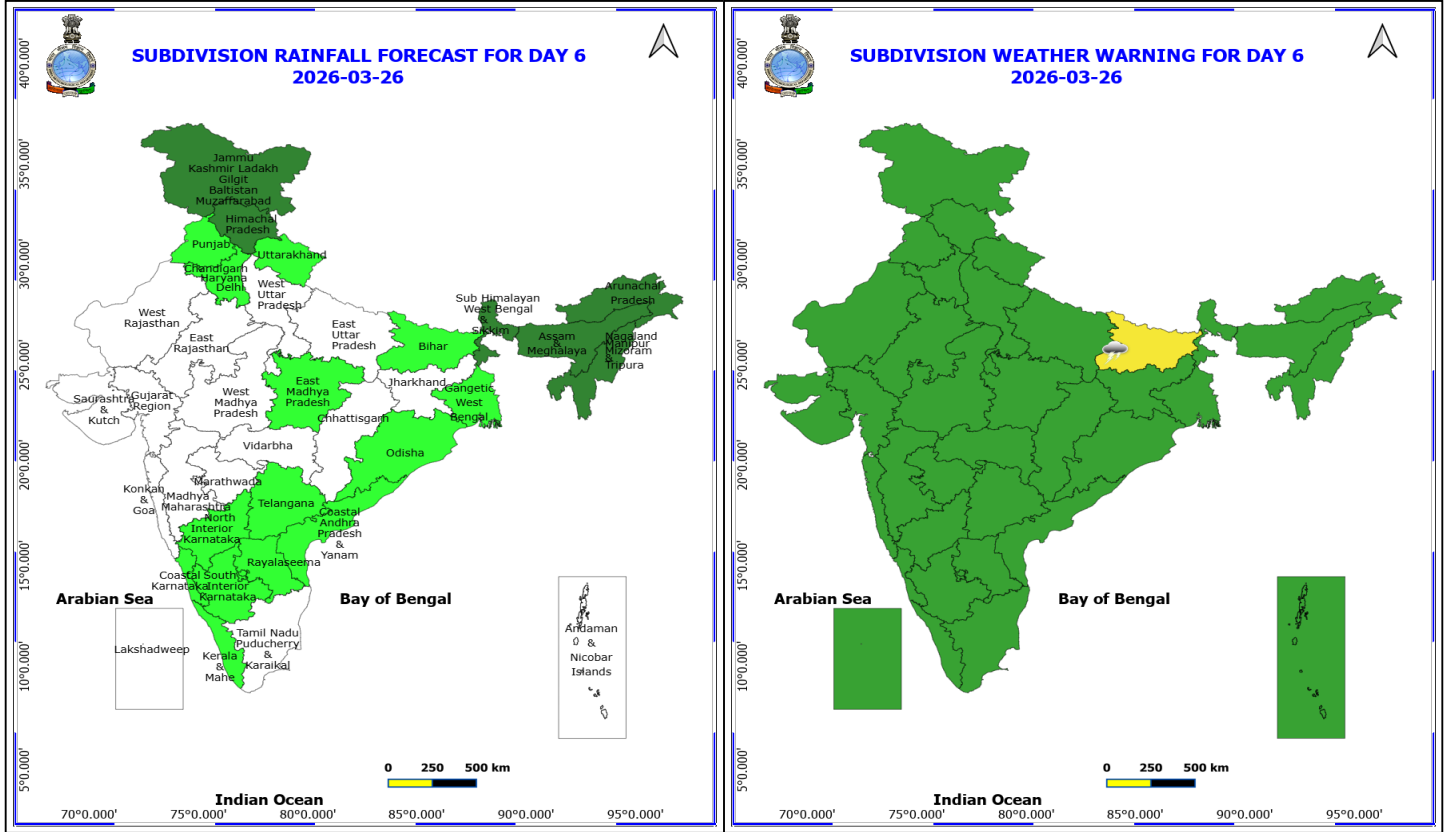
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25 March (Day 5)

- ❖ **Thunderstorm accompanied with lightning & gusty winds(30-40kmph)** likely at isolated places over North Interior Karnataka, Odisha and Sub Himalayan West Bengal & Sikkim.
- ❖ **Thunderstorm accompanied with Lightning** likely at isolated places over Assam & Meghalaya, Chhattisgarh, Nagaland, Manipur, Mizoram and Tripura and Telangana.

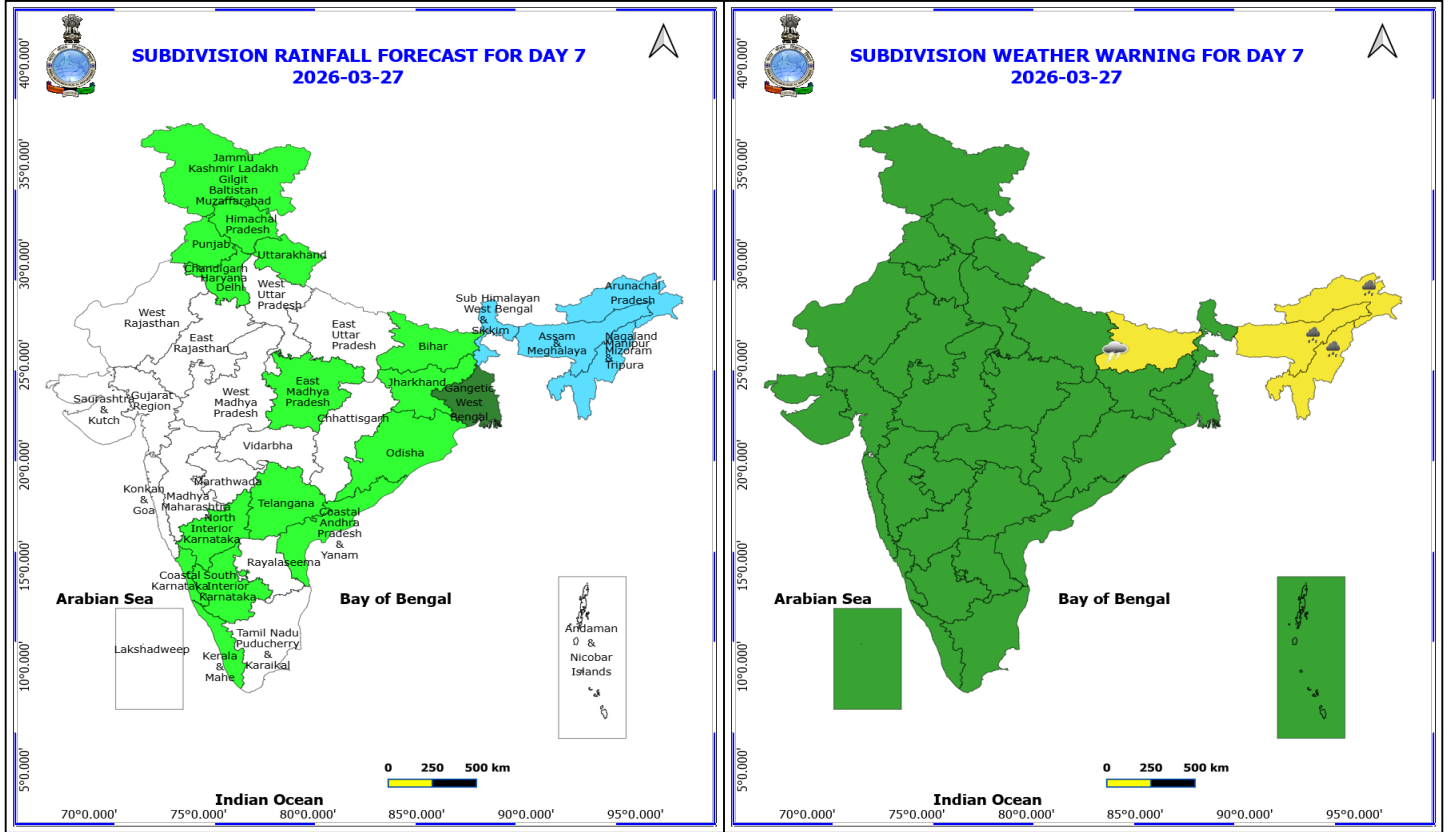
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26 March (Day 6)

❖ **Thunderstorm accompanied with lightning & gusty winds(40-50kmph) likely at isolated places over Bihar.**

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27 March (Day 7)

- ❖ **Heavy Rainfall** likely at isolated places over Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram and Tripura.
- ❖ **Thunderstorm accompanied with lightning & gusty winds(40-50kmph)** likely at isolated places over Bihar.

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Table-1

7 Days Rainfall Forecast

S.No.	Subdivision	21- Mar	22- Mar	23- Mar	24- Mar	25- Mar	26- Mar	27- Mar
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
1	ANDAMAN & NICOBAR ISLANDS	ISOL	SCT	SCT	SCT	ISOL	DRY	DRY
2	ARUNACHAL PRADESH	FWS	FWS	FWS	FWS	SCT	SCT	FWS
3	ASSAM & MEHGHALAYA	FWS	SCT	SCT	FWS	SCT	SCT	FWS
4	N. M. M. & T.	FWS	SCT	SCT	SCT	SCT	SCT	FWS
5	S.H. WEST BENGAL & SIKKIM	WS	FWS	SCT	FWS	SCT	SCT	FWS
6	GANGETIC WEST BENGAL	WS	ISOL	ISOL	ISOL	ISOL	ISOL	SCT
7	ODISHA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
8	JHARKHAND	SCT	DRY	DRY	DRY	DRY	DRY	ISOL
9	BIHAR	SCT	ISOL	DRY	DRY	DRY	ISOL	ISOL
10	EAST UTTAR PRADESH	SCT	DRY	DRY	DRY	DRY	DRY	DRY
11	WEST UTTAR PRADESH	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
12	UTTARAKHAND	ISOL	ISOL	SCT	ISOL	ISOL	ISOL	ISOL
13	HARYANA, CHD & DELHI	DRY	ISOL	ISOL	DRY	DRY	ISOL	ISOL
14	PUNJAB	DRY	ISOL	ISOL	DRY	DRY	ISOL	ISOL
15	HIMACHAL PRADESH	ISOL	ISOL	SCT	ISOL	DRY	SCT	ISOL
16	JAMMU AND KASHMIR AND LADAKH	ISOL	ISOL	SCT	ISOL	ISOL	SCT	ISOL
17	WEST RAJASTHAN	ISOL	ISOL	DRY	DRY	DRY	DRY	DRY
18	EAST RAJASTHAN	DRY	ISOL	DRY	DRY	DRY	DRY	DRY
19	WEST MADHYA PRADESH	DRY	DRY	DRY	DRY	DRY	DRY	DRY
20	EAST MADHYA PRADESH	ISOL	DRY	DRY	DRY	DRY	ISOL	ISOL
21	GUJRAT REGION	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
22	SAURASHTRA & KUTCH	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
23	KONKAN & GOA	DRY	DRY	DRY	DRY	DRY	DRY	DRY
24	MADHYA MAHARASHTRA	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY
25	MARATHWADA	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY
26	VIDARBHA	ISOL	DRY	DRY	ISOL	DRY	DRY	DRY
27	CHATTISGARH	ISOL	DRY	DRY	DRY	DRY	DRY	DRY
28	COASTAL ANDHRA PRADESH	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
29	TELANGANA	ISOL	DRY	DRY	ISOL	ISOL	ISOL	ISOL
30	RAYALASEEMA	ISOL	DRY	DRY	ISOL	ISOL	ISOL	DRY
31	TAMILNADU & PUDUCHERRY	ISOL	ISOL	ISOL	ISOL	DRY	DRY	DRY
32	COSTAL KARNATAKA	DRY	DRY	DRY	ISOL	ISOL	ISOL	ISOL
33	NORTH INTERIOR KARNATAKA	ISOL	DRY	ISOL	ISOL	ISOL	ISOL	ISOL
34	SOUTH INTERIOR KARNATAKA	ISOL	ISOL	DRY	ISOL	ISOL	ISOL	ISOL
35	KERALA	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL	ISOL
36	LAKSHDWEEP	DRY	DRY	DRY	DRY	DRY	DRY	DRY

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: Maximum Temperatures Dated 2026-03-20

Fig. 2: Departure of Maximum Temp. Dated 2026-03-20

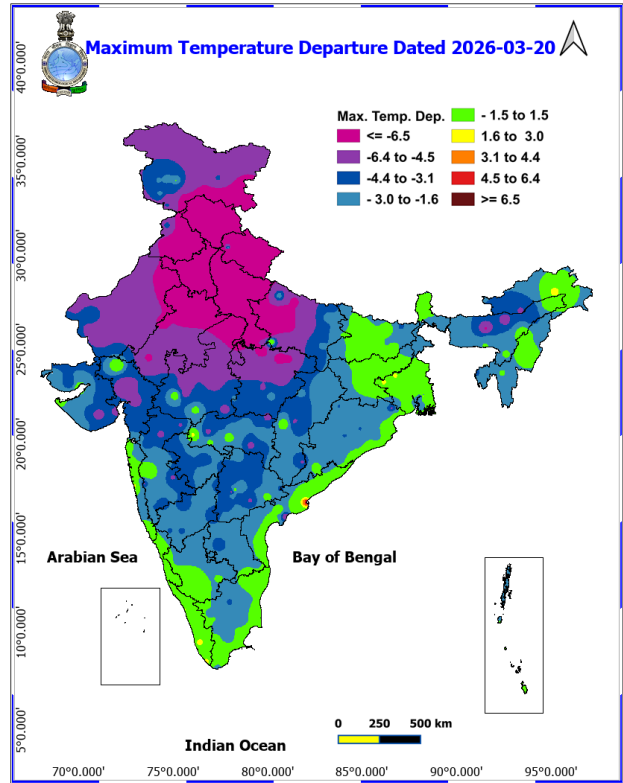
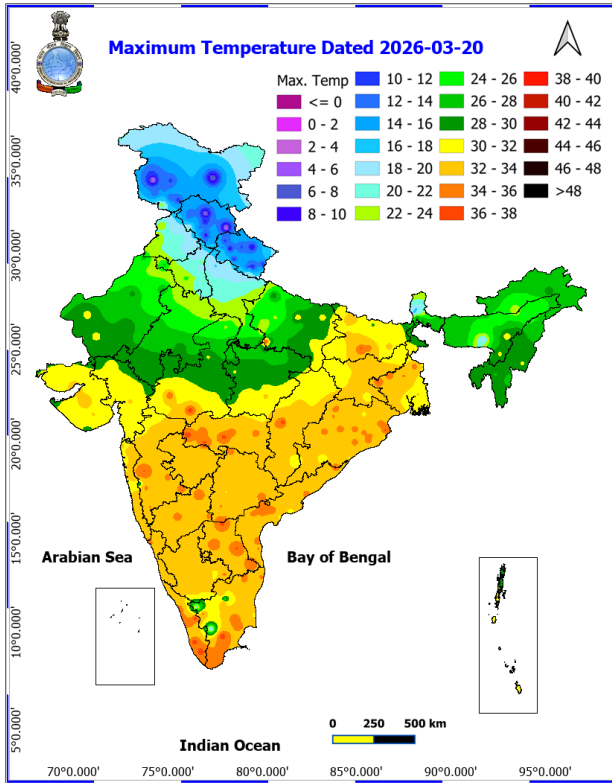
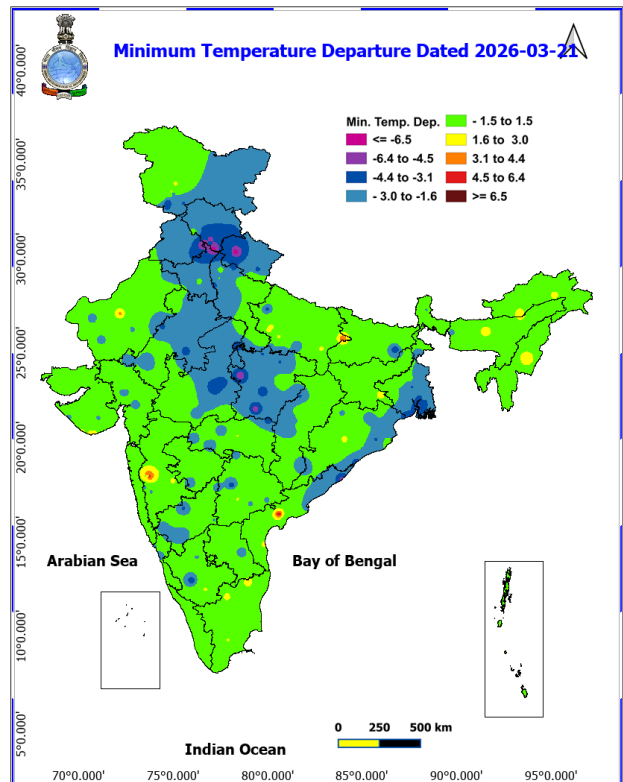
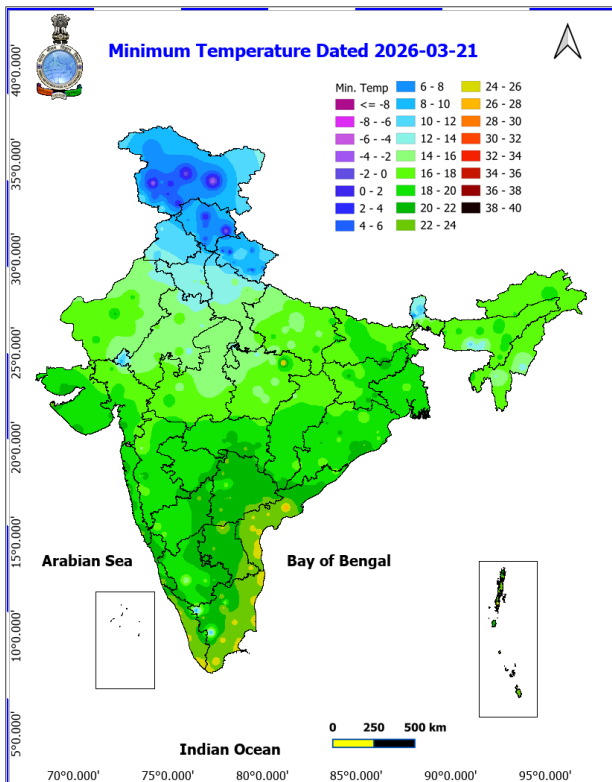
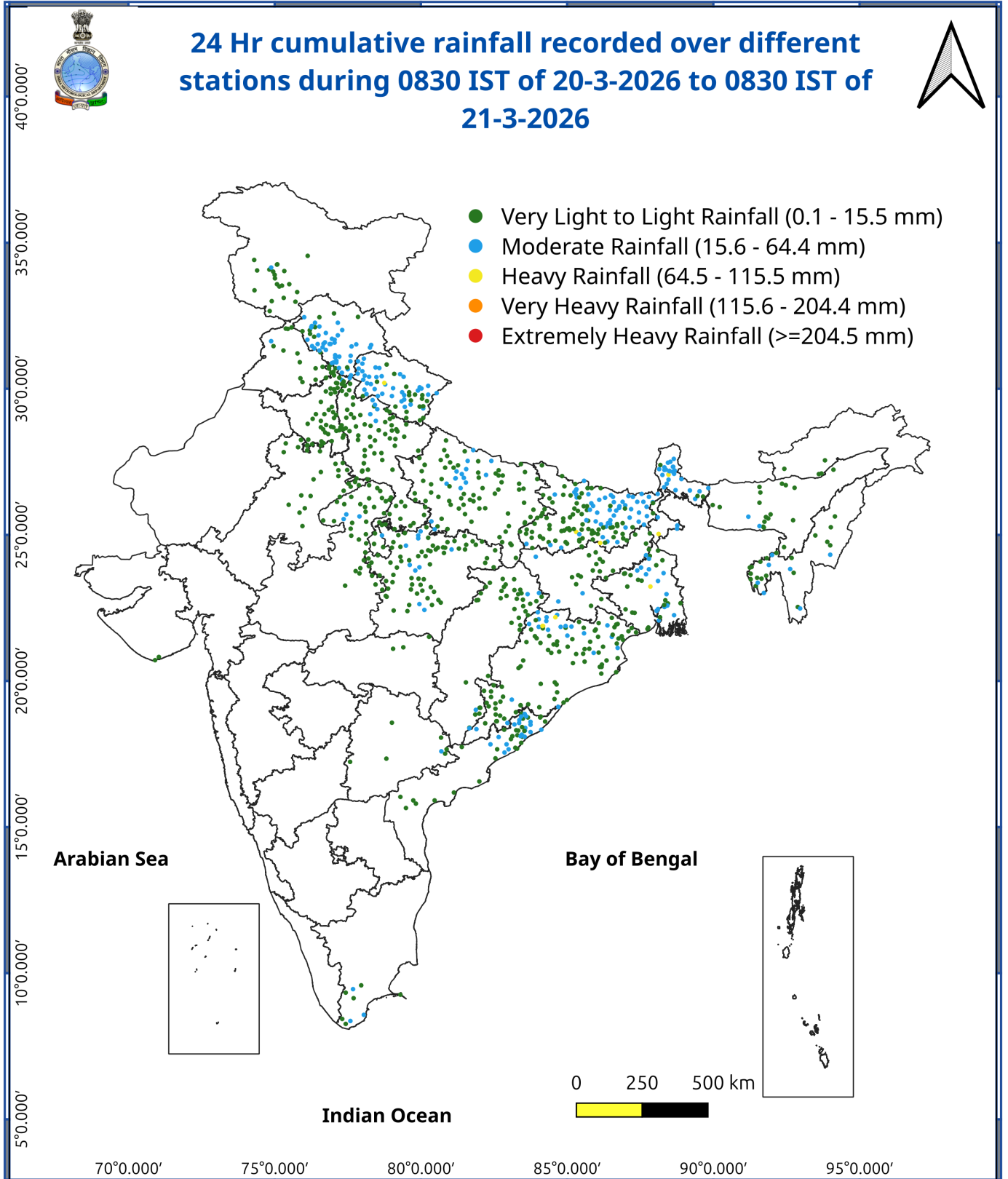


Fig. 3: Minimum Temperatures Dated 2026-03-21

Fig. 4: Departure of Minimum Temp. Dated 2026-03-21





Impact and Actions

Impact & Action Suggested due to heavy/very heavy rainfall:

- **Isolated heavy rainfall** likely over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 27th; Arunachal Pradesh on 24th & 27th March.
- **Isolated heavy rainfall** very likely over Bihar 21st March with isolated **very heavy falls** rainfall likely over Sub-Himalayan West Bengal & Sikkim on 21st March.

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
- Damage to horticulture and standing crops in some areas due to inundation.
- It may lead to riverine flooding in some river catchments (for riverine flooding please visit Web page of CWC).

Action Suggested

- Check for traffic congestion on your route before leaving for your destination.
- Follow any traffic advisories that are issued in this regard.
- Avoid going to areas that face the water logging problems often.
- Avoid staying in vulnerable structure.

Impact & suggested expected due to isolated thunderstorm with lightning/gusty & Squally winds & Hailstorm over

- Isolated **Hailstorm** activity likely over Isolated **Hailstorm** activity likely over Gangetic West Bengal on 21st March.
- **Thundersquall (wind speed reaching 50-60 kmph gusting to 70 kmph)** at isolated places over Odisha and Sub-Himalayan West Bengal & Sikkim on 21st March.

Impact expected:

- Breaking of tree branches, uprooting of large avenue trees. Large dead limbs blown from trees. Damage to Standing crops.
- Minor to Major damage to banana and papaya trees.
- Minor to major damage to power and communication lines due to breaking of branches.
- Strong wind/hail may damage plantation, horticulture and standing crops.
- Hail may injure people and cattle at open places.
- Partial damage to vulnerable structures due to strong winds.
- Minor damage to kutcha houses/walls and huts.
- Loose objects may fly.

Action suggested:

- People are advised to keep a watch on the weather for worsening conditions and be ready to move to safer places accordingly.

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- Stay indoors, close windows & doors and avoid travel if possible.
- Take safe shelters; do not take shelter under trees.
- Do not lie on concrete floors and do not lean against concrete walls.
- Unplug electrical/ electronic appliances.
- Immediately get out of water bodies.
- Keep away from all the objects that conduct electricity.

Agromet advisories for various parts of the country

Agromet advisories for likely impact of Hailstorms

Use hail nets or hail caps in fruit orchards and vegetable plants to protect them from mechanical damage in **West Bengal**.

Agromet advisories for likely impact of Heavy Rainfall

In **Sub Himalayan West Bengal**, maintain proper drainage channel, and drain out excess water from fields of rice, maize, other standing crops, vegetables and orchard. Cover the nursery of cucurbits and Dalle khorsani with polyethylene sheets or agro-nets.

In **Bihar**, ensure proper drainage to drain out excess waters from standing crop fields and vegetables and keep the harvested produce of mustard at safer places.

Agromet advisories for likely impact of Thunderstorm / Gusty Winds

Shift the harvested produce in safer places or cover the produce with tarpaulin sheets in the fields. Tie the harvested crops properly and cover them to minimise the risk of displacement due to strong surface winds.

Provide mechanical support to horticultural crops and staking or support to vegetables and young fruit plants / fruit-bearing plants to avoid lodging due to strong winds

Livestock / Poultry

Keep the animals inside the shed during Heavy Rainfall/Hailstorm period and provide them balanced feed. Store feed and fodder in a safe place to prevent spoilage.

Legends & abbreviations:

- **Heavy Rain:**64.5-115.5mm; **Very Heavy Rain:**115.6-204.4mm; **Extremely Heavy Rain:** >204.4mm.
- **Obsy:** Observatory; Automatic Weather Station; **ARG:** Automatic Rain Gauge; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office, **Aero:** Aerodrome, **IAF:** Indian Air Force.
- **Region wise classification of meteorological Sub-Divisions:**
- **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad,

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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.

LEGENDS

- 1 अंडमान और निकोबार द्वीप समुह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड मनीपुर मीजोरम और त्रिपुरा
- 5 उप हिमालय पश्चिम बंगाल एवं सिक्किम
- 6 पश्चिम बंगाल
- 7 ओडिसा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा चंडिगढ़ 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 कोंकण एवं गोवा
- 24 मध्य महाराष्ट्र
- 25 मराठावाडा
- 26 विदर्भ
- 27 छत्तीसगढ़
- 28 तटीय आंध्र प्रदेश एवं यनम
- 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. Marathawada
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)

Subdivision Colour

- NO WARNING
- WATCH (BE UPDATED)
- ALERT (BE PREPARED TO TAKE ACTION)
- WARNING (TAKE ACTION)

Probabilistic Forecast

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

- | | | | |
|--------------------------|-----------------|----------------------|--------------------|
| Heavy Rain | Very Heavy Rain | Extremely Heavy Rain | Heavy Snow |
| Thunderstorm & Lightning | Hailstorm | Dust Storm | Dust Raising Winds |
| Strong surface winds | Heat Wave | Hot Day | Warm Night |
| Cold Wave | Cold Day | Ground Frost | Fog |
| Hot & Humid | | | |

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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°C to 6.4°C .
Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^{\circ}\text{C}$

(b). Based on Actual maximum temperature

Heat Wave: When actual maximum temperature $\geq 45^{\circ}\text{C}$.
Severe Heat Wave: When actual maximum temperature $\geq 47^{\circ}\text{C}$

(c). Criteria for heat wave for coastal stations

When maximum temperature departure is $> 4.5^{\circ}\text{C}$ from normal. Heat Wave may be described provided maximum temperature $\geq 37^{\circ}\text{C}$



When maximum temperature remains 40°C

Warm Night: When minimum temperature departure 4.5°C to 6.4°C .
Severe Warm Night: When minimum temperature departure $> 6.4^{\circ}\text{C}$.



When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions.

(a). Based on departure

Cold Wave: Minimum Temperature Departure from normal -4.5°C to -6.4°C .
Severe Cold Wave: Minimum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$

(b) Based on actual Minimum Temperature (for Plains only)

Cold Wave : When Minimum Temperature is $\leq 4.0^{\circ}\text{C}$
Severe Cold Wave: When Minimum Temperature is $\leq 2.0^{\circ}\text{C}$

(c) For Coastal Stations

When Minimum Temperature departure is $\leq -4.5^{\circ}\text{C}$ & actual Minimum Temperature is $\leq 15^{\circ}\text{C}$



When minimum temperature of a station $\leq 10^{\circ}\text{C}$ for plains and $\leq 0^{\circ}\text{C}$ for hilly regions
Based on departure

Cold Day: Maximum Temperature Departure from normal -4.5°C to -6.4°C .
Severe Cold Day: Maximum Temperature Departure from normal $\leq -6.5^{\circ}\text{C}$



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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