



**Government of India
Ministry of Earth Sciences
India Meteorological Department**



**Date: 20th March, 2024
Time of Issue: 1300 hours IST**

Special Message (No. - 5)

FROM: INDIA METEOROLOGICAL DEPARTMENT

**TO: CONTROL ROOM, NDM, MINISTRY OF HOME AFFAIRS
CONTROL ROOM NDMA
SECRETARY, MOES
DIRECTOR GENERAL, DOORDARSHAN
DIRECTOR GENERAL, AIR
PIB MOES
CHIEF SECRETARY, GOVT. OF MADHYA PRADESH
CHIEF SECRETARY, GOVT. OF CHHATTISGARH
CHIEF SECRETARY, GOVT. OF JHARKHAND
CHIEF SECRETARY, GOVT. OF ODISHA
CHIEF SECRETARY, GOVT. OF WEST BENGAL
CHIEF SECRETARY, GOVT. OF MAHARASHTRA
CHIEF SECRETARY, GOVT. OF BIHAR**

Subject: Light to moderate rainfall accompanied with thunderstorm, lightning & hail likely to continue over East India today, the 20th March and gradually decrease thereafter.

Realised weather during past 24 hours till 0830 hours IST of today:

- ❖ **Light to moderate rainfall** observed at most places over Chhattisgarh, Odisha, West Bengal; at many places over Bihar, Jharkhand; at a few places over Vidarbha; at isolated places over Madhya Pradesh.
- ❖ **Heavy rainfall** at isolated places over Odisha.
- ❖ **Hailstorm** observed at isolated places over Madhya Pradesh, Vidarbha, Chhattisgarh.
- ❖ **Thundersquall/gusty winds** observed at isolated places over Bihar, Jharkhand, Madhya Pradesh, Vidarbha and Chhattisgarh.

Weather Systems and Forecast & Warnings: (Annexure I)

- ❖ A cyclonic circulation lies over north Telangana and a trough/wind discontinuity runs from Kerala to north Telangana & another trough from northeast Madhya Pradesh to south Assam in lower tropospheric levels. A cyclonic circulation lies over Jharkhand & neighbourhood in lower tropospheric level with trough aloft from northeast Uttar Pradesh to east Vidarbha in middle & upper tropospheric level. The anti-cyclonic circulation lies over Northwest Bay of Bengal off Odisha coast in lower tropospheric levels. Under the influence of these systems:
 - ✓ Scattered to fairly widespread light to moderate rainfall with isolated **thunderstorms, lightning & gusty winds** very likely over **Gangetic West Bengal, Bihar** on 20th & 21st and over **Jharkhand and Odisha on 20th March and gradual reduction thereafter. Isolated hailstorm** also very likely over Bihar, East Uttar Pradesh and Jharkhand on 20th March.
 - ✓ Isolated **heavy rainfall** very likely over Bihar and Odisha on 20th March, 2024.
 - ✓ Isolated light to moderate rainfall with **thunderstorms, lightning & gusty winds** over East Madhya Pradesh, Vidarbha, Chhattisgarh on 20th March, 2024.

The state-wise forecast is given below: (Warning graphics are given at ANNEXURE-I)

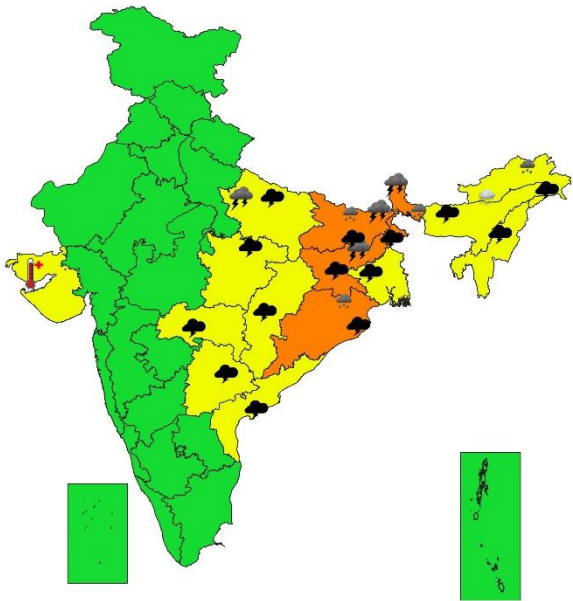
S. No.	State/sub-division	Forecast
1.	East Madhya Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 20th March.
2.	Vidarbha	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning with gusty winds (speed reaching 30-40 kmph) at isolated places on 20th March.
3.	Chhattisgarh	<ul style="list-style-type: none"> • Light to moderate rain at a few places accompanied with isolated thunderstorm & lightning with gusty winds (speed reaching 30-40 kmph) on 20th March.
4.	Jharkhand	<ul style="list-style-type: none"> • Light to moderate rain at many places accompanied with isolated thunderstorm & lightning with gusty winds (speed reaching 40-50 kmph) on 20th March. • Light to moderate rain accompanied with thunderstorm, lightning at isolated places on 21st March. • Hailstorm also likely at isolated places on 20th March.
5.	Gangetic West Bengal	<ul style="list-style-type: none"> • Light to moderate rain at most places accompanied with isolated thunderstorm & lightning with gusty winds (speed reaching 30-40 kmph) on 20th March. • Light to moderate rain at many places accompanied with isolated thunderstorm & lightning with gusty winds (speed reaching 40-50 kmph) places on 21st March and isolated light to moderate rainfall on 22nd & 23rd March.
6.	Odisha	<ul style="list-style-type: none"> • Light to moderate rain at many places accompanied with isolated thunderstorm, lightning on 21st March. • Light to moderate rainfall at isolated places on 21st March. • Heavy rainfall at isolated places likely on 20th March
7.	Bihar	<ul style="list-style-type: none"> • Light to moderate rain at many places accompanied with isolated thunderstorm & lightning with gusty winds (speed reaching 40-50 kmph) on 20th March. • Light to moderate rain at a few places accompanied with isolated thunderstorm, lightning on 21st March. • Light to moderate rainfall at isolated places during 22nd – 25th March. • Heavy rainfall at isolated places likely on 20th March • Hailstorm also likely at isolated places on 20th March.

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

This is the last special Bulletin for this event.

Surendra Pratap Singh
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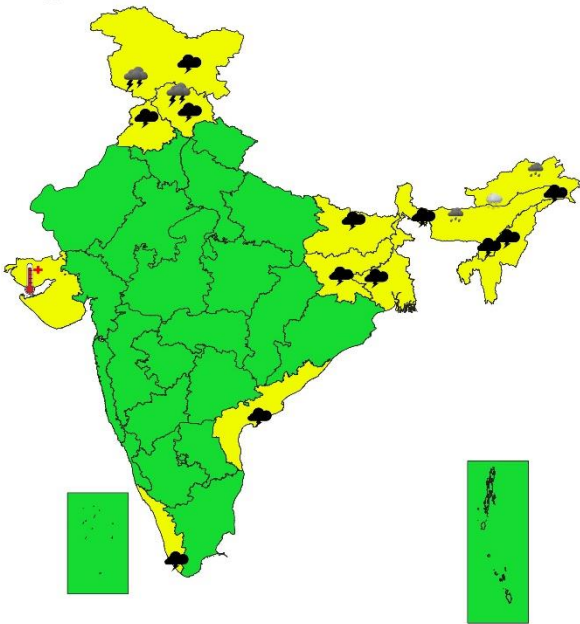
SUBDIVISIONWISE WEATHER WARNING FOR DAY 1
20-03-2024



Subdivision Warning

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

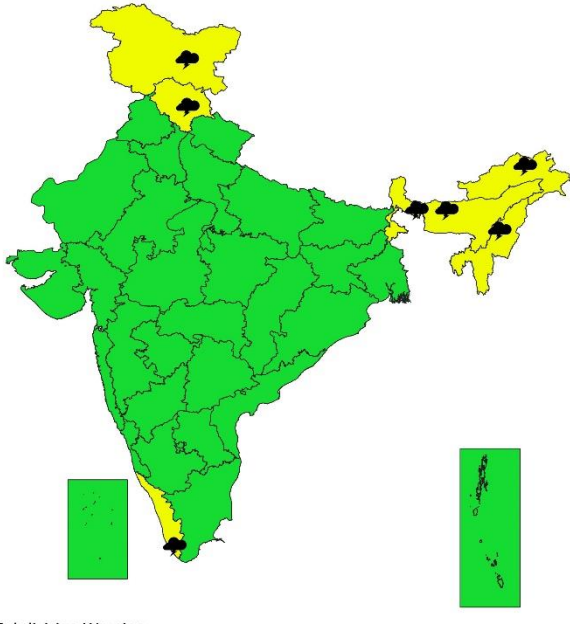
SUBDIVISIONWISE WEATHER WARNING FOR DAY 2
21-03-2024



Subdivision Warning

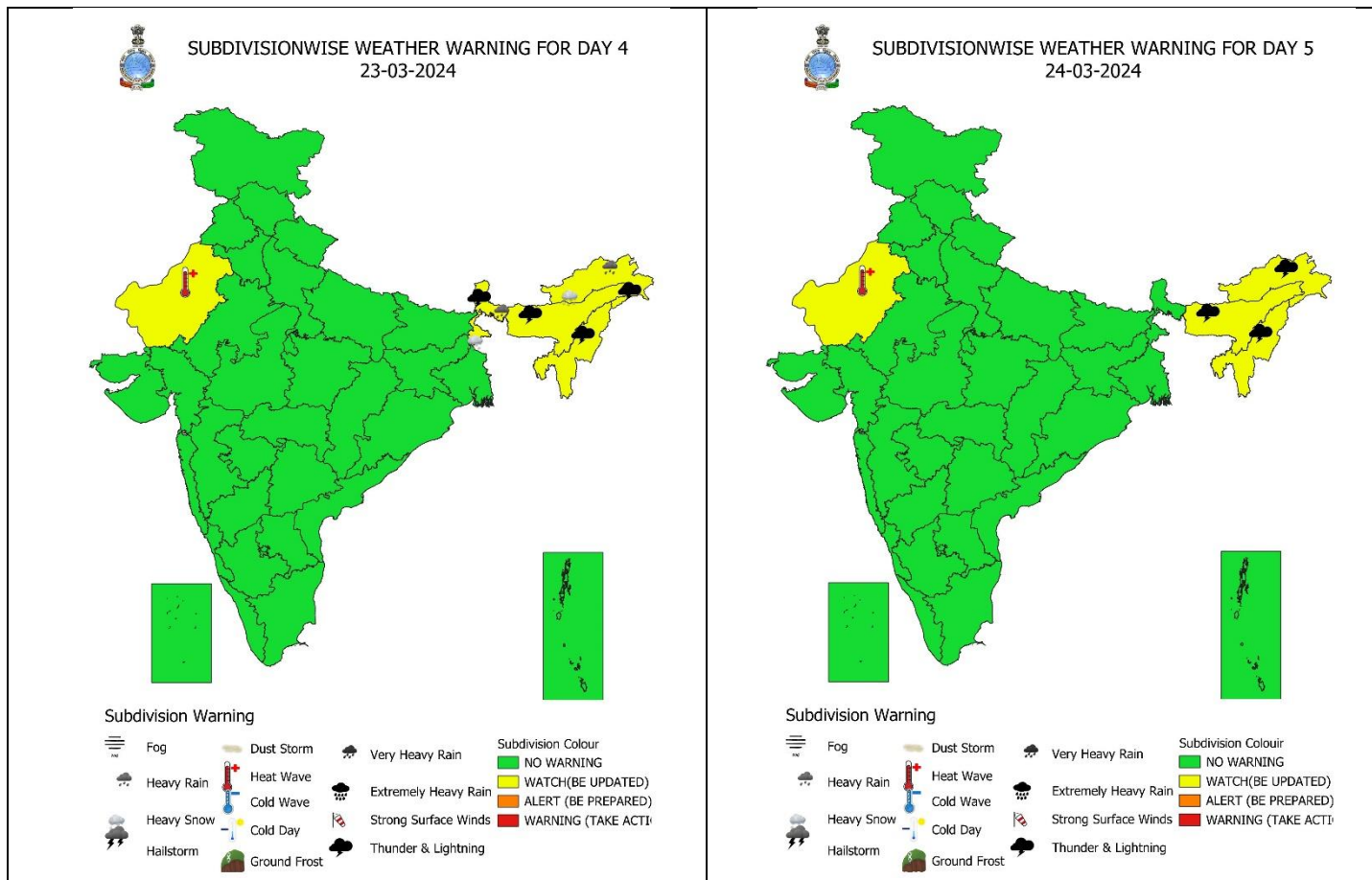
Fog	Dust Storm	Very Heavy Rain	Subdivision Colour
Heavy Rain	Heat Wave	Extremely Heavy Rain	NO WARNING
Heavy Snow	Cold Wave	Strong Surface Winds	WATCH (BE UPDATED)
Hailstorm	Cold Day	Thunder & Lightning	ALERT (BE PREPARED)
	Ground Frost		WARNING (TAKE ACTION)

SUBDIVISIONWISE WEATHER WARNING FOR DAY 3
22-03-2024



Subdivision Warning

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



Significant rainfall amount (in cm):

Odisha: Gondia (Dhenkanal) 7, Bhuban (Dhenkanal) 7, Athmalik (Angul) 7, Kantamal (Boudhgarh) 7, Daringibadi (Kandhamal) 7, Patnagarh (Bolangir) 7, Komna (Nawapara) 7, Talcher (Angul) 7, Niali (Cuttack) 6, Baliguda (Kandhamal) 6, Jatni (Khurda) 6, Birmaharajpur (Sonapur) 6, Bangamunda (Bolangir) 5, Banki (Cuttack) 5, Altuma (Dhenkanal) 5, Kankadahad (Dhenkanal) 5, Banarpal (Angul) 5, Ghasipura (Keonjhar) 5, Basudevpur (Bhadrak) 5, Hatadihi (Keonjhar) 5, Dhenkanal Pto (Dhenkanal) 5, Dhenkanal (Dhenkanal) 5, Danagadi (Jajpur) 5, Kamakhyanagar (Dhenkanal) 5, Bhadrak (Bhadrak) 5, Madanpur Rampur (Kalahandi) 5, Khaprakhola (Bolangir) 5, Paikmal (Bargarh) 5, G Udayagiri (Kandhamal) 5, Nawapara (Nawapara) 5, Khajuripada (Kandhamal) 5

Bihar: Madhepura-6, Jahanabad, Kishanganj, Bhojpur-4 each, Purnea-3, Araria, Banka, Arwal, Supaul, Gaya, Saharsa-2

East Madhya Pradesh: Benibari (dist Anuppur) 4, Pushprajgarh (dist Anuppur) 3, Chhapara (dist Seoni) 3, Amarkantak (dist Anuppur) 3, Mawai (dist Mandla) 2, Karanjia (dist Dindori) 2, Bajag (dist Dindori) 2,

Chhattisgarh: Narayanpur (dist Narayanpur) 4, Janjgir (dist Janjgir) 4, Bhairamgarh (dist Bijapur) 4, Katghora (dist Korba) 3, Poudi Uparora (dist Korba) 3, Dhamtari (dist Dhamtari) 3, Akaltara (dist Janjgir) 3, Gundardehi (dist Balod) 3, Manpur (dist Rajnandgaon) 3, Chhuikhadan (dist Rajnandgaon) 3, Gurur (dist Balod) 3, Bijapur (dist Bijapur) 3, Patharia (dist Mungeli) 3, Champa (dist Janjgir) 3, Baloda (dist Janjgir) 3, Mungeli (dist Mungeli) 3, Kharsiya (dist Raigarh) 3, Patan (dist Durg) 3, Bhatapara (dist Baloda Bazar) 3, Nagari (dist Dhamtari) 3, Pamgarh (dist Janjgir) 3, Gidam (dist Dantewada) 3, Kartala (dist Korba) 3, Simga (dist Baloda Bazar) 3, Tamnar (dist Raigarh) 3, Nawagarh (dist Bemetara) 3,

Jharkhand: West Singhbhum-3, Suimdega-2

Gangetic West Bengal: West Midnapore, Bankura-3 each, North & South 24 Parganas, Purulia, Hooghly, Nadia-2 each

Vidarbha: Kuhi (dist Nagpur) 3, Mul (dist Chandrapur) 2, Saoli (dist Chandrapur) 2, Korpana (dist Chandrapur) 2.

Impact expected and action suggested due to thunderstorm with lightning, gusty winds & Hailstorm: over East Uttar Pradesh, Bihar, Jharkhand, West Bengal & Sikkim, Odisha on 20th March.

Impact expected:

- ❖ 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:

- ❖ 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 Heavy Rainfall, Gusty winds and Hailstorms likely over various parts of the country:

- Use hail nets or hail caps in fruit orchards to protect them from mechanical damage and provide mechanical support to horticultural crops & staking to vegetables in Marathwada, East Madhya Pradesh, Vidarbha, Chhattisgarh, Gangetic West Bengal, Odisha, Jharkhand, Bihar and Telangana.
- Make necessary arrangements for draining out excess water from crop fields to avoid water stagnation in Chhattisgarh, Odisha, Jharkhand and Gangetic West Bengal and keep the harvested produce at safer places or cover the heaps of harvested produce in the fields with tarpaulin sheets.
Provide mechanical support to horticultural crops and staking to vegetables in Central and East India




Legends & abbreviations:

- ❖ **Heavy Rain:** 64.5 to 115.5 mm; **Very Heavy Rain:** 115.6 to 204.4 mm; **Extremely Heavy Rain:** >204.4mm.
- ❖ **Obsy:** Observatory; **AWS:** Automatic Weather Station; **dist:** District; **NH:** National Highway; **KVK:** Krishi Vigyan Kendra; **DVC:** Damodar Valley Corporation; **PTO:** Part Time Office.
- ❖ **Region wise classification of meteorological Sub-Divisions:**
 - **Northwest India:** Western Himalayan Region (Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand); Punjab, Haryana-Chandigarh-Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
 - **Central India:** West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
 - **East India:** Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
 - **Northeast India:** Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
 - **West India:** Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathwada.
 - **South India:** Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

SPATIAL DISTRIBUTION (% of Stations reporting)			
% Stations	Category	% Stations	Category
76-100	Widespread (WS/Most Places)	26-50	Scattered (SCT/ A Few Places)
51-75	Fairly Widespread (FWS/ Many Places)	1-25	Isolated (ISOL)

Subdivision Warning	 Dust Storm	Subdivision color
 Heavy Rain	 Strong Surface Winds	 NO WARNING
 Heavy Snow	 Heat Wave	 WATCH(BE UPDATED)
 Thunderstorms & Lightning	 Cold wave	 ALERT (BE PREPARED)
 Hailstorm	 Fog	 WARNING (TAKE ACTION)

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

Flash Flood Risk	
	High Risk (Take Action)
	Moderate Risk (Be Prepared)
	Low Risk (Be Updated)