



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



**Date: 19th March, 2024
Time of Issue: 1300 hours IST**

Special Message (No. - 4)

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
CHIEF SECRETARY, GOVT. OF TELENGANA
CHIEF SECRETARY, GOVT. OF ANDHRA PRADESH**

Subject: Light to moderate rainfall accompanied with thunderstorm, lightning & hail likely to continue over East and Central India on 19th & 20th March, 2024.

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

- ❖ **Light/moderate rainfall** observed at many places over Chhattisgarh; at a few places over East Madhya Pradesh, Gangetic West Bengal, Jharkhand, Odisha; at isolated places over West Madhya Pradesh, Vidarbha, Coastal Andhra Pradesh & Yanam and Telangana.
- ❖ **Heavy rainfall** occurred at isolated places over East Madhya Pradesh.
- ❖ **Hailstorm** observed at isolated places over Madhya Pradesh, Vidarbha, Chhattisgarh and Telangana.
- ❖ **Thundersquall/gusty winds** observed at isolated places over Jharkhand, Telangana, Madhya Pradesh, Vidarbha and Chhattisgarh.

Weather Systems and Forecast & Warnings during next 5 days: (Annexure I)

- ❖ A cyclonic circulation lies over west Vidarbha and a trough/wind discontinuity runs from South Interior Karnataka to west Vidarbha & another trough from Jharkhand to south Assam in lower tropospheric levels. The anti-cyclonic circulation lies over Westcentral & adjoining 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, Jharkhand and Odisha** during 19th–21st with possibility of **hailstorm & squall (speed reaching 50-60 kmph)** on 19th March, 2024.
- ✓ Scattered to fairly widespread light to moderate rainfall with **thunderstorms, lightning & gusty winds** over Vidarbha, Chhattisgarh, Bihar and isolated light to moderate rainfall over East Madhya Pradesh on 19th & 20th March, 2024. **Isolated hailstorm also very likely over Vidarbha, East Madhya Pradesh & Chhattisgarh on 19th March, 2024. Thundersquall (speed reaching 50-60 kmph)** likely over East Madhya Pradesh and Vidarbha on 19th March, 2024.
- ✓ Isolated **heavy rainfall** very likely over Odisha on 19th & 20th and Chhattisgarh, Gangetic West Bengal & Jharkhand on 19th March, 2024.
- ✓ Scattered to fairly widespread light/moderate rainfall with isolated thunderstorms & lightning very likely over Telangana and Coastal Andhra Pradesh & Yanam on 19th & 20th March, 2024. Isolated **heavy rainfall** also likely over Coastal Andhra Pradesh on 20th March, 2024.
- ✓ Isolated light rainfall with thunderstorm & lightning very likely over Marathwada with possibility of **hailstorm** on 19th March.

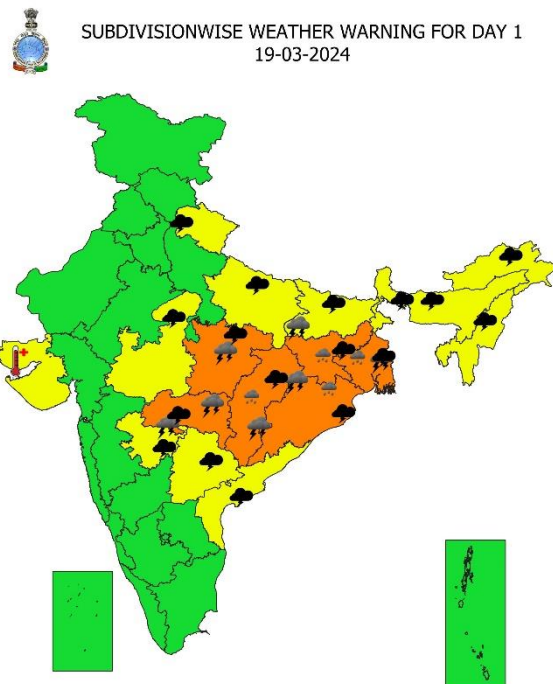
The state-wise forecast is given below: (Warning graphics are given at ANNEXURE-I)

S. No.	State/sub-division	Forecast
1.	East Madhya Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thundersquall & lightning (speed reaching 50-60 kmph) at isolated places on 19th March and with gusty winds (speed reaching 30-40 kmph) at isolated places on 20th March. • Hailstorm also likely at isolated places on 19th March.
2.	Vidarbha	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thundersquall & lightning (speed reaching 50-60 kmph) at isolated places on 19th March and with gusty winds (speed reaching 30-40 kmph) at isolated places on 20th March. • Hailstorm also likely at isolated places on 19th March.
3.	Marathwada	<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 19th March. • Hailstorm also likely at isolated places on 19th March.
4.	Chhattisgarh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm, lightning & gusty winds (speed reaching 40-50 kmph) at a few places on 19th and with gusty winds (speed reaching 30-40 kmph) at a few places on 20th March. • Heavy rainfall at isolated places likely on 19th March. • Hailstorm also likely at isolated places on 19th March.
5.	Jharkhand	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thundersquall, lightning (speed reaching 50-60 kmph) at isolated places on 19th March and with gusty winds (speed reaching 40-50 kmph) at a few places on 20th March. • Light to moderate rain accompanied with thunderstorm, lightning at isolated places on 21st March. • Heavy rainfall at isolated places likely on 19th March. • Hailstorm also likely at isolated places on 19th March.
6.	Gangetic West Bengal	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thundersquall & lightning (speed reaching 50-60 kmph) at isolated places on 19th; with gusty winds (speed reaching 40-50 kmph) at a few places on 20th March and with gusty winds (speed reaching 30-40 kmph) at a few places on 21st March. • Light to moderate rainfall at isolated places on 22nd March. • Heavy rainfall at isolated places likely on 19th March. • Hailstorm also likely at isolated places on 19th March.

7.	Odisha	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thundersquall & lightning (speed reaching 50-60 kmph) at isolated places on 19th March and with gusty winds (speed reaching upto 30-40 kmph) at a few places on 20th March. • Light to moderate rainfall at isolated places on 21st March. • Heavy rainfall at isolated places likely on 19th & 20th March • Hailstorm also likely at isolated places on 19th March.
8.	Bihar	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning with gusty winds (speed reaching 30-40 kmph) at a few places on 19th; with gusty winds (speed reaching 40-50 kmph) at a few places on 20th March. • Light to moderate rainfall at isolated places during 21st - 23rd March. • Hailstorm also likely at isolated places on 20th March.
8.	West Madhya Pradesh	<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 19th March.
9.	Telangana	<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 19th; at a few places on 20th March.
10.	Coastal Andhra Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 19th; at a few places on 20th; at isolated places on 21st March. • Light to moderate rainfall likely at isolated places on 22nd March. • Heavy rainfall at isolated places likely on 20th March.

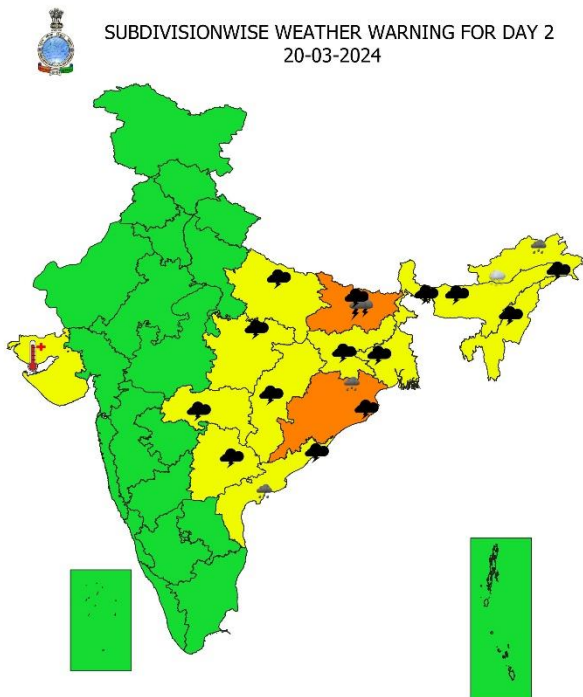
For more details, kindly refer: https://mausam.imd.gov.in/responsive/all_india_forecast_bulletin.php

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NWFC, IMD New Delhi



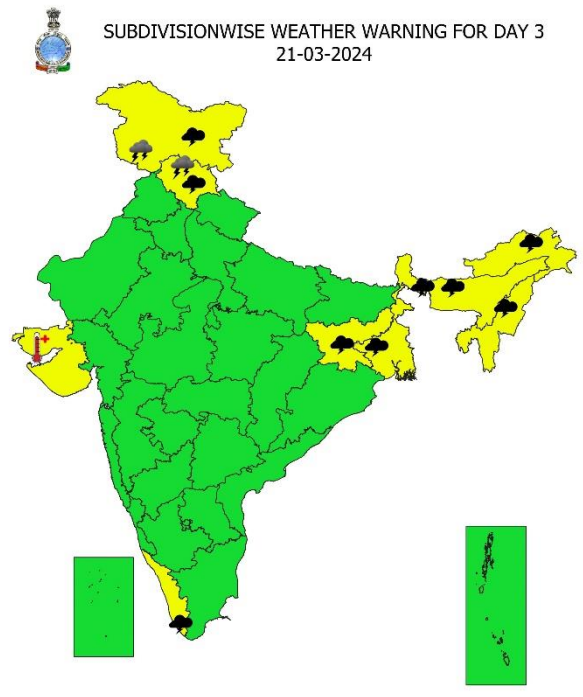
Subdivision Warning

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)



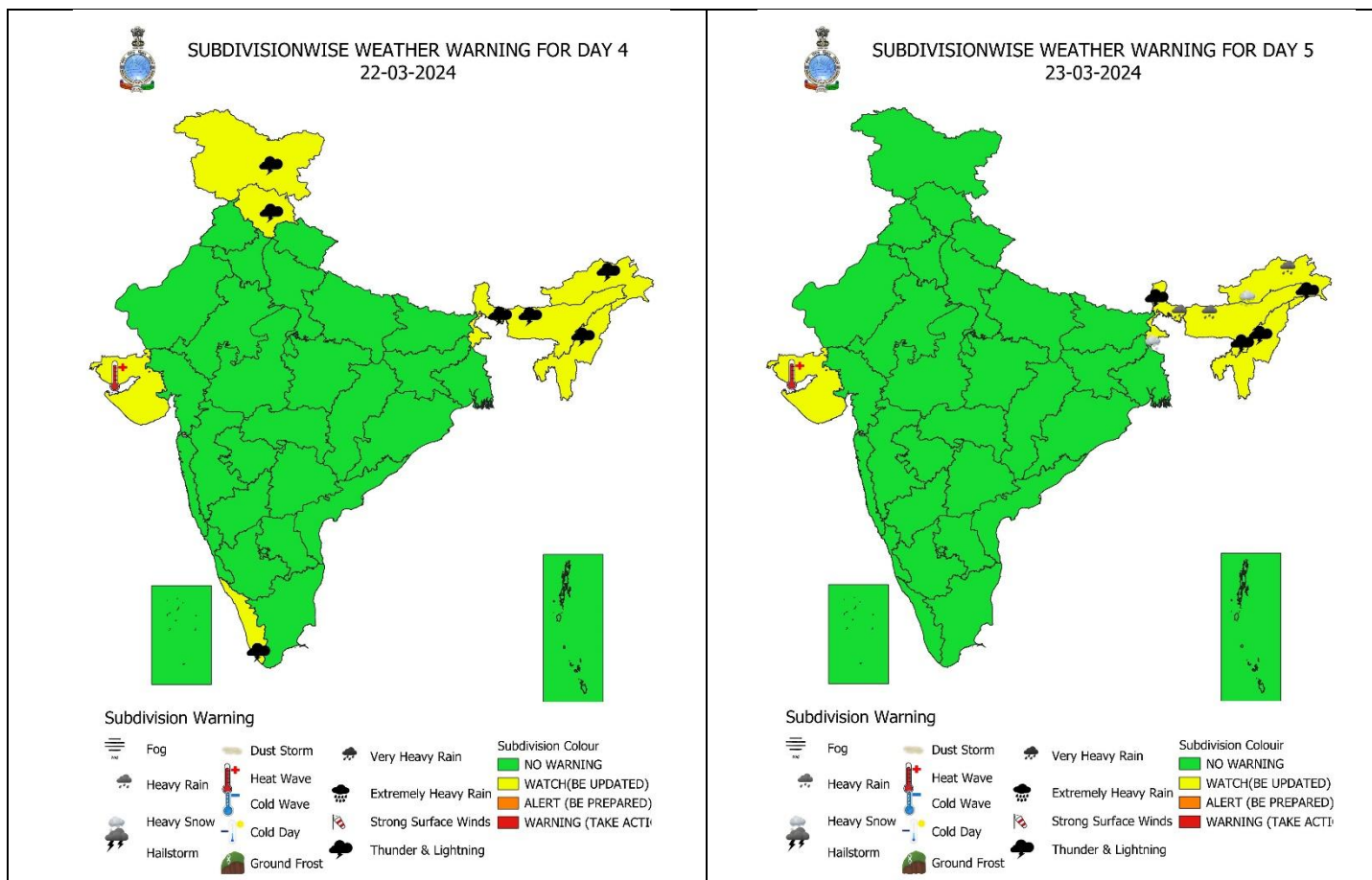
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Significant rainfall amount (in cm):

East Madhya Pradesh: Tirodi (dist Balaghat) 7, Katangi (dist Balaghat) 6, Barghat (dist Seoni) 4, Pushprajgarh (dist Anuppur) 4, Nainpur (dist Mandla) 3, Waraseoni (dist Balaghat) 3, Venkatnagar (dist Anuppur) 3, Anuppur-aws (dist Anuppur) 3, Kotma (dist Anuppur) 3, Jaithari (dist Anuppur) 3, Balaghat-aws (dist Balaghat) 3, Dhanora (dist Seoni) 3, Lalburra (dist Balaghat) 2, Channodi (dist Shahdol) 2, Amarwara (dist Chindwara) 2, Baihar (dist Balaghat) 2, Lakhnadon (dist Seoni) 2, Jaitpur (dist Shahdol) 2, Bijuri (dist Anuppur) 2,

Chhattisgarh: Akaltara (dist Janjgir) 5, Bhatapara (dist Baloda Bazar) 5, Dhamdha (dist Durg) 4, Masturi (dist Bilaspur) 4, Gandai (dist Rajnandgaon) 4, Sonhat (dist Koriya) 4, Kawardha (dist Kabirdham) 4, Bilha (dist Bilaspur) 3, Pamgarh (dist Janjgir) 3, Saja (dist Bemetara) 3, Janjgir (dist Janjgir) 3, Chhuikhadan (dist Rajnandgaon) 3, Bilaigarh (dist Baloda Bazar) 3, Bilaspur (dist Bilaspur) 3, Sahaspurlohara (dist Kabirdham) 3, Nawagarh (dist Bemetara) 3, Marwahi (dist Bilaspur) 3, Bhaiyathan (dist Surajpur) 2, Simga

Jharkhand: Ramgarh-4; Dumka, Hazaribag-3 each; Gumla, Lohardaga, Ranchi-2 each;

Impact expected and action suggested due to thunderstorm with lightning, gusty winds & Hailstorm: over East Madhya Pradesh, Vidarbha, Chhattisgarh, Marathwada, Gangetic West Bengal, Jharkhand & Odisha on 19th 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)