



**Government of India
Earth System Science Organization
Ministry of Earth Sciences
India Meteorological Department**

Press Release

Date: 19th March, 2021

Time of Issue: 1600 hrs IST

Subject: Wet spell over Western Himalayan Region and adjoining plains of Northwest India during 21st to 24th March, 2021.

Meteorological analysis:

- An active Western Disturbance is very likely to affect Northwest India from 21st to 24th March, 2021.
- An Induced Cyclonic Circulation is very likely to form over southwest Rajasthan at lower tropospheric levels on 21st and move gradually towards Haryana & neighbourhood by 24th March, 2021.
- High moisture feeding from Arabian Sea over northwest India is very likely mainly during 22nd & 23rd March 2021.

Forecast & Warning:

- Fairly widespread to widespread rainfall/snowfall with isolated thunderstorm/lightning very likely over the Western Himalayan Region; isolated to scattered light/moderate rainfall over the plains of Northwest India during 21- 24 March, 2021.
- Isolated heavy rainfall/snowfall also likely over Jammu, Kashmir, Gilgit, Baltistan & Muzaffarabad and Himachal Pradesh on 22nd & 23rd March, 2021.
- Isolated hailstorm also likely over Jammu, Kashmir, Gilgit, Baltistan & Muzaffarabad and Himachal Pradesh on 21st; over Uttarakhand on 22nd & 23rd; over Punjab, Haryana, Chandigarh & Delhi and Rajasthan on 22nd March, 2021.
- Currently maximum temperatures are 2 to 4° C over most parts of northwest & adjoining central India and northeastern states; these are near normal or below normal in remaining parts of the country. No significant change in maximum temperatures over most parts of Northwest India during next 2 days and fall by 2-3°C for subsequent 3 days and no significant change in maximum temperatures over rest parts of the country during next 4-5 days.
- **No heat wave conditions** very likely over the country during next 5 days.
- **Detailed forecast & warnings are given in following page:**

(Refer Table 1 for date wise met sub-division wise color coded warning)

Table 1: Detailed forecast & warnings are given below:

Sub-Divisions	20-Mar-21	21-Mar-21	22-Mar-21	23-Mar-21	24-Mar-21
Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad	Rainfall at isolated places	Rainfall at many places with thunderstorm & lightning & hail	Rainfall at most places with thunderstorm & lightning	Rainfall at most places with thunderstorm & lightning	Rainfall at a few places with thunderstorm & lightning
Himachal Pradesh	Dry	Rainfall at a few places with thunderstorm & lightning & hail	Rainfall at most places with thunderstorm & lightning	Rainfall at most places with thunderstorm & lightning	Rainfall at a few places with thunderstorm & lightning
Uttarakhand	Dry	Rainfall at isolated places	Rainfall at a few places with thunderstorm & lightning, hail & gusty winds	Rainfall at a few places with thunderstorm & lightning, hail & gusty winds	Rainfall at a few places with thunderstorm & lightning
Punjab	Dry	Rainfall at isolated places with thunderstorm & lightning	Rainfall at a few places with thunderstorm & lightning, hail & gusty winds	Rainfall at a few places with thunderstorm & lightning & gusty winds	Rainfall at isolated places
Haryana, Chandigarh & Delhi	Dry	Rainfall at isolated places	Rainfall at a few places with thunderstorm & lightning, hail & gusty winds	Rainfall at a few places with thunderstorm & lightning & gusty winds	Rainfall at isolated places
West Uttar Pradesh	Dry	Dry	Rainfall at isolated places with thunderstorm & lightning & gusty winds	Rainfall at isolated places with thunderstorm & lightning & gusty winds	Rainfall at isolated places
West Rajasthan	Dry	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places with thunderstorm & lightning, hail	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places

East Rajasthan	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places with thunderstorm & lightning & gusty winds	Rainfall at isolated places with thunderstorm & lightning, hail & gusty winds	Rainfall at isolated places with thunderstorm & lightning & gusty winds	Dry
West Madhya Pradesh	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places with thunderstorm, lightning	Rainfall at isolated places	Rainfall at isolated places	Dry
East Madhya Pradesh	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places with thunderstorm & lightning	Dry	Dry	Dry
Vidarbha	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places	Rainfall at isolated places	Rainfall at isolated places
Madhya Maharashtra	Rainfall at isolated places with thunderstorm & lightning & gusty winds	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places
Marathwada	Rainfall at isolated places with thunderstorm & lightning & hail	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places with thunderstorm & lightning	Rainfall at isolated places

Impact expected and action suggested due to Thunderstorm, Lightning & Hail over Marathwada on 20th March; over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad and Himachal Pradesh on 21st March; over Uttarakhand on 22nd & 23rd March and over Punjab, Haryana, Chandigarh & Delhi and Rajasthan on 22nd March.

Impact expected:

- Hail may damage plantation, horticulture and standing crops.
- Hail may injure people and cattle at open places.

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.
- Farming operations may be suspended during the event.

Impact expected & action suggested due to heavy rainfall/snowfall over Jammu & Kashmir, Ladakh, Gilgit-Baltistan & Muzaffarabad and Himachal Pradesh on 22nd & 23rd March, 2021.

- 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/snowfall.
- Disruption of traffic due to water logging in roads leading to increased travel time.
- Minor damage to kutchha roads.
- Possibilities of damage to vulnerable structure.
- Localized Landslides/Mudslides.

Action Suggested

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

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



Rain/ Snow *

Heavy: 64.5 to 115.5 mm/cm *
 Very Heavy: 115.6 to 204.4 mm/cm *
 Extremely Heavy: > 204.4 mm/cm *



Heat Wave

When maximum temperature of a station reaches $\geq 40^{\circ}\text{C}$ for plains and $\geq 30^{\circ}\text{C}$ for hilly regions
(a) Based on Departure from normal

Heat Wave: Maximum Temperature Departure from normal 4.5°C to 6.4°C .
 Severe Heat Wave: Maximum Temperature Departure from normal $\geq 6.5^{\circ}\text{C}$

(b). Based on Actual maximum temperature

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

(c). Criteria for heat wave for coastal stations

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



Warm Night

When maximum temperature remains 40°C

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



Cold Wave

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

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

(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 $\leq -4.5^{\circ}\text{C}$ or actual Minimum Temperature is $\leq 15^{\circ}\text{C}$



Cold Day

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

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



Fog

Phenomenon of small droplets suspended in air and the horizontal visibility $< 1\text{km}$

Moderate Fog: When the visibility between 500-200 metres
 Dense Fog: when the visibility between 50- 200 metres
 Very Dense Fog: when the visibility < 50 metres



Thunderstorm

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



Dust/Sand Storm

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



Frost

Ice deposits on ground

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



Squall

A strong wind that rises suddenly, lasts for atleast 1 minute.

Moderate: Wind speed 52-61 kmph
 Severe: Wind speed 62-87 kmph
 Very Severe: Wind speed >87 kmph



Sea State

Effect of various waves in the sea over specific area

Rough to very rough: Wind speed 41-62 kmph (22-33 knots) & Wave height 2.5-6 metre
 High to very high: Wind speed 63-117 kmph (34-63 knots) & Wave height 6-14 metre
 Phenomenal: Wind speed >117 kmph (>63 knots) & Wave height >14 metre

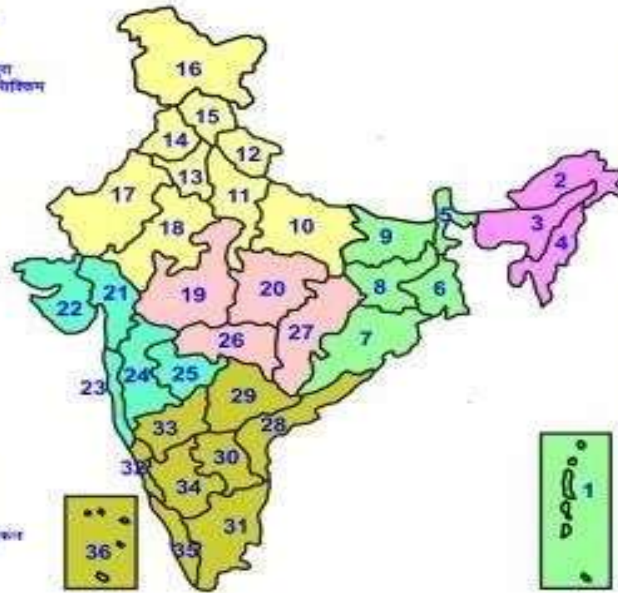


Cyclone

Cyclonic Storm: Wind speed 62-87 kmph (34-47 knots)
 Severe Cyclonic Storm: Wind speed 88-117 kmph (48-63 knots)
 Very Severe Cyclonic Storm: Wind speed 118-165 kmph (64 - 89 knots)
 Extremely Severe Cyclonic Storm: Wind speed 166-220 kmph (90 -119 knots)
 Super Cyclone Storm: Wind speed >220 kmph (>119 knots)

LEGENDS

- 1 अंडमान और निकोबार द्वीप समूह
- 2 अरुणाचल प्रदेश
- 3 असम और मेघालय
- 4 नागालैंड, मणिपुर, मिजोरम और त्रिपुरा
- 5 उप-हिमालय पश्चिम बंगाल, असम, सिक्किम
- 6 गंगाईय पश्चिम बंगाल
- 7 ओडिशा
- 8 झारखंड
- 9 बिहार
- 10 पूर्वी उत्तर प्रदेश
- 11 पश्चिम उत्तर प्रदेश
- 12 उत्तराखंड
- 13 हरियाणा, हिंदीचड़, राजस्थान
- 14 पंजाब
- 15 हिमाचल प्रदेश
- 16 जम्मू और कश्मीर एवं लद्दाख
- 17 पश्चिम राजस्थान
- 18 पूर्वी राजस्थान
- 19 पश्चिम मध्य प्रदेश
- 20 पूर्वी मध्य प्रदेश
- 21 गुजरात
- 22 सौराष्ट्र
- 23 कोंकण और गोवा
- 24 मध्य महाराष्ट्र
- 25 महाराष्ट्र
- 26 कोकण, पुणे, मराठवाड़ा
- 27 चिहामण्णेर
- 28 तटस्थ आंध्र प्रदेश और यानम
- 29 तेलंगाना
- 30 कर्नाटक
- 31 तमिलनाडु, पुदुचेरी, पुन्नम, कर्नाटक
- 32 तटस्थ कर्नाटक
- 33 उत्तर कर्नाटक
- 34 दक्षिण कर्नाटक
- 35 केरल
- 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, Cind & 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. Maharashtra
26. Vidharbha
27. Chhatisgarh
28. Coastal Andhra Pradesh & Yanam
29. Telangana
30. Rayalaseema
31. Tamilnada, Puducherry & Karaikal
32. Coastal Karnataka
33. North Interior Karnataka
34. South Interior Karnataka
35. Kerala & Mahe
36. Lakshadweep

SPATIAL DISTRIBUTION (% of Stations reporting)

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

WARNING

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

Probabilistic Forecast

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

Heavy Rain	Heavy Snow	Thunderstorm	Dust Storm
Strong Winds	Visibility	Cyclone	Squall/ Hail
Frost	Cold Wave	Heat Wave	Sea State

Kindly download **MAUSAM** APP for location specific forecast & warning, **MEGHDOOT** APP for Agromet advisory and **DAMINI** APP for Lightning Warning & visit state MC/RMC websites for district wise warning.