



Government of India
Ministry of Earth Sciences
India Meteorological Department



Date: 19th February, 2024
Time of Issue: 1340 hours IST

Special Message-04

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 JAMMU & KASHMIR
CHIEF SECRETARY, GOVT. OF LADAKH
CHIEF SECRETARY, GOVT. OF HIMACHAL PRADESH
CHIEF SECRETARY, GOVT. OF UTTARAKHAND
CHIEF SECRETARY, GOVT. OF PUNJAB
CHIEF SECRETARY, GOVT. OF HARYANA
CHIEF SECRETARY, GOVT. OF CHANDIGARH
CHIEF SECRETARY, GOVT. OF DELHI
CHIEF SECRETARY, GOVT. OF UTTAR PRADESH
CHIEF SECRETARY, GOVT. OF RAJASTHAN
CHIEF SECRETARY, GOVT. OF MADHYA PRADESH

Subject: Intense spell of rainfall/snowfall activity likely to continue over Western Himalayan Region till 21st & rainfall activity likely over plains of Northwest India during 19th-21st February, 2024.

- ❖ **Light to moderate rainfall/snowfall (refer Annexure I)** occurred at most places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and at isolated places over Himachal Pradesh.
- **Two Western Disturbances**, one as a trough in middle tropospheric westerlies runs along Long. 65°E to the north of Lat. 30°N and another as a cyclonic circulation lies over north Pakistan & neighbourhood in lower levels. These are likely to merge by evening today. An induced cyclonic circulation lies over central Pakistan in lower tropospheric levels. In addition, there is high moisture feeding from Arabian Sea over northwest India. Under the influence of these systems:
 - Fairly widespread to widespread light to moderate rainfall/snowfall accompanied with **thunderstorms, lightning** very likely over Western Himalayan Region during 19th-21st February, 2024.
 - **Heavy rainfall/snowfall very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 19th & 20th and over Uttarakhand on 19th February, 2024.**
 - **Very Heavy rainfall/snowfall also very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 19th February, 2024.**
 - **Hailstorm activity** very likely at isolated places over Himachal Pradesh, Uttarakhand, Punjab and Haryana-Chandigarh on 19th & 20th; over West Uttar Pradesh and Rajasthan on 19th February, 2024.
 - Scattered to fairly widespread light/moderate rainfall very likely over Punjab, Haryana-Chandigarh and West Uttar Pradesh during 19th-21st; East Uttar Pradesh during 20th-

22nd and isolated light/moderate rainfall over north Rajasthan during 19th-21st and over northwest Madhya Pradesh during 20th -23rd February, 2024.

- Partly cloudy sky with strong surface winds accompanied with gusty winds (speed 40-50 kmph) likely over Delhi on 19th; generally cloudy sky with very light rain/thundershowers at a few places on 20th and partly cloudy sky with possibility of very light rain/drizzle on 21st February, 2024.
- Isolated **thunderstorms, lightning with gusty winds** (speed reaching 40-50 kmph gusting to 60 kmph) very likely over Himachal Pradesh and Uttarakhand on 19th & 20th; over Punjab and Haryana-Chandigarh during 19th-21st; over West Uttar Pradesh on 20th & 21st; over Rajasthan on 20th and over East Uttar Pradesh during 20th-22nd February, 2024.
- **Hailstorm** activity very likely at isolated places over Punjab, Haryana-Chandigarh and north Rajasthan on 19th & 20th and over West Uttar Pradesh on 20th February, 2024.

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

S.No.	State/sub-division	Forecast
1.	Jammu, Kashmir and Ladakh	<ul style="list-style-type: none"> • Light to moderate rain/snowfall accompanied with thunderstorm & lightning at most places on 19th & 20th February; at a few places on 21st February and at isolated places on 22nd, 24th & 25th February. • Heavy to very heavy rainfall/snowfall very likely at isolated places on 19th February; Heavy rainfall/snowfall at isolated places on 20th February.
2.	Himachal Pradesh	<ul style="list-style-type: none"> • Light to moderate rain/snowfall accompanied with gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at most places on 19th & 20th February; at many places on 21st February; at a few places on 22nd February and at isolated places on 24th & 25th February. • Heavy to very heavy rainfall/snowfall very likely at isolated places on 19th February; Heavy rainfall/snowfall at isolated places on 20th February. • Light to moderate hailstorm is likely at isolated places on 19 & 20th February.
3.	Uttarakhand	<ul style="list-style-type: none"> • Light to moderate rain/snowfall accompanied with gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at most places on 19th & 20th February; at many places on 21st February; at a few places on 22nd February and at isolated places during 23rd-25th February. • Heavy rainfall/snowfall at isolated places likely on 19th February. • Light to moderate hailstorm is likely at isolated places on 19th - 20th February.
4.	Punjab	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm, lightning and gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at many places on 19th February; at a few places on 20th & 21st February and at isolated places on 22nd February. • Heavy rainfall/snowfall at isolated places likely on 19th February. • Light to moderate hailstorm is likely at isolated places on 19th - 20th February.

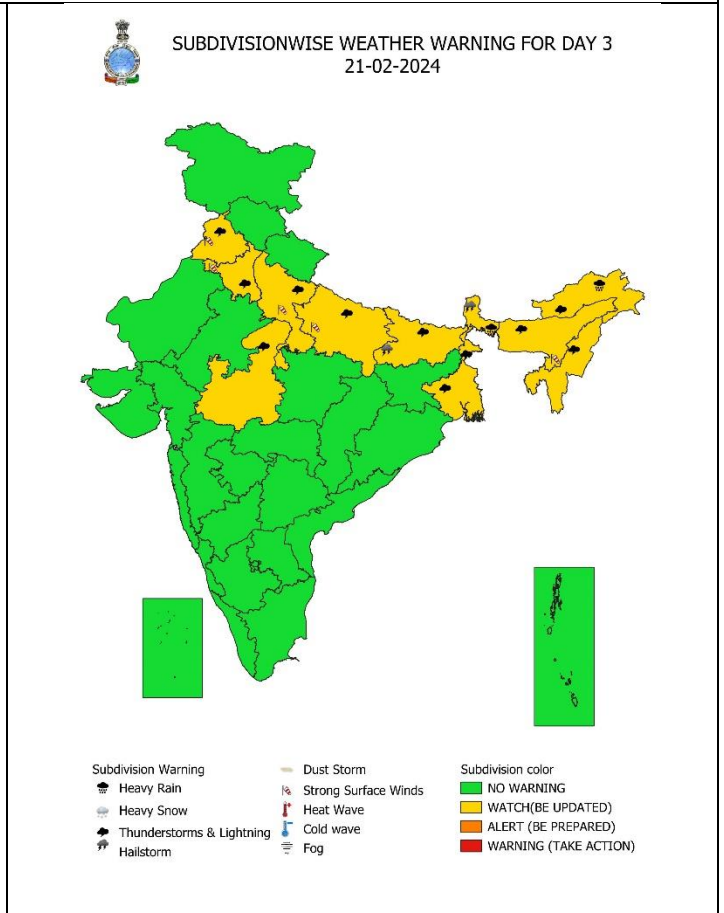
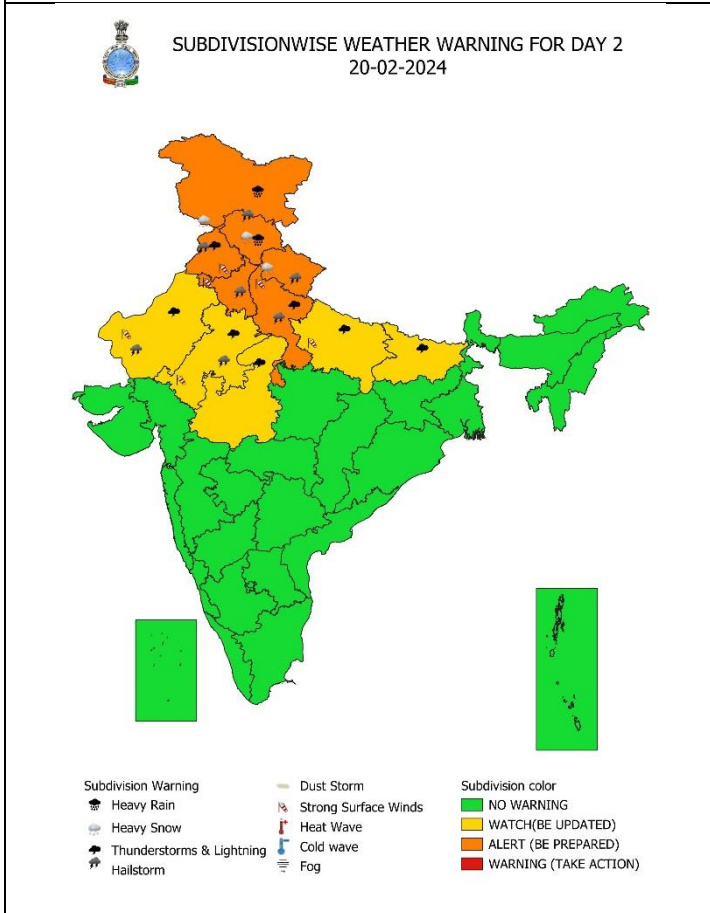
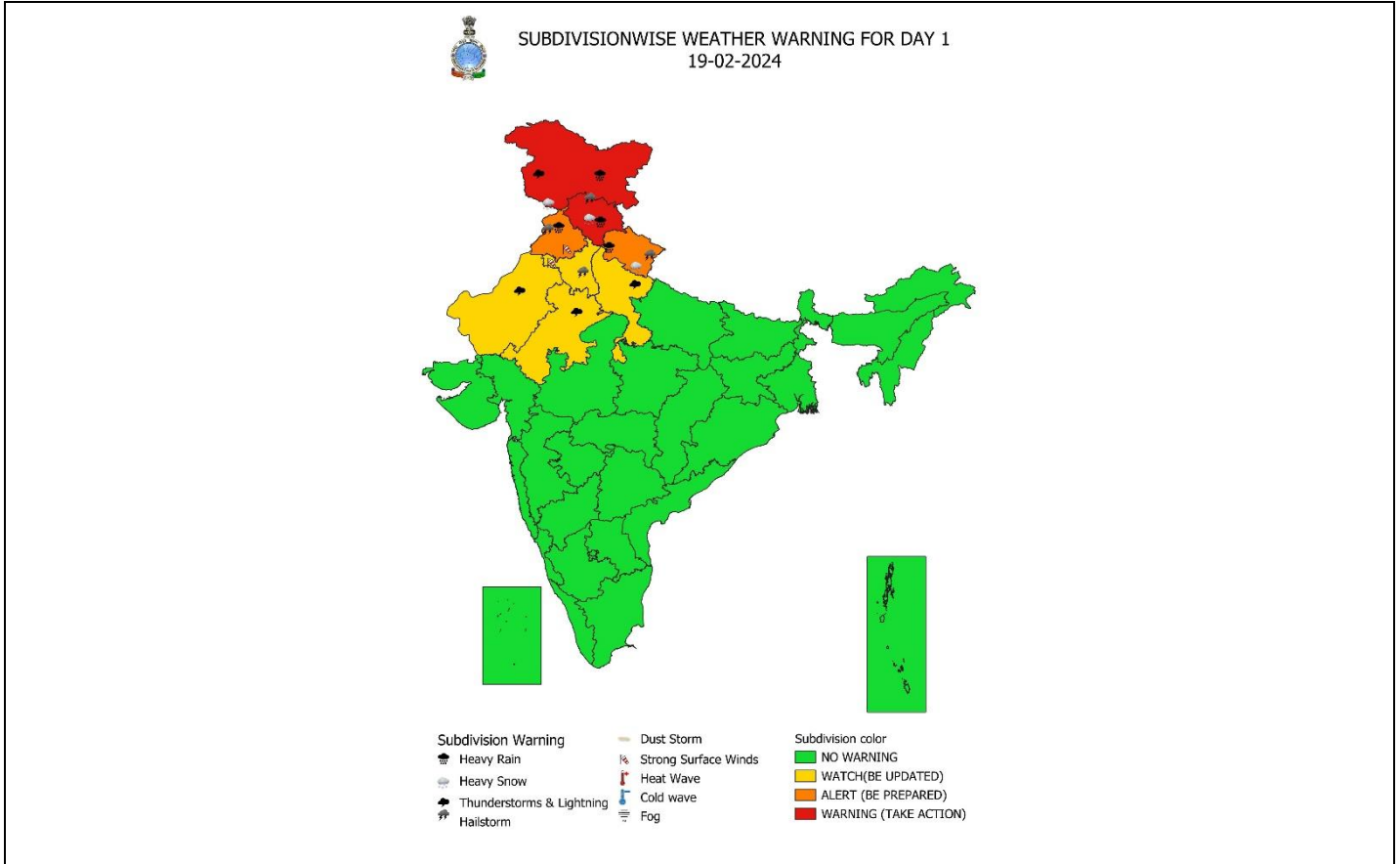
5.	Haryana, Chandigarh & Delhi	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm, lightning and gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at a few places during 19th -21st February; at isolated places on 22nd February. • Light to moderate hailstorm is likely at isolated places on 19th - 20th February.
6.	West Uttar Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 19th February; with gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at a few places on 20th & 21st February; at isolated places on 22nd February. • Light to moderate hailstorm is likely at isolated places on 20th February.
7.	East Uttar Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning and gusty winds (speed reaching upto 30-40 kmph gusting to 50 kmph) at a few places on 20th -22th February; at isolated places on 23rd February.
8.	West Rajasthan	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 19th February; with gusty winds (speed reaching upto 30-40 kmph gusting to 50 kmph) at isolated places on 20th February. • Light to moderate hailstorm is likely at isolated places on 20th February.
9.	East Rajasthan	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 19th February; with gusty winds (speed reaching upto 30-40 kmph gusting to 50 kmph) at isolated places on 20th & 21st February. • Light to moderate hailstorm is likely at isolated places on 20th February.
10	North Madhya Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 20th & 21st February; at isolated places on 22nd & 23rd February.

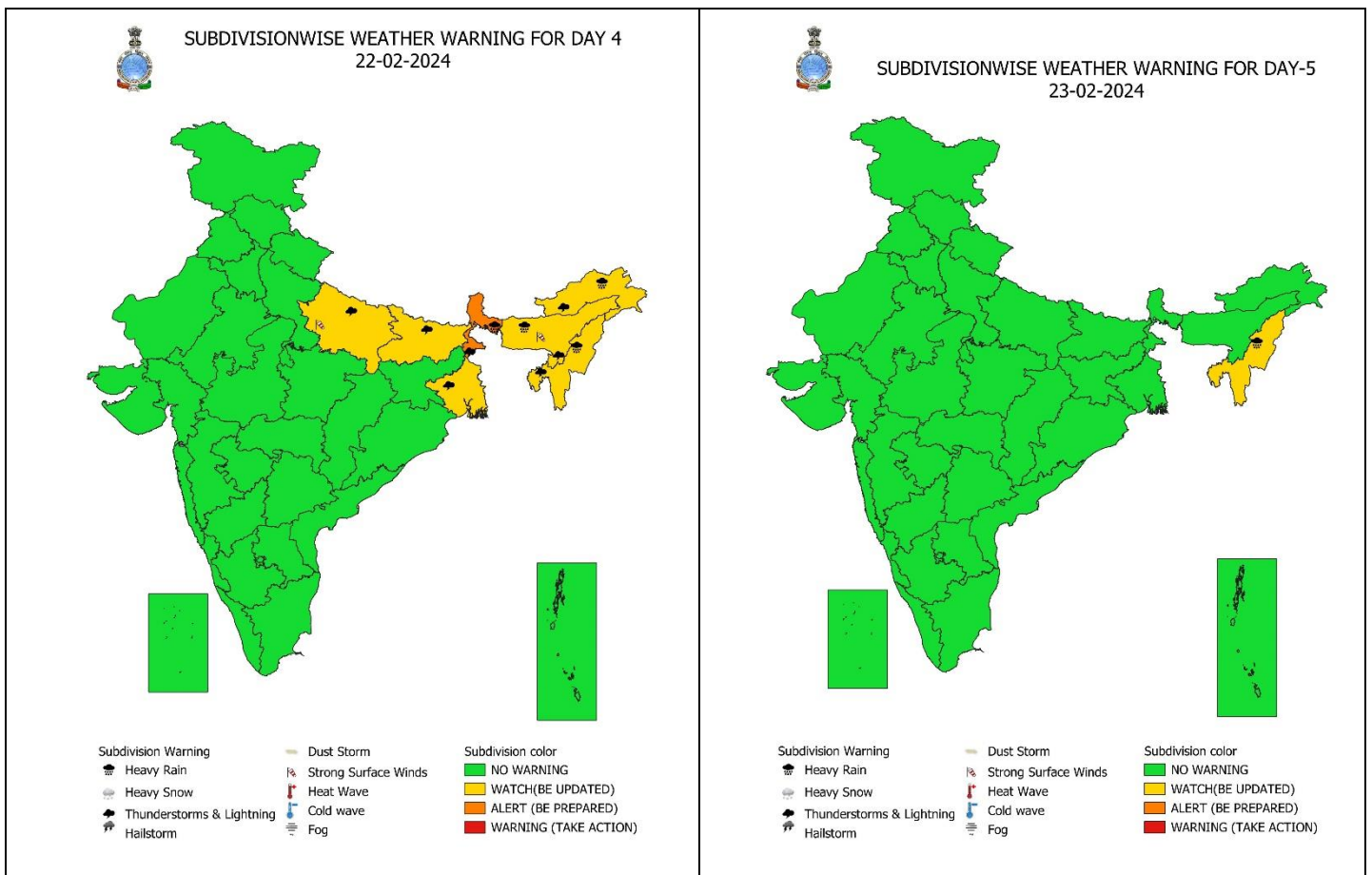
For more details kindly refer: https://internal.imd.gov.in/pages/press_release_mausam.php

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Scientist 'D'
NWFC, IMD New Delhi

ANNEXURE I

Significant rainfall (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad: Banihal (dist. Ramban) 6, Govindpura AWS (dist. Ramban) 5, Rajpura ARG (dist. Poonch) 4, Batote (dist. Ramban) 4, Kupwara(dist. Kupwara) 4, Nowgam (dist. Kupwara) 3, Bandipora AWS (dist. Bandipore) 3, Baramula AWS, Gulamarg R.S (dist. Baramula) 4 each, Tengmarg, Baramula KVK(dist. Baramula) 3 each, Badarwah (dist. Doda) 3, Rajouri ARG (dist. Rajouri) 3, Rajouri (dist. Rajouri) 2,Pahalgam (dist. Anantnag) 2, Charari Sharief, Harran AWS, Srinagar aero (dist. Badgam) 2 each, Ganderbal (dist. Ganderbal) 2, Buhama (dist. Kupwara) 2, Lolab(dist. Kupwara) 2, Shalimar agro (dist. Srinagar) 2, Kulgam AWS (dist. Kulgam) 1, Qazi gund (dist. Kulgam) 1; **Himachal Pradesh:** Kukumsheri AWS(dist. Lahaul & Spiti) 5, Tissa (dist. Chamba) 4,PTO Gondla (dist. Lahaul & Spiti) 3, Keylong (dist. Lahaul & Spiti) 2.





Impact & Action Suggested due to heavy/very heavy rainfall/snowfall: Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 19th & 20th; over Uttarakhand & Punjab on 19th February, 2024.

Impacts Expected:

- Disruption of Electricity.
- Landslide, rock fall and mudslides, Blocking/washout of roads/highways/bridges Nallahs.
- Disruption of traffic flow.
- Damage to Kuccha and unsecured structures.

Action Suggested:

- Avoid roadway underpasses, drainage ditches, low lying areas and areas where water collects – they can unexpectedly flood or overflow.
- Stay away from power lines or electrical wires.
- Don't stay in kuchcha houses during heavy rainfall as it may collapse anytime soon
- Drive carefully.

Impact expected and action suggested due to thunderstorm with lightning/gusty winds & Hailstorm: Himachal Pradesh, Uttarakhand, Punjab,

Haryana-Chandigarh on 19th & 20th; over north Rajasthan and West Uttar Pradesh on 20th; over Sub-Himalayan West Bengal & Sikkim and Bihar on 21st February, 2024.

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 rainfall accompanied with Heavy rainfall, Gusty winds and hailstorms likely over various parts of the country

- Drain out excess water from crop fields to avoid water stagnation in Jammu & Kashmir and Himachal Pradesh.
- Make necessary arrangements to drain out excess water from the crop fields in Uttarakhand, Punjab, Arunachal Pradesh and Sub Himalayan West Bengal & Sikkim.
- Remove snow immediately from the branches and crotches in Jammu & Kashmir and Himachal Pradesh.
- Postpone sowing of French bean & Potato in Uttarakhand and direct sowing of vegetables in Jammu & Kashmir.
- Use hail nets or hail caps in fruit orchards to protect them from mechanical damage in Himachal Pradesh, Uttarakhand, Punjab, Haryana, West Uttar Pradesh and north Rajasthan.
- Keep harvested produce in safe places.
- Provide mechanical support to horticultural crops and staking to vegetables.

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)