



Government of India
Ministry of Earth Sciences
India Meteorological Department



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Time of Issue: 1315 hours IST

Special Message-05

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 over Western Himalayan Region and light to moderate rainfall activity likely over plains of Northwest India on 20th & 21st February, 2024.

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

- ❖ **Hailstorm** recorded at isolated places over Himachal Pradesh, Uttarakhand, Punjab, Haryana and north Rajasthan.
- ❖ **Light to moderate rainfall/snowfall** (refer Annexure I) occurred at most places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh, Uttarakhand; **Light to moderate rainfall at a few places** over Haryana-Chandigarh-Delhi and at isolated places over Punjab and Rajasthan.

Weather Systems and Forecast & Warnings during next 5 days: (graphics in Annexure II)

- ❖ A **Western Disturbances** lies as a cyclonic circulation over central Pakistan & adjoining Punjab in lower levels with trough aloft in middle tropospheric westerlies runs along Long. 70°E to the north of Lat. 30°N and an induced cyclonic circulation lies over Punjab & adjoining Pakistan in lower tropospheric levels. In addition, there is high moisture feeding from Arabian Sea over northwest India. Under the influence of these systems:
 - Widespread light to moderate rainfall/snowfall accompanied with **thunderstorms & lightning** very likely over Western Himalayan Region on 20th & 21st and isolated/scattered light to moderate rainfall/snowfall on 22nd & 23rd February, 2024
 - **Heavy rainfall/snowfall very likely at isolated places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 20th February, 2024.**
 - **Hailstorm activity** very likely at isolated places over Himachal Pradesh on 20th and over Uttarakhand on 20th & 21st February, 2024.
 - Isolated to scattered light/moderate rainfall very likely accompanied with **thunderstorms & lightning** over Punjab, Haryana-Chandigarh and Uttar Pradesh during 20th -22nd; isolated light/moderate rainfall over northwest Madhya Pradesh

during 20th-22nd; over northeast Rajasthan on 20th & 21st; over northwest Rajasthan on 20th and East Madhya Pradesh on 21st & 22nd February, 2024.

- **Hailstorm activity** very likely at isolated places over north Rajasthan on 20th and over Uttar Pradesh on 21st February, 2024.
- Generally cloudy sky over Delhi on 20th and partly cloudy sky with one or two spell of very light rain/ thundershowers on 21st February, 2024.
- ❖ A fresh Western Disturbance is likely to affect Western Himalayan Region from 24th February night and under its influence isolated to scattered light to moderate rainfall/snowfall very likely over Western Himalayan Region during 24th -26th February, 2024.

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

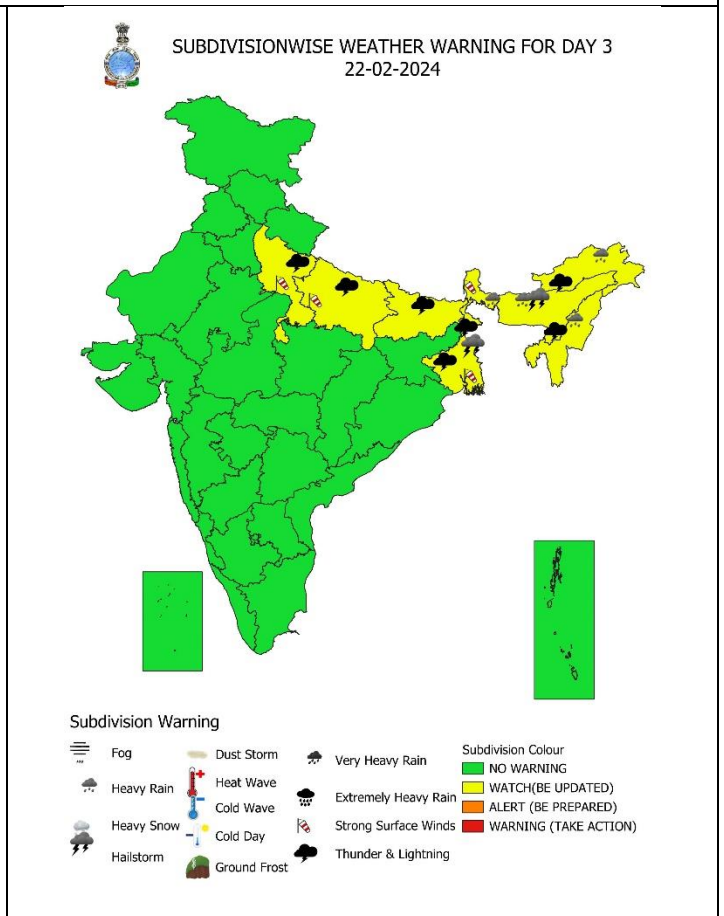
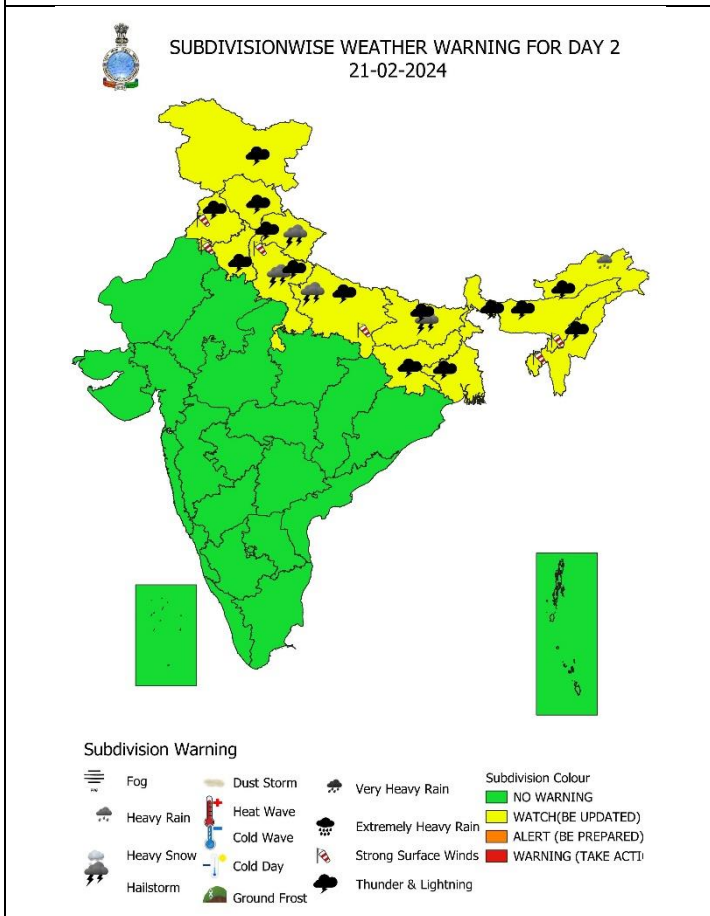
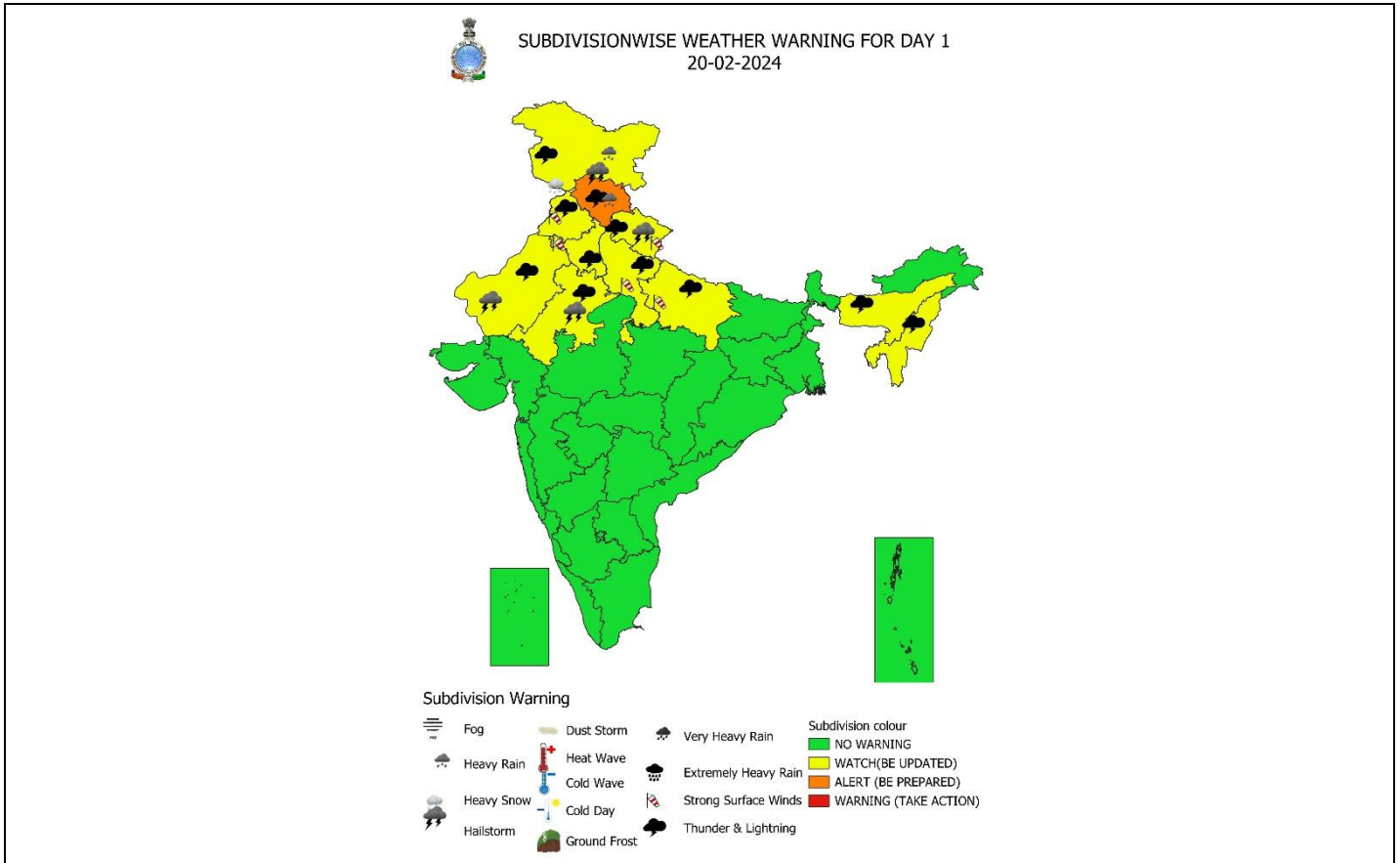
S.No.	State/sub-division	Forecast
1.	Jammu, Kashmir and Ladakh	<ul style="list-style-type: none"> • Light to moderate rain/snowfall accompanied with thunderstorm & lightning at most places on 20th February; at a few places on 21st February and at isolated places on 22nd & 24th February. • Heavy rainfall/snowfall likely 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 30-40 kmph gusting to 50 kmph) at most places on 20th & 21st February; at a few places on 22nd February and at isolated places on 23th & 24th February. • Heavy rainfall/snowfall likely at isolated places on 20th February. • Hailstorm likely at isolated places on 20th February.
3.	Uttarakhand	<ul style="list-style-type: none"> • Light to moderate rain/snowfall accompanied with gusty winds (speed reaching 30-40 kmph gusting to 50 kmph) at most places on 20th & 21st February; at a few places on 22nd February and at isolated places on 23rd & 24th February. • Hailstorm likely at isolated places on 20th & 21st February.
4.	Punjab	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm, lightning and gusty winds (speed reaching 30-40 kmph gusting to 50 kmph) at isolated places during 20th - 22nd February.
5.	Haryana, Chandigarh & Delhi	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm, lightning and gusty winds (speed reaching 30-40 kmph gusting to 50 kmph) at isolated places over Haryana & Chandigarh during 20th - 22nd February. • Generally cloudy sky over Delhi on 20th and partly cloudy sky with one or two spell of very light rain/ thundershowers on 21st February, 2024.
6.	West Uttar Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 20th February and at a few places on 21st & 22nd February. • Hailstorm likely at isolated places on 21st February.
7.	East Uttar Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 20th February; at many places on 21st and at a few places on 22nd February.

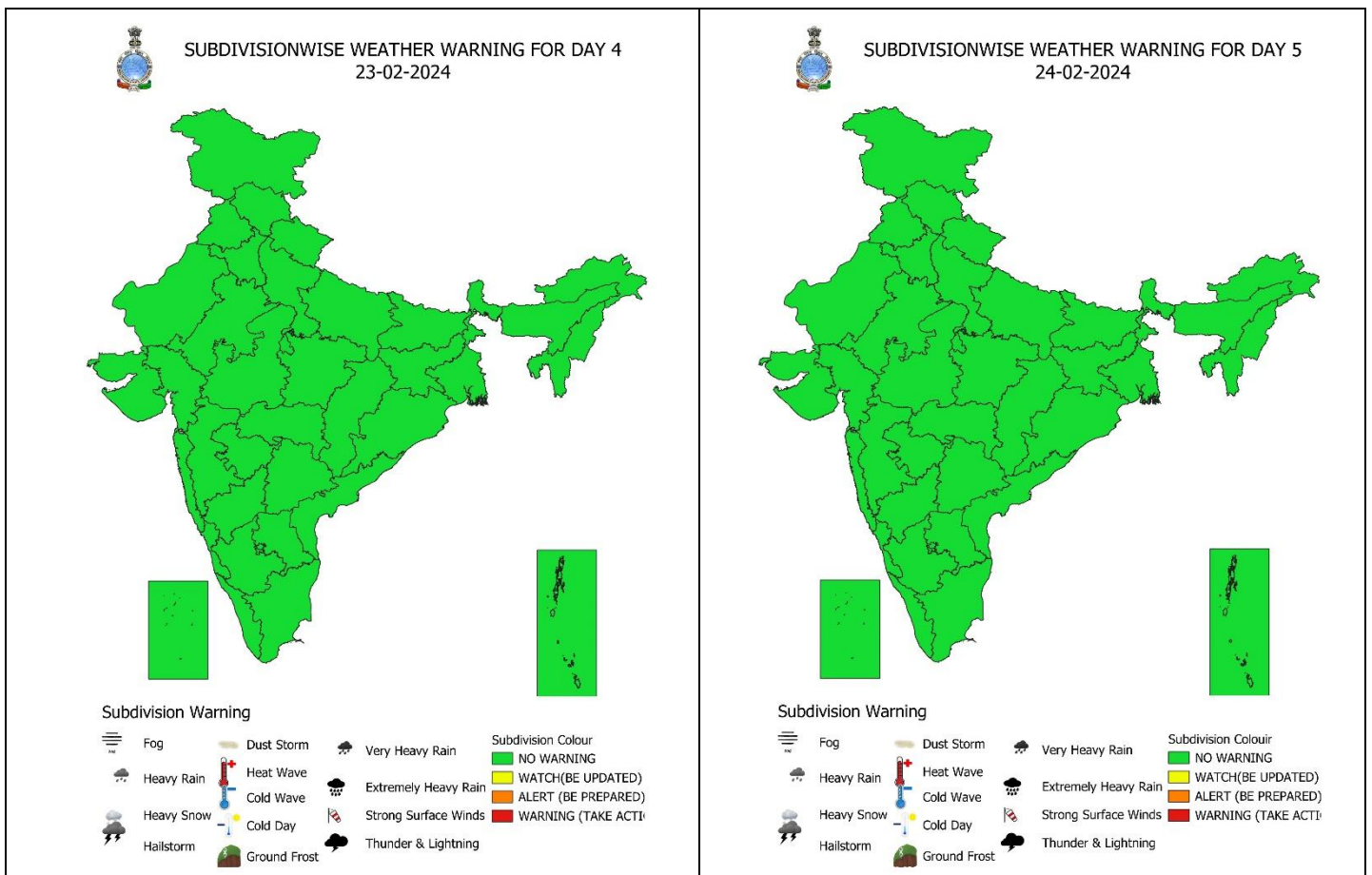
		<ul style="list-style-type: none"> • Hailstorm likely at isolated places on 21st February.
8.	West Rajasthan	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 20th February. • Hailstorm likely at isolated places on 20th February.
9.	East Rajasthan	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 20th & 21st February. • Hailstorm 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 during 20th - 22nd February.

Shobhit Katiyar
Scientist 'D'
NWFC, IMD New Delhi

ANNEXURE I

Significant rainfall (from 0830 hours IST of yesterday to 0830 hours IST of today) (in cm): Himachal Pradesh: Tissa (dist. Chamba) 8, Saloni (dist. Chamba) 8, Manali (dist. Kullu) 7, Chamba AWS (dist. Chamba) 7, Kufri AWS (dist. Shimla) 6, Chuari (dist. Chamba) 5, Dalhousi Alha AWS (dist. Chamba) 5, Kukumsheri AWS (dist. Lahaul & Spiti) 4, Chhatrari (dist. Chamba) 4, PTO Gondla (dist. Lahaul & Spiti) 4; **Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad:** : Kargil (dist. Kargil) 18, Badarwah ARG (dist. Doda) 10, Gulmarg R.S (dist. Baramula) 6, Pahalgam AWS (dist. Anantnag) 5, Verinag (dist. Anantnag) 5, Bandipore ARG (dist. Bandipore) 4, Bandipore AWS (dist. Bandipore) 5, Baramula AWS (dist. Baramula) 4, Badarwah (dist. Doda) 6, Qazi Gund (dist. Kulgam) 8, Kupwara (dist. Kupwara) 4, Banihal (dist. Ramban) 8, Batote (dist. Ramban) 5, Govindpura AWS (dist. Ramban) 8, Shalimar agro (dist. Srinagar) 4; **Uttarkhand:** Joshimath (dist. Chamoli) 4, Banbas (dist. Champawat) 4; **Punjab:** Ranjit Sagar Dam Site (dist. Pathankot) 5, Phangota (dist. Pathankot) 4.





Impact & Action Suggested due to heavy/very heavy rainfall/snowfall: Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad and Himachal Pradesh on 20th 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, 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)