



Government of India
Ministry of Earth Sciences
India Meteorological Department



Date: 03rd March, 2024
Time of Issue: 1315 hours IST

Special Message (No. 6)

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 likely to continue over Himachal Pradesh & Uttarakhand and moderate thunderstorm/hailstorm activity over East Uttar Pradesh, Bihar & Sikkim on today and significant decrease thereafter.

Realized weather during past 24 hours till 0830 hours IST of today: (Annexure II)

As predicted, yesterday following weather observed over northwest India:

- ❖ **Light to moderate rainfall/snowfall** at most places over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand.
- ❖ **Light to moderate rainfall** at most places over Punjab, Uttar Pradesh; at many places over Haryana-Chandigarh-Delhi, East Madhya Pradesh; at a few places over East Rajasthan, West Madhya Pradesh and at isolated places over West Rajasthan.
- ❖ **Heavy to very Heavy rainfall/snowfall** occurred at isolated places over Jammu & Kashmir, Uttarakhand and **Heavy rainfall/snowfall** at isolated places over Himachal Pradesh.
- ❖ **Heavy rainfall** occurred at isolated place over Haryana.
- ❖ **Hailstorm** observed at isolated places over Jammu-Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh.

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

- ❖ **The Western Disturbance as a cyclonic circulation lies over north Pakistan & neighbourhood in middle & upper tropospheric levels and an induced low pressure area lies over west Punjab & neighbourhood. Under their influence:**
 - **Fairly widespread to widespread** light/moderate rainfall/snowfall accompanied with **thunderstorms & lightning** very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand on 03rd March, 2024 and significant reduction in distribution and intensity thereafter.

- **Scattered to Fairly widespread** light/moderate rainfall accompanied with **thunderstorms, lightning & gusty winds (30-40 kmph)** very likely over Uttar Pradesh and isolated light/moderate rainfall over Madhya Pradesh on 03rd March and decrease in distribution and intensity thereafter.
 - Isolated to Scattered light/moderate rainfall likely over Punjab, Haryana-Chandigarh-Delhi, East Rajasthan on 3rd March.
 - **Isolated heavy rainfall/snowfall very likely over Uttarakhand on 03rd March, 2024.**
 - **Hailstorm activity also very likely at isolated places over East Uttar Pradesh and East Madhya Pradesh on 03rd March, 2024.**
- ❖ A fresh Western Disturbance likely to affect Western Himalayan Region from the night of 05th March, 2024. Under its influence Isolated to Scattered light/moderate rainfall likely over **Western Himalayan Region during 05th – 07th March, 2024.**

This is the last special bulletin for this event. However regular bulletins shall continue from Meteorological Center, Regional Meteorological Center and National Weather Forecasting Center (NWFC), New Delhi.

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

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NWFC, IMD New Delhi

Significant amount of rainfall (in cm):

Jammu & Kashmir: Udampur (Iaf) (Dist Udampur) 12, Banihal (Dist Ramban) 9, Qazi Gund (Dist Kulgam) 8, Batote (Dist Ramban), Govindpura Aws (Dist Ramban) 7, Katra (Dist Reasi) 7, Rajouri Arg (Dist Rajouri) 7, Bhaderwah Arg (Dist Doda) 7, Jammu (Dist Jammu) 6, Awantipur Iaf (Dist Pulwama) 5, Kupwara (Dist Kupwara) 4;

Himachal Pradesh: Sangraha (dist Sirmaur) 9, Manali (dist Kullu) 9, Renuka / Dadhau (dist Sirmaur) 9, Nahan (dist Sirmaur) 8, Pachhad (dist Sirmaur) 8, Sarahan (dist Shimla) 7, Kangra Aero (dist Kangra) 7, Rampur Bushar (dist Shimla) 6, Rajgarh (dist Sirmaur) 6, Kheri (dist Chamba) 6, Rohru (dist Shimla) 6, Kotkhai (dist Shimla) 5, Dharmsala (dist Kangra) 5, Dalhousi Alha Aws (dist Chamba) 5, Chaupal (dist Shimla) 5, Guler (dist Kangra) 5, Seo Bagh (dist Kullu) 5, Chamba Aws (dist Chamba) 5, , Paonta (dist Sirmaur) 5, Reckong Peo Aws (dist Kinnaur) 4, Naina Davi (dist Bilaspur) 5, Nagrota Surian (dist Kangra) 5, Jogindarnagar (dist Mandi) 5, Saloni (dist Chamba) 4, Nadaun (dist Hamirpur) 4, Bharmaur (dist Chamba) 4, Kandaghat (dist Solan) 4, Aghar (dist Hamirpur) 4, Hmo Shillaro (dist Shimla) 4, Sujampur Tira (dist Hamirpur) 4, Sundarnagar (dist Mandi) 4;

Uttarakhand: Chakrata (Dist Dehradun) 12, Tiuni (Dist Dehradun) 9, Mori (Dist Uttarkashi) 9, Purola (Dist Uttarkashi) 8, Barkot (Dist Uttarkashi) 6, Kotdwara (Dist Garhwal Puri) 5, Mussoorie (Dist Dehradun) 4, Loharkhet (Dist Bageshwar) 4;

Haryana-Chandigarh: Narwana (dist Jind) 10, Rajaund (dist Kaithal) 8, Thanesar (dist Kurukshetra) 8, Kurukshetra Kvk Aws (dist Kurukshetra) 7, Barara (dist Ambala) 7, Paundri Rev (dist Kaithal) 6, Babain Rev (dist Kurukshetra) 6, Naraingarh (dist Ambala) 6, Dadupur (dist Yamuna Nagar) 5, Ambala (dist Ambala) 5, Uchana (dist Jind) 5, Rohtak (dist Rohtak) 5, Tajewala (dist Yamuna Nagar) 4, Hissar (dist Hisar) 4, Karnal (dist Karnal) 4, Madluda Rev (dist Panipat) 4, Kaul Aws (dist Kaithal) 4, Assandh (dist Karnal) 4, Alewa Rev (dist Jind) 4, Ismailabad (dist Kurukshetra) 4, Rohtak Aws (dist Rohtak) 4, Chhachhrauli (dist Yamuna Nagar) 4, Gharaunda (dist Karnal) 4, Nilokheri (dist Karnal) 4;

Punjab: Phangota (dist Pathankot) 6, Adampur Iaf (dist Jalandhar) 5, Jalandhar (dist Jalandhar) 4, Khanna (dist Ludhiana) 4, Gurudaspur (dist Gurdaspur) 4;

East Rajasthan: Lalsot (dist Dausa) 2.

Yesterday following district's/stations of Jammu-Kashmir, Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh, Rajasthan and Madhya Pradesh reported hailstorm.

Jammu-Kashmir: Batote, Baderwah and Jammu

Himachal Pradesh: Palampur

Uttarakhand: Dehradun (Chakarta & Mussoorie)

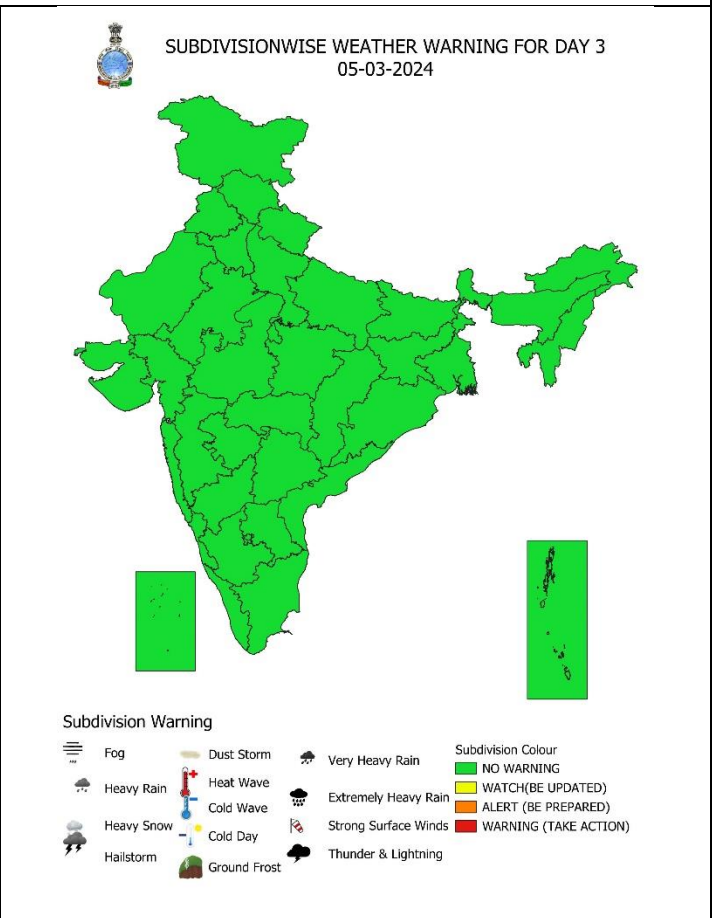
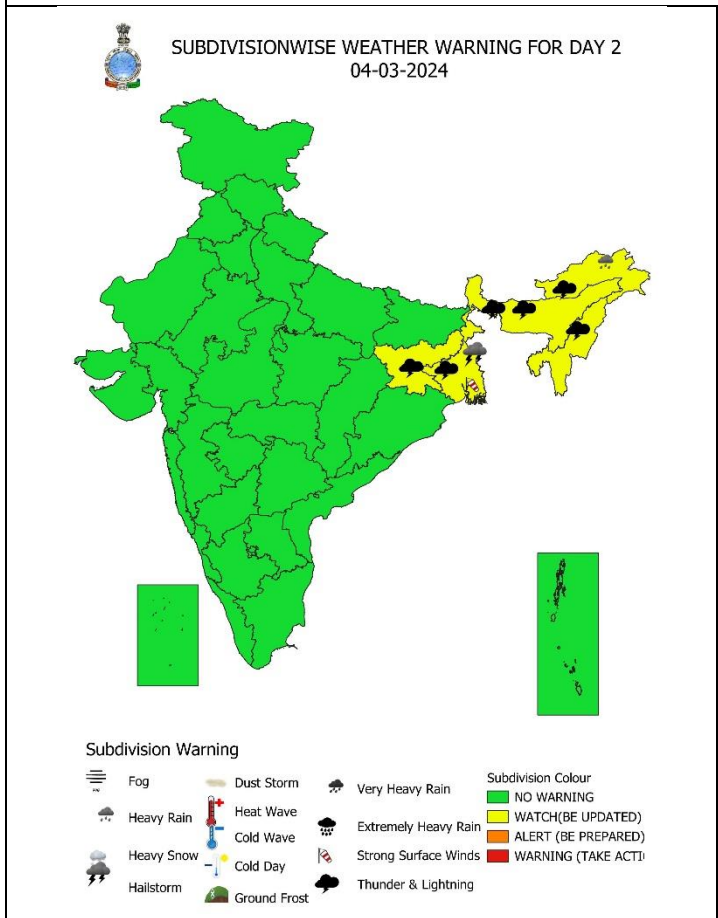
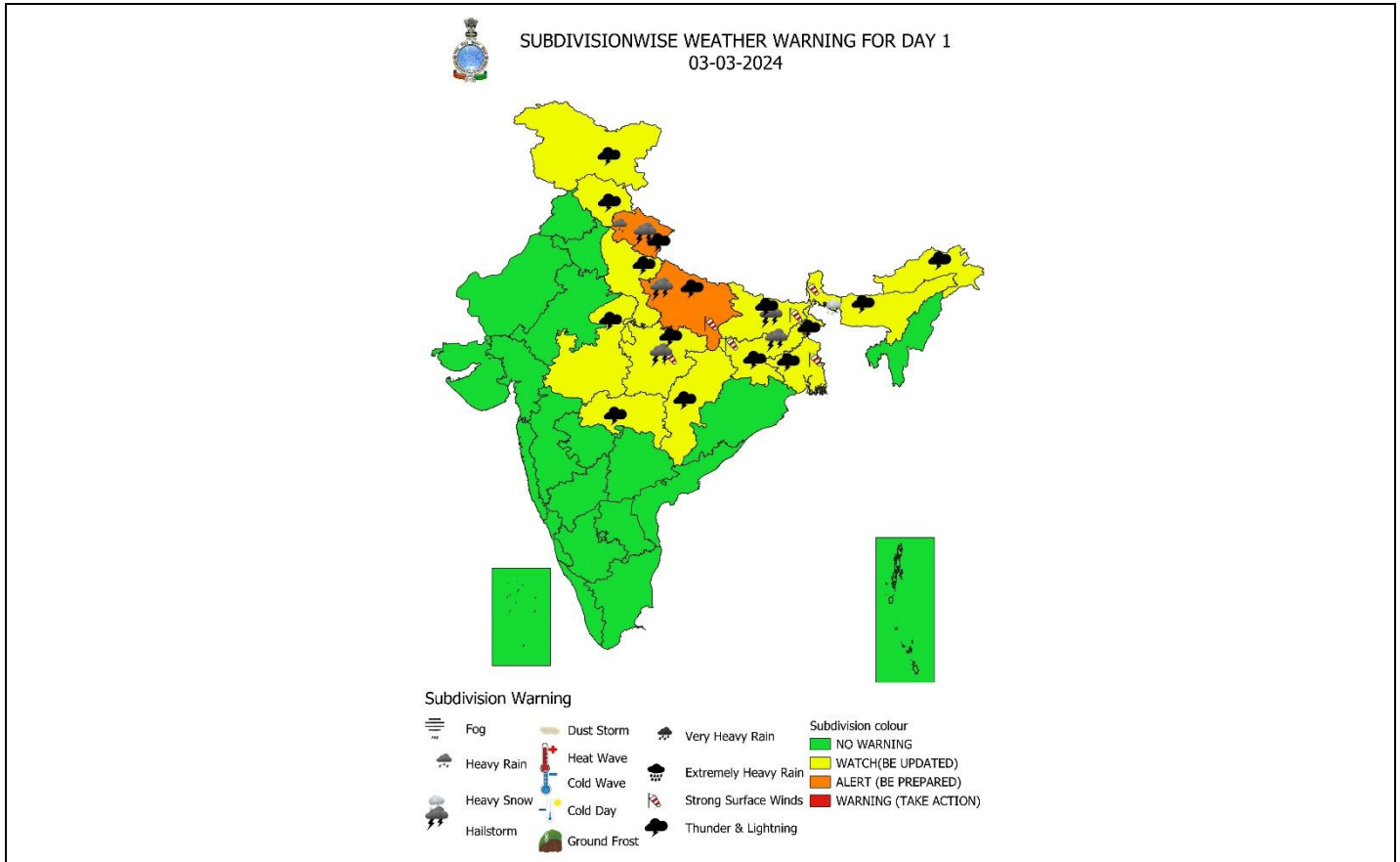
Punjab: Tarn Taran, Faridkot & Bathinda

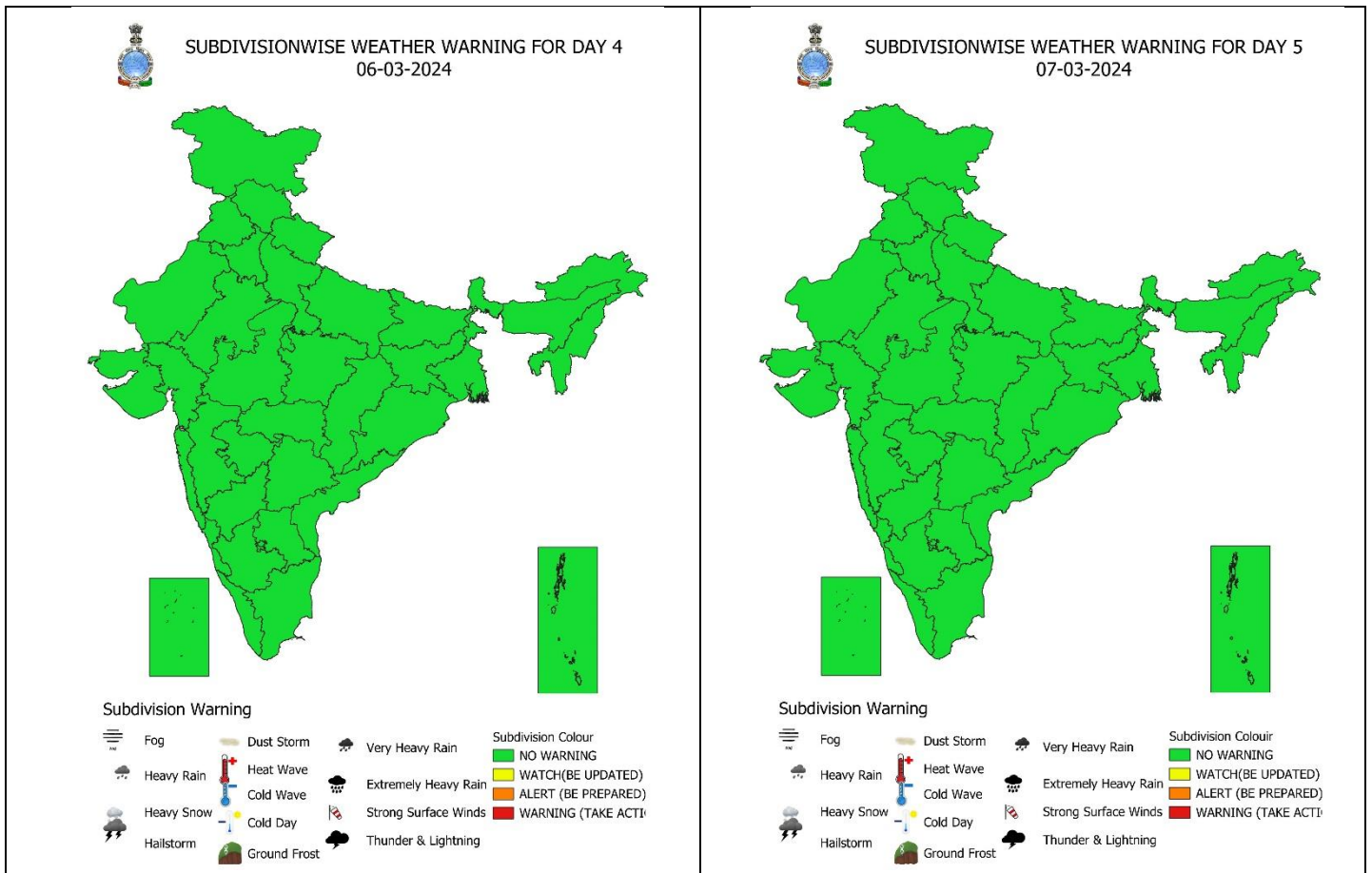
Haryana: Hisar, Rohtak, Rarnal, Sonipat, Kaithal and Jind

Uttar Pradesh: Muzaffarnagar, Meerut, Saharanpur, Baghpat, Jalaun, Kasganj and Farrukhabad

Rajasthan: Hanumangarhand Sikar

Madhya Pradesh: Ashoknagar, Guna, Shivpuri, Morena, Datia, Gwalior, Sheopur Kalan, Raisen, Chhatarpur, Tikamgarh, Nivari and Panna.





Agromet advisories for Heavy snowfall, Gusty winds and hailstorms likely over various parts of the country

(Based on the IBF and advisories issued by different AMFUs)

- 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 East Uttar Pradesh, East Madhya Pradesh and Jharkhand.
- Harvest the matured crops/vegetables at the earliest & keep already harvested produce in safe places or cover the heaps of already harvested produce in the fields with tarpaulin sheets.
- Provide mechanical support to horticultural crops and staking to vegetables.
- Shake the trees to remove snow immediately from the branches in the regions of heavy snowfall in Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Sikkim.

Impact expected and action suggested due to thunderstorm with lightning/gusty winds & Hailstorm over East Uttar Pradesh, East Madhya Pradesh, Bihar, Jharkhand on 03rd March,2024.

Impact expected:

- v Strong wind/hail may damage plantation, horticulture and standing crops.
- v Hail may injure people and cattle at open places.
- v Partial damage to vulnerable structures due to strong winds.
- v Minor damage to kutchha houses/walls and huts.
- v Loose objects may fly.

Action suggested:

- v Stay indoors, close windows & doors and avoid travel if possible.
- v Take safe shelters; do not take shelter under trees.
- v Do not lie on concrete floors and do not lean against concrete walls.
- v Unplug electrical/ electronic appliances.
- v Immediately get out of water bodies.
- v Keep away from all the objects that conduct electricity.

Impact & Action Suggested due to heavy to very heavy rainfall/snowfall over Uttarakhand, Sikkim on 03rd March and over Arunachal Pradesh on 04th March, 2024.

Impacts Expected for Rain/Snow

- 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.














Suggested Actions

- 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.


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 Widespred (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)