



Government of India
Ministry of Earth Sciences
India Meteorological Department



Date: 29th February, 2024
Time of Issue: 1250 hours IST

Special Message (No.- 3)

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 over Western Himalayan Region from night of 29th February and rainfall over plains of northwest India from 1st March to 3rd March with peak intensity of 1st & 2nd March, 2024.

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

- ❖ A Western Disturbance as a cyclonic circulation lies over northeast Iran & neighbourhood in lower to upper tropospheric levels. High moisture feeding from Arabian Sea to northwest India is also likely on 1st & 2nd March. It is very likely to affect Western Himalayan Region from night of 29th February and plains of northwest India from 1st March to 3rd March with peak intensity on 1st & 2nd March, 2024. Under its influence:
 - Fairly widespread to widespread light/moderate rainfall accompanied with thunderstorms & lightning very likely over Western Himalayan Region during night of 29th February to 3rd March, 2024.
 - Scattered to fairly widespread light/moderate rainfall accompanied with thunderstorms, lightning & gusty winds (40-50 kmph gusting to 60 kmph) very likely over Punjab, Haryana-Chandigarh-Delhi and scattered light/moderate rainfall over Uttar Pradesh, Rajasthan and north Madhya Pradesh on 1st & 2nd March, 2024.
 - **Isolated heavy to very heavy rainfall/snowfall very likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad on 1st & 2nd March. Isolated heavy rainfall/snowfall over Himachal Pradesh on 1st & heavy to very heavy rainfall/snowfall on 2nd March. Isolated heavy rainfall/snowfall over Uttarakhand on 1st & 2nd March. Isolated heavy rainfall over Punjab on 02nd March, 2024.**
 - Hailstorm activity also very likely at isolated places over Himachal Pradesh, Uttarakhand, Punjab on 1st & 2nd March; over West Rajasthan on 1st and over

Haryana, Chandigarh, East Rajasthan, Uttar Pradesh and north Madhya Pradesh on 2nd March, 2024.

- **Strong surface winds (40-50 kmph gusting to 60 kmph) likely over Northwest India on 1st & 2nd March.**

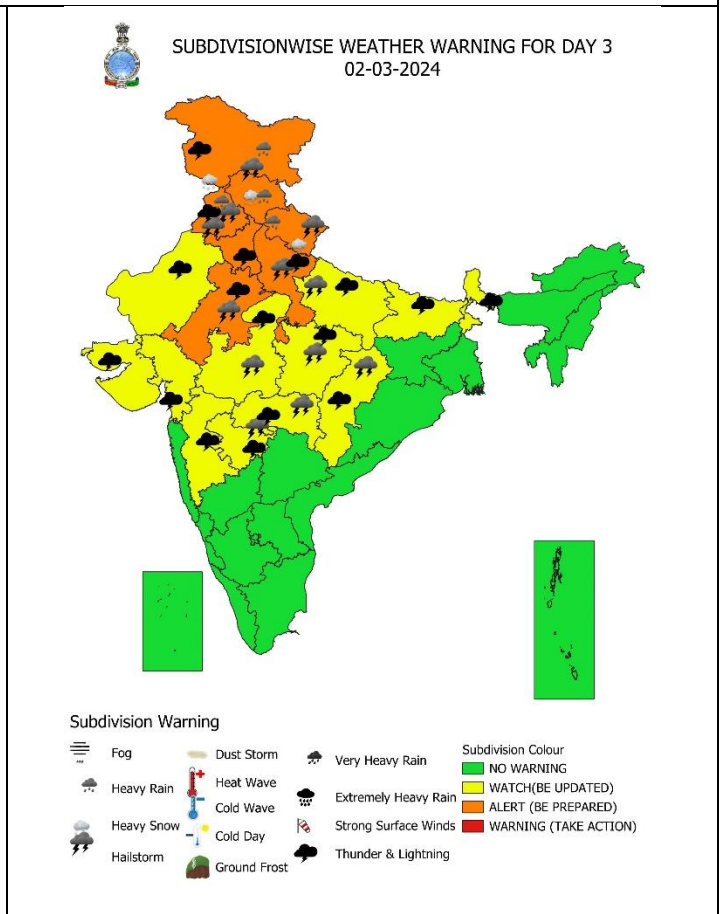
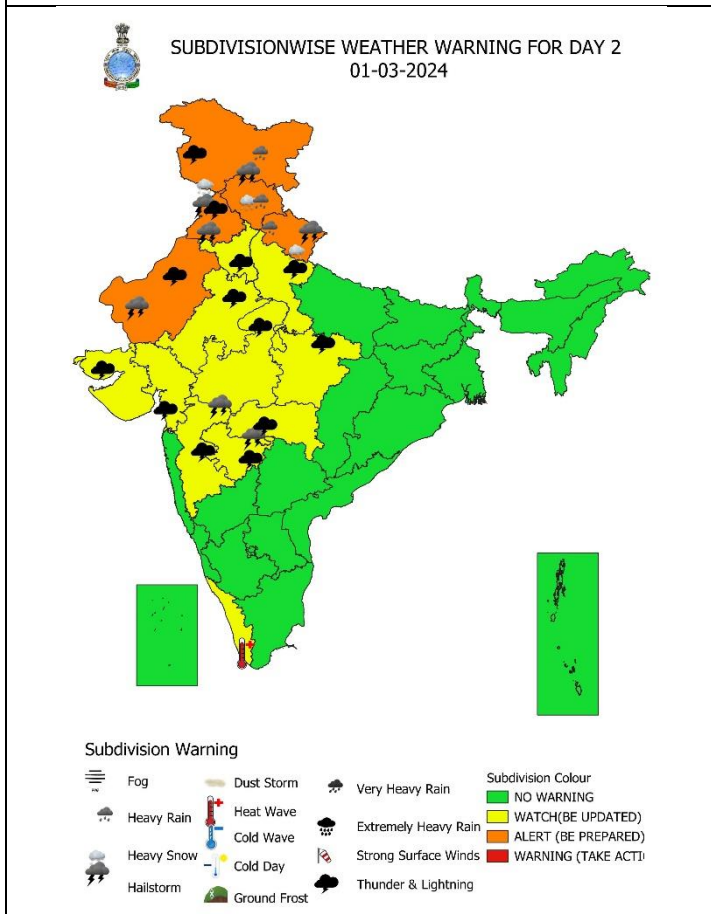
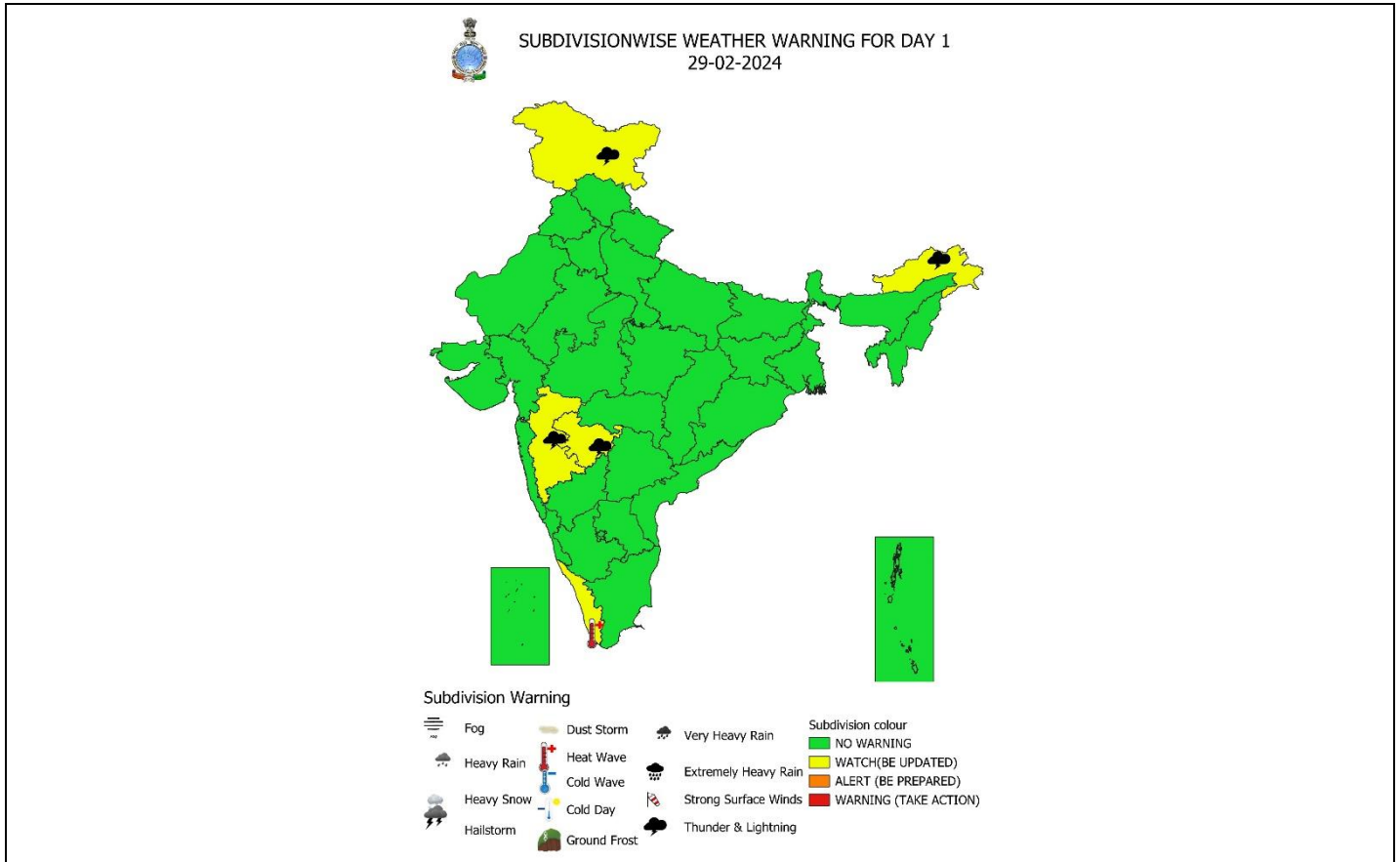
The state-wise forecast is given below: (Warning graphics are given at ANNEXURE-I)

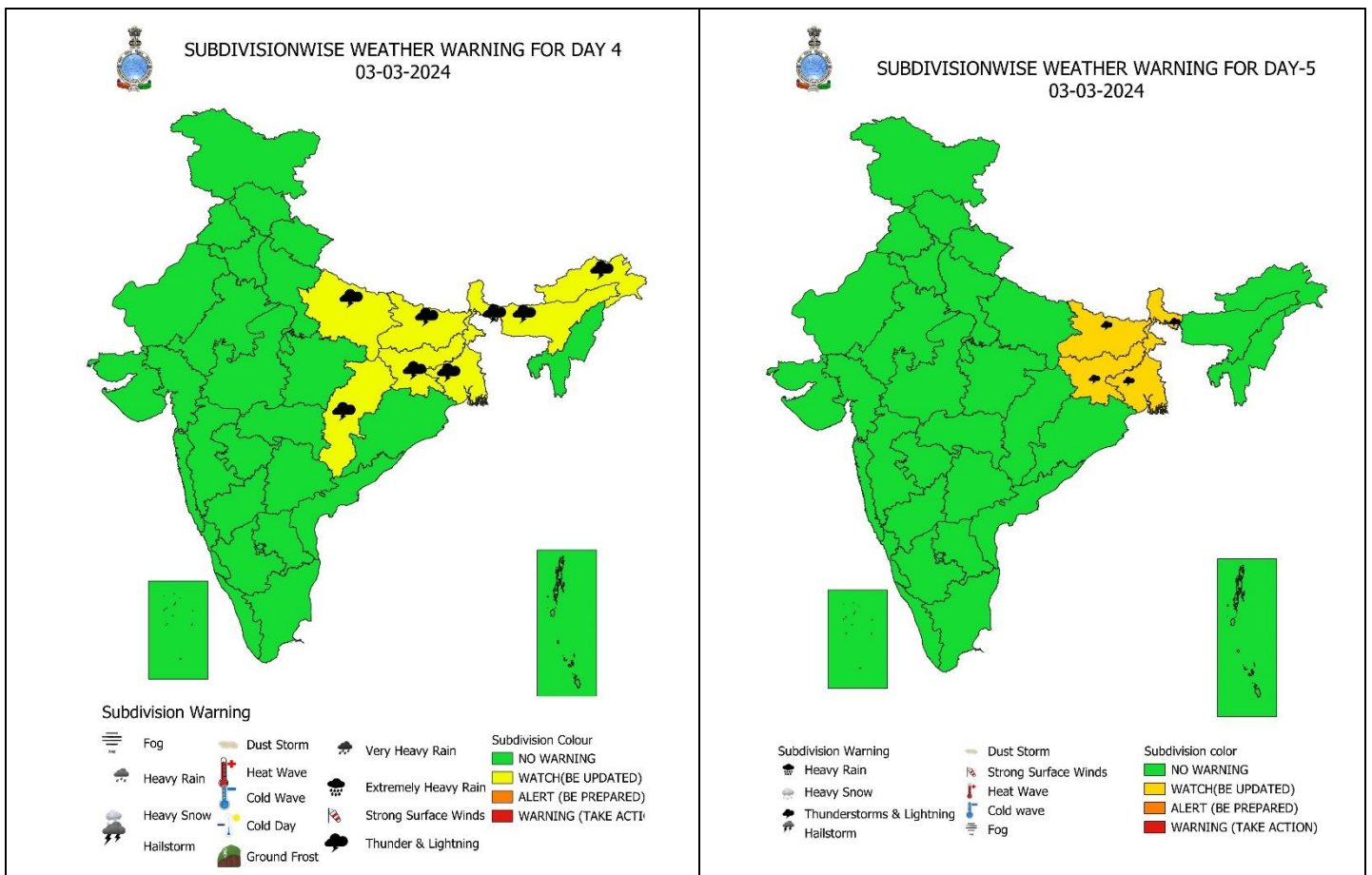
S. No.	State/sub-division	Forecast
1.	Jammu, Kashmir and Ladakh	<ul style="list-style-type: none"> • Light to moderate rain/snowfall accompanied with thunderstorm, lightning at some places on 29th February; at most places on 01st March and with gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at most places on 02nd March. • Light to moderate rain/snowfall at some places on 03rd March; at isolated places on 04th & 05th March and at some places on 06th March. • Heavy to very heavy rainfall/snowfall very likely at isolated places on 01st & 02nd March.
2.	Himachal Pradesh	<ul style="list-style-type: none"> • Light to moderate rain/snowfall at isolated places on 29th February; at most places on 01st March and accompanied with thunderstorm, lightning & gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at most places on 02nd March. • Light to moderate rain/snowfall at many places on 03rd march; at isolated places on 05th March and at some places on 06th March. • Heavy rainfall/snowfall at isolated places on 01st March; Heavy to very heavy rainfall/snowfall very likely at isolated places on 02nd March. • Hailstorm also likely at isolated places on 01st & 02nd March.
3.	Uttarakhand	<ul style="list-style-type: none"> • Light to moderate rain/snowfall at isolated places on 29th February and accompanied with thunderstorm, lightning & gusty winds (speed reaching 30-40 kmph gusting to 50 kmph) at many places on 01st March and with gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at most places on 02nd March. • Light to moderate rain/snowfall at many places on 03rd March; at isolated places during 05th March and at some places on 06th March. • Heavy rainfall/snowfall at isolated places likely on 01st & 02nd March. • Hailstorm also likely at isolated places on 01st & 02nd March.
4.	Punjab	<ul style="list-style-type: none"> • Light to moderate rain at isolated places on 29th February and accompanied with thunderstorm, lightning & gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at many places on 01st March and with gusty winds (speed reaching 50-60 kmph gusting to 70 kmph) at many places on 02nd March. • Light to moderate rain/snowfall accompanied with thunderstorm & lightning at isolated places on 03rd March. • Heavy rainfall at isolated places likely on 02nd March. • Hailstorm is likely at isolated places on 01st, 02nd March.

5.	Haryana, Chandigarh & Delhi	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning with gusty winds (speed reaching 30-40 kmph gusting to 50 kmph) at some places on 01st March and with gusty winds (speed reaching 50-60 kmph gusting to 70 kmph) at many places on 02nd March over Haryana-Chandigarh. • Light to moderate rain at isolated places on 03rd March over Haryana-Chandigarh. • Generally cloudy sky & very light rain/ thundershowers towards evening/night on 1st and generally cloudy sky & light rain/ thundershowers and gusty winds (speed 30-40 kmph) on 2nd March over Delhi. • Hailstorm is likely at isolated places over Haryana on 02nd March.
6.	West Uttar Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning with gusty winds (speed reaching 30-40 kmph gusting to 50 kmph) at some places on 01st March and with gusty winds (speed reaching 40-50 kmph gusting to 60 kmph) at many places on 02nd March. • Light to moderate rain at isolated places on 03rd March. • Hailstorm is likely at isolated places on 02nd March.
7.	East Uttar Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning at isolated places on 01st March and with gusty winds (speed reaching upto 30-40 kmph gusting to 50 kmph) at many places on 02nd march; at some places on 03rd March. • Hailstorm is likely at isolated places on 02nd March.
8.	West Rajasthan	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning with gusty winds (speed reaching upto 40-50 kmph gusting to 60 kmph) at isolated places on 01st March; with gusty winds (speed reaching upto 30-40 kmph gusting to 50 kmph) at isolated places on 02nd March. • Hailstorm is likely at isolated places on 01st March.
9.	East Rajasthan	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning with gusty winds (speed reaching upto 40-50 kmph gusting to 60 kmph) at some places on 01st & 02nd March. • Hailstorm is likely at isolated places on 02nd March.
10	Madhya Pradesh	<ul style="list-style-type: none"> • Light to moderate rain accompanied with thunderstorm & lightning with gusty winds (speed reaching upto 30-40 kmph gusting to 50 kmph) at isolated places on 01st & 02nd March. • Light to moderate rain at isolated places on 03rd March • Hailstorm is likely at isolated places on 02nd March.

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

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Impact & Action Suggested due to heavy/very heavy rainfall/snowfall: Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad, Himachal Pradesh and Uttarakhand on 1st & 2nd March, 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 kuccha 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 over Himachal Pradesh, Uttarakhand, Punjab on 1st & 2nd March; over West Rajasthan on 1st; and over Haryana-Chandigarh, East Rajasthan, Uttar Pradesh, north Madhya Pradesh on 2nd March, 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 Heavy rainfall, Gusty winds and hailstorms likely over various parts of the country (Based on the IBF and advisories issued by different AMFUs and DAMUs)

- ❖ Harvest the matured wheat, jowar and mustard in North Rajasthan as early as possible and keep the harvested produce at safer places.
- ❖ Make necessary arrangements for draining out excess water from crop fields to avoid water stagnation in Jammu & Kashmir, Himachal Pradesh, Uttarakhand and Punjab.
- ❖ Keep harvested produce in safe places.
- ❖ Provide mechanical support to horticultural crops and staking to vegetables in Himachal Pradesh, Uttarakhand, Punjab, Haryana, Uttar Pradesh and North Rajasthan.

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)