Subject: I) Cold Wave and Cold Day conditions over Northwest and Central India very likely to abate gradually from tomorrow, the 29 January, 2022

Weather Observed during past 24 hours ending at 0830 hrs IST of today:

- **Strong Surface winds (speed 10-20 kmph)** prevailing over most parts of Northwest & adjoining Central India.
- **Minimum temperatures** are below normal by 4-6°C over most parts of Madhya Pradesh, Marathwada, Vidarbha and by 2-4°C over most parts of Haryana, Uttar Pradesh, Rajasthan and Odisha.
- **Maximum temperatures** are below normal by 4-6°C over most parts of Madhya Pradesh, East & adjoining West Uttar Pradesh, Chhattisgarh & Bihar and by 2-4°C over most parts of Punjab, Haryana, Rajasthan and Odisha.
- **Severe Cold Day** conditions in many parts prevailed over East & adjoining West Uttar Pradesh; **Cold Day** conditions in most parts with **Severe Cold Day** in isolated pockets over Madhya Pradesh and **Cold Day** conditions in some parts over Bihar and Vidarbha; in isolated pockets over East Rajasthan.
- **Cold Wave conditions** in many parts with **Severe Cold Wave** in isolated pockets prevailed over West Madhya Pradesh and Vidarbha; **Cold Wave to Severe Cold Wave conditions** in isolated pockets over East Rajasthan and **Cold Wave conditions** in many parts over East Madhya Pradesh; in isolated pockets over Punjab, Haryana, Saurashtra & Kutch and north Marathwada.
- **Dense to Very Dense Fog** in isolated pockets over Uttarakhand and **Moderate to Dense Fog** in isolated pockets over East Uttar Pradesh.

**Synoptic Situations:**

- A trough runs in middle tropospheric westerlies along Long. 88°E to the north of Lat. 25°N.
- A fresh feeble Western Disturbance as a trough in middle tropospheric westerlies runs along Long. 54°E to the north of Lat. 33°N. It would move east-northeastwards and affect Jammu-Kashmir-Ladakh with isolated rainfall/snowfall till 01st February, 2022.
- An active Western Disturbance & its induced cyclonic circulation is very likely to affect Northwest India from 02nd February, 2022.

**Rainfall Forecast & Warnings:**
- Isolated to scattered light/moderate rainfall very likely over Sub-Himalayan West Bengal & Sikkim, Arunachal Pradesh, Assam & Meghalaya and Nagaland-Manipur-Mizoram-Tripura on 31st January and 01st February, 2022. Isolated thunderstorms/lightning is also very likely over Arunachal Pradesh, Assam & Meghalaya and Nagaland-Manipur-Mizoram-Tripura during next 24 hours.
- Isolated light rainfall very likely over Tamilnadu-Puducherry-Karaikal and Kerala-Mahe during next 4 days and over Coastal Andhra Pradesh-Yanam during next 48 hours.
- Light isolated rainfall/snowfall is likely over Jammu-Kashmir-Ladakh-Gilgit-Baltistan-Muzaffarabad during next 5 days.
- Surface winds (speed 15-25 kmph) likely over Punjab, Haryana, Delhi and Uttar Pradesh during next 4 days.
- **Under the influence of a fresh active Western Disturbance & its induced cyclonic circulation;** fairly widespread to widespread light/moderate rainfall/snowfall very likely over Western Himalayan Region during 02nd to 04th February. **Isolated heavy rainfall/snowfall is also likely over Jammu, Kashmir, Gilgit, Baltistan & Muzaffarabad and Himachal Pradesh on 03rd February, 2022.**
- Scattered to fairly widespread light/moderate rainfall very likely over Punjab, Haryana, Chandigarh, Delhi and Uttar Pradesh during 02nd to 04th February, 2022.
- Due to confluence between westerlies and easterlies at lower tropospheric levels; Scattered to fairly widespread light/moderate rainfall with isolated hailstorms likely over Bihar, Jharkhand, West Bengal & Sikkim on 03rd & 04th and over Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura on 04th & 05th February, 2022.

**Cold Wave, Fog and Cold Day Warning:**
- No significant change in minimum temperatures very likely over most parts of Northwest & Central India during next 24 hours and gradual rise by 4-6°C thereafter.
- No significant change in minimum temperatures very likely over East India during next 3 days and fall by 2-4°C thereafter.
- No significant change in minimum temperatures very likely over Gujarat during next 2 days and rise by 2-4°C thereafter.
- Maximum temperatures are very likely to rise by 3-5°C over most parts of Northwest & Central India till 2nd February and fall thereafter.
- **Cold wave conditions** in isolated pockets very likely over Punjab, Haryana-Chandigarh, West Uttar Pradesh and Rajasthan during next 24 hours and abate thereafter. **Cold day conditions** in isolated pockets very likely over Uttar Pradesh and East Rajasthan during next 24 hours and abate thereafter.
- **Cold Day to Severe Cold Day conditions** in isolated pockets very likely over Madhya Pradesh, Vidarbha and Chhattisgarh during next 24 hours and gradually abate thereafter. **Cold wave conditions** in isolated pockets very likely over Madhya Pradesh & Odisha during next 2 days; over Vidarbha and Chhattisgarh during next 24 hours and gradually abate thereafter.
- **Dense Fog conditions** in isolated pockets in night/morning hours very likely over Uttarakhand, East Uttar Pradesh, Assam & Meghalaya and Nagaland during next 48 hours and abate thereafter.
For more details refer: https://mausam.imd.gov.in/imd_latest/contents/subdivisionwise-warning.php
Impact expected and action suggested due to Cold Day/Severe Cold Day conditions in isolated pockets over Uttar Pradesh, East Rajasthan, Madhya Pradesh, Vidarbha and Chhattisgarh during next 24 hours.

Impact expected:

- An increased likelihood of various illnesses like flu, running/stuffy nose or nosebleed, which usually set in or get aggravated due to prolonged exposure to cold.
- Do not ignore shivering. It is the first sign that the body is losing heat. Get Indoors.
- Frostbite can occur due to prolonged exposure to cold. The skin turns pale, hard and numb and eventually black blisters appear on exposed body parts such as fingers, toes, nose and or earlobes. Severe frostbite needs immediate medical attention and treatment.
- Impact on agriculture, crop, livestock, water supply, transport and power sector at some places.

Action suggested:

- Wear several layers of loose fitting, light weight; warm woolen clothing.
- Cover your head, neck, hands and toes adequately as majority of heat loss occurs through these body parts. Wear several layers of loose fitting, light weight; warm woolen clothing rather than one layer of heavy cloth.
- Eat vitamin-C rich fruits & vegetable and drink sufficient fluids preferably warm fluids to maintain adequate immunity.
- Avoid or limit outdoor activities.
- Keep dry, if wet, change cloths immediately to prevent loss of body heat. Wear insulated/waterproof shoes.
- Warm the affected area of the body slowly with lukewarm water; do not rub the skin vigorously.
- If the affected skin area turns black, immediately consult a doctor.
- Maintain ventilation while using Heaters to avoid inhaling toxic fumes.
- Take safety measures while using electrical and gas heating devices.
- Extreme care needed for vulnerable people.
- Seek medical attention as soon as possible for someone suffering from frostbite/Hypothermia.
- Protect livestock from cold weather. (For details kindly refer NDMA guidelines: https://ndma.gov.in/Resources/awareness/Cold_Wave)
Legends:

**Heavy Rain**: 64.5 to 115.5 mm; **Very Heavy Rain**: 115.6 to 204.4 mm; **Extremely Heavy Rain**: >204.4 mm.

**Region wise classification of meteorological Sub-Divisions:**

1) **Northwest India**: Jammu, Kashmir, Ladakh, Gilgit, Baltistan & Muzaffarabad; Himachal Pradesh, Uttarakhand, Punjab, Haryana, Chandigarh & Delhi; West Uttar Pradesh, East Uttar Pradesh, West Rajasthan and East Rajasthan.
2) **Central India**: West Madhya Pradesh, East Madhya Pradesh, Vidarbha and Chhattisgarh.
3) **East India**: Bihar, Jharkhand, Sub-Himalayan West Bengal & Sikkim; Gangetic West Bengal, Odisha and Andaman & Nicobar Islands.
4) **Northeast India**: Arunachal Pradesh, Assam & Meghalaya and Nagaland, Manipur, Mizoram & Tripura.
5) **West India**: Gujarat Region, Saurashtra & Kutch, Konkan & Goa, Madhya Maharashtra and Marathwada.
6) **South India**: Coastal Andhra Pradesh & Yanam, Telangana, Rayalaseema, Coastal Karnataka, North Interior Karnataka, South Interior Karnataka, Kerala & Mahe, Tamil Nadu, Puducherry & Karaikal and Lakshadweep.

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**Spatial Distribution** (% of Stations reporting)

<table>
<thead>
<tr>
<th>Category</th>
<th>% Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widespread (WS/Most Places)</td>
<td>75-100</td>
</tr>
<tr>
<td>Scattered (SCT/ A Few Places)</td>
<td>25-50</td>
</tr>
<tr>
<td>Isolated (ISOL)</td>
<td>25+</td>
</tr>
</tbody>
</table>

**Probabilistic Forecast**

<table>
<thead>
<tr>
<th>Terms</th>
<th>Probability of Occurrence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlikely</td>
<td>&lt; 25</td>
</tr>
<tr>
<td>Likely</td>
<td>25 - 50</td>
</tr>
<tr>
<td>Very Likely</td>
<td>50 - 75</td>
</tr>
<tr>
<td>Most Likely</td>
<td>&gt; 75</td>
</tr>
</tbody>
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**Warnings**

- **Thunderstorm with Lightning**
- **Visibility/Fog**
- **Cold wave/Cold day**
- **Frost**