Subject: Wet spell over Northwest & adjoining Central India during 03rd-06th January, 2021 and abatement of Cold Wave & Cold Day conditions from Northwest India from 03rd January, 2021.

Meteorological analysis:

- A Western Disturbance as a cyclonic circulation lies over Afghanistan & neighbourhood at middle & upper tropospheric levels. It is likely to move slightly eastwards to central Pakistan & neighborhood during next 48 hours and remain practically stationary there during subsequent 3-4 days.
- An induced cyclonic circulation lies over southwest Rajasthan & neighbourhood in lower tropospheric levels and is likely to persist over the same area during next 3-4 days.
- The confluence of southwesterlies in association with the above Western Disturbance and lower level southeasterlies is very likely over plains of northwest & adjoining areas of central India during 2nd- 5th January, 2021.

Forecast & Warnings:

- Under the influence of above systems, light/moderate fairly widespread rainfall/snowfall over Western Himalayan region during 04th - 06th January, 2021 with its peak intensity on 4th & 5th is very likely with possibility of heavy rain/snow over Jammu Division & Kashmir Valley. Hailstorm at isolated places is also likely over Western Himalayan Region on 4th & 5th January, 2021.
- Scattered to fairly widespread rainfall accompanied with thunderstorm/hailstorm at isolated places very likely over Punjab, Haryana, Chandigarh & Delhi, north Rajasthan, West Uttar Pradesh and northwest Madhya Pradesh during 03rd - 05th with maximum intensity on 03rd & 04th January, 2021. Isolated heavy rainfall also likely over Punjab on 04th January, 2021.
Temperature Forecast, Cold Wave Warning and Fog Forecast:

- Minimum temperatures are between 1.0°C to 6.0°C over plains of northwest & adjoining central India except at isolated places of south Haryana & north Rajasthan where it is between 0°C to -1°C. These are very likely to increase gradually by 3-5°C over these regions during next 3 days and no significant change thereafter for subsequent 3 days.

- Cold wave to severe cold wave conditions are prevailing over many parts of plains of Northweest India and adjoining Central India. These are likely to continue over Punjab, Haryana, Chandigarh & Delhi, West Uttar Pradesh and north Rajasthan during next 24 hours and abate thereafter.

- Dense to very Dense fog in isolated pockets are likely over Punjab, Haryana, Chandigarh & Delhi and north Uttar Pradesh in the morning hours of 02nd & 03rd and likely to abate thereafter.

Detailed forecast & warnings are as follow:

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<tbody>
<tr>
<td>Jammu &amp; Kashmir</td>
<td>Rain/snow at isolated places</td>
<td>Rain/snow at a few places with isolated thunderstorm &amp; lightning</td>
<td>Rainfall/snowfall at many places with isolated heavy rain/snow and isolated thunderstorm &amp; lightning/hail</td>
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<td>Punjab</td>
<td>Rain/thundershowers at isolated places with isolated thunderstorm &amp; lightning</td>
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Impact expected and action suggested due to Cold Wave/Severe Cold Wave conditions over Uttar Pradesh during next 2 days; over Punjab, Haryana, Chandigarh & Delhi and north Rajasthan during next 24 hours and Cold Day/Severe Cold Day conditions over Punjab, Haryana, Chandigarh & Delhi and Uttar Pradesh 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)
Impact expected and action suggested due to Dense/Very Dense fog over north Uttar Pradesh, Punjab, Haryana, Chandigarh & Delhi, Assam & Meghalaya and Nagaland, Mizoram, Manipur & Tripura during next 48 hours.

**Impact expected:**

- **Transport and Aviation:**
  - May affect some airports, highways and railway routes in the areas of met-sub-division.
  - Ferry services also to be affected.
  - Difficult driving conditions with slower journey times.
  - Some road traffic collisions

- **Power Sector:**
- Chances of Tripping of Power lines in the very dense fog routes

- **Human Health:**
- Lung related health impacts: Dense fog contains particulate matter and other pollutants and in case exposed it gets lodged in the lungs, clogging them and decreasing their functional capacity which increases episodes of wheezing, coughing and shortness of breath
- Impact on people having asthma bronchitis: Long time exposure to dense fog may cause respiratory problem for people having asthma bronchitis and other lung related health problems.
- Causes Eye Irritation: Dense fog contains pollutions of various types and these Pollutants in the air if exposed may tend to irritate the membranes of the eye causing various infections leading to redness or swelling of the eye.

**Action suggested:**

- **Transport and Aviation:**
  - Careful while driving or outing through any transport.
  - Use fog lights during driving.
  - Be touch with airlines and Railway and State transport for scheduled of your journey.

- **Power Sector:**
  - Keep ready Maintenance Team

- **Human Health:** Avoid outing until unless emergency and cover the face.
A. Conditions for Cold Wave:
When minimum temperature of a station is 10°C or less for plains and 0°C or less for Hilly regions and fulfils any of the following criteria:

I) Based on Departure of Minimum Temperatures from Normal
Cold Wave: When the Departure is -4.5°C to -6.4°C Severe
Cold Wave: When the Departure is > -6.4°C

II) Based on Actual Minimum Temperature (For plain stations only) Cold Wave: When minimum temperature is ≤ 4°C
Severe Cold Wave: When minimum temperature is ≤ 2°C

III) For coastal stations:
When the Departure of Minimum Temperature is -4.5°C or less and Minimum Temperature is 15°C or less.

B. Conditions for Cold Day:
When minimum temperature is 10°C or less for plains and 0°C or less for Hilly regions and fulfils following criteria:

Cold day: Maximum Temperature Departure is -4.5°C to -6.4°C Severe Cold day: Maximum Temperature Departure is < -6.4°C
Kindly download MAUSAM APP for location specific forecast & warning, MEGHDOOT APP for Agromet advisory and DAMINI APP for Lightning Warning & visit state MC/RMC websites for district wise warning.