Subject: Wet Spell over Northwest India during 02nd to 04th; over East India on 03rd & 04th and over Northeast India 04th & 05th February, 2022.

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

- **Minimum temperatures** are below normal by 2-4°C over many parts of Haryana, West Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Maharashtra and East & North East India.
- **Cold Wave conditions** prevailed in isolated pockets over south West Madhya Pradesh, north Madhya Maharashtra, north Vidarbha and north Odisha.
- **Cold day to Severe Cold Day conditions** prevailed in isolated pockets over northern parts of East Uttar Pradesh and **cold day conditions** in isolated pockets over Bihar and West Uttar Pradesh.
- **Dense to Very Dense Fog** in some parts over East Uttar Pradesh and in isolated pockets over east Bihar, West Uttar Pradesh, Punjab, Haryana and southwest Rajasthan.

Weather Systems:

- A feeble Western Disturbance as a trough in middle tropospheric westerlies runs along Long.71°E to the north of Lat. 33°N. It is very likely to cause isolated rainfall/snowfall over Jammu-Kashmir-Ladakh on 31st January, 2022.
- An active Western Disturbance is **very likely to affect** Northwest India from 02nd February, 2022. An induced cyclonic circulation is very likely to form over West Rajasthan & neighbourhood on 03rd February, 2022. In addition, moisture feeding from Arabian Sea and Bay of Bengal to northwest India at lower & middle tropospheric levels is also very likely on 02nd & 03rd February, 2022. High moisture feeding from Bay of Bengal at lower tropospheric levels to East & adjoining northeast India **very likely** on 03rd & 04th February, 2022.
- Another Western Disturbance likely to affect Western Himalayan Region from 06th February, 2022.

Rainfall Forecast & Warnings:

- 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 hailstorm** likely over Jammu division, Himachal Pradesh on 02nd & 03rd February and over Uttarakhand on 03rd & 04th February, 2022.
Isolated light rainfall very likely over Punjab, Haryana & Chandigarh on 2\textsuperscript{nd}; Fairly widespread to widespread light/moderate rainfall very likely over Punjab, Haryana, Chandigarh, Delhi and Uttar Pradesh 03\textsuperscript{rd} & 04\textsuperscript{th} February with its peak intensity on 03\textsuperscript{rd} February, 2022.

- Due to confluence between lower levels westerlies associated Western Disturbance and lower level southeasterlies from the Bay of Bengal at lower tropospheric levels:
  - Scattered to fairly widespread light/moderate rainfall with thunderstorm/lightning likely over Bihar, Jharkhand, West Bengal & Sikkim and Odisha on 03\textsuperscript{rd} & 04\textsuperscript{th} with possibility of isolated hailstorm on Jharkhand and Odisha 04\textsuperscript{th} February. Isolated heavy rainfall also likely over Bihar and West Bengal & Sikkim on 04\textsuperscript{th} February.
  - Scattered to fairly widespread light/moderate rainfall with thunderstorm/lightning likely over northeast India 04\textsuperscript{th} & 05\textsuperscript{th} February, 2022.

**Cold Wave, Fog and Cold Day Warning:**

- No significant change in minimum temperatures very likely over most parts of Northwest India during next 2 days and rise by 3-5°C thereafter.
- Gradual rise in minimum temperatures by 2-3°C very likely over Central India during next 3 days and fall by 2-4°C thereafter.
- Gradual rise in minimum temperatures by 3-5°C very likely over most parts of Eastern India during next 5 days.
- Gradual rise in minimum temperatures by 2-3°C very likely over Gujarat during next 3 days and fall thereafter.
- No significant change in minimum temperatures very likely over most parts of Maharashtra during next 3 days and fall by 2-4°C thereafter.
- **Cold day conditions** in isolated pockets very likely over north Uttar Pradesh during next 24 hours and abate from tomorrow.
- **Dense to very dense Fog conditions** in isolated pockets in night/morning hours very likely over Terai belt of Uttar Pradesh during next 48 hours; dense fog in isolated pockets over Bihar during next 48 hours and over Himachal Pradesh, Uttarakhand, Punjab, Haryana during next 24 hours and over Odisha on 03\textsuperscript{rd} February.

_For more details refer:_
Impact expected and action suggested due to **Very Dense fog** in the night/morning hours very likely over Terai belt of Uttar Pradesh during next 48 hours; **dense fog** in isolated pockets over Bihar during next 48 hours and over Himachal Pradesh, Uttarakhand, Punjab, Haryana during next 24 hours and over Odisha on 03rd February.

**Impact expected:**

- **Transport and Aviation:**
  - May affect some airports, highways and railway routes in the areas of met-sub-division.
  - 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 in touch with airlines and Railway and State transport for schedule of your journey.

- **Power Sector:**
  - To keep ready Maintenance Team

- **Human Health:** To avoid outing until unless emergency and to cover the face
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.

---

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

<table>
<thead>
<tr>
<th>% Stations</th>
<th>Category</th>
<th>% Stations</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>76-100</td>
<td>Widespread (WS/Most Places)</td>
<td>26-50</td>
<td>Scattered (SCT/A Few Places)</td>
</tr>
<tr>
<td>51-75</td>
<td>Fairly Widespread (FWS/Many Places)</td>
<td>1-25</td>
<td>Isolated (ISOL)</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>
</table>

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