



# Western Disturbances to Bring Rain to Uttar Pradesh

## Why in News?

According to the [India Meteorological Department](#), Delhi, Punjab, Haryana, and parts of Uttar Pradesh are expected to receive light to moderate rain, thunderstorms, and hailstorms in the coming days with an intense spell of **snowfall in the western Himalayan region**.

## Key Points

- A fresh active **Western Disturbance** is projected to affect northwest India. The weather system is expected to have widespread impacts, with **diverse weather conditions** observed across multiple regions.
- The Western Disturbance is expected to cause significant changes in usual weather patterns, and communities are advised to stay prepared for these changes.
  - Authorities have been urged to gear up for any necessary measures to ensure public safety.

## Western Disturbances

- These are a series of **cyclonic storms that originate in the Mediterranean region, travel over 9,000 km to bring winter rains to northwest India**.
  - A Western Disturbance **collects moisture from the Mediterranean Sea, Black Sea, and Caspian Sea** and traverses over **Iran and Afghanistan** before hitting the **western Himalayas**.
- While the storm systems occur throughout the year, they travel to India mostly between **December and April because the trajectory of the subtropical westerly jet stream**, which transports them, shifts during the winter months to the rim of the Himalayas.
  - For the rest of the year, the jet stream travels from above the **Himalayas to the Tibetan Plateau and China**. Its trajectory changes as per the position of the Sun.
- **Significance for India:**
  - Western Disturbances are the **primary source of snowfall that replenishes the Himalayan glaciers** during winter.
    - These glaciers **feed major Himalayan rivers like the Ganga, Indus and Yamuna** as well as myriad mountain springs and rivulets.
  - These low-pressure storm systems **help farmers in India grow their rabi crop**.
- **Issues:**
  - The Western Disturbances are **not always the harbingers of good weather**. Sometimes WDs can cause **extreme weather events like floods, flash floods, landslides, dust storms, hail storms** and cold waves, destroying infrastructure and impacting life and livelihoods.

## India Meteorological Department

- IMD was **established in 1875**. It is the National Meteorological Service of the country and the principal government agency in all matters relating to meteorology and allied subjects.
  - It works as an **agency of the Ministry of Earth Sciences of the Government of India**.
- It is **headquartered in New Delhi**.

- IMD is also **one of the six Regional Specialized Meteorological Centres** of the World Meteorological Organization.

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