



State of the Climate Report 2020: IMD

Why in News

According to the **India Meteorological Department (IMD)**'s **State of the Climate Report**, the year **2020 was the eighth warmest since** India started keeping records in **1901**.

- The State of the Climate Report **looks at temperature and rainfall trends annually**.

Key Points

- **Eighth Warmest Year 2020:**

- **Average Temperature:**

- During the year, the annual average temperature in the country was **0.29 degree Celsius (°C) above normal** (29-year average from 1981-2010).
 - However, it was **much lower than 2016** (+0.71 degrees Celsius), which **remains the warmest ever year** the country has recorded since 1901.
 - Such temperature trends were reported **despite the cooling effect of La Nina**, a global weather pattern that prevailed in 2020 and is linked to substantially below normal temperatures in winter.
 - La Nina typically has a cooling effect on global temperatures, but this is now **offset by global warming due to greenhouse gas emissions**.
 - As a result, **La Nina years now are warmer than years with El Niño events of the past**.
 - El Nino and La Nina are the **extreme phases of the [El Niño and the Southern Oscillation \(ENSO\) cycle](#)**.
 - **ENSO** is a periodic fluctuation in sea surface temperature and the air pressure of the overlying atmosphere across the equatorial Pacific Ocean. It has a major influence on weather and climate patterns such as heavy rains, floods and drought.
 - **El Niño has a warming influence** on global temperatures, whilst **La Nina has the opposite effect**.

- **Comparison to Global Average Temperature:**

- India's nearly 0.3 degree rise was **less than the average global temperature rise of 1.2 degree** (January to October, as per the [World Meteorological Organisation's State of the Global Climate](#)).

- **Warmest Years over India:**

- The **eight warmest years** on record in order were: **2016** (+ 0.71 degree C) > **2009** (+0.55 degree C) > **2017** (+0.541 degree C) > **2010** (+0.539 degrees C) > **2015** (+0.42 degree C) > **2018** (+0.41 degree C) > **2019** (+0.36 degree C) > **2020** (+0.29 degree C).
 - The **past decade (2011-2020) was the warmest on record**.

- **Extreme Weather Events:**

- Extremely heavy rain, floods, **cold waves** and thunderstorms led to significant loss of lives and properties.
 - According to the report **“Preparing India for Extreme Climate Events” released by the Council on Energy, Environment and Water (CEEW)**, over 75% of districts in India are hotspots of extreme climate events.
- **Uttar Pradesh and Bihar reported the highest casualties** due to cold waves, **lightning** and thunder last year.

▪ Data on Tropical Storms:

- Globally, the **Atlantic Ocean experienced one of the most active years**, with over 30 tropical storms originating here.
- The **Indian Ocean** region - the **Arabian Sea** and the **Bay of Bengal, together reported five cyclones** - **Amphan, Nisarga, Gati, Nivar and Burevi**.
 - Of these, **Nisarga & Gati formed over Arabian Sea**, while the remaining 3 cyclones formed over the Bay of Bengal.

▪ Data on Rainfall:

- The annual rainfall over the country in 2020 was **109% of the Long Period Average (LPA)** calculated for the period of 1961-2010.

India Meteorological Department

- IMD was **established in 1875**.
- It is an agency of the **Ministry of Earth Sciences** of the Government of India.
- It is the principal agency **responsible for** meteorological observations, weather forecasting and seismology.

Source: IE

PDF Reference URL: <https://www.drishtiias.com/printpdf/state-of-the-climate-report-2020-imd>