



## Lightning Killed Many | Chhattisgarh | 25 Sep 2024

### Why in News?

Recently, a devastating lightning strike in Chhattisgarh's Rajnandgaon claimed the lives of several people, including children, during heavy rainfall.

### Key Points

- **Lightening in India:**
  - Lightning is a powerful and visible electrical phenomenon that takes place when there is a buildup of electrical charges within clouds and between clouds and the ground.
    - The discharge of this electrical energy results in a brilliant flash of light and a rapid expansion of air, creating the characteristic thunder that accompanies lightning.
    - Cloud-to-ground (CG) lightning is dangerous because it can electrocute people due to its high electric voltage and current.
  - India ranks among the five countries worldwide with an early warning system for lightning.
    - The system provides forecasts ranging from five days to as close as three hours before the occurrence of lightning.
- **Lightning Fatalities: Statistics and Trends**
  - [National Crime Records Bureau \(NCRB\) Data](#): In 2021, lightning accounted for 2,880 deaths, comprising 40% of all accidental deaths caused by "forces of nature."
    - The trend indicates an increase in lightning-related fatalities compared to other natural events.
- **Geographical Distribution in India:**
  - Lightning frequency is highest in northeastern states and **West Bengal, Sikkim, Jharkhand, Odisha, and Bihar**.
    - However, the number of lightning-related deaths is higher in central Indian states like **Madhya Pradesh, Maharashtra, Chhattisgarh, and Odisha**.
  - Bihar is one of the most vulnerable states to lightning strikes, with a significant number of deaths reported annually.
    - In 2023, till July 6, Bihar recorded **107 deaths** due to lightning.
- **Union Government's View About Lightning:**
  - The Union government opposes declaring lightning a [natural disaster](#). The government believes that education and awareness can help prevent lightning-related deaths effectively.

### Possible Factors Behind the Increasing Trend of Lightning Strikes

- **Climate Change:** [Global warming](#) and [climate change](#) could potentially influence atmospheric conditions, leading to an increase in thunderstorms and lightning activity.
  - As the planet's temperature rises, there may be changes in the distribution of moisture, instability, and convective processes that could favor more frequent lightning occurrences.
  - Kalbaisakhi is a localised thunderstorm occurrence that is accompanied by lightning, typically observed during the pre-monsoon season in the Indian subcontinent.
- **Urbanization:** The expansion of urban areas can create what is known as the "[urban heat island effect](#)."
  - Cities tend to be warmer than surrounding rural areas due to increased human activity, energy consumption, and impervious surfaces.

- These localized heat islands may lead to the formation of more thunderstorms and, consequently, an increase in lightning strikes.
- **Land Use Changes:** [Deforestation](#), changes in agricultural practices, and alterations of natural landscapes may disrupt local atmospheric conditions.
  - Such changes might contribute to the development of thunderstorms and, consequently, more lightning.
- **Pollution and Aerosols:** Air pollution, including aerosols and particulate matter, can affect cloud formation and electrical activity within storms.
  - [Anthropogenic emissions](#) might influence the frequency and intensity of thunderstorms, potentially leading to more lightning strikes.

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