

GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 1632**  
ANSWERED ON 13/03/2025

**EXTREME WEATHER EVENTS**

1632. SHRI PRAMOD TIWARI:

Will the Minister of **EARTH SCIENCES** be pleased to state:

- (a) whether there has been increased occurrences of extreme weather events in recent years;
- (b) if so, the details thereof and the reasons therefor;
- (c) whether any heat action plan has been started; and
- (d) if so, the main features thereof?

**ANSWER**  
THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR  
MINISTRY OF SCIENCE AND TECHNOLOGY  
AND EARTH SCIENCES  
(DR. JITENDRA SINGH)

- (a)-(b) Yes. Due to climate change, the annual temperature is increasing globally, and the impact is reflected in irregular weather patterns. This warming leads to more frequent and severe occurrences of extreme weather events like heavy rainfall, heatwaves, intense cyclones, etc. In general, there is an increasing trend in the frequency of heatwaves in the heat core zone covering northern plains and central India, as per the analysis done by the India Meteorological Department (IMD). Associated with climate change due to global warming, temporal and spatial diversity in severe weather, including extremely heavy rainfall, have been observed in the country in recent years.

The Ministry of Earth Sciences (MoES) published a Climate Change report titled "Assessment of Climate Change over the Indian Region". The report has assessed the impact of climate change across the country, covering all aspects of regional climate change, including the climatic extremes across India. A web-based online Atlas, namely "Climate Hazard & Vulnerability Atlas of India," is available for the most hazardous meteorological events, which cause extensive damages and economic, human, and animal losses. The India Meteorological Department regularly publishes the country's monthly and annual climate summaries. In addition, IMD also publishes a publication on "Disastrous weather events" every year. The IMD published a monograph on heatwaves that provides comprehensive information on heat waves over India. Addressing the root causes of global climate change is essential to mitigate the impact of extreme weather events.

- (c)-(d) Yes. The India Meteorological Department, in coordination with various research centers across the country, has taken multiple steps to improve monitoring and early warning systems, which helped minimize loss of life and property during extreme weather events, including heat waves. These include:

- Heat Action Plans (HAPs) in 23 States that are prone to heat wave conditions jointly implemented by the National Disaster Management Authority (NDMA) in collaboration with the State Governments
- Issuing seasonal and monthly outlooks, followed by extended-range forecasts of temperature and heatwave conditions. The early warning and forecast information are also disseminated through various social media for timely public outreach.
- District-wise heatwave vulnerability Atlas over India to help State Government authorities and disaster management agencies in planning
- The hot weather hazard analysis map over India that includes daily temperature, winds, and humidity condition
- A series of National and State-level heatwave preparedness meetings are conducted much before the start of the summer season, with regular review meetings from time to time during the season.

Further, the India Meteorological Department is making efforts to provide weather information to the public through various platforms:

- Mass Media: Radio/TV, News Paper network (AM, FM, Community Radio, Private TV), Prasar Bharati and private broadcasters
- Weekly & Daily Weather Video
- Internet (email), FTP
- Public Website (mausam.imd.gov.in)
- IMD Apps: Mausam/Meghdoot/DAMIN/RAIN ALARM
- Social Media: Facebook, X, Instagram, BLOG
  - i. X: <https://twitter.com/Indiametdept>
  - ii. Facebook: <https://www.facebook.com/India.Meteorological.Department/>
  - iii. Blog: <https://imdweather1875.wordpress.com/>
  - iv. Instagram: [https://www.instagram.com/mausam\\_nwfc](https://www.instagram.com/mausam_nwfc)
  - v. Youtube: [https://www.youtube.com/channel/UC\\_qxTReoq07UVARm87CuyQw](https://www.youtube.com/channel/UC_qxTReoq07UVARm87CuyQw)

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