GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 4374
TO BE ANSWERED ON WEDNESDAY, 20TH AUGUST, 2025

RISING INCIDENTS OF EXTREME HEAT

4374. SHRI GAURAV GOGOI:

Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether the Government has taken note of the rising frequency and intensity of extreme heat events across the country;
(b) if so, the steps taken/being taken by the Government to strengthen national and State-level heat action plans and improve early warning systems;
(c) whether inter-ministerial coordination is being undertaken to address the impact of extreme heat on public health, livelihoods and infrastructure and if so, the details thereof;
(d) the measures being implemented to support climate adaptation at the local level, particularly in vulnerable urban and rural areas; and
(e) whether the Government proposes to allocate dedicated resources or launch new schemes to build long-term heat resilience and if so, the details thereof?

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

(a)-(b) Yes. It has been observed that due to global warming, there is a rising trend in the frequency and intensity of heatwaves in various parts of the globe, including India. The trend in heatwave conditions across the country has been analysed by the India Meteorological Department (IMD) based on datasets from 1961 to 2020. In general, there is an increasing trend in the frequency of heatwaves in the heat core zone covering northern plains and central India.

The India Meteorological Department, in collaboration with various research centers across the country, has undertaken several initiatives to enhance monitoring and early warning of severe weather events. These efforts have significantly contributed to minimizing the loss of life and property during extreme weather events, including heat waves.

Some of these initiatives related to the extreme temperatures and heat waves are listed below.

- Heat Action Plans (HAPs) in 23 States that are prone to heatwave conditions were 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 platforms 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 of India incorporates daily data on temperature, wind patterns, and humidity levels.
- 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.

The weather information is provided to all the stakeholders, including the ministries of the Union Government, State Governments, and local Government bodies. The Common Alert Protocol (CAP), developed by the NDMA, is also being implemented to disseminate warnings and timely alerts by the IMD.

(c) Yes. Inter-ministerial coordination meetings have been organised by various Central Government Authorities such as NDMA, Health Departments, Labour Departments, Indian Railways, Transport Department, Forest Departments, etc., regularly. IMD regularly participates in these meetings and shares the heatwave status, forecasting, and warnings from time to time. Regular meetings are also conducted by NDMA with different stakeholders, disseminating the forecast provided by IMD for anticipatory and on-ground actions.

(d) The Ministry of Earth Sciences (MoES) has 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, including urban and rural areas, and provides a comprehensive overview of regional climate change. It covers all major aspects of regional climate change, including the climatic extremes across India. The report is available at https://link.springer.com/book/10.1007/978-981-15-4327-2.

MoES institutions use the state-of-the-art dissemination system to share weather and climate information and early warnings with disaster management authorities and the general public through various platforms/channels for necessary preparedness and to support adaptation measures across the country, including coastal States. It includes social media, Common Alert Protocol, Mobile Apps, WhatsApp, and APIs. As a result, the vulnerable population in rural and coastal areas gets evacuated on time to safe shelters, thereby reducing the human death toll to a bare minimum.

IMD utilizes a seamless forecasting system at the seasonal to nowcast scale and implements well-defined Standard Operating Procedures (SOPs) for monitoring & forecasting weather hazards. IMD in coordination with other centres in the MoES, has developed an end-to-end GIS-based Decision Support System (DSS), which has been working as the front end of the early warning systems for the timely detection and monitoring of all-weather hazards across the country. It is supported with specific severe weather modules to provide timely impact-based early warnings for extreme weather events like cyclones, heavy rainfall, etc., which devastate human lives, livelihoods and infrastructure.

IMD has also brought out a web-based online "Climate Hazard & Vulnerability Atlas of India" prepared for the thirteen most hazardous meteorological events, which cause extensive damage and economic, human, and animal losses. The same can be accessed at https://imdpune.gov.in/hazardatlas/abouthazard.html. This atlas will help State Government authorities and disaster management agencies identify the hotspots, including vulnerable urban and rural areas, and plan and take appropriate action to tackle extreme weather events. This product is helpful in building Climate Change resilient infrastructure.

(e) The State disaster management authorities have their resources available through the State Disaster Response Fund (SDRF) and State Disaster Mitigation Fund (SDMF) to support it. If there is a request from the States for financial assistance, the Central Government considers it in accordance with the relevant guidelines for the National Disaster Response Fund (NDRF) and National Disaster Mitigation Fund (NDMF).

Currently, the notified list of disasters eligible for National Disaster Response Fund (NDRF)/State Disaster Response Fund (SDRF) assistance includes 12 disasters, namely cyclones, droughts, earthquakes, fires, floods, tsunamis, hailstorms, landslides, avalanches, cloud burst, pest attack, and frost & cold wave. The issue of inclusion of more calamities in the existing notified list of calamities was considered by the 15th Finance Commission. The Commission, in para 8.143 of its report, had observed that the list of notified disasters eligible for funding from the State Disaster Response Mitigation Fund (SDRMF) and National Disaster Response Mitigation Fund (NDRMF) covers the needs of the State to a large extent and thus did not find much merit in the request to expand its scope.

However, a State Government can use up to 10% of the annual fund allocation of the SDRF, subject to the fulfillment of certain prescribed conditions and norms, to provide immediate relief to the victims of natural disasters that they consider to be 'disasters' within the local context in the State and which are not included in the centrally notified list of natural disasters.

Addressing the root causes of global climate change is essential to mitigating the impact of heat waves. This involves international cooperation to reduce carbon emissions, transition to renewable energy sources and implement sustainable practices across all sectors. Towards this, India has taken a proactive role in fostering international collaborations through initiatives such as the International Solar Alliance and the Coalition for Disaster-Resilient Infrastructure. India is committed to pursuing low-carbon strategies for development and is actively pursuing them, as per national circumstances.

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