

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 2731
TO BE ANSWERED ON WEDNESDAY, 7THAUGUST, 2024**

RISING FREQUENCY AND INTENSITY OF HEAT WAVES

2731. SHRI ARVIND GANPAT SAWANT:
SHRI SANJAY HARIBHAU JADHAV:
SHRI SHRIRANG APPA CHANDU BARNE:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether there is any proposal to address the rising frequency and intensity of heat waves in the country;
- (b) if so, the details thereof and if not, the reasons therefor;
- (c) whether the Government has assessed the gravity of disaster due to the heat waves, if so, the details thereof;
- (d) whether there is any proposal to notify the disaster caused by heat waves as the disaster entitled for sufficient funding for emergency response, relief and rehabilitation efforts from both National Disaster Response Fund (NDRF) and State Disaster Response Fund (SDRF), if so, the details thereof;
- (e) whether the Government proposes to equip the Disaster Management Authorities to address the challenges caused due to heat waves; and
- (f) if so, the details of action taken thereon?

ANSWER

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

- (a) Yes.
- (b) Due to climate change, annual temperature is increasing globally, and the impact of the same is reflected in the rising 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 rising frequency and intensity of heat waves are clear indicators of the broader issue of global climate change.

Addressing the root causes of global climate change is essential to mitigating the impact of heatwaves. 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.

- (c) Yes. Abnormal temperature events can impose severe physiological stress on the human body as the body operates best within a fairly normal temperature range. There is a marked relationship between human mortality and thermal stress. During unusually hot episodes, deaths from different causes can rise significantly with the elderly at greater risk than others.

Four Common heat health impacts resulting from excessive exposure to heat waves include dehydration, cramps, exhaustion, and heatstroke. It is also learnt that there is a sharp rise in number of cases of acute gastroenteritis and food poisoning due to spoilage of food and reduction of its shelf life due to high temperatures. There is also a rise in number of cases of anxiety, palpitations, nervousness, and behavioural change linked to extreme temperature rise. The occupational profile of most of the victims was ascertained as agricultural labourers, coastal community dwellers, and people living below poverty line (BPL) category with mostly outdoor occupations.

- (d) 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.

- (e) Yes.
- (f) India Meteorological Department, in coordination with various research centers across the country, has been 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:
- i. Issuing seasonal and monthly outlooks, followed by extended-range forecasts of temperature and heat wave conditions. The early warning and forecast information are also disseminated through various social media for timely public outreach.
 - ii. District-wise heatwave vulnerability Atlas over India to help State Government authorities and disaster management agencies in planning

- iii. The hot weather hazard analysis map over India that includes daily temperature, winds, and humidity condition
- iv. Heat Action Plans (HAPs) in 23 States that are prone to heatwave conditions jointly implemented by the National Disaster Management Authority (NDMA) in collaboration with the State Governments

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.
