

GOVERNMENT OF INDIA  
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

**RAJYA SABHA**  
**UNSTARRED QUESTION NO. 2120**  
**TO BE ANSWERED ON 04.08.2022**

**Steps taken to reduce wet-bulb temperature**

2120 SHRI VIKRAMJIT SINGH SAHNEY:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether Government has taken any steps to decrease the Wet-Bulb temperature;
- (b) if so, the details thereof;
- (c) if not, whether Government proposes to set up a captive Research and Development wing under the Ministry to find solutions to increasing high heat index and Wet-Bulb temperature in view of the large population being affected by high heat index and Wet-Bulb temperature, especially in Delhi/NCR; and
- (d) if so, the details thereof and if not, the reasons therefor?

**ANSWER**

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE  
(SHRI ASHWINI KUMAR CHOUBEY)

(a) and (b) Wet-Bulb temperature is the temperature indicated by a thermometer whose bulb is wrapped in wet cloth and exposed to air flow. It measures the lowest temperature of air that can be obtained by evaporation of water alone into air at constant pressure. Wet-bulb temperature, in contrast to the usual dry bulb measurement of temperature, is a measure of the combined effect of heat, moisture in the air and rate of evaporation due to wind flow. Wet bulb as well as dry bulb temperatures cannot be controlled.

(c) and (d) High humidity together with high air temperatures are the reasons for high heat index and wet bulb temperatures. The existing formula for Heat Index considers temperature as well as humidity based on the United States scenario and was found to be unrealistic on many occasions in tropical countries like India. Hence, the India Meteorological Department (IMD) has made efforts to develop a Heat Index suited to Indian conditions.

IMD regularly issues early warnings for heatwaves. Appreciable rise in maximum temperatures as well as heatwaves are found in the months of April, May and June in the country. IMD issues Seasonal Outlook for temperatures for the months of April, May and June in the last week of March for planning purposes. This outlook also brings out the expected scenario of heatwaves during the period. The seasonal outlook is followed by an Extended Range Outlook issued every Thursday with a forecast for the next two weeks. In addition, the forecast and the colour coded warnings for severe weather including heatwave warning over Delhi is issued on daily basis for the next five days with the outlook for another two days.

Further, as an adaptive measure, IMD in collaboration with local health departments has started a heat action plan in many parts of the country to forewarn about the heatwaves and advising action to be taken during such occasions. The heat action plan is a comprehensive early warning system and preparedness plan for extreme heat events. National Disaster Management Authority and IMD are working with 23 States prone to high temperatures with respect to the heat action plan.

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