Union Minister Dr Jitendra Singh says, there has been a rise in Maximum and Minimum temperature over Delhi during Pre monsoon season during last three years

Urbanization is one of main causes that can influence the changes in temperature pattern within the city and form heat islands: Dr Jitendra Singh

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Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, Dr Jitendra Singh said, the steep rise in pre-monsoon surface air temperature, land surface temperature and relative humidity in Delhi/NCR off late is a cause of concern.

In reply to a question in the Rajya today, Dr Jitendra Singh in a statement laid on the table of the House said, there has been a rise in Maximum and Minimum temperature over Delhi during Pre monsoon season during last three years whereas there is no such increase in Relative Humidity.

The details of average values of maximum and minimum temperature and relative humidity (RH) over Delhi during the season for the last three years with respect to Safdarjung station are given below:

Year	Average Pre monsoon Max temp (˚C)	Average Pre monsoon Min Temp (˚C)	Average Pre monsoon RH 0300 UTC (%)	Average Pre monsoon RH 1200 UTC (%)
2020	34.4	20.7043	68.4	43.5
2021	36.0	21.35484	61.4	37
2022	37.9	21.96667	60	31

Several studies have been carried out on the pre-monsoon temperature pattern of Delhi and the likely causes. Urbanization is one of main causes that can influence the changes in temperature pattern within the city and form heat islands. This is reflected by the trends of difference in annual mean minimum temperature of the two stations of which one (Safdarjung) is within the city and the other is in the outer periphery in Delhi NCR (Palam).

A recent article published in Nature, describes the reason for India’s prolonged spell of heat wave experienced

during pre-monsoon season 2022. The causes were mentioned as the absence of rainfall and convective activities for a long period, absence of Western Disturbances and the subsidence of warm and dry air in lower and middle tropospheic levels over North Arabian sea and adjoining South Pakistan and Gujarat.

It is mentioned that, Heat wave is one of the severe weather phenomena for which IMD issues early warning. In the country, appreciable rise in maximum temperatures as well as heat waves are found to be more in the months of April, May & June. As an initiative IMD is issuing Seasonal Outlook for temperatures for the months of April, May & June in the last week of March for planning purpose. This outlook brings out the expected scenario of heat waves also during the period. The seasonal outlook is followed by Extended Range Outlook issued on every Thursday for next two weeks. In addition to this, the forecast and the colour coded warnings for severe weather including heat wave warning over Delhi is issued on daily basis for next five days with outlook for another two days.

IMD has started Forecast Demonstration Project (FDP) on heat waves for the hot weather season under which a detailed daily report including realized data of heat waves, weather systems leading to the occurrence of heat waves, diagnosis on the basis of Numerical Model outputs and forecast and warnings for five days is prepared. This bulletin is disseminated to all concerned including health departments. IMD started issuing an additional bulletin on heat wave in the morning (8 a.m.) valid for 24 hours for supporting the planning of activities for the day and this bulletin is also disseminated to all concerned. All these bulletins are posted to IMD website also, on a special page created for Heatwaves.

As an adaptive measure, IMD in collaboration with local health departments have started heat action plan in many parts of the country to forewarn about the heat waves and also advising action to be taken during such occasions. NDMA and IMD are working with 23 states prone to high temperatures leading to heat-wave conditions to develop heat action plans.

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