

1. **Heatwave:** The heatwave conditions signify a certain amount of rising of temperature at a given place with respect to normal climatological value. In India, heatwave (HW) conditions are generally experienced during the period from March to July. Annual Disaster Weather Reports published by India Meteorological Department show records of the heatwave cases over India that caused hazards in terms of human death. Disaster data shows that the damages and casualties associated with HWs are observed during the months of May to July. Heatwave is an emerging public-health problem. Extreme heat can lead to minor illnesses, such as heat rash, heat edema, heat cramps, and tetany, and serious illnesses such as heat syncope, heat exhaustion, and heatstroke. Heatstroke is the most severe form of heat-related illness.

The criteria adopted by IMD to define Heat Wave is given below:

Heatwave is considered if the maximum temperature of a station reaches at least 40°C or more for Plains and at least 30°C or more for Hilly regions.

a) Based on Departure from Normal

Heatwave: Departure from normal is 4.5°C to 6.4°C

Severe Heatwave: Departure from normal is >6.4°C

b) Based on Actual Maximum Temperature

Heatwave: When the actual maximum temperature $\geq 45^\circ\text{C}$

Severe Heatwave: When the actual maximum temperature $\geq 47^\circ\text{C}$

c) Criteria for describing Heatwave for coastal stations

When maximum temperature departure is 4.5°C or more from normal, Heatwave may be described, provided the actual maximum temperature is 37°C or more.

For each of four months and annual scale, there are maps showing the total number of heatwave days that caused casualties to the humans. In addition, the Normalized Vulnerability Index is being calculated and presented for each month and annual for each district as per the formula mentioned in equation 1.