Heat waves in India

(01 January, 2022)

Definition of Heat Waves

- A Heatwave is a period of **abnormally high temperatures**, more than the normal maximum temperature that occurs during the summer season in the **North-Western parts of India**.
- Heat Waves typically occur **between March and June**, and **in some rare cases even extend till July**.

Criteria for Heat waves

The Indian Meteorological Department (IMD) has given the following criteria for Heat Waves:

- Heat Waves need not be considered till the maximum temperature of a station reaches at least **40°C for Plains and at least 30°C for Hilly regions.**
- When the normal maximum temperature of a station is **less than or equal to 40°C**:

1. Heatwave Departure from normal is 5°C to 6°C
2. Severe Heatwave Departure from normal is 7°C or more.

- When normal maximum temperature of a station is **more than 40°C**:

1. Heat Wave Departure from normal is 4°C to 5°C
2. Severe Heatwave Departure from normal is 6°C or more

- When **actual maximum temperature remains 45°C or more** irrespective of normal maximum temperature, heat waves should be declared.

How long can a heatwave spell last?

- A heatwave spell generally lasts for **a minimum of four days**.
- On some occasions, it can extend up to **seven or ten days**.
- The longest recorded heatwave spell, in recent years, was between 18 – 31 May 2015. This spell had severely affected parts of West Bengal along with Odisha, Andhra Pradesh, and Telangana.
- A similar spell in 2014 was reported during June 2 – June 11.

Areas of Heat waves in India

- Heatwaves are common over the **Core Heatwave Zone (CHZ)** — Rajasthan, Punjab, Haryana, Chandigarh, Delhi, West Madhya Pradesh, Uttar Pradesh, Chhattisgarh, Orissa, Vidarbha in Maharashtra, parts of Gangetic West Bengal, Coastal Andhra Pradesh, and Telangana, as categorised by India Meteorological Department.
- Several recent studies indicate that CHZ experience **more than six heatwave days per year during these four months**.
- Many places in the northwest and cities along with the southeastern coast report eight heatwave days per season.
- However, the regions in the extreme north, northeast, and southwestern India is lesser prone to heatwaves.

Impact of Heat waves

- Dehydration, heat cramps, heat exhaustion, and/or heat stroke.
- It also causes heat cramps, fatigue, weakness, dizziness, headache, nausea, vomiting, muscle cramps, and sweating.
- The extreme temperatures and resultant atmospheric conditions adversely affect people living in these regions as they cause physiological stress, sometimes resulting in death.
- Older people and people with chronic illnesses such as heart disease, respiratory disease, and diabetes are more susceptible to heatstroke.
- The condition also prevents clouds from forming, allowing for more radiation from the sun to hit the ground.
- The trapping of heat can also damage crops, dry out vegetation and result in droughts.
- During blackouts and power-related issues, Houses without air conditioners experience an unbearable rise in temperature of their home which can lead to sudden deaths.

How to help someone suffering from the heat?

- Move the person to a cool place under the shade.
- Give water or a rehydrating drink (if the person is still conscious).
- Fan the person.
- Consult a doctor if symptoms get worse or are long-lasting or the person is unconscious.
- Do not give alcohol, caffeine, or aerated drink.
- Cool the person by putting a cool wet cloth on his/her face/body.
- Loosen clothes for better ventilation.

Solutions for Heat waves in India

- Emergency and Public cooling shelters, portable ACs enabled public shelters, etc.
- Afforestation can cool a neighborhood by a few degrees during the hottest periods.
- Use lighter shade in public buildings so that it absorbs less heat.
- Smarter grids and new forecasting tools could help electric utilities prepare for heat waves in the case of Blackouts.