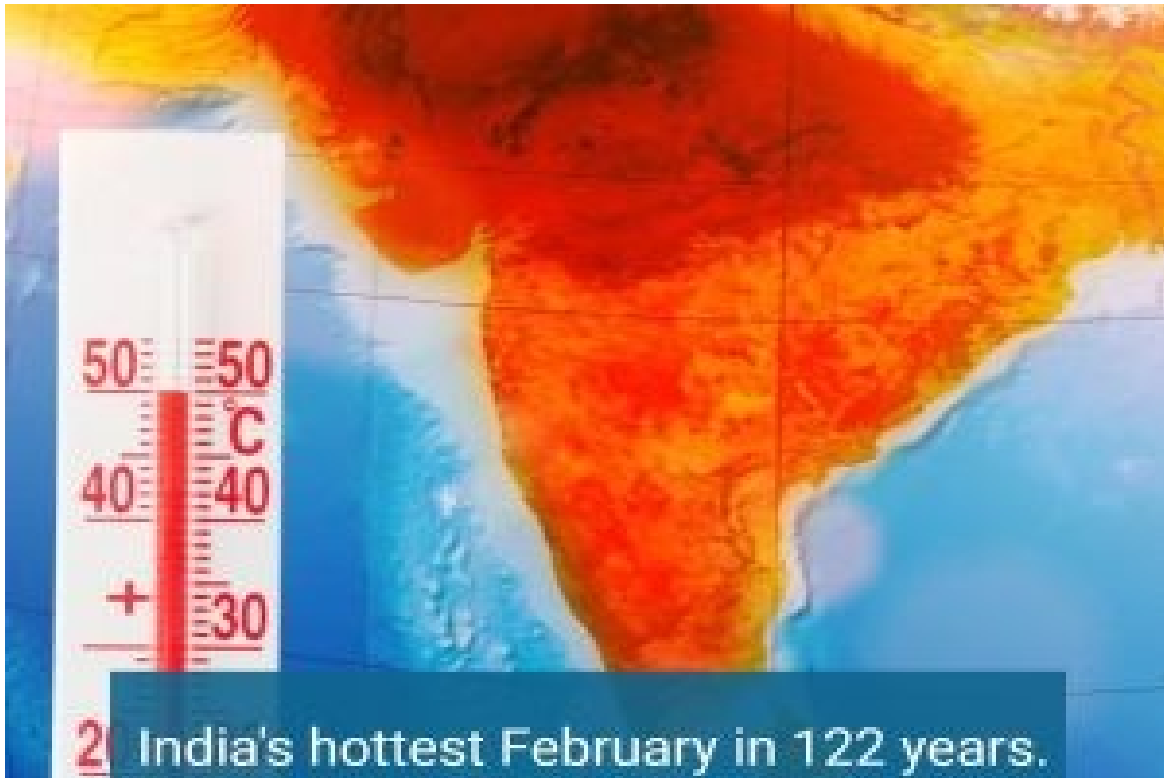


3. Heatwaves in India: A Serious Concern

Prelims Syllabus: Environment

Mains Syllabus: GS-III Environment & Biodiversity | Climatic Change Conservation, Environmental Pollution & Degradation, Eia



Why in News?

- Heat waves have become a major concern for India this year. The scorching summer heat has started prematurely, as per the recent IMD reports.
- If the record temperatures of the recent past are any indication, the heat wave is likely to become more intense.
- Rising temperatures lead to several health problems, from dehydration and heat exhaustion to more severe conditions like heatstroke. They also affect the economy and the environment.

What is Heat wave?

- A heatwave is a prolonged period of abnormally hot weather.
- Heatwaves usually last for several days or weeks and can occur in both dry and humid climates.
- They are characterized by temperatures that are significantly higher than the average for a particular region during that time of year.

- This is because climate change is causing a rise in global temperatures.
- As the planet heats up, it leads to more extreme weather events, such as heat waves. Its geography makes India particularly vulnerable to these events.

Heatwaves in India

- In India Heat waves typically occur from March to June, and in some rare cases, even extend till July.
- On an average, five-six heat wave events occur every year over the northern parts of the country.
- Single events can last weeks, occur consecutively, and can impact large population.
- Its geography makes India particularly vulnerable to these events.
- Some of the hottest summers on record in recent years that India has experienced
- In May 2016, Phalodi in Rajasthan registered 51 degrees Celsius, the highest temperature ever recorded in the country.
- In 2021, India saw its hottest day on May 22, with the temperature touching 48 degrees Celsius in Barmer, also in Rajasthan.
- In 2022, Jaipur experienced a severe heatwave. Rajasthan's capital recorded 45 degrees Celsius in April a record for the city for the month.
- Delhi, Agra, Pilani and Rohtak are among the well-known hot cities in India, where temperatures, of late, have gone up to 43 degrees Celsius in early summer

Link: [Climate change and Heat waves](#)

- **Rising heat waves:** Climate change is directly linked to the increase in the frequency, intensity, and duration of heatwaves around the world.
- **More severe and more frequent:** As the Earth's climate continues to warm, heatwaves are becoming more severe and occurring more frequently.
- **Global warming:** This is because global warming is causing changes in the atmosphere, such as increased greenhouse gas concentrations, which trap heat and cause temperatures to rise.
- **For instance:** Climate change is also causing heatwaves to last longer. A study published in the journal Environmental Research Letters found that heatwaves are lasting an average of 2.5 days longer than they did in the middle of the 20th century.

The Socio-economic impact of heat waves

- **Impact on Health:** Heat-related illnesses, such as heat exhaustion and heatstroke, are becoming more common, particularly among vulnerable groups such as the elderly, children, and outdoor workers.
- In addition, heat waves can exacerbate existing health problems, such as respiratory and cardiovascular diseases.

Impact on the environment

- One of the biggest problems is the depletion of water resources:
- Water sources are drying up as temperatures rise, leading to crises in many parts of the country.
- As people try to keep cool, they use more air conditioning, increasing electricity use. This leads to an increase in the use of fossil fuels, which significantly contributes to air pollution.

Impact on agriculture:

- Impact on environment in turn, leads to agricultural problems, with crops failing and farmers struggling to make a living.
- Given that around 40 per cent of India's population is engaged in agriculture, this is a significant concern.
- Reports are already coming from Punjab and Western Uttar Pradesh that the early heatwave has affected the growth of wheat crops and is expected to negatively affect the crop to the tune of 20 per cent.

Impact on growth:

- The healthcare costs associated with heat-related illnesses can be significant, particularly for vulnerable groups who may not have access to affordable healthcare.
- In addition, heat waves can lead to a decrease in worker productivity, which can impact economic growth.

What can be done to deal with such problems?

- **Increase public awareness:** People need to be educated about the impact of rising temperatures on their health, the environment, and the economy. This can be done through public campaigns, schools, and the media.

- **Increase the use of renewable energy:** India has already made significant progress in this area. However, much remains to be done. The government could incentivise individuals and businesses to invest in renewable energy, such as solar panels. This would help reduce the impact of rising temperatures, create new jobs, and stimulate economic growth.
- **Improving water management:** This could include introducing more efficient irrigation systems, better rainwater harvesting, and using recycled water for non-potable purposes. This would help to conserve water resources and reduce the impact of rising temperatures on agriculture.
- **Investing in infrastructure that can cope with extreme temperatures:** This could include the construction of roads and buildings that are designed to withstand high temperatures, as well as the development of more efficient cooling systems that use less energy.

