# Sansad TV Perspective: Heat Waves and Climate Change

In the series Sansad TV Perspective, we bring you an analysis of the discussion featured on the insightful programme 'Perspective' on Sansad TV, on various important topics affecting India and also the world. This analysis will help you immensely for the IAS exam, especially the mains exam, where a well-rounded understanding of topics is a prerequisite for writing answers that fetch good marks.

In this article, we feature the discussion on the topic: Heat Waves and Climate Change

Video link: https://youtu.be/9fHI9mpO0Gw

**Anchor: Teena Jha**

**Participants:**

1. Dr. Mrutyunjay Mohapatra, Director General, India Meteorological Department, Government of India
2. Dr. Roxy Mathew Koll, Climate Scientist, Centre for Climate Change Research, IITM
3. Dr. Vibha Dhawan, Director General, TERI

**Context:** The emerging threats of climate change and heatwaves have resulted in the bitter consequences of significantly high temperatures recorded in various parts of India.

**An overview of the situation:**

- Several cities of India have recorded the highest temperatures nearing 50 ℃.
- The IMD (India Meteorological Department) had declared April 2022 as the hottest month in terms of day temperatures in weather data going back to 1901 in northwest and central India.
- The IMD has also issued an orange alert for northwest India.
- This was the fourth hottest period observed in the month of April.
- The intense heat has increased the difficulties for the workers who find it difficult to continue their work under the scorching heat.
- Increased power cuts have been reported in many states and worsened the situation.
- In the midst of the crisis, the central government has requested the state and union territories to review their health facility preparedness.
- India has banned wheat exports without government approval after the heatwave conditions have hit the production of wheat resulting in supply shortages.

**What is a heatwave?**

- A heatwave is qualitatively a condition of air temperature which becomes fatal to the human body under exposure.
- It can be quantitatively defined as the temperature recorded over a region which depicts a departure from normal.
- Certain countries define it in terms of the heat index based on temperature and humidity or based on extreme percentile of the temperatures.
- The criterion for declaring heatwave conditions involves a maximum temperature of an area reaching 40°C or more for plains and at least 30°C or more for hilly regions.
- In the coastal stations, heatwave conditions prevail when the temperature is recorded at 37°C or more.

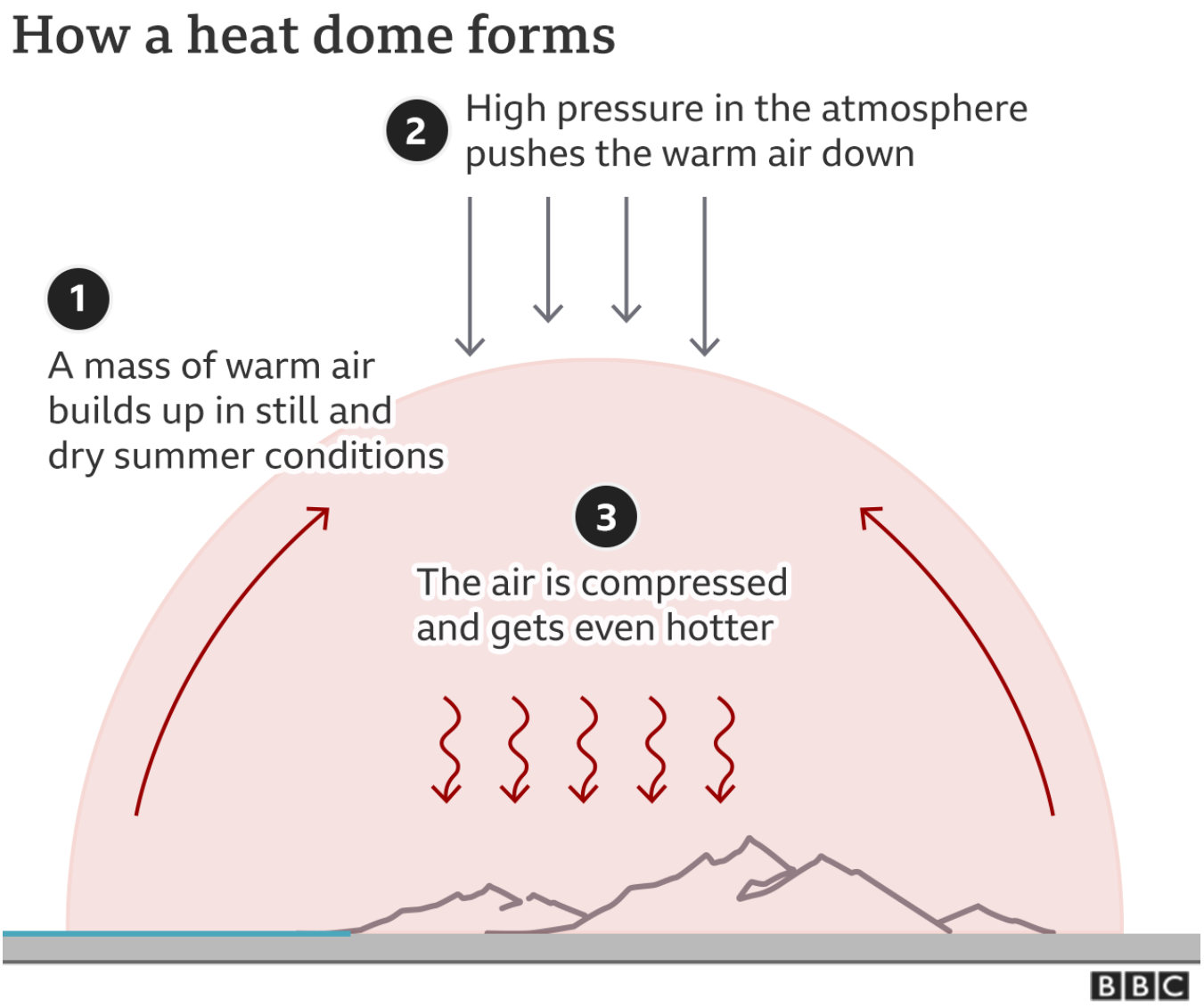


Image source: BBC

**Period of heatwaves in India:**

- It is usually observed from March to June and in some rare cases, it extends till July.
- The peak month of the heatwave in India is May.

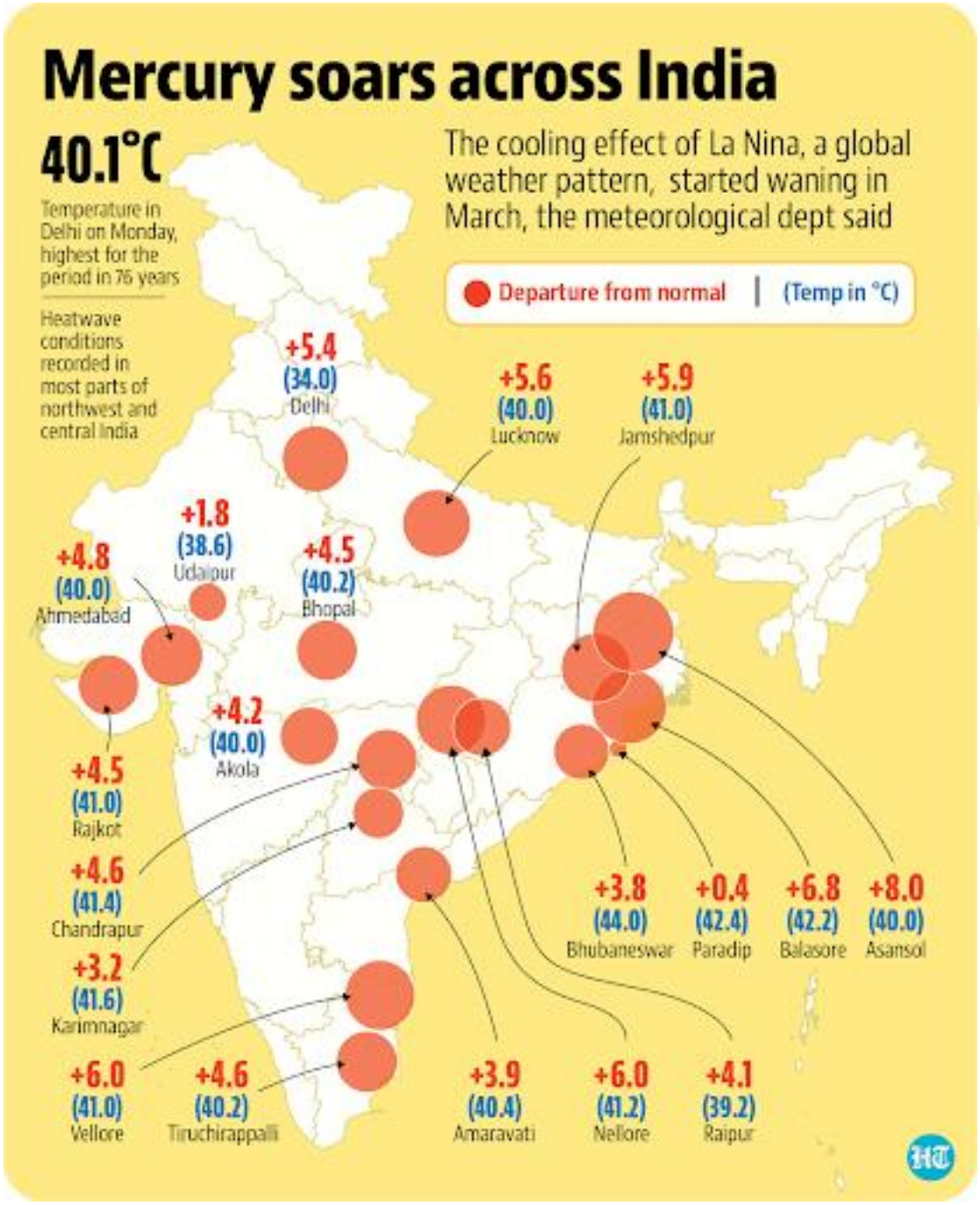

Image source: www.hindustantimes.com

**Monitoring and Prediction of Heatwaves in India:**

- The IMD maintains a network of surface observatories covering the entire country to measure various meteorological parameters like temperature, relative humidity, pressure, wind speed and direction.
- Based on daily maximum temperature station data, climatology of maximum temperature is prepared for the period 1981-2010 to find out the normal maximum temperature of the day for a particular station.
- The heatwave conditions are predicted by the IMD based on synoptic analysis of various meteorological parameters and from the consensus guidance from various regional and global numerical models that operate under the Ministry of Earth Sciences and other international models available under bilateral multi-institutional arrangements.

**Management of Heat Wave Conditions:**

- The IMD issues specific heatwave warnings at meteorological sub-division & district levels to different users like the Ministry of Home Affairs, NDMA, State Disaster Management Authority, health departments, Indian Railways, Road Transport and Media and other stakeholders.

**Favourable Conditions for Heat Waves:**

- Prevalence of hot dry air over a region
- Absence of moisture in the upper atmosphere
- Cloudless sky
- Large amplitude anticyclonic flow over the area

**Impact Based Heat Wave Warning:**

| Colour Code | Alert | Warning | Impact | Suggested Actions |
|---|---|---|---|---|
| Green (No action) | Normal Day | Maximum temperatures are near normal | Comfortable temperature. No cautionary action required. | Nil |
| Yellow Alert (Be updated) | Heat Alert | Heat wave conditions at isolated pockets persists on 2 days | Moderate temperature. Heat is tolerable for general public but moderate health concern for vulnerable people e.g. infants, elderly, people with chronic diseases | (a) Avoid heat exposure. (b) Wear lightweight, light-coloured, loose, cotton clothes. (c) Cover your head: Use a cloth, hat or umbrella |
| Orange Alert (Be prepared) | Severe Heat Alert for the day | (i) Severe heat wave conditions persists for 2 days (ii) Through not severe, but heat wave persists for 4 days or more | High temperature. Increased likelihood of heat illness symptoms in people who are either exposed to sun for a prolonged period or doing heavy work. High health concern for vulnerable people e.g. infants, elderly, people with chronic diseases. | (b) Avoid heat exposure– keep cool. Avoid dehydration. (b) Drink sufficient water- even if not thirsty. (c) Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated |
| Red Alert (Take Action) | Extreme Heat Alert for the day | (i) Severe heat wave persists for more than 2 days. (ii) Total number of heat/severe heat wave days exceeding 6 days. | Very high likelihood of developing heat illness and heat stroke in all ages. | Extreme care needed for vulnerable people. |

Image source: IMD

**Ways Suggested:**

- Exposure to the sun must be avoided especially during noontime.
- More awareness must be created among people in rural areas for better preparedness.
- It is advisable to keep the body hydrated.
- Use of umbrella/hat, and protective goggles are recommended.
- The intervening measures of the government to promote climate-resilient policies such as reducing the carbon footprint by adopting renewable sources of energy must speed up its process of implementation and upscaling to mitigate the harmful consequences of climate change.

**Read more about Mitigating Risks of Heat Waves in the linked article.**