



# Heat-Waves Threatens Litchi Farmers

[Source: DTE](#)

## Why in News?

Recently, high temperatures and scorching westerly winds have created an unsuitable climate for the growing litchi fruits in Bihar's Muzaffarpur district.

- This has spelt doom for hundreds of litchi farmers, who were already worried about low flowering this year due to erratic weather.

## What are the Challenges Associated with the Recent Heat Waves in Bihar?

- **Impact of Heatwaves on Litchi Orchards:**
  - Scorching temperatures and strong westerly winds has caused a **significant drop in immature litchi fruits**.
  - The **National Research Centre on Litchi (NRCL)** advises **increased irrigation** in orchards to combat rising temperatures and maintain moisture levels, but small farmers struggle with costs.
- **Effect of Climate Change on Litchi Production:**
  - Litchi thrives under **specific microclimatic conditions**, with an ideal temperature range of **30-35°C** during the critical second half of April for optimal fruit development.
    - **Deviations from this range** disrupt natural growth processes, leading to smaller, less sweet litchi.
- **Expected Reduced Harvest:**
  - The anticipated litchi harvest is expected to be **delayed and potentially halved** compared to previous years.
  - Farmers face **significant crop losses** and are planning to **request government support to offset these losses**.
  - Muzaffarpur and surrounding areas contributing nearly **40% of India's litchi production**, a poor harvest here has a significant national impact.

## What are Heat Waves?

- **About:**
  - Heat waves are **prolonged periods of excessively hot weather**.
  - **India Meteorological Department (IMD)** considered heatwave 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.
    - **Based on Departure from Normal:**
      - **Heat Wave:** Departure from normal is 4.5°C to 6.4°C.
      - **Severe Heat Wave:** Departure from normal is >6.4°C.
    - **Based on Actual Maximum Temperature:**
      - **Heat Wave:** When actual maximum temperature  $\geq 45^\circ\text{C}$ .
      - **Severe Heat Wave:** When actual maximum temperature  $\geq 47^\circ\text{C}$ .
- **IMD's Initiatives and Tools to Combat Heat Waves:**
  - **Early Warning Systems:**

- **Timely Forecasts:** IMD issues timely forecasts and heatwave warnings, often several days in advance.
- **Colour-coded Alerts:** They utilise a colour-coded system (yellow, orange, red) to categorise the severity of heat waves.
- **Collaboration and Action Plans:**
  - IMD works closely with the [National Disaster Management Authority \(NDMA\)](#) to develop and implement heat action plans.
  - IMD conducts awareness campaigns to educate the public on heatwave risks, precautionary measures, and how to stay cool during extreme heat.
  - IMD has introduced the Heat Index that considers both temperature and humidity for a more accurate assessment of heat stress.
- **Leveraging Technology:**
  - **Mobile Apps:** IMD provides mobile apps like "Mausam" that disseminate weather updates, including heatwave warnings, directly to users' smartphones.
  - **Website and Social Media:** They maintain a user-friendly website and actively utilize social media platforms to share weather information and heatwave alerts.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### Prelims

**Q. What are the possible limitations of India in mitigating global warming at present and in the immediate future? (2010)**

1. Appropriate alternate technologies are not sufficiently available.
2. India cannot invest huge funds in research and development.
3. Many developed countries have already set up their polluting industries in India.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans: (a)**

### Mains

**Q. Bring out the causes for the formation of heat islands in the urban habitat of the world. (2013)**