



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)