



## EDITORIAL: INDIAN EXPRESS

**GENERAL STUDIES 3: ENVIRONMENT**

**DATE: 13.01.2025**

### PLANNING FOR A HOTTER WORLD

#### Record-Breaking Temperatures in 2024

On January 1, 2025, the India Meteorological Department (IMD) confirmed that 2024 was the hottest year since records began in 1901. This milestone was echoed by countries such as Brazil, China, Indonesia, Germany, and Mali. The global warming trend presents an urgent call for India to focus on both climate adaptation and emission mitigation to counter the escalating challenges of a warming world.

#### India's Climate Vulnerabilities

A report from the Council on Energy, Environment and Water (CEEW) revealed that nearly 80% of India's population lives in areas prone to extreme climate events like floods, droughts, and cyclones. Certain regions, such as parts of Odisha, Telangana, and Gujarat, face multiple climate risks simultaneously. This increasing frequency of extreme events demands continuous, year-round preparedness. The extreme heatwaves of 2024, with temperatures nearing 50°C in Delhi, highlight the urgency of this issue.

#### The Economic Impact of Climate Extremes

Erratic monsoon patterns have had a significant economic impact, particularly on India's agrarian economy. From 2012 to 2022, key regions in the Indo-Gangetic plains experienced up to a 20% decline in monsoon rainfall, leading to substantial agricultural losses. This, in turn, has affected India's GDP, with an estimated 0.25% loss annually due to agricultural instability. The increase in tropical storm cyclones over the past two decades further exacerbates the country's climate vulnerabilities.

#### Addressing Heat Stress and Agricultural Challenges

Heat stress has far-reaching consequences, especially for vulnerable groups such as children, the elderly, and people with pre-existing health conditions. In agriculture, heat stress has contributed to a 20% decline in milk production, impacting the livelihoods of millions. Solutions like solar-powered chillers could help mitigate losses. Additionally, addressing the risks posed by rainfall variability through revised crop calendars and the promotion of resilient seed varieties can help reduce agricultural losses.

#### Strengthening Urban Resilience

Urban areas are particularly vulnerable to the impacts of climate change, requiring focused efforts on resilience building. The Disaster Management (Amendment) Bill 2024 aims to enhance city-level preparedness by empowering states to form Urban Disaster Management Authorities. Urban



resilience can be further bolstered through financial mechanisms such as green municipal bonds and city resilience bonds, helping cities invest in vital climate adaptation infrastructure.

## Incorporating Climate Resilience into Policy

As India prepares for the 2025 Budget, integrating climate resilience into financial and policy planning is crucial. This shift is not only necessary for the environment but also for economic growth. Adapting to climate challenges through resilient infrastructure, agricultural practices, and financial mechanisms will provide long-term benefits, ensuring India can navigate the complexities of a warming world.

## 2024 Temperature Data and Contributing Factors

- **Global Temperature Trends:** The average global temperature in 2024 reached 15.1°C, marking the warmest year in recorded history since 1850.
- **Temperature Deviations:** 2024 was 0.72°C above the 1991-2020 average and 1.60°C above the pre-industrial temperature levels.
- **El Niño and Greenhouse Gas Emissions:** The El Niño event, which began in June 2023, significantly contributed to the rising temperatures. The combination of El Niño and high greenhouse gas emissions led to this record-breaking heat.
- **Sea Surface Temperatures:** Sea surface temperatures also hit record highs, with extra-polar SST reaching 20.87°C, surpassing the 1991-2020 average by 0.51°C.

## Conclusion

The scorching temperatures of 2024 emphasize the need for India to address both climate adaptation and emission mitigation. With the rising frequency of extreme weather events impacting various sectors, from agriculture to urban infrastructure, proactive climate resilience strategies are essential. Through adaptive policies and innovative solutions, India can ensure sustainable development while navigating the challenges posed by climate change.

**Source:** <https://indianexpress.com/article/opinion/columns/planning-for-a-hotter-world-9775427/#:~:text=Heat%20does%20not%20impact%20everyone,crucial%20to%20prioritise%20targeted%20actions.>