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Climate Change as a Cost-of-Living Challenge in India: Rising Household Expenses and Developmental Implications

Published On: 21-06-2026

Recent Developments:

- Recent analyses and development assessments have highlighted that **Climate Change** is increasingly contributing to higher household expenditure through rising food, energy, water and healthcare costs.
- The **World Bank** has projected that rising temperatures and changing monsoon patterns could reduce India's **Gross Domestic Product (GDP)** by nearly **2.8%** by **2050** and adversely affect the living standards of almost half of the country's population.
- Increasing frequency of heatwaves, erratic rainfall, floods and climate variability is transforming climate change from a purely environmental issue into a major economic and social challenge.
- Climate-related shocks are becoming more frequent, thereby affecting inflation, productivity, employment and household welfare across both rural and urban India.

Climate Change and Cost of Living:

Understanding the Linkage:

- **Climate Change** refers to long-term alterations in temperature, precipitation patterns and climatic conditions resulting largely from anthropogenic greenhouse gas emissions.
- Climate-induced disruptions directly affect essential goods and services such as food, electricity, water and healthcare, thereby increasing household expenditure.
- The economic burden of climate change is increasingly visible in daily consumption patterns rather than only through long-term environmental degradation.
- Rising climate risks are creating new developmental challenges by reducing purchasing power and weakening household resilience.

Impact on Food Prices and Food Security:

Climate-Sensitive Nature of Indian Agriculture:

- Indian agriculture remains significantly dependent on monsoon rainfall, temperature conditions and water availability despite ongoing technological advancements.
- Delayed monsoons, rainfall deficits and extreme temperatures can reduce agricultural productivity and disrupt sowing as well as harvesting cycles.
- Heat stress can damage crops even when overall rainfall remains close to normal levels.
- Climate variability creates uncertainty in agricultural production, affecting both farmers and consumers.

Impact on Food Inflation:

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- Rainfall deficits and adverse weather conditions can reduce the cultivated area under major crops such as pulses, cereals and oilseeds.
- Supply disruptions often result in higher market prices of essential food commodities.
- **Food and Beverages** constitute nearly **45.86%** of India's **Consumer Price Index (CPI)** basket, making food inflation a critical determinant of overall inflation.
- Repeated heatwaves, floods and erratic rainfall patterns are contributing to persistent food inflation through supply bottlenecks and market volatility.
- Weak monsoon conditions and extreme heat continue to pose risks to agricultural output and food prices despite improvements in irrigation coverage.

Impact on Energy Demand and Household Expenditure:

Growing Cooling Requirements:

- Rising temperatures are increasing demand for fans, coolers, air conditioners and refrigeration systems.
- Higher cooling demand places substantial pressure on electricity generation, transmission and distribution infrastructure.
- Climate-induced energy demand is emerging as a major component of household expenditure, particularly in urban areas.

Rising Electricity Costs:

- During the severe heatwave of May 2026, India recorded an all-time peak electricity demand of approximately **270.8 Gigawatts**, primarily driven by cooling requirements.
- Meeting peak demand often requires greater dependence on thermal power generation and expensive energy sources.
- Increased electricity demand can eventually translate into higher tariffs, surcharges and energy costs for consumers.
- Low-income households frequently experience a reduction in expenditure on nutrition, education and healthcare due to rising electricity bills.
- Growing heatwaves are also creating concerns regarding grid stability, energy security and long-term energy planning.

Impact on Water Security and Household Finances:

Water Stress and Climate Variability:

- Erratic rainfall patterns and declining groundwater levels are increasing water insecurity across many regions of India.
- Climate change is altering recharge cycles and reducing the reliability of traditional water sources.
- Water scarcity is becoming both an environmental and an economic challenge.

Economic Burden of Water Scarcity:

- Rural households often spend more time, labour and financial resources in accessing safe water.
- Urban areas are witnessing expansion of private water tanker markets due to unreliable municipal water supply systems.
- Dependence on purchased water significantly increases monthly household expenditure.
- Water-stressed regions and informal settlements experience the greatest financial burden associated with water scarcity.

Impact on Health Expenditure:

Climate-Sensitive Health Risks:

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- Rising temperatures, heat stress, poor air quality and changing disease patterns are increasing public health risks.
- Climate change is contributing to the spread of vector-borne, water-borne and heat-related illnesses.
- Increased disease burden results in higher out-of-pocket healthcare expenditure.

Socio-Economic Consequences:

- Vulnerable households often experience severe financial stress due to unexpected medical expenses.
- Rural women frequently bear disproportionate burdens through water collection, caregiving responsibilities and exposure to extreme temperatures.
- Health-related expenditure can reduce savings and weaken long-term household financial stability.
- Climate-related health impacts also affect labour productivity and economic output.

Climate Change and Social Inequality:

Unequal Distribution of Climate Risks:

- The economic consequences of climate change are not distributed uniformly across society.
- Marginalised communities generally possess fewer resources to invest in adaptation and risk reduction measures.
- Limited access to irrigation, resilient seeds, insurance and climate-resilient technologies increases vulnerability.

Regional Vulnerability:

- States with high dependence on agriculture and natural resources face greater exposure to climate-related shocks.
- Regions characterized by water stress, low adaptive capacity and poverty are likely to experience larger declines in living standards.
- Climate change increasingly operates as a regressive economic burden because poorer households spend a larger share of their income on essential goods and services.
- Vulnerable states such as **Chhattisgarh**, Chhattisgarh, Madhya Pradesh, Rajasthan, Uttar Pradesh and Maharashtra are expected to face significant developmental challenges due to climate vulnerability.

Macroeconomic Implications for India:

Impact on Economic Growth:

- Climate change can reduce agricultural productivity, labour productivity and investment efficiency.
- Repeated climate shocks can increase inflationary pressures and reduce household consumption.
- Greater expenditure on disaster management and adaptation may increase fiscal pressures.
- Climate-induced disruptions can adversely affect long-term economic growth and development outcomes.

Developmental Challenges:

- Higher food inflation.
- Reduced agricultural productivity.
- Increased healthcare expenditure.
- Rising rural distress and migration.
- Greater pressure on public infrastructure and social protection systems.
- Slower progress towards inclusive and sustainable development goals.

Climate Adaptation and Policy Responses:

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Strengthening Climate Resilience:

- Agricultural systems should be made more resilient through climate-smart farming practices, crop diversification and improved irrigation systems.
- Community-based adaptation strategies can reduce vulnerability among small and marginal farmers.
- Efficient groundwater management and water conservation measures must be expanded.
- Urban heat action plans should be strengthened to reduce heat-related mortality and economic losses.

Building Climate-Resilient Development Pathways:

- Investment in resilient infrastructure can reduce future economic losses.
- Expansion of affordable healthcare and social protection mechanisms can improve adaptive capacity.
- Renewable energy deployment and energy efficiency measures can reduce climate vulnerabilities.
- Climate considerations should be integrated into fiscal, agricultural, urban and social policy frameworks.
- Initiatives such as **Andhra Pradesh Community Natural Farming (APCNF)** demonstrate how sustainable agricultural practices can improve resilience while reducing environmental stress.

Climate Change and Sustainable Development:

Broader Governance Perspective:

- Climate change should be viewed not only as an environmental issue but also as a developmental, economic and social governance challenge.
- Effective adaptation policies can simultaneously address poverty reduction, food security, water security and public health objectives.
- Recognising climate change as a cost-of-living issue can improve policy prioritisation and resource allocation.
- Integrating climate resilience into economic planning is essential for achieving long-term sustainable development.

Value Addition for UPSC:

Important Reports and Concepts:

- **World Bank Report – South Asia’s Hotspots:** Projects that climate change could reduce India’s GDP by **2.8%** and adversely affect living standards by **2050**.
- **Climate-Smart Agriculture:** Agricultural practices designed to improve productivity, adaptation and mitigation simultaneously.
- **Heat Action Plan:** A framework for reducing mortality, morbidity and economic losses arising from heatwaves.
- **Climate Resilience:** The capacity of individuals, communities and systems to withstand and recover from climate-related shocks.
- **Just Transition:** Ensuring that climate adaptation and mitigation measures remain socially equitable and inclusive