GreenariA
Go Green, Learn Green
An Agricultural Monthly e-Magazine
Volume 03, Issue 11, 2025
ISSN: 2584-153X
Article ID: G-25-1104

CLIMATE CHANGE AND THE INDIAN ECONOMY: RISKS, LOSSES AND NEW PATHWAYS FOR GROWTH

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Climate Change Moves from Weather Report to Balance Sheet

For a long time, climate change in India was discussed mainly as an environmental issue – failed monsoons, melting glaciers or hotter summers. Today, it is increasingly a macroeconomic concern. Heat waves, erratic rainfall and floods are now recognised as shocks that affect farm incomes, factory output, trade and public finances.

Recent studies underline just how high the stakes are. A World Bank analysis estimated that rising temperatures and changing rainfall patterns could reduce India's GDP by around 2.8% by 2050 and lower living standards for nearly half the population if strong adaptation measures are not taken (World Bank, 2018). World Bank Another assessment suggests that climate impacts could eventually shave 6–10% off India's national income and push millions back into poverty (World Economic Forum, 2024). World Economic Forum At the regional level, South Asia as a whole is projected to face climate-related losses of about US$160 billion annually by 2030. World Bank

Drivers of Economic Risk

The economic threat from climate change in India is driven by several interlinked factors:

1.High Climate Exposure

Large numbers of people live in floodplains, drought-prone districts and cyclone-prone coasts, so even a single extreme event can affect millions of livelihoods at once.

2.Nature-Dependent GDP

Nearly one-third of India's GDP is tied to sectors that depend heavily on nature, such as agriculture, forestry, fisheries and nature-based tourism (World Economic Forum, 2024). World Economic Forum When ecosystems are stressed; the economy feels it.

3.Social and Infrastructure Gaps

A big informal workforce, limited social protection and weak urban infrastructure mean that climate shocks quickly translate into income loss, migration and service disruptions.

Challenges and Opportunities

The economic story of climate change in India is not only about losses; it is also about choices.

Key challenges include:

- Rising Disaster Losses: Repeated floods, droughts and cyclones strain state budgets and divert resources from long-term investments in education, health and infrastructure.
- Productivity Pressures: Heat waves reduce labour productivity, especially for outdoor and manual work, and increase health risks and cooling costs.
- Trade Headwinds: As global markets move towards net-zero, Indian exports

must decarbonize or risk losing competitiveness where carbon-based border taxes and strict climate standards are introduced (Net Zero Tracker / Reuters, 2025).

At the same time, important opportunities are emerging:

- **Green Jobs:** Investment in renewable energy, energy-efficient buildings and resilient infrastructure is creating new employment in construction, operations and maintenance, as well as in services and innovation.
- **Innovation in Finance:** Green bonds, blended finance and sustainability-linked loans are beginning to channel capital into climate-friendly projects, linking lower borrowing costs to better environmental performance.
- **Rural Diversification:** Climate-smart agriculture, agro-forestry and value-addition in the agri-food chain can help stabilise rural incomes while restoring soils, water bodies and biodiversity.

Impact on Key Sectors

1. Agriculture

Irregular monsoons, heat stress and water scarcity threaten yields and farm incomes. Farmers are experimenting with shorter-duration varieties, micro-irrigation, crop insurance and diversified cropping patterns. For a country where agriculture still supports a large share of employment, these changes directly affect food security and rural demand.

2. Urban Economy

Rapid, often unplanned, urbanisation is intensifying heat and flooding in Indian cities. Urban heat islands and extreme rainfall disrupt transport, damage property and raise cooling costs, affecting both households and businesses. TIME Power outages during heat waves or floods can halt production, while waterlogging increases health risks and clean-up costs.

3. Infrastructure and Finance

Roads, bridges, ports and power systems face rising climate risk. Damage to infrastructure interrupts supply chains and raises maintenance costs. Banks and insurers are beginning to factor climate-related damage and transition risk into lending and pricing decisions, linking climate resilience to financial stability and credit ratings (IMF, 2025).

The Road Ahead

To safeguard growth and jobs, India needs to weave climate considerations into core economic decision-making rather than treating them as a separate environmental agenda. Some priorities include:

1.Mainstreaming Climate Risk

Integrate climate scenarios into macroeconomic planning, state budgets and financial regulation so that investment choices reflect long-term physical and transition risks.

2.Scaling Adaptation

Expand investments in flood management, drought-resilient agriculture, early-warning systems and climate-resilient infrastructure, especially in vulnerable districts and smaller cities (World Bank, 2023).

3.Supporting a Just Transition

Protect workers and communities in coal- and carbon-intensive regions through reskilling, social protection and regional diversification, so that climate policy does not deepen inequality.

4.Unlocking Climate Finance

1Mobilise domestic and international capital for mitigation and adaptation through tax incentives, guarantees and strong, well-prepared project pipelines at state and municipal levels.

Conclusion

Climate change is no longer a distant environmental issue for India; it is a present-day economic reality. Left unmanaged, it could erode GDP, widen inequality and reverse development gains. Managed wisely, however, the response to climate change can accelerate structural transformation, create new jobs and strengthen India's long-term competitiveness.

For policymakers, businesses and investors, the central question is shifting from "Can we afford climate action?" to "Can we afford inaction?" The answer, increasingly backed by evidence, is clear: building a climate-resilient, low-carbon economy is not just good for the planet – it is essential for India's economic future.

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