

“Green Accounting in India: Paving the Way toward Sustainable Economic Growth”

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Abstract

Green accounting is an emerging approach that integrates environmental factors into traditional financial systems, offering a more accurate representation of a nation’s economic well-being. In India, where rapid industrialization poses significant ecological challenges, green accounting presents an opportunity to align economic growth with environmental sustainability. This paper examines the current status of green accounting in India, highlights government and corporate initiatives, and explores its role in valuing natural resources, guiding sustainable policies, and promoting responsible industrial practices. By analyzing case studies and international models, the study identifies critical gaps in implementation and suggests strategic policy interventions. Institutionalizing green accounting in India can play a vital role in achieving long-term sustainable development goals while supporting national climate commitments and ensuring the preservation of natural capital for future generations.

Keywords: SDGs, Green accounting, ecosystem services, ESG, sustainable policies.

1. Introduction

Green accounting, also known as environmental accounting, is an evolving concept that integrates environmental costs and benefits into traditional accounting frameworks. It seeks to measure the economic impact of environmental degradation, natural resource depletion, and the cost of ecological preservation. Unlike conventional accounting, which focuses solely on financial transactions, green accounting attempts to value environmental assets and liabilities, thereby offering a more holistic view of a nation's or a business's economic performance.

In the Indian context, sustainable development has emerged as a key national priority, especially given the country's rapid industrial growth, increasing urbanization, and environmental challenges such as air and water pollution, deforestation, and climate change. Balancing economic growth with environmental preservation is crucial for ensuring long-term welfare, resource security, and resilience. As India pursues development goals aligned with the United Nations Sustainable Development Goals (SDGs), integrating environmental concerns into economic decision-making has become more critical than ever. Traditional economic indicators like Gross Domestic Product (GDP) often overlook the environmental costs associated with growth. As a result, they can present a distorted view of progress. Green accounting offers a valuable tool to bridge this gap by internalizing ecological costs and helping policymakers and businesses make more informed, sustainable choices.

“Green Accounting in India: Paving the Way toward Sustainable Economic Growth”

Parikshit Hada

2. Literature Review

The concept of green or environmental accounting has evolved significantly over the past few decades, driven by growing awareness of the environmental consequences of unchecked economic growth. The roots of environmental accounting can be traced back to the 1970s, when economists and environmentalists began questioning the adequacy of traditional financial accounting in reflecting the true cost of development. Over time, the need to account for environmental degradation, resource depletion, and ecological impacts led to the formulation of various green accounting models globally.

One of the most widely recognized frameworks is the System of Environmental-Economic Accounting (SEEA) developed by the United Nations. SEEA provides a standardized methodology for integrating environmental data with national accounts. It allows governments to assess the contribution of natural resources to the economy and the impact of economic activities on the environment. Countries like Australia, Canada, and the Netherlands have successfully adopted SEEA to guide policy-making and environmental management. In the Indian context, research on green accounting has gained momentum in recent years. Studies have explored initiatives such as “Green GDP” calculations, the Natural Capital Accounting project by the Ministry of Statistics and Programme Implementation (MoSPI), and the role of public sector enterprises in environmental reporting. However, much of this work remains theoretical or limited to case-specific applications.

Despite growing academic interest, there is a noticeable gap in the literature when it comes to the policy-level implementation of green accounting in India. Moreover, the adoption of environmental accounting practices in the private sector, especially among small and medium enterprises (SMEs), remains weak and under-researched. The lack of standardized guidelines, institutional capacity, and awareness continues to be a major barrier. This study aims to address these gaps by analyzing the practical challenges and opportunities of integrating green accounting into India’s development agenda.

3. Green Accounting Framework in India

Green accounting in India remains in its nascent stage, with growing recognition of its importance among both government institutions and the private sector. There is an increasing awareness of the need to incorporate environmental considerations into financial and policy decision-making. However, these efforts are still fragmented and have not yet been fully institutionalized at the national level. On the government front, significant strides have been made toward integrating environmental concerns into economic accounting. A key initiative is the development of a Green GDP framework, which seeks to adjust traditional GDP figures by factoring in environmental degradation and the depletion of natural resources. The Ministry of Statistics and Programme Implementation (MoSPI), in collaboration with international bodies such as the World Bank and the United Nations, has undertaken Natural Capital Accounting (NCA) pilot studies as part of the “EnviStats India” series. These studies aim to monitor environmental assets—such as forests, water bodies, and land—and link them to economic activities using the System of Environmental-Economic Accounting (SEEA) framework.

“Green Accounting in India: Paving the Way toward Sustainable Economic Growth”

Parikshit Hada

In the private sector, several large corporations—particularly those listed on stock exchanges—have begun including environmental performance indicators in their annual sustainability reports. This shift has been driven largely by regulatory mandates from SEBI and the rising emphasis on ESG (Environmental, Social, and Governance) compliance. Nonetheless, these practices are still mostly voluntary and inconsistently adopted, especially among small and medium-sized enterprises (SMEs). Despite this progress, several obstacles hinder the widespread adoption of green accounting in India. One major challenge is the absence of standardized methodologies and metrics to consistently measure and report environmental impacts across sectors. Without uniform guidelines, data comparison and integration into national accounts become difficult. Additionally, limited awareness and technical expertise within both government agencies and businesses impede the implementation of sophisticated accounting tools. Many stakeholders remain unaware of the long-term benefits of green accounting or lack the capacity to apply it effectively. Furthermore, fragmented data collection poses a significant barrier, with environmental data often scattered, outdated, or incomplete, making it hard to establish accurate accounts or analyze trends over time.

To advance green accounting in India, a coordinated policy approach is essential, along with institutional capacity-building and enhanced collaboration between government, academia, and industry. The development of standardized tools, robust digital infrastructure for data collection, and comprehensive awareness programs will be critical to embedding green accounting as a core element of the country's sustainable development strategy.

4. Green Accounting Framework in India

Green accounting in India is still in its developmental stage, with both government and private sector entities gradually recognizing its significance. The current status of environmental accounting practices reflects a growing awareness of the need to integrate ecological factors into financial and policy decision-making. However, these efforts remain fragmented and are yet to be fully institutionalized at a national level.

In the government sector, there have been several important steps toward integrating environmental concerns into economic accounting. One notable initiative is the attempt to develop a Green GDP framework that adjusts traditional Gross Domestic Product figures by accounting for environmental degradation and the depletion of natural resources. The Ministry of Statistics and Programme Implementation (MoSPI), in collaboration with international organizations like the World Bank and United Nations, has undertaken Natural Capital Accounting (NCA) pilot studies under the "EnviStats India" series. These reports aim to track environmental assets like forests, water, and land, and link them to economic activity using the System of Environmental-Economic Accounting (SEEA) framework.

In the private sector, some large corporations, especially those listed on stock exchanges, have begun incorporating environmental performance in their annual sustainability reports, driven by mandates from SEBI and increasing ESG (Environmental, Social, and Governance) compliance requirements. However, these practices are largely voluntary and unevenly adopted, particularly among small and medium-sized enterprises (SMEs).

“Green Accounting in India: Paving the Way toward Sustainable Economic Growth”

Parikshit Hada

Despite these advancements, institutionalizing green accounting in India faces several challenges. First, there is a lack of standardized metrics and methodologies to measure and report environmental impacts consistently across sectors. Without uniform guidelines, it becomes difficult to compare data or integrate it into national accounts. Second, limited awareness and technical expertise within both government agencies and private businesses hinder the implementation of complex accounting tools and systems. Many stakeholders are unaware of the long-term benefits of green accounting or lack the capacity to implement it effectively. Third, fragmented data collection remains a major barrier. Environmental data is often scattered across multiple agencies, outdated, or incomplete, making it difficult to develop reliable accounts or assess trends over time.

To move forward, India requires a coordinated policy framework, institutional capacity-building, and stronger collaboration between government, academia, and industry. Standardized tools, digital infrastructure for data collection, and awareness programs will be key to making green accounting a foundational pillar of sustainable development in the country.

5. Role in Sustainable Economic Development

Green accounting plays a vital role in supporting sustainable economic development by offering a more accurate and holistic view of the relationship between the economy and the environment. Traditional accounting methods often ignore the depletion of natural resources and ecosystem degradation. In contrast, green accounting incorporates these environmental externalities, making it a crucial tool for long-term planning and sustainability efforts.

One of the key contributions of green accounting is the valuation of natural resources and ecosystem services. Elements such as forests, water bodies, clean air, and biodiversity significantly contribute to economic well-being, yet they are often absent from national income accounts. By assigning monetary value to these assets, green accounting emphasizes their importance and highlights the costs associated with environmental degradation. This helps policymakers and businesses better appreciate the value of natural capital and encourages greater investment in its preservation.

Green accounting also fosters responsible industrial behavior by urging companies to account for environmental costs. When businesses understand the financial impact of pollution, resource depletion, and waste, they are more likely to adopt cleaner technologies and sustainable practices. Additionally, incorporating environmental performance into financial reporting can attract investors who prioritize Environmental, Social, and Governance (ESG) criteria. At the policy level, green accounting provides critical data for informed decision-making. It enables governments to evaluate the long-term economic impacts of environmental policies and investments. This is especially relevant for India, where sustainable development is a cornerstone of national strategy—reflected in its commitment to the Sustainable Development Goals (SDGs), Net Zero ambitions, and promotion of a circular economy.

Green accounting also offers sector-specific advantages. In the energy sector, it helps compare the costs of fossil fuel reliance with renewable alternatives. In agriculture, it assesses the environmental consequences of intensive farming practices. For forestry and mining, it balances resource extraction with ecological restoration, supporting improved regulatory frameworks.

“Green Accounting in India: Paving the Way toward Sustainable Economic Growth”

Parikshit Hada

In conclusion, green accounting lays the groundwork for harmonizing economic progress with environmental stewardship. By embedding ecological considerations into financial systems, it empowers decision-makers to pursue a future that is inclusive, resilient, and sustainable.

6. Case Studies

India has begun exploring green accounting practices through pilot projects and state-level initiatives, although large-scale implementation remains limited. One noteworthy example is the “Green Accounting for Indian States and Union Territories” (GAISP) project led by the Green Indian States Trust (GIST). This initiative attempted to quantify natural capital for various states like Himachal Pradesh, Madhya Pradesh, and Maharashtra. The GAISP project highlighted how forest cover, water availability, and soil quality contribute to state-level economic performance. In Himachal Pradesh, green accounting was used to estimate the value of ecosystem services provided by forests, influencing policy decisions related to land use and hydropower development.

In the corporate sector, public enterprises like the Oil and Natural Gas Corporation (ONGC) and Steel Authority of India Ltd (SAIL) have made efforts to incorporate environmental performance into annual reports. These companies assess emissions, energy consumption, and water usage, and some have initiated internal carbon pricing mechanisms. However, such practices are still rare among smaller businesses and lack standardization.

Globally, Norway has developed a comprehensive natural capital accounting system that integrates resource use and emissions into national accounts. Through satellite accounts for forests, fisheries, and oil reserves, Norway uses this data to ensure long-term economic and environmental sustainability. Similarly, Costa Rica has pioneered ecosystem service valuation and payments for ecosystem services (PES) programs, encouraging forest conservation by quantifying the benefits provided by biodiversity, carbon storage, and water regulation. These international models offer valuable lessons for India. Firstly, both Norway and Costa Rica emphasize institutional coordination—an area where India struggles due to fragmented data and overlapping responsibilities among ministries. Secondly, they have invested heavily in capacity building and stakeholder engagement, ensuring that green accounting is understood and applied at multiple levels of governance. Thirdly, their systems are embedded within national planning frameworks, aligning economic decisions with sustainability goals.

India can adopt a phased, decentralized approach, starting with state-level pilot projects and gradually scaling up using robust methodologies like the System of Environmental-Economic Accounting (SEEA). Learning from international best practices, India can build a cohesive framework that not only values natural capital but also drives inclusive and ecologically sound economic development.

7. Discussion

The current efforts in implementing green accounting in India represent a positive but limited step toward integrating environmental sustainability into economic decision-making. Pilot initiatives like the Green Accounting for Indian States and Union Territories (GAISP) and the Natural Capital

“Green Accounting in India: Paving the Way toward Sustainable Economic Growth”

Parikshit Hada

Accounting (NCA) pilot studies by the Ministry of Statistics and Programme Implementation have laid the groundwork for a national framework. However, their effectiveness is constrained by several systemic and institutional limitations.

One of the main challenges is the lack of uniformity and standardization in data collection and accounting practices. Different states and sectors follow varying methodologies, leading to inconsistent and incomparable results. Furthermore, technical capacity and awareness remain low, especially at the state and local levels, where most natural resource management decisions are made. These gaps reduce the utility of green accounting outputs for policymakers, thereby limiting their influence on planning and budgeting processes.

Despite these limitations, green accounting holds significant policy potential. If institutionalized effectively, it can guide more informed decision-making by quantifying the trade-offs between economic development and environmental degradation. For instance, integrating natural capital assessments into Environmental Impact Assessments (EIAs), infrastructure planning, and fiscal policy could ensure that developmental projects are aligned with sustainability principles.

Strategic recommendations include the adoption of a centralized national framework, possibly modeled on the UN's System of Environmental-Economic Accounting (SEEA), to ensure consistency and comparability. The government should also invest in capacity building by training environmental economists, statisticians, and planners across central and state agencies. Moreover, expanding public-private partnerships can promote innovation and broader adoption of green accounting practices in industries, particularly in high-impact sectors like mining, energy, and manufacturing.

Aligning green accounting with India's developmental priorities—such as the Sustainable Development Goals (SDGs), Nationally Determined Contributions (NDCs) under the Paris Agreement, and the Panchamrit climate commitments—can amplify its relevance and effectiveness. By embedding environmental data into economic planning, India can transition toward a low-carbon, resource-efficient, and inclusive growth model.

In conclusion, while India's green accounting journey is still in its nascent stages, its potential impact on sustainable development is profound. With the right policy support, institutional frameworks, and multi-stakeholder engagement, green accounting can become a cornerstone of India's long-term economic and environmental strategy.

8. Conclusion and Recommendations

This study has explored the significance of green accounting as a tool for promoting sustainable economic development in India. The findings highlight that while India has made initial progress through pilot initiatives, government reports, and corporate environmental disclosures, green accounting practices remain limited in scale, fragmented in application, and underutilized in decision-making processes. The potential of green accounting to reshape how we value and manage natural resources is immense, particularly in a rapidly developing country like India, where environmental degradation often accompanies economic growth.

One of the key findings is that green accounting can bridge the gap between economic planning and environmental conservation. It enables policymakers to recognize the true cost of environmental

“Green Accounting in India: Paving the Way toward Sustainable Economic Growth”

Parikshit Hada

degradation and natural resource depletion, which are typically excluded from traditional economic metrics like GDP. Moreover, it can promote sustainable business practices, guide investments, and support regulatory frameworks aligned with long-term ecological goals.

However, several institutional and operational challenges persist. These include a lack of standardized metrics, insufficient technical expertise, fragmented data sources, and limited awareness among both policymakers and industry stakeholders. The uneven adoption across sectors and states further limits the effectiveness of green accounting in influencing national economic strategies.

To strengthen green accounting systems in India, the following policy-level recommendations are proposed:

1. Develop a unified national framework based on international standards like the UN's System of Environmental-Economic Accounting (SEEA), ensuring consistency across states and sectors.
2. Establish a central coordinating body or task force dedicated to green accounting under the Ministry of Environment, Forest and Climate Change (MoEFCC) or MoSPI.
3. Invest in capacity-building programs to train government officials, industry professionals, and researchers in green accounting tools and methodologies.
4. Enhance public-private collaboration to promote innovation, data-sharing, and sustainable business practices.
5. Incentivize environmental disclosures through tax benefits, green finance schemes, or ESG-linked incentives.

Looking ahead, there is significant scope for further research and implementation strategies. Future studies could explore sector-specific green accounting models, the integration of green metrics into corporate balance sheets, and the role of digital technologies like GIS and blockchain in improving environmental data accuracy and transparency.

In conclusion, institutionalizing green accounting in India is not just an environmental imperative but a strategic economic necessity. With robust systems and stakeholder commitment, green accounting can serve as a powerful enabler of India's transition toward inclusive, resilient, and sustainable development.

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“Green Accounting in India: Paving the Way toward Sustainable Economic Growth”

Parikshit Hada

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“Green Accounting in India: Paving the Way toward Sustainable Economic Growth”

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