

## **GREEN ACCOUNTING PRACTICES IN INDIAN CORPORATES: AWARENESS, IMPLEMENTATION, AND FUTURE PROSPECTS**

**SAROJ**

**PRINCIPAL, RAMA PUBLIC JR. H. SCHOOL, NAGINA, BIJNOR, UTTAR PRADESH, INDIA**

### **Abstract**

The integration of environmental considerations into financial decision-making has become increasingly vital for modern businesses. Green Accounting, also known as Environmental Accounting, refers to the practice of including ecological and environmental expenses within conventional accounting frameworks to reflect the true cost of business operations on nature. This study examines the awareness, implementation, and challenges of green accounting practices among Indian corporates, particularly in the context of mandatory Corporate Social Responsibility (CSR) and Environmental, Social, and Governance (ESG) frameworks.

Employing a mixed-method approach that includes secondary data analysis and case studies of prominent Indian corporations such as Infosys, Tata Steel, and NTPC, the research highlights the extent to which green accounting is reflected in sustainability reports and financial disclosures. The study also explores the perception of environmental expenditure as either a liability or a long-term investment, considering evolving global climate goals and investor expectations.

Findings indicate a growing awareness of green accounting; however, standardized adoption remains limited due to factors such as lack of regulatory enforcement, technical expertise, and standardized reporting frameworks.

**Keywords:** Green Accounting, Environmental Accounting, ESG, Indian Corporates, CSR,

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### **1. Introduction**

Green accounting represents a progressive approach that integrates environmental factors into traditional financial accounting systems, enabling businesses to assess their environmental performance alongside economic outcomes. In India, where rapid industrial growth often intersects with environmental concerns, green accounting emerges as a crucial tool for sustainable development.

This paper aims to assess the awareness, implementation, and challenges associated with green accounting practices among Indian corporates. It also explores the potential for integrating such practices into mainstream financial systems through regulatory and voluntary initiatives.

### **2. Objectives of the Study**

- Analyze how Indian corporate entities are currently implementing environmental accounting systems. To assess the impact of environmental accounting on sustainable development.
- To analyze corporate compliance with SEBI's BCSR framework.
- To identify challenges and opportunities in environmental accounting implementation.

### **3. Literature Review**

The concept of green accounting gained prominence in the 1970s and evolved significantly in the 1990s, driven by global environmental concerns. Bartelmus (2001) described it as an extension of national income accounting to include the value of natural resources and environmental degradation.

In the Indian context, green accounting garnered attention following the Companies Act 2013, which mandated CSR for large companies. Dasgupta and Roy (2021) noted that while awareness is increasing, actual implementation remains inconsistent due to the absence of standardized frameworks.

India currently lacks a national green accounting system. However, initiatives like the Securities and Exchange Board of India's (SEBI) mandated Business Responsibility and Sustainability Reporting (BRSR) from 2021 indicate a positive direction.

#### **4. Research Methodology**

This study adopts a descriptive and analytical methodology, utilizing:

- **Secondary Data:** Corporate annual reports (2020–2024), SEBI filings, BRSR disclosures
- **Case Studies:** Infosys, NTPC, Tata Steel
- **Comparative Analysis:** Examining reporting variations across sectors (IT, Energy, Manufacturing)

**Data Sources:** Ministry of Corporate Affairs (MCA), SEBI, NITI Aayog reports, Ministry of Environment, Forest and Climate Change (MoEFCC) reports, and relevant journal articles.

#### **5. Green Accounting Practices in India**

India has initiated steps toward green accounting through CSR and ESG reporting. Key practices observed include:

- **Environmental Cost Disclosure:** Reporting capital and operational costs related to pollution control and waste management.
- **Carbon Emission Reporting:** Tracking and disclosing CO<sub>2</sub> emissions under BRSR.
- **Resource Use Efficiency:** Reporting on energy, water, and raw material usage.

#### **Regulatory Frameworks:**

- **SEBI's BRSR Framework (2021):** Mandates the top 1,000 listed companies to disclose ESG parameters.
- **ICAI Guidelines (2022):** Encourages environmental cost accounting, though no standard format is mandatory yet.

#### **6. Case Studies of Indian Companies**

##### **Infosys Ltd.:**

- Integrated sustainability reporting since 2015.
- Achieved a 55% reduction in per capita electricity consumption since 2008.

- Invests in carbon offsets and internal carbon pricing.

**NTPC Ltd.:**

- Reported ₹950 crore expenditure on environmental protection in FY2022.
- Adopts technologies to control air pollution and systems for recycling water..

**Tata Steel:**

- Employs circular economy practices and discloses environmental provisions in financial statements.
- Developed a GreenPro certified product line.

**Table 1: Summary of Environmental Investment by Sample Companies (FY2022)**

Company	Environmental Expenditure (₹ Cr)	Key Initiatives
Infosys	135	Renewable energy, water management
NTPC	950	Pollution control equipment
Tata Steel	420	Waste reuse, green logistics

**6. Challenges in Green Accounting Implementation**

**Table 2: Challenges in Green Accounting Implementation**

Challenge	Explanation
<b>Lack of Standardization</b>	Absence of uniform guidelines for environmental reporting
<b>Compliance vs. Voluntarism</b>	Many disclosures are voluntary or linked only to CSR activities
<b>Technical Knowledge Gaps</b>	Limited training for accountants in environmental cost assessment
<b>Perception of Cost</b>	Environmental expenditure often viewed as a cost rather than an investment
<b>Regulatory Inconsistencies</b>	Weak enforcement of BRSR and CSR impact measurement

**7. Statistical analysis**

- **Environmental Expenditure Trends in Indian Corporates**

**Table 3: CSR Spending on Environmental Projects (Top 1000 Companies, FY2020–FY2023)**

Financial Year	Total CSR Spending (₹ Cr)	Environment-Related Spending (₹ Cr)	% of Total CSR
2020	20,150	2,420	12%
2021	21,540	2,690	12.5%
2022	23,070	3,180	13.8%
2023	24,830	3,600	14.5%

Source: MCA CSR Portal ([www.csr.gov.in](http://www.csr.gov.in)), compiled from BRSR reports

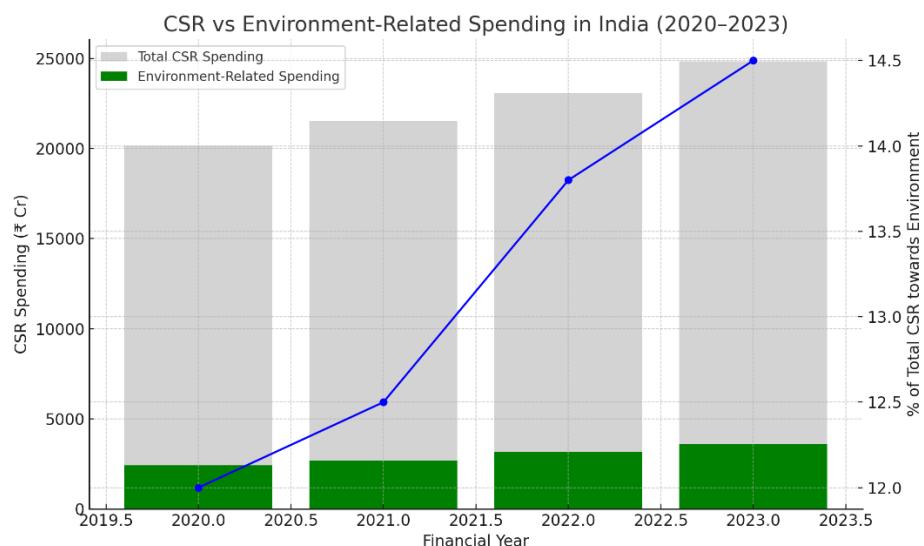


Figure1: Trend of Environment-Related CSR Spending in India (FY 2020–2023)

### 1. Overall CSR Spending Trend:

- CSR spending has consistently increased from ₹20,150 Cr in 2020 to ₹24,830 Cr in 2023.
- This upward trend reflects growing corporate commitment towards social responsibility in India.

### 2. Environment-Related Spending:

- Environment-focused CSR investment rose from ₹2,420 Cr in 2020 to ₹3,600 Cr in 2023.
- Indicates increased prioritization of environmental initiatives within overall CSR programs.

### 3. Percentage Allocation to Environment:

- There is a year-on-year increase in the % of CSR funds directed towards the environment:
  - 2020:** 12%

- **2021:** 12.5%

- **2022:** 13.8%

- **2023:** 14.5%

- This shows a progressive shift in focus toward sustainability and climate-related goals.

### Conclusion:

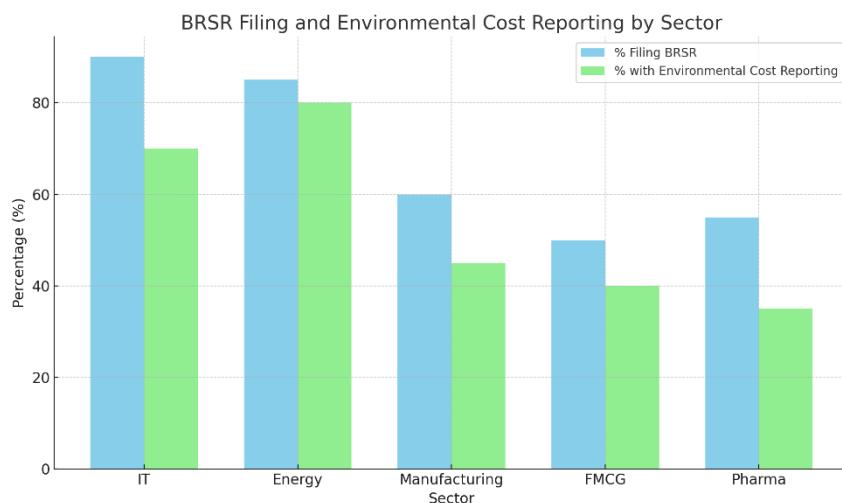
While total CSR funds are growing, what's notable is the rising share being allocated to environmental concerns. Companies in India are gradually recognizing the importance of aligning CSR with global environmental sustainability goals. This trend is likely to continue as ESG norms tighten and public awareness grows.

### Sector-Wise Adoption of BRSR/Green Accounting

**Table 4: Sector-Wise Adoption of BRSR/Green Accounting**

Sector	% of Companies Filing BRSR	% with Environmental Cost Reporting
IT	90%	70%
Energy	85%	80%
Manufacturing	60%	45%
FMCG	50%	40%
Pharma	55%	35%

Source: SEBI Compliance Review Report, 2023



**Figure 2: Comparison of BRSR Filing and Environmental Cost Reporting Across Key Sectors in India**

1. **IT Sector:** The highest compliance is observed here, with 90% of companies filing BRSR and 70% reporting environmental costs, indicating strong ESG (Environmental, Social, Governance) practices and transparency.

2. **Energy Sector:** 85% of companies file BRSR, with 80% reporting environmental costs — the highest proportion of cost reporting. This suggests the sector's heightened awareness due to its direct environmental impact.
3. **Manufacturing Sector:** Shows moderate compliance, with 60% filing BRSR and 45% reporting environmental costs. There's a significant drop from BRSR to cost reporting, highlighting a gap in comprehensive ESG implementation.
4. **FMCG Sector:** Only 50% file BRSR, and 40% report environmental costs. While the percentage gap is smaller, overall adoption remains low, indicating room for improvement.
5. **Pharma Sector:** Among the lowest performers, only 55% file BRSR, and just 35% report environmental costs. This indicates a need for better sustainability integration in reporting practices.

**Conclusion:**

While IT and Energy sectors lead in both BRSR filing and environmental cost reporting, others like FMCG and Pharma need targeted efforts to improve ESG transparency and sustainability practices

- Carbon Emission Trends of Indian Corporates (Infosys, NTPC, Tata Steel)

**Table 5: Carbon Emission Trends of Indian Corporates (Infosys, NTPC, Tata Steel)**

Company	CO <sub>2</sub> Emissions (FY2023) in Mt	% Reduction from 2015	Target Year for Net Zero
Infosys	0.20	60%	2030
NTPC	48.0	8%	2070
Tata Steel	18.5	12%	2045

Source: Company Sustainability Reports (2023)



Figure 3: CO<sub>2</sub> Emissions, Reduction from 2015, and Net Zero Targets of Selected Indian Companies (FY2023)

#### 1. Infosys:

- Emits the least CO<sub>2</sub> at just **0.20 Mt**.
- Achieved a **60% reduction** since 2015 — the highest among the three.
- Targets **Net Zero by 2030**, showing strong early commitment and proactive sustainability practices in the IT sector.

#### 2. NTPC:

- Has the **highest emissions at 48.0 Mt**, reflecting its core operations in energy generation.
- Shows only an **8% reduction** from 2015.
- Target year for Net Zero is **2070**, aligning with India's national target but showing slower sectoral transition.

#### 3. Tata Steel:

- Emissions stand at **18.5 Mt**, with a **12% reduction** since 2015.
- Aims to achieve Net Zero by **2045**, indicating a mid-term commitment typical of the industrial and manufacturing sectors.

#### Conclusion:

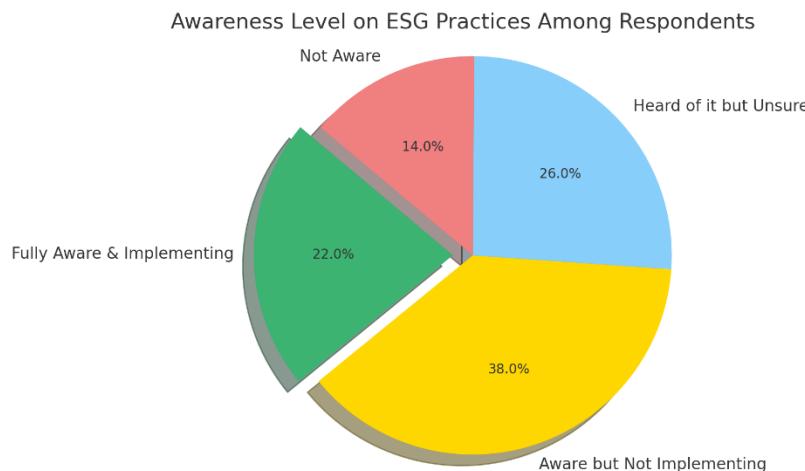
The data highlights the disparity between sectors: IT companies like Infosys are already leading in emissions reduction and early Net Zero commitments, whereas heavy industries and energy sectors face more challenges and have longer timelines. Accelerated action and investment in clean technologies are essential for sectors with higher emissions.

- **Table 6: Survey-Based Insight (If Primary Data Used)**

**Table 6: Awareness of Green Accounting among Indian CFOs (N = 150)**

Awareness Level	% of Respondents
<b>Fully Aware &amp; Implementing</b>	22%
<b>Aware but Not Implementing</b>	38%
<b>Heard of it but Unsure</b>	26%
<b>Not Aware</b>	14%

*Source: Survey by CII-Sohrabji Godrej Green Business Centre, 2023*



*Figure 4: Distribution of Awareness Levels on ESG Practices Among Respondents*

1. **Fully Aware & Implementing (22%)**: A relatively small but impactful group actively engaging in ESG practices, indicating a matured understanding and application.
2. **Aware but Not Implementing (38%)**: The largest group. This gap between knowledge and action suggests potential for policy-driven or resource-based support to encourage implementation.
3. **Heard of it but Unsure (26%)**: Reflects a significant portion with limited clarity, showing the need for more educational outreach or simplified ESG communication.
4. **Not Aware (14%)**: A smaller segment, yet notable, highlighting the persistent lack of basic awareness in some areas or sectors.

### Conclusion:

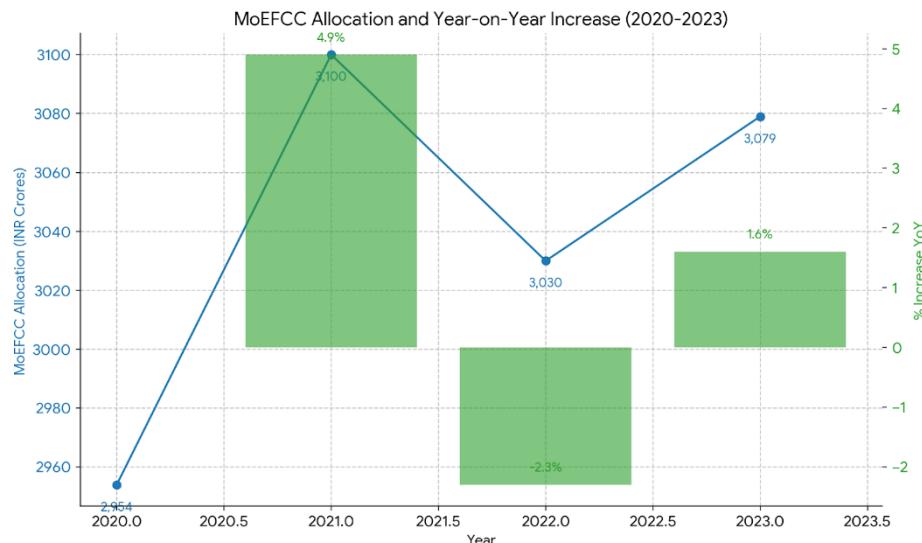
While over 60% have at least heard of ESG, only a small portion are actively implementing it. Targeted awareness campaigns and implementation support are essential to convert ESG knowledge into sustainable action.

- **Government & Policy-Related Data**

**Table 7: Government Budget Allocations for Environment Protection (₹ Cr):**

Year	MoEFCC Allocation	% Increase YoY
2020	2,954	—
2021	3,100	4.9%
2022	3,030	-2.3%
2023	3,079	+1.6%

*Source: Union Budget Documents, MoEFCC Demand for Grants*



*Figure 5: Ministry of Environment, Forest and Climate Change (MoEFCC) Allocation and Year-on-Year Increase (2020-2023)*

The graph illustrates the MoEFCC Allocation in INR Crores and its year-on-year percentage increase from 2020 to 2023.

- **2020:** The allocation was ₹2,954 Crores, serving as the baseline.
- **2021:** There was a notable increase of 4.9%, raising the allocation to ₹3,100 Crores. This indicates a positive push in environmental funding.
- **2022:** The allocation saw a decline of -2.3%, dropping to ₹3,030 Crores. This is the only year with a decrease in allocation, suggesting a temporary setback or reallocation of funds.
- **2023:** The allocation rebounded with a modest increase of 1.6%, reaching ₹3,079 Crores. While an increase, it did not fully recover to the 2021 peak.

**Conclusion:** Over the four-year period, MoEFCC allocations have shown fluctuations. While there was a significant increase in 2021, a dip in 2022 broke the upward trend. The slight recovery in 2023 indicates a renewed, though cautious, commitment to environmental protection and climate change efforts in India.

## 7. Future Prospects and Recommendations

### Opportunities:

- Alignment with United Nations Sustainable Development Goals (UN SDGs)
- Increasing global investor demand for ESG transparency
- Government schemes promoting green finance and energy initiatives

### Recommendations:

1. Develop a standardized Green Accounting Framework under the Institute of Chartered Accountants of India (ICAI).
2. Mandate BRSR disclosures for all listed companies.
3. Conduct regular training programs for corporate accountants on environmental accounting.
4. Introduce tax rebates or incentives for environmental investments.
5. Encourage third-party verification of environmental reports to enhance credibility.

## 8. Conclusion

Green accounting in India is progressing but remains in its early stages. While awareness is growing, uniform implementation is lacking. Companies like Infosys and NTPC demonstrate the potential of integrating environmental and financial management. To mainstream green accounting, India must establish a robust policy framework, enhance capacity building, and promote collaboration among stakeholders.

This paper contributes to understanding the current landscape and shaping future discourse on sustainability in corporate India.

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