

The Evolution of Green Accounting: A Critical Review of Objectives, Challenges, and Recent Developments

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ABSTRACT

Purpose: This study aims to critically review the evolution of green accounting by examining its objectives, regulatory developments, implementation challenges, and current practices at both the international and Indonesian levels.

Design/Methodology/Approach: This study employs a qualitative approach using a library research method with a critical literature review design. Secondary data were collected from peer-reviewed journal articles, international sustainability standards (IFRS, ISSB, GRI, and IFAC), and Indonesian regulations. The collected data were analyzed using qualitative content analysis through thematic synthesis and comparative analysis.

Findings: The findings reveal that green accounting has evolved into a strategic sustainability accounting framework driven by stakeholder expectations, sustainability reporting, and ESG integration. However, its implementation continues to face challenges related to organizational readiness, inconsistent environmental measurement, and the risk of greenwashing.

Research Implications: This study provides a comprehensive understanding of green accounting developments and offers practical insights for policymakers, researchers, and business organizations to strengthen sustainability reporting and harmonize environmental accounting practices.

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INTRODUCTION

Climate change, environmental degradation, and the excessive exploitation of natural resources have driven the emergence of a new paradigm in accounting that extends beyond traditional financial performance to encompass environmental and social impacts. Over the past few decades, green accounting has evolved as a response to increasing stakeholder demands for greater corporate transparency and accountability regarding the environmental consequences of business activities. Green accounting is no longer viewed merely as a mechanism for recording environmental costs; rather, it has become a strategic management tool that supports sustainable development by providing relevant information for economic, environmental, and social decision-making (Sundarasen et al., 2024).

The growing importance of green accounting has been reinforced by the global emphasis on sustainability, the widespread adoption of Environmental, Social, and Governance (ESG) principles, and the continuous development of international sustainability reporting standards. Environmental accounting is now recognized as an integral component of corporate governance because it facilitates the integration of environmental considerations into financial and non-financial reporting systems. Previous studies have demonstrated that the implementation of green accounting enhances transparency, accountability, resource efficiency, and stakeholder confidence while improving corporate sustainability performance and long-term value creation (Sundarasen et al., 2024).

Despite its growing significance, the implementation of green accounting continues to face substantial challenges. One of the primary obstacles is the absence of universally accepted

standards for identifying, measuring, and disclosing environmental costs and benefits. Research by Norarita et al. (2026) indicates that through green accounting, companies can identify, measure, and report the costs and benefits of activities that impact the environment, thereby enabling strategies oriented not only toward short-term profit but also toward long-term business sustainability. Variations in regulatory frameworks across countries, the limited availability of reliable environmental data, high implementation costs, and inadequate expertise in environmental accounting remain major barriers to its widespread adoption (Hendri Nofriadi et al., 2025). Furthermore, organizations are increasingly confronted with the risk of greenwashing, whereby environmental disclosures are used primarily for reputational purposes without reflecting genuine environmental performance, thereby undermining the credibility of sustainability reporting (Mukwarami & van der Poll, 2024).

Recent research indicates that the focus of green accounting studies has shifted considerably. Earlier studies primarily emphasized conceptual foundations and the economic benefits of environmental accounting, whereas contemporary research increasingly explores its integration with ESG reporting, corporate governance, digital reporting technologies, climate-related financial disclosures, and the achievement of the Sustainable Development Goals (SDGs). A recent meta-synthesis of green accounting literature covering the period from 1995 to 2024 identified environmental auditing, sustainability reporting, stakeholder engagement, accountability, and environmental protection as dominant research themes, highlighting the continuous evolution of the discipline in both theoretical and practical dimensions bilal (Sundarasan et al., 2024).

In light of these developments, this study aims to critically review the evolution of green accounting by examining its origins, objectives, implementation challenges, and recent developments. By synthesizing contemporary literature, this review seeks to provide a comprehensive understanding of the changing landscape of green accounting and to offer valuable insights for researchers, practitioners, policymakers, and organizations seeking to strengthen sustainability-oriented accounting practices in an increasingly environmentally conscious business environment.

Although previous studies have extensively discussed environmental accounting, most reviews primarily focus on its implementation or its relationship with corporate performance. Limited studies comprehensively examine the evolution of green accounting by integrating its conceptual development, regulatory changes, implementation challenges, and recent global developments into a single critical review. Therefore, this study fills this gap by providing a comprehensive synthesis of these dimensions.

LITERATURE REVIEW

Green Accounting

Green accounting, also referred to as environmental accounting, is an accounting approach that integrates environmental considerations into organizational accounting and reporting systems. Unlike conventional accounting, which primarily emphasizes financial performance, green accounting identifies, measures, records, and discloses the environmental impacts of business activities to stakeholders (Erstawan, 2024). This approach enables organizations to assess both economic performance and environmental responsibility while supporting sustainable development, particularly as environmental disclosure has become increasingly embedded in corporate reporting practices worldwide (D'Amore, 2025). The International Federation of Accountants (2024) defines environmental accounting as the identification, measurement, analysis, and communication of environmental costs and benefits to support internal decision-making and external reporting. Similarly, environmental management accounting (EMA) provides organizations with environmental information to improve resource management, environmental performance, and organizational legitimacy

(Asiaei et al., 2021). Green accounting therefore functions as a strategic management tool for controlling environmental costs, improving resource efficiency, reducing pollution, and strengthening corporate accountability. In Indonesia, its adoption also supports regulatory compliance, sustainable business practices, and corporate reputation (Sitorus, 2024). More recently, green accounting has evolved beyond the recording of environmental expenditures toward a broader sustainability-oriented system that incorporates Environmental, Social, and Governance (ESG) considerations in response to growing stakeholder expectations, demand for non-financial information, and global commitments to the Sustainable Development Goals (SDGs) (Nyakuwanika & Panicker, 2025). Green accounting may contribute to corporate reputation, operational efficiency, investment attractiveness, and long-term firm value, although its effects on firm value in Indonesia may vary across industries and investment horizons (Amaliah & Candra, 2024). In general, green accounting encompasses environmental cost accounting, which identifies costs related to pollution prevention, waste management, environmental remediation, and natural resource conservation (Murti, 2023); environmental management accounting, which provides environmental information for managerial planning, control, and decision-making (Asiaei et al., 2021); environmental financial accounting, which reports environmental assets, liabilities, expenditures, and risks and supports the development of integrated reporting (Abbasabadi et al., 2022); and sustainability accounting, which integrates economic, environmental, and social performance into comprehensive sustainability reporting to support the achievement of the SDGs (Zuherman & Sisdianto, 2025).

Stakeholder Theory

Stakeholder Theory, introduced by Freeman and McVea (1984), argues that organizations are responsible not only to shareholders but also to a broader range of stakeholders, including governments, investors, customers, employees, suppliers, local communities, and the natural environment. The theory emphasizes that organizational success depends on creating value for diverse stakeholder groups and considering their interests in corporate decision-making. In green accounting, Stakeholder Theory provides a theoretical basis for explaining corporate environmental disclosure, as stakeholders increasingly demand transparent and reliable information on environmental expenditures, emissions, energy consumption, waste management, resource efficiency, and climate-related risks. Green accounting facilitates the identification, measurement, and communication of such information, thereby enhancing transparency, accountability, and stakeholder confidence while supporting informed decision-making. Environmental disclosure can therefore serve as a strategic mechanism through which firms demonstrate environmental responsibility and strengthen relationships with stakeholders. The growing adoption of Environmental, Social, and Governance (ESG) principles and sustainability reporting has further strengthened the relevance of Stakeholder Theory, as firms face increasing pressure to disclose non-financial information and integrate sustainability considerations into their accounting and reporting practices (Hidayati, 2023). Consequently, Stakeholder Theory is frequently used to explain how transparent and accountable reporting helps organizations maintain stakeholder trust and legitimacy (Maharani & Bayangkara, 2025). Nevertheless, the relationship between green accounting, corporate governance, and sustainability outcomes is not necessarily linear or consistently positive, indicating that effective governance mechanisms remain important for translating stakeholder-oriented accounting practices into meaningful sustainability outcomes (Wati et al., 2024). Recent evidence further supports the continuing relevance of the theory, with a systematic literature review identifying Stakeholder Theory as the most frequently applied theoretical perspective in research on ESG disclosure and sustainability reporting (Del Gesso & Lodhi, 2025). Similarly, stakeholder engagement, transparency, accountability, and sustainability reporting have emerged as dominant themes in contemporary green accounting

research, highlighting the central role of stakeholder expectations in shaping environmental accounting practices (Sundarasen et al., 2024).

Regulations in the International and Indonesia International on Green Accounting

Recent evidence also indicates that sustainability reporting and external assurance practices continue to mature globally, with an increasing proportion of large companies obtaining independent assurance over sustainability information to enhance its credibility and comparability. Nevertheless, implementation remains uneven across jurisdictions due to differences in regulatory systems, institutional capacity, corporate governance practices, and organizational readiness, particularly between developed and developing economies.

At the international level, one of the most significant developments is the establishment of the International Sustainability Standards Board (ISSB) under the IFRS Foundation. In 2023, the ISSB issued IFRS S1 – General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 – Climate-related Disclosures, both becoming effective for reporting periods beginning on 1 January 2024. IFRS S1 establishes general requirements for reporting sustainability-related risks and opportunities affecting enterprise value, while IFRS S2 specifically addresses climate-related disclosures covering governance, strategy, risk management, and performance metrics. These standards aim to improve consistency, comparability, and transparency in sustainability reporting across jurisdictions.

Besides IFRS Sustainability Standards, companies frequently adopt internationally recognized sustainability reporting frameworks, including Global Reporting Initiative (GRI) Standards, Task Force on Climate-related Financial Disclosures (TCFD) (now incorporated into IFRS S2), Sustainability Accounting Standards Board (SASB) Standards, and Integrated Reporting (<IR>) Framework.

Indonesia on Green Accounting

In Indonesia, green accounting has gradually become part of the broader sustainable finance agenda. Although Indonesia has not yet enacted a specific Green Accounting Standard (PSAK), environmental reporting is regulated through several legal instruments. The primary regulation is the Otoritas Jasa Keuangan (2017). This regulation requires financial institutions, listed companies, and public companies to implement sustainable finance principles and publish Sustainability Reports as part of their corporate accountability. Other relevant regulations include:

1. Law No. 32 of 2009 concerning Environmental Protection and Management.
2. Law No. 40 of 2007 on Limited Liability Companies, particularly Article 74 concerning Corporate Social and Environmental Responsibility (CSR).
3. Government Regulation No. 47 of 2012 regarding Corporate Social and Environmental Responsibility.
4. Sustainability reporting guidelines issued by the Indonesia Stock Exchange (IDX) and OJK.

METHODS

This study employed a qualitative research approach using the library research method. Qualitative research aims to understand, interpret, and critically analyze a phenomenon based on existing information rather than numerical data. It emphasizes the exploration of concepts, theories, and findings from previous studies to generate comprehensive insights into a particular research topic. Library research was selected because the objective of this study is not to collect primary data from respondents but to critically examine the evolution of green accounting, including its objectives, international and Indonesian regulatory developments,

implementation challenges, and recent issues discussed in the academic literature. According to (Snyder, 2019), literature review research is an appropriate methodology for synthesizing existing knowledge, identifying research gaps, and developing new conceptual understandings within a particular field.

RESULT

The Development and Evolution of Green Accounting

The evolution of green accounting reflects a paradigm shift in accounting from a traditional financial-oriented approach toward a broader framework that integrates economic, environmental, and social dimensions (Sisaye & Birnberg, 2025). Initially, accounting practices focused primarily on measuring profitability and maximizing shareholder value. However, increasing environmental degradation, climate change, industrial pollution, and depletion of natural resources during the late twentieth century prompted governments, academics, and international organizations to reconsider the role of accounting in promoting sustainable development (Gray, 2002; Schaltegger & Burritt, 2017). The concept of green accounting began to gain international attention in the 1970s and 1980s alongside the emergence of environmental management and corporate social responsibility (CSR), a trajectory that has since been described as evolving from the traditional costing approaches shaped by the Industrial Revolution into a strategic dimension incorporating environmental accounting alongside other modern cost-management methods such as activity-based costing and life-cycle costing (Martadinata, 2024). During this period, companies started recognizing environmental expenditures, such as waste treatment costs and pollution prevention expenses, although these costs were generally recorded as operational expenses without systematic disclosure. In the 1990s, environmental accounting developed further through the introduction of Environmental Management Accounting (EMA), which emphasized the identification and measurement of environmental costs to improve managerial decision-making (Burritt et al., 2023; Schaltegger & Burritt, 2017).

A major milestone occurred following the publication of the Brundtland Report (1987) and the United Nations Conference on Environment and Development (Earth Summit) in Rio de Janeiro (1992). These events strengthened global awareness that sustainable development should be incorporated into corporate governance and accounting practices. Consequently, green accounting evolved from merely recording environmental costs into a strategic tool for measuring environmental performance and supporting sustainability-oriented decision-making (World Commission on Environment and Development [WCED], 1987; United Nations, 1992). This transformation can also be explained through Stakeholder Theory, which argues that organizations are accountable not only to shareholders but also to a broader range of stakeholders, including governments, investors, customers, employees, local communities, and environmental groups (Freeman & McVea, 1984). As stakeholders increasingly demand greater transparency regarding environmental performance, organizations are encouraged to adopt green accounting practices and disclose environmental information as part of their corporate accountability. Consequently, green accounting has become an important mechanism for responding to stakeholder expectations, enhancing corporate legitimacy, and strengthening long-term stakeholder relationships (Del Gesso & Lodhi, 2025).

The twenty-first century has witnessed a rapid expansion of green accounting driven by globalization, stakeholder pressure, and the growing adoption of Environmental, Social, and Governance (ESG) principles. International initiatives such as the Global Reporting Initiative (GRI), the Task Force on Climate-related Financial Disclosures (TCFD), and more recently the International Sustainability Standards Board (ISSB) have transformed environmental reporting into a more standardized practice. The issuance of IFRS S1 and IFRS S2, effective from January 2024, marked a significant milestone by integrating sustainability-related disclosures

with general-purpose financial reporting, thereby increasing comparability and transparency across global capital markets (International Federation of Reporting Standards, 2023; International Federation of Reporting Standards, 2023). The growing adoption of these frameworks further demonstrates the practical application of Stakeholder Theory, as organizations increasingly disclose sustainability information to meet the expectations of investors, regulators, customers, and other stakeholders seeking reliable environmental and ESG-related information (Del Gesso & Lodhi, 2025)

Recent literature also demonstrates a significant increase in academic interest in green accounting. Systematic literature reviews indicate that research has shifted from conceptual discussions toward practical issues such as ESG reporting, environmental performance measurement, climate-related financial disclosures, digital sustainability reporting, and corporate value creation. In Indonesia, the number of green accounting publications has increased considerably during the last decade, indicating growing awareness among researchers and practitioners regarding sustainable business practices. This trend reflects the increasing recognition that stakeholder demands have become one of the primary drivers of environmental accounting innovation and sustainability reporting worldwide (Del Gesso & Lodhi, 2025; Sundarassen et al., 2024).

Table 1. Evolution of Green Accounting

Period	Development	Main Characteristics
1970-1980	Environmental Cost Accounting	Pollution Cost
1990	EMA	Managerial Decision
2000	CSR	Environmental Disclosure
2010	ESG	Integrated Reporting
2023-2024	IFRS S1 S2	Global Sustainability Reporting

Source: Adapted and synthesized from Burritt et al. (2023), Schaltegger and Burritt (2000), Gray (2002), IFRS Foundation (2023), and Sundarassen et al. (2024)

Challenges in Green Accounting Implementation

Despite its growing importance, the implementation of green accounting continues to face numerous challenges at both the international and national levels. The first challenge concerns the absence of universally standardized measurement methods. Although IFRS S1 and IFRS S2 guide sustainability-related disclosures, they primarily regulate disclosure rather than the recognition and measurement of environmental assets, liabilities, revenues, and expenses. Consequently, companies often adopt different measurement approaches, reducing the comparability of sustainability information across industries and countries (International Federation of Accountants, 2024; International Federation of Reporting Standard, 2023a; International Federation of Reporting Standard, 2023b)

A second challenge relates to the difficulty of measuring environmental impacts in monetary terms. Many environmental costs, including biodiversity loss, ecosystem degradation, carbon emissions, and natural resource depletion, cannot be easily quantified using conventional accounting methods. This limitation complicates the integration of environmental information into financial statements and reduces the usefulness of environmental performance evaluation (Burritt et al., 2023; Sundarassen et al., 2024). Third, organizations frequently encounter high implementation costs. Establishing environmental management systems, collecting sustainability data, conducting environmental audits, implementing carbon accounting, and obtaining sustainability assurance require substantial financial and human resources. These costs are particularly burdensome for small and medium-sized enterprises (SMEs), especially in developing countries (International Federation of Accountants, 2024; Mukwarami & van der Poll, 2024).

Another significant issue is the limited availability of qualified professionals. Effective implementation of green accounting requires interdisciplinary expertise combining accounting, environmental science, sustainability management, and data analytics. Many organizations,

particularly in emerging economies, still face shortages of personnel with such competencies, limiting the quality and reliability of sustainability reporting (Sundarassen et al., 2024). Furthermore, the increasing popularity of ESG reporting has raised concerns regarding greenwashing, where organizations disclose environmental information primarily to enhance their corporate image rather than accurately reflecting their environmental performance. This practice reduces stakeholder trust and highlights the need for stronger assurance mechanisms and regulatory oversight. From the perspective of Stakeholder Theory (Freeman & McVea, 1984), transparent and reliable environmental disclosure is essential because stakeholders rely on sustainability information when evaluating corporate accountability and long-term performance. Therefore, greenwashing not only undermines the credibility of environmental reporting but also weakens stakeholder confidence and corporate legitimacy (Del Gesso & Lodhi, 2025; Suchman, 1995).

From a regulatory perspective, implementation also varies significantly across countries. Developed economies generally possess stronger regulatory frameworks and greater institutional support than developing countries. Differences in legal systems, enforcement mechanisms, corporate governance quality, and sustainability awareness contribute to uneven adoption of green accounting worldwide. These differences influence organizations' ability to respond to stakeholder expectations regarding environmental transparency and sustainable business practices, resulting in varying levels of green accounting implementation across jurisdictions (Del Gesso & Lodhi, 2025; International Federation of Reporting Standards, 2023; International Federation Reporting Standard, 2023). The reviewed literature consistently indicates that measurement inconsistency remains the most frequently discussed issue in green accounting. Although international sustainability standards have improved disclosure quality, the absence of mandatory recognition and measurement guidance continues to limit comparability across industries. This finding suggests that future regulatory reforms should focus not only on disclosure but also on standardized environmental accounting measurements. In addition, strengthening environmental accounting standards will enable organizations to provide more reliable and decision-useful information for stakeholders, thereby supporting the fundamental principles of Stakeholder Theory, which emphasize transparency, accountability, and long-term value creation for all stakeholder groups (Freeman, 1984; IFRS Foundation, 2023a; Del Gesso & Lodhia, 2024).

Table 2. Challenges in Green Accounting

Challenges	Descriptions	Implications & Solutions
Lack of Standardized Measurement Methods	There is no universally accepted method for recognizing and measuring environmental assets, liabilities, costs, and benefits.	Reduces the comparability and reliability of sustainability information across organizations. This challenge can be addressed by developing globally harmonized environmental accounting standards and strengthening the implementation of IFRS Sustainability Disclosure Standards.
Difficulty in Monetizing Environmental Impacts	Environmental impacts such as biodiversity loss, ecosystem degradation, and carbon emissions are difficult to quantify in monetary terms.	Limits the integration of environmental information into financial statements and managerial decision-making. Organizations should improve environmental valuation techniques and adopt standardized carbon accounting methodologies.
High Implementation Costs	Green accounting requires substantial investments in environmental	Creates financial burdens, particularly for SMEs and

	management systems, sustainability reporting, assurance services, and data collection technologies.	organizations in developing countries. Governments can support implementation through incentives, subsidies, and simplified sustainability reporting frameworks.
Limited Human Resource Competencies	Organizations often lack professionals with expertise in sustainability accounting, environmental management, and ESG reporting.	Reduces reporting quality and environmental performance measurement. Continuous professional education, sustainability training, and interdisciplinary collaboration are needed to strengthen organizational capacity.
Greenwashing Risk	Some organizations disclose environmental information primarily to enhance their corporate image without significant environmental improvements.	Weakens stakeholder trust and reduces the credibility of sustainability reporting. Stronger external assurance, independent verification, and regulatory oversight are essential to improve reporting integrity.
Regulatory and Institutional Differences	Sustainability regulations, enforcement mechanisms, and institutional support vary considerably across countries.	Results in inconsistent implementation and disclosure practices. Greater international regulatory harmonization and stronger institutional support are required to improve reporting consistency.
Data Availability and Quality Issues	Environmental data are frequently fragmented, incomplete, or difficult to verify.	Reduces the accuracy and reliability of sustainability reporting. Organizations should invest in integrated digital reporting systems, environmental databases, and AI-assisted data analytics.
Stakeholder Awareness and Engagement	Some stakeholders continue to prioritize short-term financial performance over environmental accountability.	Weak stakeholder pressure discourages comprehensive green accounting implementation. Increasing sustainability awareness and promoting ESG-oriented investment can encourage greater corporate environmental accountability.

Source: Adapted and synthesized from Del Gesso and Lodhia (2024); Sundarasan et al. (2024); IFRS Foundation (2023); International Federation of Accountants (2024); Mukwarami and Van der Poll (2024)

Current Implementation of Green Accounting: International & Indonesia Perspectives International Implementations

At the international level, green accounting has become increasingly integrated into corporate sustainability strategies. Large multinational corporations now routinely disclose environmental information through sustainability reports, integrated reports, and ESG reports using internationally recognized frameworks such as the Global Reporting Initiative (GRI) Standards and the IFRS Sustainability Disclosure Standards (Global Reporting Initiative, 2021; International Federation of Reporting Standards, 2023). The establishment of the International Sustainability Standards Board (ISSB) represents one of the most significant recent developments in global sustainability reporting. The issuance of IFRS S1 and IFRS S2, effective for annual reporting periods beginning on or after 1 January 2024, has introduced globally consistent requirements for sustainability-related financial disclosures. These

standards require organizations to disclose governance structures, sustainability-related risks and opportunities, strategic responses, risk management processes, and sustainability performance metrics that may influence enterprise value (International Federation of Reporting Standards, 2023; International Federation Reporting Standard, 2023)

In Europe, sustainability reporting has become increasingly mandatory through the implementation of the Corporate Sustainability Reporting Directive (CSRD), which requires companies to provide standardized environmental and sustainability disclosures. Consequently, environmental information is gradually becoming as important as traditional financial information in supporting investment decision-making and corporate governance (European Commission, 2023). Institutional investors have also intensified their use of Environmental, Social, and Governance (ESG) information when evaluating corporate performance. As a result, companies are increasingly integrating environmental performance indicators into executive compensation, strategic planning, enterprise risk management, and long-term investment decisions (Del Gesso & Lodhi, 2025; International Federation of Accountants, 2024).

Indonesia Implementations

Compared with developed countries, Indonesia remains in the early stages of green accounting implementation, although significant progress has been achieved over the past decade. One of the major regulatory milestones is the issuance of OJK Regulation No. 51/POJK.03/2017, which requires financial institutions, listed companies, and public companies to implement sustainable finance principles and publish Sustainability Reports (Otoritas Jasa Keuangan, 2017). In addition, the Indonesian government has introduced various policies supporting ESG investment, sustainable finance, and environmental protection, encouraging companies to improve environmental transparency and accountability (Otoritas Jasa Keuangan, 2021).

Research trends also demonstrate growing academic interest in green accounting. Recent literature indicates that Indonesian studies increasingly examine the relationship between green accounting, environmental disclosure, ESG performance, corporate governance, financial performance, and firm value. Nevertheless, empirical research remains concentrated on manufacturing companies listed on the Indonesia Stock Exchange (IDX), indicating opportunities for future studies involving SMEs, public sector organizations, and non-profit institutions (Del Gesso & Lodhi, 2025; Sundarasan et al., 2024).

Despite these positive developments, several implementation challenges remain. These include limited regulatory enforcement, inconsistent environmental disclosures, inadequate technical expertise, insufficient environmental information systems, and relatively low sustainability awareness among SMEs. Furthermore, environmental reporting practices vary considerably across industries, making cross-company comparisons difficult (International Federation of Accountants, 2024; Mukwarami & van der Poll, 2024). Comparative evidence suggests that while developed economies have established more mature green accounting systems supported by mandatory sustainability reporting requirements and stronger institutional frameworks, Indonesia continues to strengthen its sustainability ecosystem through regulatory reforms, ESG initiatives, and increasing stakeholder awareness. These developments indicate that green accounting in Indonesia is gradually transitioning from voluntary environmental disclosure toward a more comprehensive sustainability accounting framework aligned with international standards (Del Gesso & Lodhi, 2025; International Federation of Reporting Standard, 2023a; Otoritas Jasa Keuangan, 2021).

DISCUSSION

The findings of this review demonstrate that green accounting has undergone a substantial transformation from a conventional environmental cost accounting approach into a comprehensive sustainability accounting framework. This evolution has been driven not only by increasing environmental concerns but also by growing stakeholder expectations and institutional pressures for greater corporate transparency and accountability. In line with Stakeholder Theory (Freeman & McVea, 1984), organizations increasingly recognize that long-term corporate value depends on balancing the interests of shareholders with those of governments, investors, communities, customers, employees, and other stakeholders. Consequently, environmental disclosure has become an essential mechanism for maintaining stakeholder trust and supporting sustainable business practices.

The review also indicates that the development of green accounting has accelerated following the introduction of global sustainability initiatives such as the GRI Standards, ESG reporting, and more recently the ISSB's IFRS S1 and IFRS S2. These initiatives have improved the consistency and comparability of sustainability disclosures while encouraging organizations to integrate environmental information into strategic planning and corporate governance. Nevertheless, the literature consistently reveals that the absence of standardized environmental measurement methods remains one of the most significant barriers to achieving globally comparable green accounting practices. This finding suggests that harmonization should extend beyond disclosure requirements to include recognition and measurement principles for environmental costs and liabilities.

Another important finding concerns the implementation gap between developed and developing countries. While developed economies generally possess stronger institutional support, regulatory enforcement, and organizational capabilities, developing countries, including Indonesia, have not yet established comprehensive accounting standards governing the recognition and measurement of environmental assets, liabilities, revenues, and expenses. Consequently, environmental disclosures remain inconsistent across industries. Furthermore, many organizations, particularly small and medium-sized enterprises (SMEs), continue to face financial constraints, limited technological infrastructure, and shortages of professionals with expertise in sustainability accounting and ESG reporting.

From the perspective of Stakeholder Theory (Freeman & McVea, 1984), the relatively lower demand for environmental transparency from investors and other stakeholders also contributes to slower implementation. Sustainability reporting is still largely driven by regulatory compliance rather than strategic value creation. Therefore, strengthening regulatory harmonization, enhancing professional competencies, expanding digital sustainability reporting, and increasing stakeholder awareness are essential for improving green accounting implementation and aligning Indonesia with international sustainability reporting practices. Furthermore, the increasing emphasis on ESG reporting has created both opportunities and challenges. On one hand, green accounting enhances transparency, corporate reputation, and investment attractiveness. On the other hand, the growing demand for sustainability disclosure increases the risk of greenwashing, where organizations provide symbolic environmental disclosures without corresponding improvements in actual environmental performance. Therefore, stronger external assurance, independent verification, and internationally harmonized sustainability standards.

CONCLUSION

Green accounting has evolved from a system focused on recording environmental costs into a broader sustainability accounting framework that integrates economic, environmental, and social dimensions. This development has been driven by growing concerns about environmental degradation, climate change, and sustainable development, supported by

initiatives such as the Global Reporting Initiative (GRI), Environmental, Social, and Governance (ESG) reporting, and the International Sustainability Standards Board (ISSB) through IFRS S1 and IFRS S2. Green accounting therefore functions not only as a compliance mechanism but also as a strategic tool for improving transparency, accountability, risk management, and long-term value creation. However, its implementation still faces challenges, including inconsistent measurement methods, difficulties in valuing environmental impacts, high implementation costs, limited expertise, regulatory differences, and the risk of greenwashing. Addressing these challenges requires stronger regulation, organizational capacity, technological innovation, and stakeholder collaboration. Internationally, IFRS Sustainability Disclosure Standards have strengthened efforts to improve the comparability and credibility of sustainability reporting. In Indonesia, green accounting has also progressed through sustainable finance policies, particularly OJK Regulation No. 51/POJK.03/2017 on Sustainability Reports. Nevertheless, implementation remains uneven across sectors because of differences in organizational readiness, regulatory enforcement, and technical capacity. Overall, green accounting has become an important component of sustainable corporate reporting and provides a useful framework for researchers, organizations, and policymakers in advancing transparent and responsible business practices.

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