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Green Budgeting Accountability in Yogyakarta: Governance Barriers and Financial Reporting Transparency

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Abstract

Background: The Net Zero Emissions target has accelerated the adoption of green budgeting. However, despite achieving the highest accountability rating (SAKIP AA), the Special Region of Yogyakarta still faces a gap between its policy commitments and the transparency of its financial reporting.
Objective: This study aims to analyze the accountability challenges in implementing green budgeting in Yogyakarta.
Methods: This qualitative study employed a case study design using semi-structured, in-depth interviews with five key informants (INF-01 to INF-05) from Bapperida, BPKAD, DLHK, and public sector accounting experts. Document analysis was conducted on the RKPD, KUA-PPAS, and Notes to the 2021–2025 Financial Statements (CaLK). Data were analyzed using a six-stage thematic analysis, with validity ensured through data triangulation and member checking.
Results: The main barriers to implementation were a lack of specific technical guidelines, sectoral ego, and differing perceptions across agencies regarding environmental activity classification. The rigidity of the national SIPD system, which lacks green tagging features, further complicates the identification of green expenditures. Consequently, green costs are embedded within routine expenditure items in the CaLK, resulting in re-labeling practices to meet administrative requirements. Moreover, limited regional fiscal capacity and shifting policy priorities contribute to a gap between planning and actual implementation.
Conclusion: High accountability ratings (SAKIP AA) do not ensure substantive sustainability accountability, as green budgeting in Yogyakarta remains largely symbolic. Strengthening implementation requires integrating the Green Chart of Accounts into SIPD, developing cross-sectoral classification standards, and enhancing transparency in environmental cost disclosure. The findings provide actionable guidance for local governments seeking to align fiscal governance with sustainability commitments.

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INTRODUCTION

The global commitment to climate change mitigation under the Sustainable Development Goals (SDGs) has driven a significant transformation in public financial management, including the adoption of green budgeting. Green budgeting is an approach that aligns public fiscal policy with environmental and climate change goals (Marchewka-Bartkowiak, 2023). In Indonesia, the Ministry of Finance, through the Center for Climate Change Financing and Multilateral Policy, with support from the United Nations Development Programme (UNDP), has implemented Climate Budget Tagging at the national level to identify, track, and monitor climate-related expenditures and programs within the state budget (APBN) since 2016. This initiative aims to assess the environmental impact of public spending and ensure consistency with sustainable development goals. Several member countries of the Organization for Economic Co-operation and Development (OECD) have adopted green budgeting systems that incorporate environmental and climate considerations into fiscal policy (OECD, 2023). Indonesia's commitment to net zero emissions requires regional governments to integrate environmental considerations into their fiscal policies (Kurniawan et al., 2023). Guided with its philosophy of *Hamemayu Hayuning Bawana*, Yogyakarta has adopted this principle as the foundation for environmentally sustainable economic development (Sulistiyani et al., 2021).

Green budgeting serves as an operational mechanism for translating philosophical values into measurable budget allocations. However, its implementation faces structural barriers (Sulistiyani et al., 2021; Sumarmi et al., 2024). Green budget allocations are often confined to administrative compliance, with limited integration into robust governance frameworks. Despite the relative flexibility of the regional budget, environmental challenges such as the waste management crisis following the closure of the Piyungan Landfill and threats to local food security indicate that existing allocations have yet to generate measurable environmental outcomes. For instance, the Special Region of Yogyakarta's 2023 Regional Budget (APBD) allocated approximately IDR 245 billion (2.1% of total expenditure) to environmental programs, yet measurable reductions in greenhouse gas emissions and waste diversion rates remained below national targets (BPS DIY, 2023). Between 2021 and 2023, Yogyakarta's greenhouse gas emissions from the waste sector increased by 12%, despite an 18% increase in the environmental budget during the same period (KLHK, 2024), illustrating a disconnect between fiscal commitment and environmental outcomes. This condition reflects a mismatch between fiscal resources and mitigation results at the regional level, highlighting the need for a more transparent, targeted, and accountable budgeting system to facilitate effective monitoring and evaluation of environmental expenditures (Firdaus et al., 2024).

Transparency in regional budget management remains essential from a public sector accounting perspective (Mahmudah et al., 2024). However, environmental programs are often not explicitly identified as green expenditures (Sneideriene & Legenzova, 2025). Many regional governments still prioritize conventional economic indicators such as GDP growth and increases in regional own-source revenue (PAD), without adequately considering long-term environmental and social impacts. This limits the ability to accurately assess environmental budget allocations (Taufiq, 2025). A more comprehensive monitoring and evaluation system is required to assess budget effectiveness in supporting sustainable development indicators, including carbon emission reductions, improved air and water quality, enhanced waste management, and a more holistic social welfare index (Kurrohman & Oktaviani, 2025).

The rigidity of the SIPD-RI system limits the classification of environmental costs due to its limited classification features. Consequently, Local Government Financial Statement (LKPD) and Notes to the Financial Statements (CaLK) do not present separate green cost information, which can reduce the quality of information for decision-making and weaken horizontal accountability to the public (Firdaus et al., 2024; Mediaty et al., 2025). Moreover, Ulfa (2025) argued that increased allocations for environmentally oriented programs reflect a growing fiscal commitment to sustainability, although limitations in budget classification remain a challenge for accurate measurement. Green budgeting is therefore relevant not only to environmental policy but also to the quality of public sector financial reporting. Its implementation can enhance local governments' credibility among investors, stakeholders, and the public.

In Indonesia, literature on green budgeting is dominated by policy and budget allocation aspects (Ruscitasari et al., 2025). Research focusing on transparency in financial reporting following the implementation of green budgeting remains limited, particularly regarding the identification and disclosure of green costs within the CaLK (Prayogi & Kurniawan, 2024). Green costs are often treated as routine expenditures without clear separation and remain embedded within OPD work programs. As a result, their identification relies primarily on subjective interpretations of budget documents. This is consistent with global challenges, where a major barrier in green accountability is limited environmental impact data and a lack of guidance on financial reporting disclosures (OECD, 2024). Consequently, it is difficult for stakeholders to distinguish between routine operational expenditures and environmental investments with tangible impacts. The lack of explicit information from relevant agencies encourages subjective analysis, ultimately reducing the usefulness of financial information for sustainability-based decision-making.

Some previous studies have examined the potential of green budgeting to improve public spending efficiency and fiscal commitment to sustainability. However, the challenges of accountability and transparency in green financial reporting, particularly local governance barriers, have not been thoroughly analyzed (Awudu et al., 2025). Existing studies tend to focus on macro-policy aspects, while an in-depth analysis the rigidity of the SIPD system and its integration with regional financial reporting remains limited (Manik et al., 2025).

The Special Region of Yogyakarta (DIY) has unique characteristics, including its philosophy of *Hamemayu Hayuning Bawana*, special autonomy status, and the highest performance accountability rating in Indonesia (SAKIP AA). However, this region continues to face a gap between green budget commitments and reporting transparency. This case study contributes valuable institutional lessons for other regions in Indonesia. The 2021–2025 period represents a crucial opportunity for this province to demonstrate that its "Green Yogya" vision is not merely symbolic but is also concretely reflected in transparent and accountable financial reporting.

This study aims to investigate accountability challenges in implementing green budgeting in Yogyakarta, focusing on governance barriers, transparency in green financial reporting, and strengthening public sector accounting mechanisms to support the transition toward environmental sustainability. The findings are expected to benefit regional governments by providing institutional lessons for overcoming systemic barriers and to inform national policymakers regarding the need for SIPD system reform. Theoretically, this study contributes to expanding the public accountability framework within environmental governance in decentralized contexts.

METHOD

This qualitative study employed a case study design as proposed by (Yin, 2018). This design was suitable for investigating in-depth accountability challenges, governance barriers, and financial reporting transparency in the implementation of Green Budgeting Accountability. It allowed for a deep and contextual understanding of complex underlying processes in a real-life environment, where the boundaries between the phenomenon (green budgeting accountability) and its context (provincial government operations) could not be clearly separated. This study also sought to further identify budget synchronization and governance challenges in financial reporting. The study adopted an interpretivist philosophical stance, recognizing that accountability challenges in green budgeting are socially constructed through the interactions of bureaucratic actors, institutional norms, and policy frameworks (Creswell & Poth, 2018). A constructivist ontology underpins the research, wherein meaning is co-constructed through the lived experiences of informants within their institutional contexts.

The object of this study was the Provincial Government of Yogyakarta, with a specific focus on green budgeting practices in 2021–2025. This province has unique characteristics, including the highest performance accountability rating in Indonesia (SAKIP AA), special autonomy status, and its "Green Yogya" vision for environmental sustainability. It is a suitable case because it still experiences a gap between green budget commitments and financial reporting transparency. This study is expected to provide valuable institutional lessons for other provinces facing similar challenges in integrating green budgeting with the SIPD.

Data collection techniques included document analysis and semi-structured in-depth interviews. The instruments used were (1) a document analysis checklist based on OECD (2024) green budgeting disclosure criteria and Indonesian Government Accounting Standards (SAP), and (2) a semi-structured interview guide containing open-ended questions aligned with the three main research themes (accountability challenges, governance barriers, and financial reporting transparency).

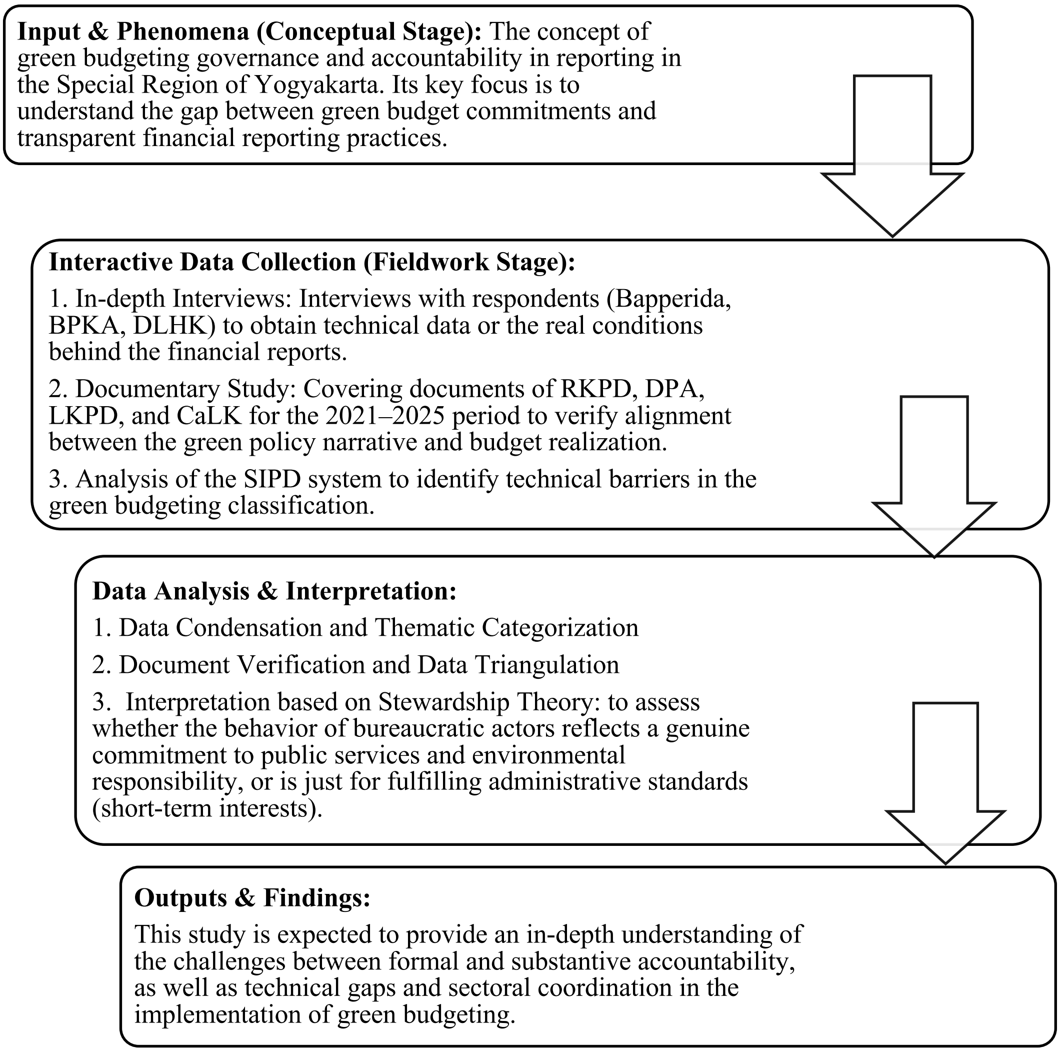
Data were analyzed using a step-by-step thematic analysis procedure Braun & Clark (2022), combined with content analysis. The sampling strategy used purposive sampling involving key stakeholders to ensure depth and validity of data through source triangulation. The sample consisted of policy authorities from Regional Development Planning, Research, and

Innovation Agency (Bapperida) (INF-01 and INF-02), who are responsible for formulating green budgeting policies and synchronizing regional strategic programs; technical implementers from Regional Financial and Asset Management Agency (BPKAD) (INF-03), who are responsible for integrating the Regional Government Information System (SIPD) and budget classification; and program managers from Environmental and Forestry Agency (DLHK) (INF-04), who understand the operational realities and obstacles in reporting environmental program achievements in the field. To ensure objective analysis, public sector accounting experts (INF-05) were also involved to review accountability and budget governance practices.

A semi-structured interview guide was developed based on two main dimensions: Governance, and Accountability & Transparency of Reporting. The questions were designed in an open-ended manner to encourage critical argumentation and in-depth explanations. They were grouped into two clusters: (1) the Governance and Coordination Synergy dimension, which explores coordination mechanisms between OPDs in determining the classification of activities as part of green budgeting. Its key focus is the extent to which sectoral ego or differences in interests between agencies hinder the synchronization of environmental programs, as well as the existence and effectiveness of cross-sectoral standard operating procedures (SOPs) regulating green budget governance in the province; and (2) the Accountability and Transparency of Reporting dimension, which explores technical challenges in classifying, coding, and disclosing green spending in the financial reporting system, particularly in the CaLK. The questions focused on the extent to which reporting goes beyond mere administrative compliance, as well as the ability of the CaLK to reflect the real impact of green budget allocations on environmental sustainability. This interview guide was designed to align with institutional theory and the public accountability framework used in the research.

To ensure the quality and validity of the findings, data validity testing strategies were applied (Lincoln & Guba, 1985; Creswell & Poth, 2018). The strategies included (1) data triangulation, by comparing data from three sources—interviews, official documents, and SIPD system analysis—to reduce bias and increase the credibility of findings; and (2) member checking, in which initial findings and interpretations were returned to the four primary institutional informants (INF-01 to INF-04) for confirmation and clarification. INF-05 (the academic expert) provided additional analytical validation rather than data confirmation. This process was conducted during the verification stage to ensure alignment between the researcher's interpretations and the informants' understanding. All five informants provided written informed consent prior to participation, and data anonymization was applied throughout the analysis. Permission to access government documents was obtained formally through official correspondence with each relevant agency. Regarding the 2025 documents, the analyzed CaLK 2025 represented the approved interim version available at the time of data collection (February–April 2026); the final audited version was not yet publicly available.

The flowchart of this case study is presented below.



RESULTS AND DISCUSSION

Results

Qualitative Findings Matrix

The following matrix summarizes the key themes identified from the thematic analysis, linking interview evidence, documentary evidence, and analytical implications:

Table 1. Qualitative Findings Matrix

Theme	Interview Evidence	Documentary Evidence	Implication
Absence of green budgeting technical guidelines	*"Bapperida does not have specific guidelines regarding green budgeting and planning..." (INF-01)*	RKPD 2023 lacks explicit green budget classification criteria; Governor Regulation No. 50/2012 remains the operative but outdated reference	Weak institutional accountability; environmental spending remains unverifiable against policy targets
SIPD system rigidity & absence of Green Tagging	*"We do not have any specific mechanism, but we usually identify environment-related activities..." (INF-03)*	CaLK 2022-2024: environmental expenditures embedded in Goods & Services category (e.g., sub-activity ''Waste Management'' coded under routine operations, not	Reduces horizontal accountability; stakeholders cannot distinguish routine from environmental expenditure

		environmental investment)	
Re-labeling / symbolic compliance	*"The concept of green budgeting doesn't yet exist formally, but has been integrated into planning..." (INF-04)*	LRA 2022: general road maintenance activities classified under "Environmental Protection" program without environmental impact criteria; DLHK DPA includes social activities relabeled as green programs	Risk of greenwashing; inflated green expenditure reporting obscures true fiscal commitment
Planning-realization gap	*"Adjustments frequently occur due to fiscal capacity. While programs are still implemented, efficiency measures are applied..." (INF-02)*	RPJMD 2022-2027 targets 40% waste reduction; LRA 2023 shows only 28% realization of waste reduction sub-activities; KUA-PPAS budget for environmental program cut by 15% during mid-year adjustment	Demonstrates inconsistency between sustainability commitments and actual fiscal prioritization

Green Budgeting Process in Yogyakarta

The green budgeting process in the Special Region of Yogyakarta follows the standard regional budgeting mechanism, namely the planning stages outlined in the Regional Government Work Plan (RKPD). Interviews with Bapperida revealed that the understanding of green budgeting in this province has reached the initial stage of implementation but has not yet been fully integrated into the regional budgeting system. The informant reported that Bapperida does not have specific technical guidelines that formally regulate the implementation of green budgeting at the regional level. One informant explained:

"Bapperida does not have specific guidelines regarding green budgeting and planning…"

This condition indicates that the existing understanding remains conceptual and normative. It can be concluded that the primary focus of the policy is emission reduction, while the technical system for environmentally friendly budgeting has not yet been fully standardized. This is associated with national-level reporting through Bappenas' system, the ASKSARA application. All mitigation and adaptation activities can be reported using the previous year's mechanism based on planning documents. Thus, environmentally friendly budgeting has been integrated into the national reporting framework, although it remains largely administrative.

This conceptual understanding is not yet consistent between program planning and implementation, with a gap between targets set in planning documents (Renstra OPD and RPJMD) and actual implementation due to limited regional fiscal capacity. Moreover, support from local government, the business sector, and higher education institutions remains limited. This finding is consistent with the previous study by Sinervo (2024), which found that sustainability integration in local government is implemented gradually rather than abruptly. The provincial government has not specifically regulated green budgeting.

The planning of environmental programs in the RKPD and General Budget Policy and Temporary Budget Priority & Ceiling (KUA-PPAS) indicates that commitment to low-emission development has been reflected in program priorities and regional budget allocations. The RKPD functions as an annual document outlining development priorities, while the KUA-PPAS serves as a bridge between planning and budget allocation. Therefore, environmental programs in both documents indicate efforts to integrate environmental considerations into regional planning and budgeting. In this province, green programs in the RKPD focus on climate change mitigation and adaptation efforts implemented across various development sectors. These programs are not always explicitly labeled "Green Tagging" but are intended to support emission reduction, environmental resilience, and sustainable development.

The focus of the green program is low-carbon development by addressing the impacts of climate change and adapting to environmental risks. The regional government is currently designing a study on low-carbon development and climate adaptation as a basis for new regulations. This suggests that the RKPD and KUA-PPAS have oriented development priorities toward environmental issues, while the supporting regulatory framework is still being refined.

The green budgeting concept in DLKH can be seen from the relationship between the budget and environmental performance targets, particularly indicators of environmental quality. These indicators serve as primary references in setting program and activity priorities, ensuring that budget allocations support the achievement of measurable environmental outcomes. It can be concluded that environmental aspects are already considered in the planning and budgeting process, even though they are not explicitly labeled as green budgeting. One informant stated:

"The concept of green budgeting actually doesn't yet exist formally, but it has been integrated into planning, especially in environment-related programs …"

An explicit mechanism governing green budgeting has not yet been formally established. The budgeting process still utilizes the existing SIPD system with a tagging or program-adjustment approach. One informant stated:

"We do not have any specific mechanism, but we usually identify environment-related activities, which are then identified through programs…"

These findings indicate that this province has implemented gradual preparation for green budgeting, but it has not yet been fully integrated into a standardized system. This condition also affects the budget implementation stage, particularly in program realization.

Governance Barriers

Regions with high levels of accountability, measured through financial reports receiving unqualified opinions or efficient administrative performance, may still face governance barriers, as administrative accountability does not always correlate with the effectiveness of public service delivery or regional policy outcomes. In the implementation of Green Budgeting Accountability, the Special Region of Yogyakarta faces several governance barriers that must be addressed to ensure optimal implementation. One of these is persistent differences in approaches among local government agencies. Each agency has its own interpretation of and approach to implementing environment-based programs, preventing full integration into a unified green budgeting framework. One informant from DLHK argued that:

"Sometimes local government agencies have different perceptions of what constitutes environmental activities, so there is no integrated approach yet..."

This condition demonstrates a fragmented understanding. This aligns with previous research by Domingues (2017), which suggests that sustainability reporting processes are influenced by organizational dynamics and differing interpretations across units.

Regional government agencies (OPDs) tend to follow existing administrative patterns without significant innovation. Consequently, progress toward a more sustainable system remains slow. This finding is consistent with Domingues (2017), who notes that the shift toward sustainable practices in the public sector is often obstructed by organizational structures that are not supportive of change. Moreover, Sinervo (2024), who emphasizes that collaboration and inter-institutional adjustment are required for effective sustainability integration.

The next barrier is limitations within the SIPD system, which does not fully support environment-based budget management. It lacks specific features or coding mechanisms to identify or categorize green budgeting components, requiring manual classification. As a result, green budget management and reporting processes are less efficient and suboptimal.

The absence of a Green Tagging feature further hinders transparency and accountability in environmental budget management. Consequently, environmental expenditures are not clearly separated from total regional spending. Instead, environmental budgets are distributed across various programs and sub-activities within the DPA. This makes it difficult to quantitatively determine the amount of environmental spending and assess its impact on the total APBD. Therefore, the environmental budget cannot be clearly presented without manual review of budget documents, making it difficult for local governments to demonstrate the extent of their fiscal commitment to environmental priorities.

Another barrier in implementing green budgeting is human resource capacity. Not all local government agencies share the same level of understanding of this concept. Limited comprehension of green budgeting results in suboptimal implementation, affecting program development and reporting quality. Hughes (2026) found that the success of sustainability programs is largely influenced by the readiness and capacity of human resources. In addition, institutional efficiency is highly dependent on human resource capacity to achieve sustainable development goals, as effective policy implementation requires adequate competencies in managing environmentally oriented budgeting (Musah, 2024; La Torre et al., 2024).

A lack of standards for green budget reporting also hampers the implementation of green budgeting. This leads to variations in data quality across local government agencies. Environmental reporting standards have not yet been fully standardized, as each OPD applies different preparation methods. This is consistent with Kvasničková (2023), who notes that sustainability reporting in developing countries still shows significant variation. In Indonesia, regional government readiness for sustainability reporting remains uneven, highlighting the importance of a standardized reporting system to support sustainable development and the integration of ESG principles into modern governance (Firmansyah et al., 2025; Rossi et al., 2025; Sklavos et al., 2025).

The interview results reveal challenges in regulations related to the integration of environmental programs into the budgeting process. One informant from Bapperida stated that existing regulations are no longer fully relevant to the Green Budgeting program. He said:

"The specific guideline used is Governor Regulation No. 50 of 2012, but this was implemented in 2020, while Presidential Regulation No. 98 of 2021 has also been replaced by Presidential Regulation No. 110 of 2025..."

The philosophy of *Hamemayu Hayuning Bawana* serves as a normative foundation for regional development, including environmentally oriented budgeting. This philosophy underpins the formulation of sustainability-oriented programs (Sulistiyani et al., 2021). Its core principle is maintaining environmental balance in development. The integration of local values strengthens the legitimacy of environmental policies. This aligns with La Torre (2024), who highlights that more effective green finance policies are achieved when supported by local values and contextual alignment.

Accountability and Transparency in Green Budgeting

The budget formulation process, which is not yet fully integrated, may affect the implementation of green budgeting. Thus, examining the alignment between planning and budget realization is crucial. In practice, discrepancies exist between green budget allocation and realization; not all planned programs are implemented optimally. Interviews with DLHK informants revealed that, in some cases, activities are budgeted but not fully realized. This finding is supported by interviews with Bapperida, which indicated that the discrepancy between planning and implementation occurs not only at the implementation stage but is also influenced by regional fiscal capacity constraints.

Bapperida stated that all programs are accommodated in the planning process; however, during implementation, adjustments frequently occur due to fiscal capacity limitations. While programs are still implemented, efficiency measures are applied by reducing their scope. In practice, discrepancies are found between planning documents and realization. Documents such as the Strategic Plan (Renstra) or the Regional Medium-Term Development Plan (RPJMD) may propose activities across multiple locations, but in practice, only a portion is implemented due to budget constraints. This indicates that the gap between planning and realization is influenced not only by technical factors but also by fiscal capacity and policy dynamics. This finding aligns with Zainuddin (2025), who argues that green budgeting depends heavily on consistency between planning and realization.

Shifts in policy priorities also impact the realization of green budgeting, particularly when government agendas change. Such shifts require environmental programs to be adjusted, indicating that they are not consistently treated as priorities. This finding is supported by Musah (2024), who highlights the importance of institutional efficiency in maintaining the consistency of sustainability programs.

Relabeling practices were found in some cases, where activities that are not environmentally oriented are categorized as green budgeting. Some general activities are included under environmental categories, reflecting the absence of a standardized definition of green budgeting. This finding is in line with Kvasničková (2023), who notes that sustainability reporting still varies in standards and interpretations in developing countries.

This condition is linked to the regional financial reporting structure, which does not explicitly accommodate Green Budgeting Accountability in the Budget Realization Report (LRA). In practice, green budgeting in the Special Region of Yogyakarta is not yet recorded as a specific line item in the LRA but is instead distributed across various categories. Environmental programs are generally classified under operating expenditures, particularly goods and services expenditures, such as waste management and pollution control activities. Moreover, green budgeting is also reflected in capital expenditures, for example, in the development of environmental infrastructure such as waste treatment facilities and green open spaces.

In some cases, green budgeting is also allocated through grants or social assistance, particularly for community-based programs such as community-driven waste management. This condition indicates that, although green budgeting has been substantially implemented, it is still not structurally separated within the regional financial reporting system. This finding reinforces previous evidence that the identification of green budgeting still relies on relabeling practices and subjective interpretation by each OPD.

The quality of green budgeting implementation varies across OPDs, depending on their capacity and understanding of environmental programs. This suggests that institutional capacity is a critical determinant of implementation quality. This finding is supported by Hughes (2026), who argue that organizational responses to sustainability projects are strongly influenced by internal capacity. The analysis shows that the realization of green budgeting continues to face various limitations, including constraints in planning, shifting policy priorities, and varying levels of implementer understanding. This condition results in multiple challenges in the implementation of green budgeting at the regional level.

Discussion

The findings of this study indicate that the implementation of Green Budgeting Accountability in the Special Region of Yogyakarta remains at an early stage, characterized as conceptual and administrative rather than fully integrated into the regional financial governance system. Although normative commitments to sustainable development are reflected in planning documents such as the RKPD and KUA-PPAS, the results reveal a significant gap between policy commitments and practical implementation. This finding reinforces the argument that environmental policy success is not solely determined by planning but also by institutional capacity and supporting systems (Kurrohman & Oktaviani, 2025; OECD, 2023).

From a governance perspective, the primary barrier lies in the fragmentation of understanding among Regional Government Agencies (OPDs). Differences in interpretation regarding the definition and classification of environmental activities lead to the absence of standardized green budgeting practices. This condition reflects weak cross-sectoral coordination, which, from an institutional theory perspective, can be interpreted as a failure to achieve institutional alignment among bureaucratic actors. This finding is consistent with previous studies highlighting that sustainability reporting effectiveness is highly dependent on organizational coherence and shared understanding across units (Domingues et al., 2017; Sinervo et al., 2024).

Furthermore, limitations in the Regional Government Information System (SIPD) constitute a critical technical constraint. The absence of green-tagging features or specific environmental expenditure classifications prevents clear identification of green spending in financial reports. Consequently, environmental costs are dispersed across various expenditure items and can only be identified through subjective interpretation. This condition reduces the quality of financial information, particularly in supporting sustainability-based decision-making and enhancing horizontal accountability to the public (Firdaus et al., 2024; Mediaty et al., 2025).

In addition, this study identifies the presence of relabeling practices, where non-environmental activities are categorized as part of green budgeting. This phenomenon indicates that green budgeting implementation tends to be symbolic (symbolic compliance) rather than substantive. Within the public accountability framework, this condition reflects the dominance of vertical accountability (administrative compliance with central government requirements) over horizontal accountability to society. This finding aligns with previous studies showing that sustainability reporting in developing countries often varies in interpretation and risks being used as a symbolic instrument rather than a substantive accountability mechanism (Sneideriene & Legenzova, 2025; Kvasničková et al., 2023).

The gap between planning and budget realization also emerges as a critical issue. Not all planned environmental programs are implemented optimally, primarily due to fiscal capacity constraints and shifting policy priorities. This finding suggests that the effectiveness of green budgeting depends heavily on the consistency between planning and implementation. The mismatch further supports the argument that integrating green budgeting into planning documents alone is insufficient without strong monitoring and evaluation mechanisms (Musah, 2024; Zainuddin et al., 2025).

From the perspective of human resource capacity, the study reveals an uneven understanding of green budgeting concepts across OPDs. This disparity directly affects the quality of implementation and reporting. In public management theory, this finding highlights that the success of policy innovation is strongly influenced by the readiness and competence of human resources as key implementation actors (Hughes & Baker, 2026; La Torre et al., 2024).

CONCLUSION

This study addresses three research objectives: (1) analyzing governance barriers in green budgeting implementation in Yogyakarta, (2) examining the transparency of green financial reporting, and (3) identifying mechanisms to strengthen public sector accountability for environmental sustainability. The findings demonstrate that all three objectives converge on a common institutional problem: the absence of an integrated green budgeting framework.

This research contributes to the green budgeting literature in developing countries by demonstrating that high-performance accountability (SAKIP AA) does not automatically translate into sustainable accountability. This finding broadens the application of the public accountability framework proposed by Bovens within the decentralization context in Indonesia, where horizontal accountability to the public remains weak despite strong vertical accountability to the central government. The integration of stewardship theory with institutional theory provides a new framework for explaining bureaucratic actors' behavior in advancing the green economy.

This research recommends that the Provincial Government of the Special Region of Yogyakarta develop a Green Chart of Accounts integrated with SIPD, along with the establishment of cross-agency standard operating procedures governing the classification, measurement, and disclosure of green budgeting in the CaLK. In addition, for the Indonesian Ministry of Finance and the Ministry of Home Affairs, these findings provide input for revising SIPD regulations to accommodate more flexible yet mandatory environmental cost classification features. This recommendation is also relevant for other regions in Indonesia. As a critical case, Yogyakarta offers transferable lessons for broader application in supporting Net Zero Emissions and Nationally Determined Contribution (NDC) targets for 2060.

This study has several limitations. First, the number of informants was limited to five purposively selected participants; thus, while the insights obtained are in-depth, they remain limited in scope. Second, this research employs a single-case study design in one province over the 2021–2025 period, which requires cautious generalization. Third, the analysis primarily focuses on governance and financial reporting aspects and does not quantitatively measure environmental impacts (e.g., greenhouse gas emissions or biodiversity indicators).

Future research is expected to conduct comparative analyses across provinces (e.g., comparing Yogyakarta with Central Java or Bali) using a mixed-methods approach to test the generalizability of these findings. Moreover, future studies could integrate post-reporting environmental impact assessments or employ a longitudinal design following the revision of the SIPD system. The use of big data analytics in national LKPD documents also offers a promising direction for assessing greenwashing trends at the regional level.

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AUTHOR CONTRIBUTION STATEMENT

Author 1 contributed to conceptualization, methodology, and original draft preparation. Author 2 contributed to data collection, formal analysis, and review & editing. All authors have read and agreed to the published version of the manuscript.

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