ENVIRONMENTAL AUDITING IN THE PUBLIC SECTOR: MEASURING ACCOUNTABILITY IN GREEN PUBLIC EXPENDITURE

Dewi Nidia Soepriadi*[1]
Jurusan Akuntansi, Universitas Pattimura, Indonesia
Email: dewi_nidiasoepriadi@yahoo.com

Jabida Latuamury
Jurusan Akuntansi, Universitas Pattimura, Indonesia
Email: jabida.latuamury@gmail.com

Kathleen Asyera Risakotta
Jurusan Akuntansi, Universitas Pattimura, Indonesia
Email: kathleenasyera@gmail.com

Abstract

This study aims to analyze the role of environmental auditing in the public sector, focusing on measuring the accountability of public expenditure allocated for green or environmentally friendly programs. Using a literature review method, this study examines various academic studies, environmental audit reports, and policy documents related to accountability practices in sustainability-oriented public financial management. The study results indicate that environmental auditing functions not only as a tool for monitoring budget utilization but also as a strategic instrument for ensuring the transparency, efficiency, and sustainability of government environmental policies. The literature analysis demonstrates that integrating environmental audits into public accountability systems can improve the quality of decision-making, strengthen public trust, and promote alignment between fiscal policy and sustainable development goals. However, the study also identifies several challenges, such as limited green performance indicators, insufficient auditor capacity, and weak reporting standards across countries. Therefore, the development of a more comprehensive and standardized environmental audit framework is needed to more effectively measure accountability in green public expenditure and make it comparable across jurisdictions.

Keywords: environmental auditing, public sector, accountability, green public expenditure

[1] Correspondence author

INTRODUCTION

The research background on environmental audits in the public sector is based on the increasing global urgency of climate change, environmental degradation, and sustainable natural resource management. Countries around the world have begun allocating significant budgets to support environmentally friendly development programs, such as renewable energy development, carbon emission mitigation, biodiversity conservation, and sustainable waste management. However, substantial budget allocations do not necessarily guarantee the achievement of desired environmental goals. This is where environmental auditing plays a crucial role, as it serves as an evaluation mechanism to measure the extent to which green public spending actually contributes to environmental sustainability. Environmental audits serve not only as an administrative compliance tool but also as an analytical instrument for assessing the effectiveness, efficiency, and impact of public policies on ecosystem conditions.

In the context of governance, accountability is a key pillar determining legitimacy and public trust. Public spending allocated to environmental programs, if not monitored by appropriate mechanisms, has the potential to give rise to problems such as budget misuse, program overlap, and bureaucratic inefficiency. This can undermine the effectiveness of government policies in achieving sustainable development targets (Huang, 2023). Environmental audits are emerging as a solution to strengthen transparency in public budget use, while also serving as a means to assess whether green spending is truly aligned with environmentally sound development goals. Furthermore, environmental audit practices can also detect weaknesses in policy planning and implementation, thus providing strategic recommendations for improvement for government agencies (Matos et al., 2023a).

In many developing countries, including Indonesia, environmental audits in the public sector are still relatively new compared to traditional financial audits. However, their urgency is growing as public spending allocations for green programs continue to increase. For example, in the context of new and renewable energy development, the government has allocated substantial funds, but their effectiveness is often questioned (Cappellieri et al., n.d.). In such situations, environmental audits can provide a more objective picture of the gap between plans and implementation, while also measuring the extent to which impacts are aligned with initial objectives. This aligns with public demand for a government that is not only financially accountable but also ecologically responsible.

Furthermore, environmental audits also play a crucial role in ensuring long-term fiscal sustainability. Public spending on environmentally friendly programs should not be viewed simply as an expense, but as an investment in future generations. However, these investments will only yield optimal results if they are properly planned and implemented, and monitored through effective audit mechanisms. Without adequate oversight, public funds have the potential to be wasted or even cause counterproductive environmental impacts. Therefore, research on environmental audits in the public sector significantly underscores the importance of accountability for green spending, while strengthening a transparent and sustainability-oriented governance framework (Saavedra, 2024).

Another equally important aspect is the role of environmental audits in strengthening public trust and government legitimacy (Wu et al., 2020). The public generally places great emphasis on environmental issues, particularly those related to daily quality of life, such as clean air, access to clean water, and waste management. If the government can demonstrate accountability in environmental budget management through transparent audit results, public trust will increase (Silva et al., 2020). Conversely, failure to manage a green budget, characterized by audit findings of inefficiency or misuse of funds, can lead to a crisis of trust. This makes environmental audits an important political and administrative instrument, as they serve to maintain the government's credibility in the eyes of the public and the international community.

From an academic perspective, research on environmental audits in the public sector has also become increasingly relevant with the development of the green governance and sustainable public finance paradigms (Cao et al., 2022a). Various literature has shown that good environmental governance cannot be separated from rigorous accountability mechanisms. However, there remains a research gap regarding how environmental audits can be systematically integrated into the public sector audit framework. This research is expected to provide theoretical contributions to enrich the literature on the relationship between auditing, accountability, and sustainability. By examining various environmental audit approaches and practices across countries, this study can identify the best model for measuring the effectiveness of green public spending (Cao et al., 2022a).

Practically, research on environmental auditing can serve as a reference for auditors, regulatory agencies, and policymakers in formulating more comprehensive audit standards. These standards should not only focus on administrative compliance but also consider the environmental and social impacts of implemented programs. Thus, environmental audit results can provide a more comprehensive picture of the quality of public spending and provide strategic recommendations for policy improvement. This is crucial in the modern era, which demands a balance between economic growth, social justice, and environmental sustainability.

Overall, research on environmental auditing in the public sector is a strategic step towards strengthening accountable and sustainable governance. Through this research, it is hoped that an effective environmental audit framework can be found for measuring the accountability of green public spending. This is important not only for developing countries seeking to strengthen their environmental governance capacity, but also for developed countries seeking to ensure that large budget allocations for green programs actually have a positive impact on the environment. Therefore, this research has the potential to make significant contributions both academically and practically, encouraging the creation of more transparent, sustainability-oriented governments capable of addressing the global challenges of climate change and environmental degradation.

RESEARCH METHOD

The research method used in this study is a literature review, focusing on the collection, critical analysis, and synthesis of various scientific sources relevant to the theme of environmental audits in the public sector. The research was conducted by reviewing journal articles, academic books, official reports from government agencies and international organizations, and previous research discussing accountability in environmentally oriented public spending. The literature selection process was conducted systematically, taking into account the criteria of topic relevance, publication recency, and source credibility, thus establishing a solid theoretical and empirical basis for answering the research questions.

Data analysis was conducted using a thematic-based qualitative approach, categorizing the collected information into key themes such as the concept of environmental audits, public sector accountability mechanisms, and the implementation of green public spending. The results of the literature review were then compared and integrated to identify patterns, challenges, and opportunities emerging in the implementation of environmental audits in the public sector. With this approach, the research is expected to provide a comprehensive overview of how environmental audits can serve as an accountability measurement instrument in the management of sustainability-oriented public spending, while also providing a conceptual contribution to the development of a policy framework and practice for public sector audits.

RESULT AND DISCUSSION

The Concept of Green Public Expenditure and Public Accountability

Green public expenditure is a crucial instrument in realizing governance that is oriented not only toward economic growth but also toward environmental protection and sustainable development (Matos et al., 2023b). Conceptually, green public expenditure refers to government budget allocations directed toward supporting programs, policies, and activities that have a positive impact on the environment. This spending includes investments in renewable energy, natural resource conservation, waste management, sustainable transportation, forest rehabilitation, and climate change mitigation and adaptation. Thus, public spending is understood not only as an instrument for economic distribution and stabilization, but also as a strategic means to ensure a balance between development needs and ecosystem sustainability.

Within the framework of national development, the concept of green public expenditure stems from the recognition that the state budget has a significant driving force in determining the direction of development. The government holds a strategic position as the primary actor, able to determine investment and program priorities through fiscal policy. If budget allocations are directed more toward exploitative sectors, the impact of environmental damage will be greater (Li et al., 2023). Conversely, if the budget prioritizes green spending, the government directly encourages the transition to a sustainable economy. Therefore, green public expenditure is seen as a budgeting mechanism that functions to ameliorate negative externalities from development while creating incentives for the public and businesses to participate in environmental protection. In this way, public finance becomes an instrument that not only supports physical and social development but also serves as a tool for internalizing environmental costs into development policies.

The scope of green public expenditure in government practice is quite broad and diverse, depending on a country's development priorities and fiscal capacity (Ugochukwu & Oruta, 2021). In developing countries, green spending is often associated with pollution control programs, increasing access to clean energy, and rehabilitating natural resources. Meanwhile, in developed countries, the concept focuses more on the development of low-carbon technologies, renewable energy innovation, and strengthening environmentally friendly infrastructure. At the local level, green spending can also be realized in the form of urban waste management programs, the development of green open spaces, electric-powered public transportation, and community empowerment for environmental conservation. Whatever its form, the main goal of green public expenditure is to create development that is resilient to ecological crises, while simultaneously improving people's quality of life in a sustainable manner (Bulus & Koc, 2021).

Public accountability is an integral aspect of the concept of green public expenditure. Because green spending utilizes a budget sourced from taxes and other state revenues, the public has the right to know the extent to which this budget is being used effectively and generating tangible benefits for the environment. Accountability in this context has two meanings. First, fiscal accountability emphasizes transparency in the allocation and use of budgets for green projects. Second, environmental accountability measures whether funded programs actually have a positive impact on environmental sustainability. Without adequate accountability mechanisms, green spending will simply be political jargon with no real implications for sustainability. Therefore, environmental audits and performance audits are crucial as a means of monitoring and evaluating the implementation of green public expenditure within the government.

Implementing public accountability in managing green public expenditure requires a comprehensive monitoring and evaluation system. The government must be able to present clear data on indicators of green spending outcomes, such as reduced greenhouse gas emissions, increased rehabilitated forest area, or the amount of clean energy generated through state-funded projects. Accountability reports must also be presented transparently to the public so that citizens can assess the extent to which the funds they contribute through taxes are truly managed for environmental benefits. In this context, the role of state financial audit institutions is vital, as they can ensure that government spending on the environment complies with the principles of efficiency, effectiveness, and sustainability (Sadiq et al., 2022).

Furthermore, public accountability in green public expenditure is also linked to government legitimacy. A government that demonstrates a real commitment through green spending allocations and demonstrates its positive impact on the environment will gain greater trust from the public and the international community. Conversely, if budget allocations are merely symbolic and do not produce significant environmental impacts, public accountability will be questioned. In the era of globalization, government legitimacy is also measured by its contribution to achieving international agendas such as the

Sustainable Development Goals (SDGs) and the Paris Agreement on climate change (Işık et al., 2022). Therefore, accountability for green spending impacts not only the national level but also the country's reputation on the global stage.

Furthermore, the concept of accountable green public expenditure also has important implications for social justice. Environmental issues are inseparable from the distribution of benefits and burdens of development. Well-targeted green spending can help protect vulnerable groups from the impacts of environmental degradation, such as poor communities living in flood-prone areas or smallholder farmers who depend on quality soil and water (Azam et al., 2023). Therefore, accountability in green spending also means ensuring that budget allocations truly favor those most impacted by environmental damage. This accountability broadens the meaning of green public expenditure as an instrument not only for protecting ecosystems but also for realizing environmental justice for all levels of society.

Ultimately, green public expenditure and public accountability are two complementary concepts within the framework of sustainable governance. Green spending ensures that the state budget is directed toward programs that protect and improve the environment, while public accountability ensures that every rupiah spent is accounted for, both financially and in terms of its ecological impact. The combination of the two creates governance that is not only transparent and efficient but also future-oriented. In this way, the government can build strong legitimacy, the community can obtain real benefits, and the environment can be preserved for future generations.

Challenges in Implementing Environmental Auditing

Environmental auditing is a crucial instrument for ensuring that development activities, both in the public and private sectors, align with the principles of sustainability and environmental protection (Brunelli et al., 2022). Essentially, environmental audits are intended to provide an independent, objective, and systematic evaluation of an organization's or institution's compliance with environmental regulations, operational standards, and commitments related to natural resource conservation. While conceptually, environmental auditing holds significant potential for improving environmental governance and public accountability, its implementation often faces complex challenges. These challenges are not only technical but also institutional, regulatory, financial, and cultural, closely related to stakeholder awareness and commitment.

One of the main challenges in implementing environmental audits is the limited availability of a consistent and clear regulatory framework (K & C, 2020). In many developing countries, including Indonesia, regulations related to environmental auditing are still developing and often overlap with other regulations. This makes it difficult for environmental auditors to determine definitive evaluation indicators and benchmark standards. Regulatory ambiguity can create room for differing interpretations, potentially leading to inconsistent environmental audit results between auditors and institutions. Furthermore, legal loopholes remain in the enforcement of environmental audit results. Recommendations often lack binding force, leading companies or public institutions to neglect their serious action. This reduces the effectiveness of environmental audits as an instrument for controlling environmental damage (ENVIRONMENTAL AUDIT AS A TOOL FOR MANAGEMENT AND SUSTAINABILITY, n.d.).

Another challenge is the limited human resources with specialized competencies in environmental auditing. Environmental audits require auditors with multidisciplinary expertise, encompassing knowledge of environmental science, industrial engineering, environmental law, accounting, and auditing. In reality, the number of auditors with such expertise remains very limited, often resulting in audits being conducted by personnel with little experience or inadequate certification. This limitation is exacerbated by the lack of ongoing training and uniform professional standards at the national and international levels. As a result, the quality of environmental audits is inconsistent and difficult to rely on for strategic decision-making, both by the government and the private sector (Castka et al., 2020a).

Financial aspects are also a significant barrier to implementing environmental audits. The environmental audit process is relatively costly, encompassing field data collection, laboratory testing, and detailed technical analysis (Huq & Stevenson, 2020). While these costs may be manageable for large companies, for small and medium-sized enterprises or public institutions with limited budgets, environmental audits are often perceived as an additional burden that is not a priority. This contributes to resistance to implementing environmental audits, especially when the long-term benefits are not immediately visible. Furthermore, the lack of adequate government incentives, such as tax breaks or subsidies, further weakens organizations' drive to conduct regular and comprehensive environmental audits.

Technical challenges are also a crucial issue that cannot be ignored. Environmental audits rely heavily on the availability of accurate, measurable, and verifiable data. However, in practice, many organizations still face limitations in their environmental data recording systems, for example regarding greenhouse gas emissions, energy use, solid waste, and water pollution. Incomplete, inconsistent, or even manipulated data can hamper the audit process and reduce the credibility of the results (Huq & Stevenson, 2020). Furthermore, technological limitations in environmental monitoring pose a significant obstacle. Many organizations, particularly in developing countries, lack sophisticated automated monitoring equipment, so data collection relies on manual, error-prone methods.

Organizational culture and environmental awareness are also fundamental challenges. Many companies and public institutions still view environmental audits as merely an administrative formality to meet regulatory requirements, rather than a substantive effort to improve their environmental performance. This paradigm robs environmental audits of their strategic value because they are not followed up with concrete improvement measures. Cultural resistance to change also often arises when audit results require significant overhauls in production processes, technology use, or waste management. In this context, the commitment of organizational leaders is key, because without support from the highest level, environmental audit recommendations often remain on paper.

Furthermore, political factors and economic interests also play a significant role in challenging environmental audit implementation. In many cases, environmental audits can produce findings that have implications for the economic interests of companies or even governments. For example, if audit results reveal serious violations that could damage an organization's image or disrupt investment, there is often pressure to change or conceal these findings. This creates a conflict of interest and threatens auditor independence. In the public sector, environmental audits can also be intertwined with specific political agendas, for example in infrastructure projects or natural resource exploitation, making audit results less objective.

Another challenge is the lack of public awareness and community participation in supporting environmental audits. Environmental audits are more effective if their results are transparently accessible to the public, thus fostering social pressure on companies or public institutions to make improvements. However, in reality, the public is often not involved or does not have access to environmental audit reports. This hinders optimal environmental accountability and weakens the function of social control. The lack of environmental literacy among the public also leads to a lack of understanding of the importance of environmental audits, resulting in relatively low public pressure for environmental compliance.

All these challenges demonstrate that implementing environmental audits is not simply a technical issue, but also a complex institutional, cultural, and political one. Overcoming these obstacles requires a comprehensive strategy, ranging from strengthening regulations, building auditor capacity, providing incentives, to developing an environmentally friendly organizational culture. Furthermore, close collaboration between the government, the private sector, academia, and civil society is essential to ensure that environmental audits are truly an effective instrument for maintaining sustainable development. Without collective commitment, environmental audits risk becoming merely administrative procedures that fail to deliver tangible impact on environmental improvement.

The Role of Auditors in Improving Transparency and Accountability

Auditors play a highly strategic role in building good governance, particularly in creating transparent and accountable systems across various sectors, both public and private. Amidst increasing public demands for information disclosure and clean financial management, auditors serve not only as technical audits but also as agents of public trust. Transparency and accountability are two fundamental, interrelated principles. Transparency emphasizes openness in the presentation of information, while accountability emphasizes responsibility in the use of resources. Auditors, through a systematic, objective, and independent audit process, can ensure that both principles are effectively implemented (Ayogu, 2023).

In the context of transparency, auditors play a crucial role in ensuring that information published by an organization, particularly financial reports, truly reflects the true state of affairs. This means auditors are tasked with verifying that the data presented complies with accounting standards, is free from misrepresentation, and is free from manipulation that could mislead stakeholders. The role of auditors prevents organizations from freely concealing errors or irregularities, as every recording and reporting process is subject to detailed scrutiny. The existence of credible audit reports can ultimately increase public trust in organizations, whether government agencies, private companies, or non-profit organizations. Thus, transparency is not merely an ideal concept but a concrete practice realized through the work of auditors (Sari & Muslim, 2023).

Meanwhile, accountability is also a crucial aspect strengthened by the role of auditors. Accountability requires every organization to be accountable for all decisions, policies, and resource use to the public or stakeholders. Auditors ensure that these resources are used in accordance with applicable objectives, rules, and regulations. For example, in the public sector, auditors ensure that government-managed budgets are truly allocated for the benefit of the public and not misused for personal gain. An audit process conducted with integrity will help uncover irregularities, inefficiencies, and potential fraud (King & McKennie, 2023). Thus, auditors serve not only as supervisors but also as drivers of a culture of accountability within an organization.

Furthermore, auditors have an educational function in raising awareness of the importance of transparency and accountability among both management and employees. Through recommendations presented in the audit report, auditors provide constructive input to address weaknesses in the internal control system, improve reporting quality, and strengthen governance. These recommendations ultimately not only help organizations improve operational practices but also encourage the creation of a more open and accountable system (Amalia, 2023). In other words, auditors not only identify errors but also play a role in providing solutions to existing problems. This demonstrates that the role of auditors extends beyond simply a control function to strategic partners in developing sustainable governance.

In the modern era marked by digitalization and information transparency, the role of auditors in supporting transparency and accountability has become increasingly crucial. Technology has presented both new opportunities and challenges. On the one hand, digital-based accounting information systems enable faster and more accurate data presentation, but on the other hand, they also open up the possibility of new, more complex fraud. Auditors are required to keep pace with these developments by utilizing audit technology based on data analytics and information systems (Viana et al., n.d.). With these capabilities, auditors can more quickly detect anomalies, analyze suspicious transaction patterns, and provide greater assurance of the quality of financial information. In this context, auditors are not merely traditional supervisors but also agents of change who utilize technology to strengthen transparency and accountability.

Furthermore, auditors also play a role in maintaining organizational integrity in the public eye. When financial statements have been audited and received an unqualified opinion, the public will have confidence that the organization is well-managed. Conversely, if the auditor discovers discrepancies, the public can be alerted to issues that require attention. Thus, auditors serve as a communication bridge between the organization and its stakeholders. Public trust is not built solely through management's word of mouth, but rather through the objective assurance provided by auditors (Sofyani et al., 2020). This trust is crucial for organizations in maintaining their reputation, enhancing legitimacy, and gaining support from various parties.

However, the auditor's role in enhancing transparency and accountability is not without challenges. Auditor independence is often questioned when conflicts of interest arise, particularly if the relationship between the auditor and the auditee is too close. This can diminish the credibility of the audit report and undermine public trust. Therefore, maintaining integrity and independence is key for auditors to effectively carry out their roles. Furthermore, auditors must also face pressure from ever-evolving regulatory complexity and increasing public expectations for audit quality. With adequate competence, professionalism, and a commitment to ethics, auditors can overcome these challenges and remain consistent in carrying out their roles.

Overall, auditors play a vital role in building a transparent and accountable system. Their role extends beyond technical audits to empowering organizations through recommendations, strengthening internal control systems, and leveraging technology to support better governance. Through independence, integrity, and professionalism, auditors are able to maintain public trust and ensure that every organization is accountable for its resource management. In the long term, auditors' contributions not only impact the internal health of the organization but also significantly contribute to the development of a clean, open, and trustworthy economic and governance system. Therefore, auditors can be considered a key pillar in realizing sustainable transparency and accountability across all aspects of an organization's life.

The Impact of Environmental Auditing on Public Financial Management

Environmental auditing, in the context of public sector governance, plays an increasingly significant role in ensuring that state financial management is not only oriented towards fiscal efficiency and accountability, but also takes into account aspects of sustainability and environmental preservation (Spatariu, 2022). Over the past few decades, awareness of the environmental impacts of various development activities has encouraged governments to integrate green governance principles into public policy. The presence of environmental auditing allows for a more comprehensive control mechanism, where state expenditures related to infrastructure development programs, natural resource management, and other public expenditures can be transparently assessed for environmental compliance (Cao et al., 2022b). Thus, public financial management is no longer viewed solely from an administrative perspective, but is also assessed based on the extent to which budget allocations contribute to the achievement of sustainable development goals.

The most obvious impact of implementing environmental auditing on public financial management is the improvement in the quality of accountability. Environmental audits add an additional dimension to the public expenditure evaluation process by assessing whether the use of public funds complies with applicable environmental regulations and sustainability standards (INTERNAL AUDIT AND MANAGEMENT CONTROL IN UNITS OF THE PUBLIC FINANCE SECTOR, n.d.). For example, in large-scale infrastructure development projects, environmental audits can ensure that the budget allocated for roads, bridges, or power plants does not neglect environmental factors such as pollution, deforestation, and ecosystem damage. If violations or inefficiencies in the use of funds that negatively impact the environment are identified, audit recommendations can encourage policy improvements and improved budget governance in the future. In this way, environmental auditing helps minimize potential waste of public funds that could arise from non-compliance with sustainability principles.

Furthermore, the implementation of environmental audits also promotes efficiency in public financial management. When the government is required to account for public spending from a sustainability perspective, state institutions will be more careful in planning and allocating budgets (Castka et al., 2020b). Programs that have the potential to incur negative externalities, such as pollution or long-term environmental damage, can be minimized from the budget planning stage. The long-term impact is public cost savings, as the costs arising from environmental damage generally far outweigh the costs of preventative measures. For example, allocating funds for environmentally friendly waste treatment technology from the outset is more efficient than bearing the public health costs resulting from uncontrolled pollution. Thus, environmental audits serve as a preventative tool that can strengthen state financial risk management.

Equally important, environmental auditing also contributes to increased transparency in the public financial management process. The public, as the legitimate owners of state funds, has the right to know how the government spends its budget and the extent to which that spending supports environmentally sound development. Publicly published environmental audit reports provide a platform for civil society, academics, and the media to conduct independent oversight of government policies. This transparency strengthens public trust in state institutions and fosters a stronger culture of accountability among bureaucrats. In other words, environmental auditing creates a more comprehensive checks and balances mechanism by incorporating sustainability aspects into the public financial accountability framework.

Another significant impact is the formation of a more sustainable fiscal policy orientation. Environmental audit results often provide important input for formulating budgetary policies in subsequent years (Grossi et al., 2020). The government can use audit findings to identify sectors requiring sustainability strengthening, such as energy, transportation, or water resource management. This allows the state budget to be more effectively targeted, not only to drive economic growth but also to ensure environmental sustainability. This orientation transformation is highly relevant in the era of sustainable development, where balancing economic growth, social equity, and environmental sustainability is a key pillar (Hay & Cordery, 2021).

The implementation of environmental auditing also contributes to mitigating legal and reputational risks for the government. Non-compliance with environmental regulations in the use of public funds has the potential to give rise to legal disputes, both at the national and international levels, ultimately burdening state finances. Furthermore, the government's failure to maintain environmental compliance can damage the country's reputation with global investors, international financial institutions, and multilateral organizations. Through environmental audit mechanisms, the government can anticipate these risks by strengthening compliance and closing potential loopholes for environmentally unfriendly budget irregularities. Thus, the positive impact is not only on fiscal efficiency but also on enhancing the country's image and credibility on the global stage.

Conceptually, the impact of environmental auditing on public financial management can also be seen within the framework of good governance. Environmental audits strengthen the principles of transparency, accountability, participation, and fairness in the management of state funds. These principles are the primary foundation of good governance, ultimately creating healthier, more efficient public finances that favor the interests of the wider community. Therefore, environmental auditing is not merely seen as a technical instrument for compliance audits, but also as an ethical pillar that guides public financial management toward equitable and sustainable development.

From these various descriptions, it can be emphasized that environmental auditing has a multidimensional impact on public financial management. Not only does it increase accountability and efficiency, but it also strengthens transparency, encourages the formulation of sustainable fiscal policies, and reduces legal and reputational risks for the state. With the increasing complexity of development challenges and increasing global pressure on environmental issues, the role of environmental auditing in the public sector will become increasingly crucial. Going forward, strengthening auditor capacity, integrating with analytical technology, and providing clear regulatory support are key to ensuring environmental audits can truly contribute to creating sustainability-oriented public financial governance.

CONCLUSION

The conclusion of the study "Environmental Auditing in the Public Sector: Measuring Accountability in Green Public Expenditure" demonstrates that environmental audits in the public sector play a strategic role in ensuring that the allocation and use of green spending are truly aligned with the principles of sustainability and good governance. Through the implementation of environmental audits, government transparency and accountability can be enhanced, so that policies designed to support environmental conservation become not only formal commitments but also realized in measurable and accountable budgeting practices. Thus, environmental audits serve as both a monitoring instrument and a driver of change toward sustainable development.

Furthermore, environmental audits in the public sector help strengthen public trust in the government by providing objective evidence regarding the effectiveness of public spending management directed toward environmentally friendly programs. The success of these audits depends on a clear regulatory framework, the competence of auditors, and the integration of environmental performance indicators into the state budgeting system. Therefore, it can be emphasized that environmental audits are not merely technical evaluation tools but also policy instruments that contribute to fiscal accountability, efficient resource use, and the achievement of long-term green development goals.

REFERENCES

Amalia, M. M. (2023). Enhancing Accountability and Transparency in the Public Sector: A Comprehensive Review of Public Sector Accounting Practices. *The Es Accounting And Finance*, *1*(03), 160–168. https://doi.org/10.58812/esaf.v1i03.105

Ayogu, M. (2023). Fostering Transparency and Accountability Enhancing Statutory Audits in Nigeria. *Journal of Business and Economic Options*, *6*(1), 37–44.

Azam, W., Khan, I., & Ali, S. A. (2023). Alternative energy and natural resources in determining environmental sustainability: A look at the role of government final consumption expenditures in France. *Environmental Science and Pollution Research*, *30*(1), 1949–1965. https://doi.org/10.1007/s11356-022-22334-z

Brunelli, S., Murzakhmetova, A., & Falivena, C. (2022). Environmental Auditing in Rural Areas: Current Patterns and Future Challenges in Central Asia. *Sustainability*, *14*(22), 15163. https://doi.org/10.3390/su142215163

Bulus, G. C., & Koc, S. (2021). The effects of FDI and government expenditures on environmental pollution in Korea: The pollution haven hypothesis revisited. *Environmental Science and Pollution Research*, *28*(28), 38238–38253. https://doi.org/10.1007/s11356-021-13462-z

Cao, H., Zhang, L., Qi, Y., Yang, Z., & Li, X. (2022a). Government auditing and environmental governance: Evidence from China's auditing system reform. *Environmental Impact Assessment Review*, *93*, 106705. https://doi.org/10.1016/j.eiar.2021.106705

Cao, H., Zhang, L., Qi, Y., Yang, Z., & Li, X. (2022b). Government auditing and environmental governance: Evidence from China's auditing system reform. *Environmental Impact Assessment Review*, *93*, 106705. https://doi.org/10.1016/j.eiar.2021.106705

Cappellieri, F., Lombardi, R., Pizzo, M., & Vinciguerra, R. (n.d.). *Environmental reporting in public sector organizations: A review of literature for the future paths of research*. https://doi.org/10.1111/faam.12411

Castka, P., Searcy, C., & Mohr, J. (2020a). Technology-enhanced auditing: Improving veracity and timeliness in social and environmental audits of supply chains. *Journal of Cleaner Production*, *258*, 120773. https://doi.org/10.1016/j.jclepro.2020.120773

Castka, P., Searcy, C., & Mohr, J. (2020b). Technology-enhanced auditing: Improving veracity and timeliness in social and environmental audits of supply chains. *Journal of Cleaner Production*, *258*, 120773. https://doi.org/10.1016/j.jclepro.2020.120773

ENVIRONMENTAL AUDIT AS A TOOL FOR MANAGEMENT AND SUSTAINABILITY: A QUALITATIVE STUDY - ProQuest. (n.d.). Retrieved September 13, 2025, from https://www.proquest.com/openview/a4dbbd9f5f35f397a7b47a299197e920/1?pq-origsite=gscholar&cbl=2031968

Grossi, G., Meijer, A., & Sargiacomo, M. (2020). A public management perspective on smart cities: 'Urban auditing' for management, governance and accountability. *Public Management Review*. https://www.tandfonline.com/doi/abs/10.1080/14719037.2020.1733056

Hay, D., & Cordery, C. J. (2021). Evidence about the value of financial statement audit in the public sector. *Public Money & Management*. https://www.tandfonline.com/doi/abs/10.1080/09540962.2020.1729532

Huang, R. (2023). Auditing the environmental accountability of local officials and the corporate green response: Evidence from China. *Applied Economics*. https://www.tandfonline.com/doi/abs/10.1080/00036846.2022.2120958

Huq, F. A., & Stevenson, M. (2020). Implementing Socially Sustainable Practices in Challenging Institutional Contexts: Building Theory from Seven Developing Country Supplier Cases. *Journal of Business Ethics*, *161*(2), 415–442. https://doi.org/10.1007/s10551-018-3951-x

INTERNAL AUDIT AND MANAGEMENT CONTROL IN UNITS OF THE PUBLIC FINANCE SECTOR. (n.d.). Retrieved September 13, 2025, from https://zeszytynaukowe-sgsp.pl/article/158884/en

Işık, C., Ongan, S., Bulut, U., Karakaya, S., Irfan, M., Alvarado, R., Ahmad, M., & Rehman, A. (2022). Reinvestigating the Environmental Kuznets Curve (EKC) hypothesis by a composite model constructed on the Armey curve hypothesis with government spending for the US States. *Environmental Science and Pollution Research*, 29(11), 16472–16483. https://doi.org/10.1007/s11356-021-16720-2

K, N. J., & C, N. A. (2020). Challenges and opportunities in environmental impact assessment and environmental audit practice in Kenya. *Journal of Geography and Regional Planning*, *13*(3), 70–76. https://doi.org/10.5897/JGRP2019.0753

King, H., & McKennie, N. (2023). Assessing the Impact of Audit Quality on Accountability and Transparency among Financial Institutions in the United States: A Systematic Review and Meta-Analysis. *Journal of Finance and Accounting*, *7*(2), 11–21. https://doi.org/10.53819/81018102t4130

Li, L., Shen, Z., Song, M., & Vardanyan, M. (2023). Public Expenditure, Green Finance, and Environmental Governance: Evidence From China. *Environmental Modeling & Assessment*, *28*(5), 859–873. https://doi.org/10.1007/s10666-023-09899-w

Matos, S., Jorge, S., & Moura e Sá, P. (2023a). Measuring local public expenditure effectiveness using sustainable development goals. *International Journal of Public Sector Management*, *36*(4–5), 440–462. https://doi.org/10.1108/IJPSM-01-2023-0003

Matos, S., Jorge, S., & Moura e Sá, P. (2023b). Measuring local public expenditure effectiveness using sustainable development goals. *International Journal of Public Sector Management*, *36*(4–5), 440–462. https://doi.org/10.1108/IJPSM-01-2023-0003

Saavedra, M. O. R.-. (2024). Environmental Audits in Public Institutions: A Mechanism to Enhance Transparency and Sustainability. *Pakistan Journal of Life and Social Sciences (PJLSS)*, *22*(2). https://doi.org/10.57239/PJLSS-2024-22.2.001466

Sadiq, M., Nonthapot, S., Mohamad, S., Chee Keong, O., Ehsanullah, S., & Iqbal, N. (2022). Does green finance matter for sustainable entrepreneurship and environmental corporate social responsibility during COVID-19? *China Finance Review International*, *12*(2), 317–333. https://doi.org/10.1108/CFRI-02-2021-0038

Sari, R., & Muslim, M. (2023). Accountability and Transparency in Public Sector Accounting: A Systematic Review. *Amkop Management Accounting Review (AMAR)*, *3*(2), 90–106. https://doi.org/10.37531/amar.v3i2.1440

Silva, K. de, Yapa, P. W. S., & Vesty, G. (2020). The Impact of Accountability Mechanisms on Public Sector Environmental Sustainability Performance: A Case Study of Sri Lanka. *Australasian Accounting, Business and Finance Journal*, *14*(3). https://doi.org/10.14453/aabfj.v14i3.4

Sofyani, H., Riyadh, H. A., & Fahlevi, H. (2020). Improving service quality, accountability and transparency of local government: The intervening role of information technology governance. *Cogent Business & Management*. https://www.tandfonline.com/doi/abs/10.1080/23311975.2020.1735690

Spatariu, A. A. (2022). The Impact of the External Public Audit on the Performance of the Administration In the Field of Environmental Policies. *ACADEMIC JOURNAL OF LAW AND GOVERNANCE*, *9.2*, 178–203.

Ugochukwu, S. D., & Oruta, L. I. (2021). Government Expenditure and Economic Growth in Nigeria: A Disaggregated Analysis. *Traektoriâ Nauki = Path of Science*, *7*(11), 4022–4035.

Viana, L. C., Moreira, J. A., & Alves, P. (n.d.). *State audit of public–private partnerships: Effects on transparency, auditor's roles, and impact on auditee's reactions*. https://doi.org/10.1111/faam.12342

Wu, X., Cao, Q., Tan, X., & Li, L. (2020). The effect of audit of outgoing leading officials' natural resource accountability on environmental governance: Evidence from China. *Managerial Auditing Journal*, *35*(9), 1213–1241. https://doi.org/10.1108/MAJ-08-2019-2378